

**“THE 2020 EUROPEAN AGRICULTURE:
LONG TERM CHALLENGES,
NEW PUBLIC AND PRIVATE POLICIES”**

CONFERENCE PROCEEDINGS
JANUARY 29-30, 2009, PARIS

Session 1: Climate change.....	2
Session 2: Energy	6
Session 3: Water.....	10
Session 4: Food Security and Food Safety	16
Session 5: Structural Adjustments.....	24
Session 6: Multifunctionality	31
Session 7: Risk Management	37
Session 8: Competition Policy	41

Rapporteurs: Gabrielle Barraqué, Nicolas Berghmans

The proceedings reflect rapporteurs' interpretations of the discussions. They do not constitute any institutional positions and views of participants and organisations.

The conference was held at Sciences Po on January 29, 2009, and January 30, 2009, with the support or contributions of Sciences Po, The German Marshall Fund of the United States, La France Agricole and the OECD.

Steering Committee: Pierre Boulanger, Louis-Pascal Mahé, Patrick Messerlin, Stefan Tangermann

Session 1: Agriculture and Climate Change

The president of session 1 on climate change and agriculture was Patrick Messerlin (Professor and Director, Sciences Po Groupe d'Economie Mondiale - GEM). The Wiseman was Gerald Nelson (Senior Research Fellow, International Food Policy Research Institute - IFPRI) and the discussants were Stéphane de Cara (Research Fellow, French National Institute for Agricultural Research - INRA) and Nathalie Guesdon (Environment Policy Officer, French Ministry of Agriculture and Fisheries).

Patrick Messerlin began the first session of the conference by thanking the partners of the event: *La France Agricole*, the German Marshall Fund of the United States and the Organisation for Economic Co-operation and Development. This conference takes place as the health-check of the common agricultural policy is ending, and before a reform that Czech and Swedish EU presidencies have to initiate. Thus timing seems appropriate to question the future of agricultural policies. He then introduced the various sessions of the conference, including the first half-day which focuses on the profound and long term changes affecting agriculture: climate change, bio-fuel energy policies and water resources.

Gerald Nelson marked first that there is no doubt about climate change. It will manifest itself in higher average temperatures, more overall rainfall with changes in atmospheric circulation patterns. However, great uncertainties remain on the location and depth of these changes. With the coming of climate change, agriculture needs to adapt and to be resilient to a variability of scenarios due to these uncertainties. Biophysical and socioeconomic changes will be needed in the future. These include new crop varieties, infrastructure investments and changes in management structures. Agriculture has also a role to play in mitigating the potential future increases in temperature, by capturing greenhouse gas (GHG) emissions from other economic sectors, and also by reducing its own emissions. Finally, an important issue, from an economist point of view, deals with the need of a more open agricultural trading system.

Temperatures have increased since the beginning of the industrial revolution. Up to 2000, the increase in global temperature was approximately half a degree Celsius. Starting from current observations, a variety of scenarios upon global temperature can be made on the long run. If we manage to stop emissions now, the increase in temperature could be stabilized at less than one degree Celsius over the next century. From there, global temperature scenarios predict changes from 1.5 to 4 degrees Celsius, with a most probable 2 degree increase. Many simulation models estimate the worldwide overall effect. They conclude that temperature will get higher everywhere, with largest increases in temperature at the highest latitudes. Precipitation patterns are more disparate. Models tell us that there will be an increase in occurrence and variability of precipitation. What parts of the world will become drier and what will become wetter is still mostly uncertain. For Europe, according to the most relevant hypothesis on future GHG emissions, the predictions are an increase in the number of century droughts. But the distribution throughout the continent depends on the model examined.

How does scientific literature developed regarding the effects of climate change on agriculture? In the mid-1990s, the general view was that agriculture would not be significantly affected by climate change, as changes would be easily manageable. Initial studies mentioned CO₂ fertilization effects. Indeed with a higher CO₂ concentration in the atmosphere, some plants grow faster. Global warming negative yield effects would be

counterbalanced by CO₂ fertilization effects and the continued liberalization of agricultural markets. More open trade-flows would permit regions that suffer the consequences of climate change to trade with regions that benefit from it. In the early 2000s, literature changed a bit its view. There was still the wise conclusion that climate change will be manageable. However, studies came with the conclusion that agricultural production would increase in temperate areas, mostly developed countries, and decrease in developing countries. These regional differences would go stronger over time bringing worries about potential hunger situations in the poorest countries of the world. In the late 2000s, literature changed again its views. Yields will increase in all regions, with smaller gains in temperate areas. In all generation of studies, CO₂-fertilization effects were needed to offset the reduction in yields resulting from higher temperatures and losses of precipitation in some regions. However, recent agricultural experiments showed that the effect in the field was half-overvalued and that higher CO₂-concentration could increase crop vulnerability to insects. Indeed, first experiments on CO₂-fertilization effects were made in laboratory. Thus when they were moved to the field in the Northern-American Midwest, the results were much more ambiguous. CO₂-fertilization effects are uncertain and impacts of climate change on yields are actually not really known. One thing remained constant in all studies: the need for a more open trading agricultural system to help agricultural sector reinforce its resilience.

Given the uncertainties about the nature and spatial distribution of change and the long lead times needed for some adaptation efforts, the challenge is to find the most cost-effective ways to adapt. It is very important to know that developing policy is a key. Indeed, more productive agriculture provides higher incomes to farmers, and thus higher resilience to deal with the uncertainty of climate change. Due to the disproportionate importance of changes affecting poorer nations, pro-growth policies and technological solutions, including biotechnology, are essential.

Location matters are also crucial. Location specific analyses and programs are the best way to build up adaptation policies. It has no sense to build a dam in an African region where precipitations will drop so much that it will be impossible to capture water. It is also important to reinforce agricultural research: crop-breeding and biotechnology that provides resilient crops to biotic stress. Improvements in water productivity are critical as global warming will exacerbate the need for water harvesting, storage, and management. That is specifically a local issue, for example Latin America has almost no investments in irrigation whereas Sub-Saharan Africa has a lot. Investments in both physical and institutional rural infrastructure will help to cope with the uncertainties of climate change. On the physical side, this includes roads, markets, building storage facilities. On the institutional side, information programs, credit-markets that function well and allow farmers to access new varieties of crops are needed. The last crucial point is the reduction of internal barriers as there are too many countries where going across the territory means having to pay a multitude of taxes. Another important challenge for the future is the internalization of the negative and positive externalities associated with environmental services of agriculture.

Agriculture has also an important role to play in mitigating the effects of climate change. Globally, agriculture contributed to about 14% of annual GHG emissions and forestry a further 19%. Contribution is very different across countries. In Europe, 9.1% of the total emissions come from agriculture and forestry, but in Sub-Saharan Africa, 60% of emissions come only from forestry, essentially deforestation. Policies will be then very differentiated depending on the regions of the world. One way to mitigate the effects of climate change involves crops. This requires cultivating more perennial crops and plants with roots that can go deeper in the soil; reducing tillage that releases the carbon from the soil to the atmosphere. Management options include a change in the form of nitrogenous fertilizers and cultivation

practices to reduce methane emissions from irrigated rice. The way forward to reduce deforestation presents tricky challenges.

To conclude, Gerald Nelson noted that climate change and agriculture is a problem that has to be addressed now. More thoughts have to be done on the way to adapt to climate change. More research on climate change is needed to have a better look on it. More biological research is also required to find crops that are more resilient to environmental changes. Finally, more openness of the global agricultural trading system will also help to adapt to climate changes.

Stéphane De Cara highlighted two major challenges for agriculture and climate change: adaptation of agriculture to climate change and mitigation of emissions from agricultural sector.

He regretted the separated treatments of these two issues that prevail in the current literature and studies. This separation is justified by three assumptions: the difference in time horizon between the long-term adaptation and the short-term mitigation, the macro-micro scale distinction and the disparity in the nature of uncertainties. Stéphane De Cara noted that recent climate change reduces the time horizon for adaptation. At the same time, the most promising mitigation solutions require long-term investments (e.g. plantation forestry). According to Stéphane De Cara, a convergence exists on time horizons for these two issues.

He also questioned the prevailing idea that uncertainties on adjustment costs are greater than those on mitigation costs. Adaptation costs can be deducted from the past natural disasters experiences, while very large uncertainties remain on the effectiveness of mitigation. He added a comment on the interaction between climate change and GHG emissions. The effects of climate events can hugely influence emissions as illustrated with the 1999 French storm which led to high emissions of GHG due to deforestation.

To conclude, he highlighted that improving agricultural productivity requires investments in infrastructures and a research that directly addresses problems of both mitigation and adaptation. Stéphane De Cara thinks that it would be desirable to enhance coordination of research and public policy between these two areas.

Nathalie Guesdon endorsed the idea of a comprehensive approach including mitigation and adaptation, but also more broadly asked for more consistent policies, taking into account other environmental policies such as biodiversity or water quality programs.

Working groups set up by the Ministry of Agriculture conclude that it is very important to think on operating systems, water resources and improve the variety of cultures to adapt to change. The increase in yield due to the effect of CO₂ may well be thwarted by excessive temperature increase and depletion of water resources. An important challenge will be to incorporate environmental requirements in quality labels in France. There is also a strong need for information and training on adaptation at farmers' level.

Speaking about mitigation, 18% of GHG emissions in France come from agriculture. Since 1990, agricultural emissions have decreased by 11% due to the decrease of livestock and the improved efficiency of nitrogen fertilizers. Since 2004, a French climate plan exists. This year it will be updated to reflect the European emission reduction targets for 2020. Regarding current emission, the reduction target for the French agricultural sector is 14%. Agriculture and forestry can contribute to mitigate the effect of GHG emissions, but the benefits are often posted on other sectors: wood in the real estate sector, biomass in the energy sector.

Internationally, the focus on the role of agriculture on climate change is relatively recent. International approach must not forget the importance of the local level. It is at local levels that can be defined the most appropriate measures.

Debate

The audience questioned the contradiction between environmental policy and a free trade policy. Encouraging small distribution channels could reduce GHG emissions.

In response, Gerald Nelson cited a study on sheep meat produced in New Zealand and imported into the United Kingdom. This study concluded that imported sheep meat has a smaller impact in terms of GHG emissions. A study on beans produced in Africa has revealed that the access to the European market has led farmers to improve their operating efficiencies. There is no simple answer to this issue. Economists tend to think that it is better to internalize the environmental externalities than to use indirect tools such as trade policies to meet the challenge of reducing GHG emissions.

The audience also asked whether agriculture can be considered as neutral from an ecological point of view.

Stéphane De Cara thinks that agriculture cannot be regarded as neutral. While agriculture can mitigate GHG emissions by capturing carbon it causes emissions of methane and nitrogen. In terms of greenhouse effect, Methane is 20 times more harmful than carbon dioxide, nitrogen 300 times more.

Another question was about the opportunity of international funds transfers intended to fight global warming.

Gerald Nelson mentioned the case of a Brazilian farmer who cut the Amazonian rain forest. The price in Europe of a ton of carbon dioxide is \$ 25. Then it seems a very good solution to pay a fraction of that price to this farmer to prevent him to cut trees. However, such a transfer is technically impossible for the moment, and raises the question of what the farmer can do next for his living. A more appropriate policy for this farmer would be to support economic development in his country.

Session 2: Agriculture and Energy

The president of the session 2 on agriculture and energy was Ann Tutwiler (Managing Director for Trade and Development, Hewlett Foundation). The Wiseman was Michael Levi (Research Fellow, Council on Foreign Relations) and the discussant was Ronald Steenblik (Economist, Organisation for Economic Co-operation and Development - OECD).

Michael Levi began his speech advising that he had long been convinced that getting adequate energy policy requires taking it out of its own separate space, its own separate category and thinking about how it is integrated with other important elements of public policy. He decided to highlight three points. The first is that bio-fuels, regardless of the policy decisions that will be made, will remain a significant part of the future energy mix. The details of their evolution and the magnitude of their contribution will depend heavily on policy decisions and will have significant impact on the agricultural community. The second is that the bio-fuel policy will be shaped primarily by thinking about three areas: energy security, climate change and food security. The third is that dealing with bio-fuels will also require policies that address land use and agriculture around the world. Bio-fuels are now mainly composed of ethanol and bio-diesel. Something is planted, grown, harvested and processed into liquid fuel burned in cars and trucks and possibly elsewhere in the future. In the process, energy is used and emissions are created. Today bio-fuels from a variety of food crops exist: soy, corn, wheat and sugarcane for example.

The first question is how bio-fuels enter energy security strategy. It really depends on what are the objectives of the energy security strategy. Energy security means different things to different people. The oldest concern is about oil or gas supply cut-offs due to exporters' policy or international events. Another concern is on the impact on the economy of heavy dependence on fossil fuels. Finally, the third concern is about how by importing oil and gas, regimes that are not supported in the framework of foreign policy are enriched. Supply cut-offs are less salient today, particularly for oil. The international oil markets function well; reserve supplies of petroleum that can be released onto the market have been created.

However, dealing with energy security issues does not automatically lead to a push on bio-fuels. A variety of options exists. Two other options can be considered: energy demand reduction through higher efficiency, particularly in transportation, and also electrification of the transportation sector.

Another important variable affecting bio-fuels in the context of energy security is the supply of natural gas. Indeed it takes energy to convert crops into bio-fuels and this energy is often supplied by natural gas. Natural gas is also an important element for the production of fertilizers, which are an important input in the current bio-fuels' growth. So a lot of energy in the form of gas potentially goes into bio-fuels production. Trading dependence on oil for dependence on gas is not necessarily positive for energy security. On that point, there is a significant difference between the United States and Europe. There are severe concerns in Europe since it is more exposed to security issues arising from natural gas. Internal markets are not exactly well functioning, transparency is low and there is a supply dependency. United States natural gas markets function much better though that might become an issue in the future. On the whole it is hard to decide exactly what the net impact of bio-fuels is but in general increasing bio-fuels production in a responsible way is positive for energy security.

The second policy dimension of bio-fuels production is climate change. Using bio-fuels in the tank of a car produces the same kind of carbon dioxide emissions as if petroleum were burned instead. The difference is that in the process of growing bio-fuels carbon dioxide is

absorbed from the atmosphere. Adding that to the emissions that come out of the processing, the net result tends to be lower than the one resulting from traditional gasoline or diesel use. The issue is more complicated though. Indeed the problem is the place to grow bio-fuels. If that place currently has a lot of carbon stored in the ground or in trees and plants, and if that land is cleared to grow bio-fuels, a potentially enormous amount of greenhouse gases (GHG) is released into the atmosphere. And by growing bio-fuels that initial debt is only slowly recovered and it may take a very long time to make up for that initial release into the atmosphere. Clearing peat lands for producing bio-diesel is an example.

Things may become trickier when land impacts are indirect. Some land once used to make food is then shifted into fuel production. But there are still the same or similar demands for the food that was produced there. This food can be thus provided from lands recently cleared elsewhere. In Brazil, the rain forest is not cleared to grow bio-fuels but ranching land is taken to grow crops for bio-fuels. Ranchers then clear forest to raise their cattle. For climate change it is not clear, in particular with the current generation of bio-fuels, whether they have a positive or negative impact.

The third policy dimension is food security. Food security means reliable supply of affordable food throughout the world. This has been a huge concern particularly over the last couple of years as food prices were skyrocketing. The exact impacts of bio-fuels policies on food prices are very hard to measure because of many factors that intersect. For all that, there is a broad consensus that a massive expansion in bio-fuels production without some changes in the actual policies would have a potentially enormous impact on food supplies and food prices. The net impact of bio-fuels on food security is probably negative.

An important point that will affect future bio-fuels policies is how the technology evolves. Technology both in the sense of hard technology for processes and soft technology to assert supply chain will have a real huge impact. Existing bio-fuels are first-generation ones. The focus right now of policymakers is on moving eventually to second-generation bio-fuels based on cellulosic feedstock. In principle, these kinds of bio-fuels can use less energy input. They could cost less if future development is proper and have a lower impact on land-use and on food markets. These fuels can be made from waste rather than actual food products, corncobs rather than corn. Land unused in particular seasons can be exploited, so they can be accommodated alongside traditional crops. Woody biomass like woodchips could also be used as other inputs that do not use agricultural land. What will work is extremely hard to identify right now since a lot of technological processes and varieties of feedstock are being tested.

As for policy concerns, there is a broad agreement that the current approach to bio-fuels promotion which consists mostly in subsidizing either production or consumption, and in commissioning production volumes of bio-fuels is economically inefficient. A lot of money is given for few results. Though, it is not an issue that can be left to markets for a couple of reasons. The first is that markets do not price energy security benefits, climate impacts and the effects on food security. Regulation through taxation is needed to make markets reflect benefits and costs of bio-fuels. Beyond that, other market failures must be addressed, especially insufficient investments in research on technology. That is clearly the case when dealing with second-generation bio-fuels. Governments need to step in, in partnership with nongovernmental actors to provide support for research and development in next-generation technologies.

To conclude, it is not only an issue of getting bio-fuels policy right. It is also a question of evaluating the tension between bio-fuels use and land use as it impacts climate change, and bio-fuels use in food production as it impacts food security. It is a two-sided tension so a

comprehensive policy needs to address the tension from both sides. When it comes to land-use, it is needed to work on providing incentives completely independent of bio-fuels policy for people to protect sensitive carbon rich land: the tropical forest in Brazil or peat-lands in Indonesia. There are a lot of efforts to look for in the context of global climate negotiations and also bilateral relationship. The idea of a mix of financial incentives for countries that leave land in place combined with the provision of technical assistance is emerging. Providing technical assistance means helping on issues such as enforcing properties laws or helping forest fire avoidance. That can ameliorate to some extent the pressure that comes from bio-fuel growth. On the agricultural front, improving agriculture productivity around the world through better processes with better technology and improving the function of agricultural markets is required.

Ronald Steenblik took then the floor. At the beginning bio-fuels were originated by agricultural policies. The objective was to create a demand for agricultural surplus, while bio-fuels were not requested at all by the transport sector. The arguments on energy security and on reducing GHG emissions came later. It is utopian to expect that bio-fuels can significantly decrease fuel prices, as their weight is still marginal in total fuel consumption. As long as their consumption will be less than 1% of total fuel consumption, their price will simply follow the prices of fossil fuels.

Furthermore, it remains very difficult to clearly assess the net balance sheet of emissions from bio-fuels. Despite the reserves expressed about the impact of bio-fuels, many countries are elaborating new programs to subsidize bio-fuels. Ronald Steenblik deeply regrets it.

The effects on agricultural markets should be monitored, and it is necessary to separate the case of developing and developed countries. In developing countries, consumers feed themselves from low-elaborated products, and spend much of their income on food. In developed countries, taking the United States, only 20% of the food prices result from the agricultural prices.

Moreover, the opening of international trade for bio-fuels poses a challenge to the World Trade Organization (WTO). There are standards to be defined, but also strong internal public support incompatible with the international trade rules. These heavy subsidies can potentially increase exponentially in some countries when they are coupled to production.

Opportunity cost of bio-fuels in reducing GHG emissions have to be closely examined. Studies show that it is often better to leave the abandoned agricultural land to nature than to install bio-fuel crops, not only to sequester more carbon, but also to ensure biodiversity.

Debate

David Harvey, professor of economics at the Newcastle University, raised the current long-term outlook of price development and agricultural energy. While improved agricultural productivity relies on technologies using fossil fuels, is it consistent to use fossil fuels to produce bio-fuels? At the same time, more land will certainly be needed to feed a still-increasing world population.

Michael Levi agreed that resources are increasingly scarce, public intervention must be very careful in selecting the fields where subsidies are appropriate. Ronald Steenblik completed by referring to the importance of effectiveness criterion to judge bio-fuels. Indeed, second generation bio-fuels seem to suffer from a devouring need of biomass to produce fuel, making its ecological advantage uncertain. The price paid to prevent the emission of one ton of CO₂

by encouraging bio-diesel use is so high that it makes any public subsidy for its production foolish. There are more effective ways to reduce emissions. Michael Levi completed by stating that if this is the case for bio-diesel, the price to pay for other bio-fuels is much lower. In addition, environmental effects are not the only reasons that make relevant the development of bio-fuels. Matters on energy security also intervene.

The audience would also like to know if the recent reports questioning the appropriateness of bio-fuels development have already had an impact on public policies.

Michael Levi believes that for the moment the studies are relatively recent and did not influence policies. Yet they strengthened the support for research and development of second-generation bio-fuels. In his introductory speech, the new Secretary of State for Agriculture has long and enthusiastically referred to the second generation of bio-fuels. Ronald Steenblik said that studies have had some effect on policy makers in Europe, but regrets that powerful lobbies publish studies whose sole purpose is to contradict the previous ones.

Ann Tutwiler recalled the change in the discussion over bio-fuels during the last three years. In the United-States., it was impossible to question the benefits of bio-fuels a few years ago, whereas today the pro-bio-fuels are on the defensive. She also evoked the fuels that can be produced from used cooking fat, as an alternative to bio-fuels. She added that in some sectors, such as the mining industry, the damage caused by the use of fossil fuels can be mitigated by the use of bio-fuels. Thus, transportation would be the least effective way to use bio-fuels, while discussions focused largely on this use.

A question was asked about supporting groups for bio-fuels. Who are they? What are their reasons for lobbying?

Ronald Steenblik told that bio-fuels really took off with the emergence of concerns about the GHG effects. The solution seemed ideal, solving at once the need for renewable energy, energy independence, agricultural overproduction and the emission of GHG. It is the energy industry that encouraged primarily the development of bio-fuels.

Finally the audience asked for the views of the speakers on the Brazilian bio-fuel experience.

Michael Levi said that he believes the Brazilian bio-fuel policy is totally consistent since the issue of CO₂ emissions is excluded. The results change if direct and indirect effects on deforestation from bio-fuels cultivation are taking into account.

Session 3: Agriculture and Water

The president of session 3 on agriculture and water was Alexandre Le Vernoy (Researcher, GEM Sciences Po & Nestlé Waters). The Wiseman was Bart Schultz (Professor, UNESCO IHE Institute for Water Education) and the discussants were Bernard Barraqué (Research Director, National Centre for Scientific Research - CNRS), Daniel Zimmer (Associate Director, World Water Council) and Jacques Pasquier (Farmer and National Secretary, *Confédération Paysanne* farmers' union).

Alexandre Le Vernoy introduced the session by reminding that among challenges faced by European agriculture, water is a crucial issue for all our societies and we may wonder if this challenge is not more short-termed than the ones of climate change or energy. This intuition comes from the observation that we can make on the state of water resource in the world. Water is a fundamental resource for almost all of our human activities and also for the environment. Agriculture on that point is a major sector. May we speak about a water crisis today? What importance must be given to irrigated agriculture and rain fed agriculture? How efforts for both increased agricultural and water productivity must be oriented? What is the impact of international trade on water resources? And then in the context of the European Union, what is or should be the articulation between the Common Agricultural Policy and the water policy implemented within the UE Water Framework Directive?

Bart Schultz began his speech by reminding some figures. In the 25 to 30 years to come the world food production will have to double in order to maintain world food security. Indeed, the world population will reach 9 billion people by 2050, with a high demographic growth in developing countries. This demographic growth will go together with a strong urbanization. The number of cities over 5 million people increased significantly since the 1950s.

Today most of the cultivated land (around 1.120 million hectares) is cultivated without a proper water management system. 118 million hectares are under drainage systems, 214 million ha under irrigation systems and 60 million ha benefit from both systems. Water needs are very dependant on climatic characteristics – humid temperate zones to arid and semiarid zones and humid tropical zones – and on a wide set of local conditions.

According to Bart Schultz the necessary increase in agricultural production calls for an improvement and a development of irrigation and drainage systems together with an increase in water storage capacities. However, there are still water shortages as consequence of water management problems such as inefficient water use, water-logging and salinization, pollution by pesticides or fertilizers and flooding of cultivated, urbanized or industrial land.

In 2000, during the second World Water Forum in The Hague, the three main axes were: water for food and rural development, water for people, and water for Nature. These three themes are still valid today and the main challenges remain: to feed the ever growing world's population, to improve standards of living and environmental conditions in rural areas, and to develop and manage land and water in a sustainable way in the coming decades, especially in the least developed and emerging countries.

Actions to be undertaken associate irrigation, drainage and flood protection with food security, rural development and livelihood. Bart Schultz estimates that water withdrawals for irrigation should increase by 15-20% and to ensure this, an increase of 10-15% in storage capacity is necessary. Governance and institutional environment must be improved by increasing stakeholders' involvement.

During the third and fourth World Water Forums, water for food was a less discussed topic. But we may speak more about it during the next Forum in Istanbul in March 2009.

Which orientations can be identified as regards the future policy making and management of water systems? First we need a better integration of all aspects of water management. Irrigation and drainage must be improved and water savings must be performed at all levels. Institutional aspects are central in irrigation and water system management and a strengthened organisation at the level of the basin is essential to the development of an integrated water management. Finally, it is necessary to build up any water management project in a sustainable way with an acceptable level of environmental impacts.

For Bart Schultz, the three main groups of stakeholders in water management, who have to agree for the objectives to be reached, are governments, agencies and farmers. Governments are responsible for policy, legislation and water resources at the national level. Agencies should be responsible for main distribution and access systems. Farmers should be responsible for field systems.

Bart Schultz ended its speech with two statements. First the world is insufficiently aware of the required measures to duplicate food production within 30 years. Second, small farmers have no future.

Daniel Zimmer brought several complementary elements, first on water, then on the world's food model. The subject of the session was more focused on will we be able to feed the world in the future and how water can contribute to help feeding the population. Available water resources today amount to roughly 40 thousand cubic kilometres per year. On this total, about 12 to 14 millions are considered to be exploitable for human activities. Today about 3.000 km³ are actually used, of which 70% for agricultural irrigation (i.e. about 2.000 each year). Daniel Zimmer underlined the fact that in official data on water resources, only water which is taken from rivers or ground water is taken into account but never rain water used for crops. The water needed today for food production reaches about 7.000 km³, of which 2.000 are used in irrigation and 5.000 come from rain water. This figure is all the more interesting as water productivity is all the lower as yields are low. It can be estimated that if all yields in the world were above 2 tons per hectare we could spare about 1500 km³ on 7 000 km³.

In 2050, when population will have risen by 50% (9 billions inhabitants instead of 6), we consider that water needs for food production will reached 10 to 12 thousand cubic kilometres which is more than a 50% increase. This can be explained by the fact that the part of irrigation would actually not increase that much in the future, contrary to what Bart Schultz is forecasting. If we continue on the present trend, irrigation share would reach 2.600 km³ only. Thus, much of the farm production may come mainly from rain fed agriculture as is already the case. Moreover if yields stay at a low level, water productivity will also be low and water needs will be all the higher.

This challenge is important but we may have to review the whole world food system. Indeed, we are reaching limits in production and in productivity. Increase in productivity from the 1960s to the 1990s has been important but it is decreasingly increasing. Since 1998, the world's consumption has been higher than the world's food production. This year (2008), the number of undernourished people grew by 40 million and according to the FAO there should be 100 million more people over the next 3 years. On the other hand, obesity is spreading with 300 million people suffering from obesity and 1 billion people overweight. In some developing countries such as Egypt today, there may be in a same family individuals who are undernourished and others overweight.

Furthermore, food losses are huge in the world. A recent study in the United State has shown that in the last two step of commercialization between retailing and final consumption 31% of all the food is lost. In developing countries food loss occur mainly in the first steps of the food chain: storage, transport and wholesaling. Thus, at least 30% of food produced in the world is lost and if we think in terms of included water, many water savings could be done by reviewing our food production and consumption models.

People touched by under-nutrition are mainly poor rural people having difficulties during the lean period. This population is not the same every year and the dynamics relies upon climatic variability. Yet, with the accumulation of several difficult years, starvation may appear and creates incentive to migrate toward cities where the poor urban population also sensitive to sub-nutrition increases. But the urban populations are a priority for politicians since the risk of riots is higher in cities.

Poverty and the world small agriculture are a major issue and one may say that “small farmer is no future” but it is not a reason not to care about him since he represents a large part of the world population and may not disappear in the coming years.

Daniel Zimmer concluded his speech by reminding that we should review the world food system from production to consumption and see how to improve its energy and water efficiency and regain a healthy food without the imbalances we know today.

Bernard Barraqué began his speech by reporting commentaries of colleagues who could not come that day and who are currently working on a prospective study called Agri-Monde. They said it might be dangerous to develop future visions at global level without breaking down the analysis in more specific regions. In particular they would suggest subtracting from both Asia and Africa the MENA Middle East and North Africa region which has very specific problems in terms of agriculture and water. In that region, almost all exploitable water resources are presently being used and building more dams will not change much the situation. In the case of richer countries like Saudi Arabia it is possible to desalinate sea water in order to produce food, which is already done, but it is certainly not sustainable economically speaking at global level. So breaking down the analysis might lead to slightly different visions.

Bernard Barraqué then insisted on the fact that one should distinguish between integrated water management and multipurpose water management. He then invited the public to read a paper by François Molle called “Nirvana Concepts” and published in the review *Water Alternative*. Indeed the concept of integrated water management is used by everybody here and there but often with very different meanings. The use of integrated water management should be reduced to cases where there is basically no search for additional supply of water but reallocation or better use or water conservation between existing water users. This is not what multipurpose projects are offering since they are clearly targeting an increase of water supply and of water availability for all sorts of users so that conflicts over water allocation between existing water users would be postponed. These models were first developed in the United-States, first in California at the beginning of the 20th century and in the famous case of the Tennessee Valley. It was exported after the Second World War in many developing countries and it is still in use.

During the Mexico and Kyoto World Water Forums we did not speak a lot about water for food but this aspect will be revived in Istanbul. During the two previous forums the focus was on access to drinking water and the dispute on privatization has obscured the other issues. But actually, during almost a decade, irrigation and drainage and large hydraulic schemes were

not as much supported as before, particularly after several reports of the International Commission on large dams. Some people to whom Bernard Barraqué belongs think that we should have a closer look to this projects which were certainly not able to solve as much problems as they pretended to. But fortunately or unfortunately, within the community of water engineers around the world, there is a come back of multipurpose projects. It seems to happen as if the international organizations stopped financing large dams because the Chinese were doing some and we would not want to help them but now that they have finished their dams alone we can help other countries to do more dams for multipurpose projects. But these projects will not change much of the situation according to Bernard Barraqué.

There are many researchers in agronomy who think that another future is possible that would not exclude the poor farmers. Small farmers may very well have a future depending on the choices that will be made and the supports that will be given. But it is clear that in the years after the Second World War when large hydraulic schemes were promoted and financially supported by international organizations their first effect has been to modernize and concentrate agriculture in fewer and fewer hands excluding poor farmers from production. This kind of solution will not solve the problem of developing countries. If modernization of agriculture means like in Morocco or Spain producing high value cash crops which will be in the end bought only by the consumers of developed countries this will only aggravate the situation of poor population in these countries. There is a de facto alliance between we, rich consumers of sophisticated food in developed countries, and the agricultural elites usually largely supported by non democratic governments in developing countries.

As a conclusion, results of Agri-Monde study showed that the change of agriculture in Europe will not solve food problems in the rest of the world and on the top of this, we already have water problems in Europe as is shown in the last report on droughts committed by the French Ministry of Agriculture and realised by the INRA and the Cemagref. If climate change is going to worsen the situation we should really consider stopping growing as much maize in south-west France as we do today for the very reason that we will not be able to irrigate and all the more as this maize is mainly exported to Spain to feed pigs. So things are not simple and there might be complex chain effects left mainly unstudied. Bernard Barraqué finished his speech saying that according to him it would be better not to build more dams in France but rather to try and find a more sustainable and water conserving way of farming.

Jacques Pasquier is a farmer in the French Department of Vienne in Poitou-Charentes where drought problems frequently occur and where the life of rivers is endangered in the summer. Jacques Pasquier began his speech saying that we do need water to grow plants. However as Daniel Zimmer said rain water is often forgotten and irrigated land also receives rain water. When we do water consumption balances we often forget to include precipitations. In France only 10% of arable land is irrigated but we already have water resource problems in the summer. This is quite questioning as we hear that we should develop irrigation. Building more dams brings often more problems than solution as is attested by many examples around the world, in China, India, and United States, where excessive uses of irrigation have sometimes led to soil salinization. Therefore, heavy large scale technologic solutions are surely not for the better. In France all cultivated hectares do produce, including the 90% that are not irrigated and which are productive as well. Some productions need irrigation such as fruits and vegetable for their quality and good appearance or seeds for their fertility. But these productions represent a small part of the whole agricultural production. And yet the main part of irrigation in France is for maize. But the very moment when maize needs more water is during the months of July and August where there is precisely less water available in

France. There is thus an anomaly in the development model we have implemented since we have to irrigate the most when the resource is the weakest. Maize is a plant which is neither good nor bad. Actually it needs less pesticide than other plant such as oilseed rape. But it is a tropical plant and France has not a tropical climate. However it is possible to grow maize without irrigation and only half of the 3 million hectares of maize in France receive irrigation. Not only it is possible to be a farmer without irrigation but it is also possible to be a maize grower without irrigation. But for this we cannot just put any culture in any field. We call that agronomic knowledge but also the art of a farmer who knows his fields and their properties and does not cover his land with maize because at that peculiar moment maize was bringing the higher margin like in some regions of France... if you can irrigate it; but also if you receive for that irrigated maize a high subsidy from the CAP. The most surprising thing in France is that irrigated crops are more subsidized than rain fed crops. So there is something wrong in that system.

The irrigation we are supposed to develop is exactly the one that was offered to us in the 1960s with the chemical fertilizers which would allow us to feed the world. We were told that there are 840 millions people suffering from hunger in the world. After the implementation of the green revolution production volumes have increased faster than the world's population growth. But at the end of 2008 there are already 963 million people in under-nutrition. And the food crisis we had was not really due to an agricultural production shortage. It has been mainly provoked by the lack of access to food for poor populations who were unable to buy food because of the increased prices. In France, households devote around 15% of their budget for food on average (40% if you are a receiver of the minimum income benefit). But in Nigeria, it is 50% of the Gross Domestic Product which is devoted to food and in Indonesia it is 75% of the GDP.

If we set up the political means to produce and to promote access to food, we will be able to feed 9 billion people in 2050. There are today 1.5 billion hectares of cultivated land. There are on Earth around 12 billion hectares, of which uncultivable land in mountains, deserts, forests that we must protect. But there is also land which is not cultivated anymore and neglected because we have discouraged small farmers from producing in some parts of the world. When we opened the agricultural world market we set in competition all farmers in the world and the smallest lost their ability to access the market and sell. But when supply gets a little scarcer on the world market, like in 2008, we, rich countries, can still afford to buy food but for some countries it might be more difficult. We must put ourselves globally and politically in a position such that all arable hectares on the planet are cultivated in a sustainable way. Water and irrigation are of course a mean to consolidate and give security to farm production but not necessarily with huge projects. Some drop by drop systems implemented locally or small basin dug at the foot of plants to stop water from streaming away may be more efficient. These solutions can be used by a family farming, able to produce everywhere even on less productive lands. Indeed models we have to develop more irrigation would work only with very productive land. But if, according to a FAO report, there are 4.2 billion hectares of arable land in the world, they include very little productive land that will not reach the 2 tons per hectare yields that would be needed.

Debate

The audience first asked a question about the variability in hydraulic regimes linked to climate change and the fact that there is more streaming water now than before and less water infiltration to replenish aquifers. The second question was on what we can do to improve streaming water capture.

Aymard de Montigny a farmer and former director of the trade association for potato added some comments. A lot has been done on productive variety research without taking into account the need for water. Today important work is done on varieties more resistant to drought and water saving and also on more efficient irrigation systems.

About streaming water which can seem an interesting solution to irrigate crops it can also bring bacteria and parasites which may jeopardize the production. We must be careful towards solutions that may seem simple but bring sanitary problems to the crop. Finally there are regions in the world where we can produce without irrigation and now produce with water saving techniques.

Daniel Zimmer reminded that it is difficult to prove that the fluctuations that we observe today are really linked to climate change. We will need more time to have longer statistical data to prove anything. But what we can observe today is that, in the north of Europe, river flows seems to increase and that in the southern part of the Mediterranean region, there seems to be a few month shift of the rainy season.

Concerning water streaming, for thousand years there had been rain water channelling techniques but they often disappeared with time. But in some regions their use is coming back in order to restore hydrologic cycles like in Rajasthan or in Niger.

Finally, as regards the development of plants that work well when they have enough water, it is all about a model that tries to make plants that actually work well when they get everything to work well in terms of fertilizers, soil, and water, but which do not work so well when there is something wrong, less water, less fertilizers. In Africa and in many developing countries farmers usually grow several different varieties and kind of crops and eventually expect some to provide good yields if everything goes well and other will guarantee a minimum result in case of problems. That is often the way how farmers manage risk in developing countries and we have probably forgotten these lessons on how to manage risks in agriculture with our variety improvement schemes.

The audience also reacted to the question of small farmers' future.

Bart Schultz explained that in the Netherlands a farmer needed 5 hectares to survive at the beginning of the 20th century and that at the end of the century he needs 50 hectares. Small farmers have three ways to survive: getting bigger by buying more land or specializing or having several activities and not only farming. These are just the current trends we observe.

As regards the use irrigation systems or not, there are possibilities for improvement. Concerning great dams, despite the reports of the international commission on great dams, several countries still invest in dams such as Brazil, China, and Iran and only funding agencies have been convinced to stop financing them. But international organisation have a very small role to play in water management since the main part of investments comes from national or local funding and only 10% come from international lenders and mainly for the least developed countries and not the emerging countries.

Session 4: Agriculture, Food Security and Food Safety

The president of session 4 on Agriculture, Food security and Food safety was Louis-Pascal Mahé (emeritus Professor, INRA-Agrocampus Rennes). The Wiseman was Jo Swinnen (Professor, Director of the LICOS, Leuven University) and the discussants were Laurence Roudart (associate Professor, AgroParisTech) and Aymard de Montigny (Farmer, member of the *SAF- Société des Agriculteurs de France*, former Director of the French Potato trade association).

Louis Pascal Mahé introduced the session by reminding the ambiguity of the word “*sécurité alimentaire*” in French, which covers at the same time food supply security, and food products sanitary safety. Following the first meaning, there is a debate on whether the goal of food security is legitimate or not. Indeed the argument of targeting food security has already been used to mask other protectionist thoughts in trade negotiations. Thus a first question is if there is an agreement or not on the political objective of food security. Then, if this objective is recognised by all as legitimate, a second question concerns the means to get it and their economic efficiency. Can we reach food security only by food self-sufficiency or are there other means as well? Finally a third dimension of the issue concerns the relationship between food security, international trade and World Trade Organisation (WTO) negotiations. In the last agreement, food security was not recognized as such whereas at the same time, provisions were really indulgent toward export restrictions for the largest exporters.

In the sense of food safety, we must look and find what is at stake from an economic point of view in food related health problems. We already know that it is particularly a problem of information and responsibilities. A second issue is what the relationship between the State and the market is and how to share the roles of the two organization systems. Finally there is also here an international dimension of the issue for as soon as we set standards there is always a risk for them to be used as protectionist barriers.

Jo Swinnen begun his speech by contributing to previous session debates and giving some figures from Eurostat about the European Union (EU) 15 agriculture: more than 50% of the farmers are more than 55 years old; 75 % are multiple job holders; 96% are family farmers; 59% of the farms have less than 5 hectares (ha) and 3 % of the farms have more than 100 ha. In the south of Europe, 75% of Mediterranean farms have 5 ha or less, and 75% of cattle herds have less than 5 cows. So the image one may have on very big farms as the future of agriculture may not match the actual structural reality. Jo Swinnen stressed on the importance of small farms and small farmers in agricultural trade globalisation, in developed and developing countries.

Jo Swinnen then built his speech on three points: food security, food safety and food quality (including environmental and social quality in production modes).

Most of the debates in agriculture until now were about quantity, supply and income issues. Jo Swinnen tried in a study to discern the EU public opinion on the issue from three empirical data sources. First he studied consumer surveys enquiring if consumers are more concerned by food quantity or quality, food safety or prices (Euro Barometer). The results have shown that health and safety issues are on the top of European consumers’ concerns. Second, by analysing the evolution of political speech and authorities’ worries, political and social problems related to food scarcity or supply problems have not occurred since the 1930s-40s. Since that time not one government in Europe has failed on food price or supply issues. But

on the other hand, food safety problems have arisen recently with strong political impacts such as the 1990s ESB crisis, food and mouth disease crisis and dioxin crisis.

Third Jo Swinnen studied how media handled with food security and safety issues in the past years. They referred to the 2007-2008 food and energy price crisis but only in the inner pages of newspaper whereas sanitary crises of the 1990s were right on headlines of the most serious newspapers.

The continuous decrease in the share of food in European households' budgets could explain this. But there is a large heterogeneity between the 27 EU Member States today and poor population of the eastern new member states is more sensitive to food security problems.

In the last two reforms of the Common Agricultural Policy (CAP) in 2003 and 2008, a greater attention was given to food safety and quality, although most of the funds still go on quantity, price and income aspects. The need to secure food supply was a great concern after World War II and this is still reflected in today's CAP. Since then, the concern on food security ebbed in Europe except on two particular moments: at the beginning of the 1970s and recently in 2007-2008 with the increase in world food prices. But the attention gradually turned toward demand problems that can be seen in the evolution of official definitions of food security. The solutions have been thus more and more focused on poverty reduction and low incomes diminution since they are considered as the cause of food insecurity. Today the EU should fight food insecurity problems by insuring a sufficient level of income for the European poorest people.

On the supply side, there is a consensus on what are the causes of the recent food price rise. It has been caused by a combination of factors: the increase of Asian emerging countries' demand, climatic difficulties, speculation activities and biofuels. A policy maker has to distinguish temporary and fundamental problems. Jo Swinnen presented the results of a study done by Scott Rozelle and al. (Stanford, 2008). Agricultural prices have been declining for a century and the 2007-2008 food price increase is still lower than previous price rises. During the 1974 and 1995 price peaks, lower prices were forecasted on future markets within two years for 1976 and 1997. But this time, higher prices than present prices are forecasted for 2010 on future markets. This means that the fundamental price trend, which was decreasing since the beginning of the 20th century, has changed. The authors bridge this fact with the development of biofuels.

Then Jo Swinnen presented a list of policy consequences.

First, in answer to the rise in prices all kinds of biofuel subsidies have to be stopped. Moreover, if agricultural prices stay permanently at a high level, there will be fewer arguments to maintain supports for European farmers. On the European demand side, the effects of price rise that may affect the poorest must be counterbalanced by a policy of income support much more than by price regulation. For foreign countries, efforts must be strengthened to implement efficient development policies.

Second the issue of agricultural price volatility and how farmers can manage the instability has to be addressed. There is no satisfactory solution to that problem for the moment. Initiatives to cover risks and market uncertainty issues are required.

Third, more investments in research and development and in technology aiming at an increase in agricultural productivity are required. Most of productivity gains shall come from developing countries and not from developed countries. In Europe, we will have to face climate change consequences and consider a reallocation of the CAP funding toward environmental issues and the development of biotechnologies.

Jo Swinnen went next to the issue of food safety. Until the 1990s, the EU had no food safety policy as the regulation responsibility belonged to the Member States. That changed when the ESB, the dioxin and the foot and mouth disease crises happened, provoking the writing of the European white book on food safety in 1997. Then the general food law regulation was established in 2002. This regulation aims at protecting consumers' health taking into account the constraints of the single market and of international agreements on standards. In terms of policy implications this is an approach of risk control at each step of the food chain "from farm to fork". Since the policy has been implemented recently (5 years ago), the most important is to appreciate if adjustments are needed.

Finally on the issue of food quality there is no real food quality policy at the European level for the moment. But there are some initiatives at the Member State level such as the German Quality System (QS – *Qualitätssicherung*). There are also some supports under CAP pillar II but only for local initiatives. There are considerable public-private partnerships in the Member-State initiatives. Many quality approaches like QS are actually focusing on sanitary and food safety issues. Here again the policy is recent so policy makers should wonder if some adjustments are needed. But they should also wonder if there is a need for a food quality regulation at the European level or if it should be left to the Member State responsibility and if pillar II funding should be increased (through budget reallocation) for local initiatives on quality.

Jo Swinnen mentioned the fact that today private standards for food safety and quality are developing a lot and are often stronger than public ones (except for labour regulation). He concluded his speech by raising the issue of the links between standards and trade restrictions. It is often said that the increase in standard may impede poor farmers of developing countries from accessing the markets. Several results contradict this idea. A study from the World Bank revealed that compliance costs may be lower than previously assumed. Moreover standards may also appear as trade catalysts by reducing part of the transaction costs. Once a country satisfies these requirements, the benefits can be very high, including for the poorest.

But a huge issue is how private standards will be treated by an international organisation such as the WTO which is in charge of organising trade between States by setting public rules but has formally no influence on private standards.

Laurence Roudart first saluted Jo Swinnen's ability to condense in his paper the subjects of food security, food safety and quality when each is a whole world in itself. Laurence Roudart is mainly working on agricultural development issues and on food supply security in developing countries. In this perspective she commented Jo Swinnen's intervention in five points.

The first point regarded under-nourishment and malnutrition in the EU. There are still poor people under-nourished and suffering from malnutrition in the EU and their number increased with the EU enlargement. Today there is no food security policy in Europe. There are national policies of income support that aim mainly at supporting poor consumer food purchasing power. But there is no common food policy with the same dimensions as the United-States food policy which includes the food stamp program. The food stamp program objectives are to provide a market for American farm products and to support American poor consumer purchasing power. Laurence Roudart asked to Jo Swinnen as he seemed to favour an extension of income support policies if he had already considered an eventual food policy for Europe.

The second point regarded producers and consumers interests. As Jo Swinnen said, the CAP was built with a larger focus on producers' interest than on consumers or tax payers' interests. But these groups that we usually use – producers, consumers, taxpayers – are not clear-cut categories. Farmers are producers but also consumers and taxpayers; consumers are also taxpayers, etc. Moreover these groups are not homogeneous. The CAP implemented in France in the second half of the 20th century mainly tried to improve productivity gains for farmers who were better located and equipped, whereas the majority of farms have disappeared. Inside each group, interests may diverge and the CAP may have opposing results in each.

On the contrary producers and consumers' interests can converge on the whole. By supporting important productivity increases in Europe, the CAP has largely worked in favour of European consumers. Real agricultural prices have decreased a lot and this widely participated in lowering the share of households' budgets dedicated to food purchases. Jo Swinnen underlined, there has not been any demonstration of consumers for food quantity or prices in Europe since the 1950s which shows that their interests have been as well served while producers' interests were met.

The third point regarded the widening of the concept of food security. This expansion occurred in reaction against policies of food self-sufficiency. Until the 1970s, recently independent governments of developing countries had as a political goal to reach food self-sufficiency, which means to guarantee the basic ration for the population by producing enough food inside the borders. The concept of food security appeared against that of food self-sufficiency by shifting the attention from national production to food access for consumers. The idea supported was that demand can be satisfied by domestic production but also by food imports and possibly by food aid. This is related to the return of the theory of comparative advantage during the 1970s.

Many people stress on the fact that food security problem is first a problem of poverty and of deficiency in the solvent demand. However there is also here a rocking effect: during a long period, the attention was focused on production neglecting the access issues whereas the contrary presently occurs. At the world level today food production is not enough to cover properly humanity's food needs. There is enough food in theory to satisfy the global caloric need but there is not enough to provide a correct diet and a balance ration in vitamins, minerals and essential amino acid to all. So there is still an insufficient food production at the global level contrary to what can be read.

Most of under-nourished people in the world are poor farmers and their families. For them the consumption problem is deeply linked to a production problem. There again interests of producers and consumers do not diverge. Some micro-economists made farm household models which do not separate producer and consumer models but try to integrate profit and demand functions in various goods. The results show that in several regions when there is an increase in agricultural prices, the positive profit effect for the producer takes over the negative income effect for the consumer. There is then an increase in food consumption for the producer. Thus in many cases an increase in agricultural prices is not unfavourable to the majority of people suffering from under-nourishment in the world, to poor farmers.

The fourth point regarded the determinants of the 2007-2008 increase in food prices. Several authors doubt that the increase of food demand in emerging countries had a role in last year increase. Indeed the growth of food consumption in emerging countries is a large phenomenon since decades. There has been a continuous increase since the 1960s for demographic reasons and for reasons of change in consumption habits. In the middle of the 1990 meat consumption in developing countries exceeded that of developed countries (in global consumption, not per capita consumption). Several authors at IFPRI were speaking of a

meat revolution in developing countries whereas agricultural prices were historically low. During a long period there were at the same time a continuous rise in consumption of developing countries and a decrease in world agricultural prices. But one factor that may explain the recent boom in agricultural prices is the weakness of investments in agriculture for more than two decades due to low agricultural prices. Thus since the 2000s farm production has been lower than world demand, and stocks were running short just before the price boom.

Finally as fifth point, Laurence Roudart asked Jo Swinnen what he thought the CAP should do not to threaten food security in developing countries or even to promote food security.

Aymard de Montigny explained that he was during thirty years at the direction of the French potato trade association, which is the fourth food product in the world. Yet potato is a product which has no Common Market Organisation in Europe and early faced the export struggle when different standard requirements are applied (France is today the largest world exporter of potato). Aymard de Montigny explained that he would focus on food safety and products quality in relation with the aspects of product specifications and codes of good practice.

Product specifications developed in the 1990s and there are presently more than five hundreds of them today in Europe. They include (and mix in some cases) several aspects: more frequently quality but also economy, environment, social aspects. The most complete specifications address the three pillars of sustainable development. According to Aymard de Montigny it shall not be possible to reduce the number of specifications for they all are legitimate and most probably their number shall even increase.

As Jo Swinnen said previously there are few public initiatives. France has its own quality signs but only for a small part of food production. There has been the “*agriculture raisonnée*” scheme in France, QS in Germany, Vegaplan in Belgium, Vavi in the Netherlands, and the NFU Protocol in the United Kingdom. All these countries have developed product specifications but mainly for imports from neighbour countries. These specifications do not really apply for domestic products. But domestic production is mainly destined to the domestic market and even in Europe exchanges between countries are not that important.

After the ESB crisis for meat and the critics against residual pesticides in fruits and vegetables, there has been an escalation in product specifications. Particularly private specifications have grown with more and more points to observe (the most famous one is Global GAP). Today many requirements are totally disproportionate with family farm capacities whereas the majority of agriculture in the world is done by family farmers. These increasing demands eliminate de facto the access to markets for small farmers, which means actually to 96% of family enterprises for which product specification are excessive in relation to the size of their activity.

In addition, demands today are more administrative and related to traceability than in favour of an efficient action for product quality and hygiene. As a result, the traceability implementation has created important private data bases, on which there is very little control as regards freedom of access to information. This information is given by abuse of dominant position to retailers who can then select their suppliers in function of the price, the number of phytosanitary treatments, etc.

Furthermore farms are facing ever more audits which induce a cost - since the farmer or its collective organisation has to pay for them - and this reflects on the price. And demands are often incompatible when they are added up. For example it is forbidden to spray pesticides when the wind speed is too high. Thus in coastal area farmers have sometimes to spray on a very short time (when there is no wind) and then daily and weekly working times widely

exceed what is authorised by law. Combined constraints make action impossible and farmers often end being in infraction with such or such rule.

The CAP could bring an improvement by setting mutual recognitions for benchmarking of trade between EU countries. Presently the benchmarking with private product specifications is totally controlled by retailers and represents high costs for the farmers without any product certification compensating the producer in the end. Without willing to reduce the number of legitimate specifications, there should be a way to differentiate large size companies from family farming enterprises and have reasonable demands that would not set the producers off the market. When supply exceeds demand, specifications are put forward but when supply is insufficient specifications are forgotten.

Aymard De Montigny concluded his speech noticing that it would be interesting to also have specifications for the distribution sector and retailers considering that product quality problems often appear at marketing or storage steps. Product specification should apply to the whole chain up to the consumer. A “fork to farm” approach is now necessary with good practices for those who do the marketing since farmers have already done a lot of efforts.

Debate

Jo Swinnen first reacted to the discussants’ interventions. He agreed with Laurence Roudart’s commentary on the need to have a more nuanced view on who is producer and who is consumer. This point is very important and particularly valid in the case of developing countries. A more consistent model on the effects of high or low agricultural prices is necessary. How to develop a model in each country representing different effects on different groups of people is a crucial prospective. A more dynamic approach is also needed since the results of high agricultural prices may be negative on the short run but positive on the longer run.

Regarding the role of the CAP, Jo Swinnen said that decoupling should be maintained. Trade may play a role in stabilizing world agricultural prices on the condition that exports are not blocked when they go up or imports are increased when they go down because in that case price instability is exported. The agricultural market stability is a very important issue today in the whole world.

Louis-Pascal Mahé then asked Jo Swinnen to react to Aymard de Montigny’s speech and say what he thought about the risk of market power appropriation by those who are already strong in this economic field through private standards and if the situation endangers these standards.

Jo Swinnen answered that he had not done studies in Western Europe but rather in developing countries. Studies in Senegal have given counter intuitive results. Great retailing companies contact directly exporters in the country and tell them what demands the farmers supplying the exporter should respect. But export companies need to invest a lot in extension and transmission to farmers. Actually once they have succeeded in setting difficult quality contracts, companies pay very well the few farmers they have invested in. On the other hand, Jo Swinnen said that this may not work in the EU since when there is enough supply then producers’ bargaining power decreases a lot.

A member of the audience asked for lighting on what is happening today in Sub-Saharan Africa and if family farmers are already making profit from the rise in agricultural prices.

Another had three questions. First he asked if Europe would be ready to implement a food stamp policy through an important increase of the EU budget. Second he asked what the discussants' opinions were on setting a ceiling on larger farms' subsidies. Third regarding agricultural market volatility he asked the discussants to comment on the fact that Europe gradually left any protection system for the farmers against market volatility such as the deficiency payments in the United-States.

Ann Tutwiler underlined that in several developing countries, producers do not perceive world market prices because of market failures. She thanked Laurence Roudart for having spoken about the lack of investment in agriculture and she asked her if she had found rigorous statistical data on that point.

Jo Swinnen answered that to him food security issue must be solved through an extension of general income policies but not through agricultural or food policy and certainly not funded by the EU budget. Regarding support digression, Jo Swinnen said that the United Kingdom had not been very consistent when it asked for a deep review of the CAP and then did not accept the proposal of higher reduction in largest farms' subsidies. Finally regarding the comparison between the United-Sates and Europe, United States have had a much more consistent policy trying to reduce the effect of their subsidies on the world market until 1996 but then they went back. On average, the EU gives twice as many subsidies to its farmers than the United-Sates. But it depends on commodities. For sugar and milk for example the level of support is almost the same.

Jo Swinnen agreed to the fact that developing countries need a true development policy with investments in infrastructures and institutional improvements. About the question of large companies versus family agriculture Jo Swinnen went back to the result of the study made in Senegal, on vegetable producers near Dakar. The number of farms having a contract with a large company that also produced the vegetables had decreased whereas the number of employees had increased. It should be explained by the fact that in the 2000s, there was an important structural adjustment due to new European export standards. But these standards were not easy to respect for small farmers. So the farmers who were previously under contracts with the company began to work as working force on larger farms. Households, who were out of this chain, lived all below the poverty line. Those who had a contract with the company had an income which was 300% higher. Finally those who worked as employees on the larger farms had an income which was not as high as those who had a contract and worked on their own farm but which was twice as much as those who were out of the system and therefore still received a benefit from it.

Laurence Roudart then answered the question about food stamps. She said that since there are still many people in Europe who are under-nourished and it seems that the present income policies are not solving the problem, studies on the opportunity of having a proper food policy or not may be launched. About figures on agricultural investments, there is a lack of good statistical data at the global level. This is due to the production structures since the majority of farmers are family farmers in developing countries that are often not well counted in their country. As a result, there are few data on their investments and other economic characteristics. Nevertheless there is information in particular in the last World Development Report of the World Bank which released very interesting data in relation to agricultural investments. For example in Sub-Saharan Africa for many years only 4% of public spending have been devoted to agriculture which is a sector that represent 70 to 80 % of the population ; moreover official development assistance budgets for agriculture and food security are low (3-4%). After the 2008 crisis, there has been a call of the international community to raise this ratio from 3-4% to 10% in five years.

Agricultural production in Sub-Saharan Africa has increased during the last decades on contrary to what can be said. Producers in that region are very dynamic. It is interesting to analyse the determinants of productivity increases in comparison to other regions in the world. According to FAO data, from the 1960s to the 1990s, gains were due at 70% from the increase in yields, 20% from the increase in cultivated area 10% from the increase of the harvest number on a same area. But in Africa these figures are inverted since on the same period production growth came mainly from an increase in cultivated area and little from increase in yields. In spite of that, there is still an important quantity of available potentially cultivable land in Africa. There is still space for improvement in Africa by increasing cultivated area and by increasing the yields that are still low today (about 1 ton per hectare).

As regards the question of large farms versus family farms, the situation today in Africa reminds us a lot what happened in South America after the soar of agricultural prices in the 1970s. After the shock there were important investments made on very large domains which were until then producing rather extensively in order to modernize and produce crops at a large scale. It worked pretty well in terms of competitiveness. But it occurred under temperate climatic conditions that are much more favourable than the conditions in Sub-Saharan Africa. The profitability of such large domains in more difficult conditions than the South-American ones may be doubtful. And this all the more as we do not really know at what level will agricultural price stay in the future.

Finally as regards world market prices transmission in the different regions of Africa, it is a very complex mechanism and the impact is very clear in some region but not observable in others.

Session 5: CAP and Structural Adjustments

The president of the session 5 on Common Agricultural Policy (CAP) and structural adjustments was Pierre Boulanger (Research Fellow, GEM Sciences Po). The Wiseman was Catherine Moreddu (Senior Economist, Trade and Agriculture Directorate, Organisation for Economic Co-operation and Development - OECD) and the discussants were Jean-Pierre Butault (Research Director, French National Institute for Agricultural Research - INRA) and Bruno Ledru (Farmer and Vice-president, *Jeunes Agriculteurs* farmers' union).

Pierre Boulanger introduced the session by stressing that targeting structural adjustments in the agricultural sector is now a real requirement. This demand is not new: in 1968 the Mansholt plan was recommending drastic structural adjustments. The policy translation of that plan has been more than marginal. So that, in spite of the progressive re-orientations of the CAP instruments towards the market with the 1992 and 2003 reforms, as well as the institutionalisation of rural development measures under the CAP second pillar with the 1999 reform, which both had a positive impact on the efficiency of the CAP, we can still wonder today about the relevancy of the instruments to face structural adjustments.

Catherine Moreddu first marked that estimated producer support is about 15% of the receipts in the United States and about 30% in the European Union. Her speech was organised in six points.

Among economic forces that act on agriculture, there are underlying forces such as the increase in labour productivity which leads to a reduction of the sector labour force. There are a tendency of the reinforcement of regulations and maybe an increase in volatility. But there are also changes in relation to sanitary crises or punctual policy reforms. Indeed the agricultural sector is characterized in most countries by a strong public intervention: agricultural policies but also environmental, animal welfare, food safety regulations.

How does the sector adapt? Farmers have a great ability to adapt to changes which is often underestimated by authorities. They adapt mainly by three main ways: getting bigger; specializing; or choosing part time farming added with other non farm activities.

There is a great diversification in structures. It has been said that there was a bipolarisation with on one side big commercial farms and on the other smaller and more diversified farms specialized in quality products or multi-activity.

This is of great importance for the targeting of supports. Are we going to give the same amount to big farms or to small ones that have not exactly the same finality? This is also of great importance for the distribution of supports. When supports were implemented in the 1960, farms were rather homogeneous but with the structural diversification we now observe great inequalities in the support distribution. At statistical level, small farmers are difficult to observe because in Europe they are not belonging to the field of the surveys.

Why do countries intervene? They intervene on one hand for reasons of economic efficiency, and on the other hand for reasons of equity. Authorities can wish to accompany the adjustment for reasons of economic efficiency in case of market failures, for example land or credit markets, or when the costs of the adjustment exceed its short-term advantages. They can also be guided by a concern of equity which drives them to indemnify the losers, including as a way to limit possible increases in disparities. Behaviours of countries as regards the underlying adjustment differ widely, from *laissez-faire* to strong interventionism.

Reforms of the agricultural policy are often accompanied with measures of adjustment which facilitate the adaptation of the sector to the new environment. They include a whole range of incentives, from investment to conversion aids, which may be matched with consulting services and trainings, decoupled income payments or compensations in case of decline in the value of assets.

In the European Union, all these supports are regulated under the Rural Development Regulation, particularly with axe I concerning investment and entrance and exit supports but also with axe III on diversification. But we see today in Europe that supports are permanent which does not encourage farmers to adjust rapidly.

The OECD assesses agricultural policies according to their ability to reach the announced objectives with a maximal efficiency, at the lowest cost and minimizing the distortion effects on trade. The principles of implementation of such policies are: transparency as regards the objectives, costs and advantages, and the identification of the winners and losers; identification of precise objectives; decoupling between support and production; adaptation of the level of efforts to the expected results; flexibility; and equity.

In recent works, the OECD assessed adjustment measures implemented as part of recent reforms in Australia, in Canada and in the European Union. The lessons drawn, among others, from these experiences, enabled to formulate specific recommendations for adjustment measures, which have been added to the previous criteria. In particular they should let the actors' capacity of adjustment express itself, for it is sometimes slowed down by useless regulation. For example the SAFER (*Société d'aménagement foncier et d'établissement rural*, a French public institution responsible for structure and land management) in some regions impede the increase in farm size whereas larger farm would be more sustainable. Adjustment measure should also be irreversible and limited in time, be consistent and integrated, in particular to systems already implemented, include a clear part about business discontinuation, and plan trainings to facilitate conversions. In order to improve policy systems, these studies emphasize the importance of *ex ante* evaluations, which allow anticipating potential adjustment problems, as well as monitoring and current policy evaluations.

Jean-Pierre Butault stressed on the following points: the issues of context, evaluation of structure policies, optimal structures, support and inequalities.

First, recommendations of general value are useful but it is always important to take into account the context of each country. We must see the differences between countries and also take into account the evolutions. The CAP has allowed a smooth structural adjustment on thirty years for the agricultural sector.

The evaluation of structural adjustment measures is not easy because there are contradictory aspects. For example modernization supports aim at helping the economically sustainable farms, but there are at the same time windfall and strong selection effects.

The issue of optimal farm structure is also an important question. We cannot judge the farms only on their economic efficiency. We must think about how to determine the optimal size not economically speaking but for land occupation, to maintain the social fabric and so on. And the objectives of economic efficiency and territory balance by maintaining a good land occupation may not be compatible.

On the support issue we probably have favoured vested rights too much for 30 years and we have frozen the supports without trying to correct the inequalities.

Bruno Ledru said that, as a farmer, many things in Catherine Moreddu's presentation were disturbing him but that he could understand. Farmers are a part of society. They only represent 2% of actives but the agricultural sector represents 14% of French economic activity which is more than the car industry. French agriculture receives important subsidies in comparison to other activities. These supports are from the European budget because agriculture is the only sector which has a truly common European policy. Thus the European budget for agriculture is very important but it must be related to the importance of agriculture in each country. We are a generation of farmers that are not ashamed to speak about the subsidies we receive which is different from our parents' generation. Receiving direct and more decoupled payments is not good for our self-esteem because we work generally more and on a longer time than other professions but we cannot make a proper living from our work and besides we need to be supported to survive.

Concerning targeting the supports and their distribution, perfect equity is impossible or it would be too expensive. *Jeunes Agriculteurs* states that young farmers need a support to begin in agriculture which is highly capitalistic activity with very low returns on the invested capital. Capitalisation aids should be set to help young farmer to set up their farm. Moreover figures show that when a young farmer receives aids at their beginnings 95% of the farms are still working 10 years latter. That may justify an installation policy as a useful investment.

On the contrary it is more and more difficult to justify and explain the direct decoupled payments to European taxpayers, but also to farmers which receive a per hectare support whatever they do. *Jeunes Agriculteurs* would prefer that the payments were made in function of the number of actives on the farm which would be an income support and not a hectare support.

We also need more public policy on risk management for climatic and sanitary risks. The CAP must guarantee to Europeans citizens a healthy, sure and qualitative food but for that we must give farmers the means to guarantee this safety.

The problem of farmers is that they are dependent on market prices and they cannot anticipate their coming yields. And contrary to other sectors they cannot regulate the supply by short term unemployment. The milk sector for example was regulated at the European level with quotas but with the decrease in prices the quotas have become ineffective for 6 months. However prices consumers are facing do not decrease. There are still about 100 000 milk producers in France and if they were twice as less it is not sure that it would improve the economic competitiveness. Milk is a product that must be consumed locally since its transport is difficult. If the world market price, which is only a surplus price for us, is too low the domestic price has to be higher so that it paid farmers a subsistence minimum. Farmers will have thus to put pressure on distribution and on major outlets and if there will be no more supports they will have to bargain with retailers to get higher prices in order to make a living.

Farm supports do not belong to farmers. They have been decided by political powers and are paid by citizens. For *Jeunes Agriculteurs*, it is very important to justify them then. A decoupled support is not justifiable. A support for disadvantaged areas makes sense because it is more profitable to keep agriculture in the mountains than just paying for slope-menders in ski resorts. It is also more interesting to have diversified production systems for the countryside and for the sustainability of agriculture.

Finally as regards the SAFER these organisms were implemented by the farmer unions and they allowed a lot of young farmers to install their farm. It is not sure that a reduction of the number of farmers will help to provide what the society wants from agriculture.

Debate

A member of the audience first asked Catherine Moreddu a question on the SAFERs. For him SAFERs did not impede farms to grow but rather impeded young farmers to install since they did not have enough land in comparison to the standard for it is thought that small farms are not able to produce enough value. But it is often the smallest farms that have the higher added-value per hectare. So the question is optimal structure for whom: for the farmer, for the territory for the society? We must take into account the social costs of unemployment and environmental costs to know what optimal is. If estimate support to income is 34% on European average, the proportion of public aids in net operation result is 77%. Even in a cereal-growing region such as Ile-de-France it represents 65% when the average area of farms is 150 ha which quite big farms are. So there are rather big farms that are very fragile though for they are dependent from public aids.

There is also a relation between structural adjustments and general political orientation. For example we are missing in our policy an important European protein plan. If we cannot supply a balanced food to the whole planet it is not because of our soils agronomic abilities but because of our policies. As long as we will import soybean from Latin America to feed our cattle, soybean will take place of local staple food production there. If Europe had a stronger promoting policy for protein maybe South-Americans could eat properly.

Another member of the audience said he was surprised by Catherine Moreddu's vision on what is a public policy. It is not only distributing public money, it is also about what the society thinks its dwellers want not only for the economy but also for land settlement for example. It would be as if there were heavy trends on which humans cannot do anything and as if policies were only there to help us to adapt to these trends. Policy must lead concerns at different levels national, local international.

Regarding the issue of what is the good size for a farm and if they shall always grow, where should we stop? How to develop a model of the ideal farm? For years research worked on improving per worked hour return. Is it still the valid criterion or should not we look for resource optimization now?

Catherine Moreddu thanked Jean-Pierre Butault to have spoken of windfall effects. In many cases investment would have occurred even without the support.

On the question of optimal structure Catherine Moreddu agreed that it is very difficult to know what an optimal structure is. It is also difficult for public authorities. That is why it is not easy to intervene on structures since we do not know the optimality. So let the farmers decide what the best solution is. Regarding the SAFERs, their role has been quite different depending on regions. Catherine Moreddu was contesting more the fact that a structure management organism is required.

Regarding the increase in farm size Catherine Moreddu is not pro or against since it is only one of the adaptation strategies. There are also other valid and sustainable strategies. That is not to the State to decide what the optimal size is but to farmers to decide what is the optimal size for them to live and maintain their activity in a context where supports are not permanent and must be targeted on precise objectives.

We should of course take into account externalities. If they were, there probably would do not be such a concentration in pig production in Brittany. If pollution was taxed as it should be there would be a better balanced distribution on the territory.

Catherine Moreddu agrees with the idea that decoupled aids are not justifiable on the long run. It is important to define the objectives, to have a social agreement on them and that aid remunerate farmers for the provided services to the society.

On the question of support distribution, equity is not a goal in itself but it is important in case of income support. In that case, supports must go to those who really need them and not to people who do not have income problems, on equity grounds but also in order to have a better use of public funds. If it is a support to provide a positive externality there is no problem if farms which provide more of the service receive more support. But today supports are more income supports so it is important to know something about there distribution.

A member of the audience contested the fact that agriculture represents 14% of French economy or that automobile industry 10%. The main problem in agriculture is the lack of transparency on agriculture situation to really open a public debate. The person collaborates with farmsubsidy.org and revealed the first studies on support distribution. Mediapart was almost the only media to publish the nominal list of second pillar support recipients. Statistics on first pillar supports will be published on April 30, 2009. He then asked if the lack of transparency in the sector would not impede the true debate on the inevitably dual essence of agriculture. We cannot treat a 1.500 ha sugar beats producing farm in Oise the same way as a mountain dairy farm. The recent food crisis has revealed the structural conflict of interests between cereal growers and breeders. But there is no political and union debate on that point. We cannot ask taxpayers to pay for such an opaque system in agriculture anymore.

Another member of the audience went back on the question of positive externalities. For example in the case of public funding to help farmers to shift to organic farming in Munich municipality, on a quite short run it has proven to be more profitable to help farmers to do organic farming in water basin than to support the costs of de-polluting. Organic farming which brings much more advantages for the environment is still less supported today by public aids.

Jean-Pierre Butault answered to the commentaries saying that he did not have anything against large farms, especially large farms with many employees as a way to produce and as an economic organisation. But the problem of these farms deals with the objectives we have for spatial land occupation. There are many academic studies on farm economic efficiency but few on optimality as regards landscape, land settlement, territorial occupation and maintaining the social fabric.

These problems cannot be set globally since what is true for a region may not be true for another.

Bruno Ledru reacted on the issue of vegetal proteins. *Jeunes Agriculteurs* defends a real Vegetal Protein Plan within the CAP health check in particular for environmental and ecological reasons. As Catherine Moreddu said farmers have a great ability to adapt. Since their opinion was not asked and cereal prices were higher they did more cereal and less proteins. The problem here comes from support orientation. Farmers reacted in the sense of policy orientations. Organic farming is a widening market today growing by 3 to 4% a year. Why farmers do not convert massively? The first problem of French farmers in organic farming today is the difference of regulations between European countries. In comparison with German organic farmers, French organic farmers are three or four times less competitive. There are phyto-sanitary products that are used in organic farming in Germany that are not

even allowed in conventional farming in France. A standard harmonization is required by the Farmers. It is with economic arguments that farmers shall be convinced to do organic farming, not by imposing environmental and sanitary standards.

Farmers are not against a change in production systems. Actually they are not really happy to use pesticides. What they like is making a living by farming properly, respecting the rules they are given and trusting scientists to give them only chemical products that will not harm them or the consumers of their products. Farmers are the first in contact with nature and their goal is to keep their soils fertile for tomorrow since we will all need them.

Maria Rosander from the Swedish representation for the European Union agreed with the idea that governments and policy makers cannot determine what the best structure is. She asked what the possibilities of the CAP are to offer a proper framework for national or international structural adjustments taking into account the structural differences between the 27 countries and whether such a framework is needed at a European or national levels.

Pierre Boulanger answered that the CAP second pillar is often referred to as an example for targeting aids in particular for structural adjustments and that it is ruled by co-funding between Member-States and the EU. The first pillar was designed to deliver compensation payments for the decrease in prices after the 1992 reform. Today we try to legitimate the first pillar supports by setting conditional standards that allow receiving these direct payments. But with the 2003 reform and the article 69 (now 68), we are trying to re-target supports within the first pillar. This means that the separation between first and second pillar is becoming more blurred. The only difference comes from the funding since there is one fund for the first pillar and another for the second.

Pierre Boulanger then asked the participants to react to the issues of the general structure of the CAP and Single Farm Payments (SFPs).

Jean-Pierre Butault answered that to him it is not possible to go towards a first pillar reinforcement which lost its justification which was to compensate decrease in prices. We could go on a more targeting policy derived from the second pillar and including the elements of the first pillar on income hazards. In the long run agricultural support can only belong to the second pillar supports.

Catherine Moreddu said that the pillar organisation is a historic heritage but we must review it. It is not a question of taking from the first pillar to give to the second pillar but we must think about what are the objectives. We should evaluate why some supports are of the EU responsibility and other are of national responsibilities and on the basis decide the share in co-funding.

To answer to Maria Rosander the issue is that most part of structural adjustment supports are productive investment supports. So they have an effect on production thus we need a common framework to avoid competition distortion between countries.

Bruno Ledru added that for *Jeunes Agriculteurs* the second pillar should gather handicap compensating supports. The first pillar should gather economic supports but we need to agree on the orientation of these supports: what does Europe want to do for food policy? Do we want husbandry in Europe? Do we want vegetal protein? The second pillar answers to the question do we want them anywhere in Europe or only in specialised so called competitive areas?

For *Jeunes Agriculteurs*, decoupled payments are an economic non-sense for as farmers do adapt they will and we will specialise whole regions which can lead to environmental catastrophes and be not really sustainable.

Pierre Boulanger concluded the session saying that SFPs are most probably transitory until the next CAP reform.

Session 6: Agriculture and Multifunctionality

The president of session 6 on agriculture and multifunctionality was Jean-Pierre Butault (Research Director, French National Institute for Agricultural Research - INRA). The Wiseman was David Harvey (Professor, School of agriculture, Food and Rural Development, University of Newcastle) and the discussants were François Lefebvre (Study Manager, French National Agency for the Development of Farming Installations - CNASEA), Louis-Pascal Mahé (emeritus Professor, INRA-Agrocampus Rennes), and Thierry Pouch (Department of Economic Studies and References, Permanent Assembly of French Agricultural Chambers - APCA).

David Harvey began his presentation saying that there is a common perception that agriculture should not be left only to the market. The conventional wisdom says that agriculture in Europe is clearly multifunctional. It provides some socially important products, goods or services, but also a social fabric and a structure to the countryside. These products are labelled by economists with positive externalities, which means that they are unintended consequences of agricultural activity for which there is no payment back. Agriculture also produces public goods i.e. which anybody may receive these goods paying or not. These public goods and positive externalities induce market failures. This implies that governments have to intervene to provide these goods. This is the basic argumentation to justify Single Farm Payments (SFPs). That justification implies, in particular in the light of the OECD best practice recommendation that we through our governments define carefully what we think we can get from agriculture and thus what SFPs are supposed to pay. Then entire books will be written detailing the subject and then we will have to send armies of bureaucrats to control that farmers do what they are supposed to do. Nothing of this has happened yet but it will happen if we continue justifying SFPs on the basis of the supply of socially needed goods that the market cannot provide. But farmers are already complaining about disproportionate regulations and requirements. With the SFP, such regulations shall increase in the future.

This is conventional wisdom. But we may be more careful in the analysis of what market failures mean in that context. David Harvey thus defines the CARE goods, CARE for Conservation, Amenities, Recreation, and Environment, including socio-environmental and cultural goods which make the social fabric. These goods and services are highly dependent on the context and are spatially differentiated. Within countries, regions do not provide these goods at the same level and in the same way. These goods are also highly dependent on preferences and aspirations. People do not value the different elements of the countryside at the same worth. And these elements not only concern people who pay to get them but also people who are paid to provide them. Farmers do not farm for the same reasons. Finally, values, technologies, preferences change with time. This implies that uniform prescriptions fail, even nationally; 'objective' valuations are highly contingent, contestable and hence unreliable; administrative "solutions" are likely to fail and be costly.

How could an arbitrarily uniform amount per hectare SFP possibly be justified on the basis of market failures? How to value multifunctional attributes of agriculture and are we even able to do it? What people say they are willing to pay may be quite different of what they are actually ready to pay when they have to.

Actually there is not only a market failure here. There is also an administrative failure: we cannot administratively provide these goods. So we should reconsider what market failure means. The answer to how to value and prioritise concerns is that we cannot, by using social science tools. The answer to how to devolve competence is that you cannot, by using

administrative machinery. The answer to what architecture we should give for SFPs is that there is none available from present or likely future inventory, despite more (careful) targeting. In conclusion the market failures at least in this case cannot be solved by the government.

Actually “market failure” is not the right term here. The market determines whether it is interesting or not to organize those who are interested in these goods in sufficient groups to go and ask to those who are able to provide the goods, to organize themselves to produce them. For the moment the market has shown that cost and organisation efforts of CARE goods demand and supply is not worth it. The market is not failing here. It just answers that it takes too much time, resource and efforts to solve the problem. The reason for that is that transaction costs are too high. Thus the solution to multifunctionality problems is to reduce transaction costs and for David Harvey this certainly not goes with more bureaucracy and administration.

There are two problems indeed. SFPs do not only answer to multifunctionality issues. They are also a compensation for farmers because of the decrease in public price supports and contribute to get rid of their dependency on public supports and encourage them to make a living from the market place. This takes time so the SFP is a transitory helpful tool.

For David Harvey, the best solution to face the problem of the dependency of farmers and the transition help toward the new system was the proposition of Stefan Tangermann to deliver once and for all a Common Agricultural Policy (CAP) bond to compensate for the loss in the value of farmers’ assets. For multifunctionality, markets do actually solve quite well the issues. We have seen that if markets are not the best solution they are certainly a better alternative than having dictatorial obligation on what to produce and consume. How to encourage the production of CARE goods then? With CARTS: Conservation Amenities Recreation Trusts, with an organisation similar to the Royal Bird Society. This kind of charities receives voluntary contributions from the general public who wants to have things done in the countryside. They establish contracts with farmers or land owners to provide these services. Such quasi-market organisations make a competition to administrative solutions with the capacity and the potential to better provide the CARE goods.

These trusts should be encouraged by tax deductibility for donators and grants-in-aid to solve both free rider and the merit good problems. They would be buttressed by an ombudsman and (random) audits. And we would also need a public provision of research and understandings on the CARTS.

François Lefebvre began his speech saying that agriculture is not an ordinary sector: it provides our food and it covers 53% of the French territory. In France the agricultural world is quite specific too, with its own social security system, its own education system, its own bank, and its powerful unions. Agriculture is so peculiar that we cannot only refer to it through an economic way. We should also add food self-sufficiency. The Swiss has reserved 2% of its territory to food self-sufficiency. We should speak of political and social choices, of environmental policies and of the citizens’ demand.

Multifunctionality of agriculture answers these demands. Agriculture has always been multifunctional but since the Second World War, agriculture and multifunctionality have been parting. After the Second World War, farmers were mainly asked to produce enough food at a time when there still was rationing tickets and they did very well. With the globalisation speeding up the new economic context separated even more multifunctionality and agriculture.

In the 1990s, there was a multifunctionality come back which helped at the European level to justify some supports and to answer to the protests against productivist models after the 1996 BSE crisis.

Multifunctionality also goes with political choices for rural development and it is a tool for land settlement. In the 1999 orientation law three roles were recognised for agriculture: the economic role, the socio territorial role and the agro-environmental role.

But beyond regulatory aspects these public policies led rural and agricultural world to realize how important where the environmental aspects.

In France farmers who do multifunctionality are farmers whose parents were not farmers, farmers who set up without public supports, farmers who set up after the age of 40, and more generally all those who have had other professional experiences before to set up as farmers. Having a multifunctional way of farming is sometimes the result of personal convictions but also the need of creating a higher added value because of a small area for example, by direct selling, transformation, particularly in tourist areas.

But multifunctionality is closely linked to the agricultural demography. In order to have a multifunctional agriculture, work and labour force are needed. In 1900 there were 5 millions of farmers in France. Now there are 450.000. The number is decreasing by 10.000 per year. This may not be a problem to fulfil the first role of agriculture, the economic role, but it may be more difficult for the socio territorial and the environmental role. Moreover land is a big issue in France and in the world since we need land to capture CO₂, to feed the world, to maintain forests, and for all sorts of human activities. For agriculture 100.000 ha disappear from the arable land each year that is an equivalent of one French department every 6-7 years. Beyond multifunctionality one issue for the 2020 agriculture is the land use issue.

Louis-Pascal Mahé as an economist agreed on a large part of David Harvey's presentation but with slight different conclusions for the action. He noticed two major points for the evolution of the agricultural policy.

First was the question of the spatial differentiation. The size of market failures and rural public good stakes differs widely according to the region. Targeting is necessary but it is complex and there are information asymmetries. A uniform system on the whole territory is not suitable anymore. But on the other hand targeting may reveal very costly. Transaction costs with administration are high and Louis-Pascal Mahé agrees with David Harvey to say that we must ban kludge instruments since there are complex governmental systems that can do more harm than letting the market failure as it is. Moreover most of administrative transaction costs are often fixed costs of setting up the system. So the first thing to do is not to change programs every year or as soon as there is a change in the political majority.

Second Louis-Pascal Mahé did not share the same confidence in markets and collective organisation for rural public goods. He agreed to say that this may work for some public goods in some locations where the environment and the nature have a great value or when there is an important population. But there are cases where rural public goods are not well defended by collective action. For example in the pig production area in Brittany or for goods such as biodiversity, species conservations, which are not club goods and thus, for which collective action does not work very well.

Collective action has an interesting potential but we cannot really do without public intervention. The paradox is some times that it is Europe which is virtuous while local and

national governments do not play their role, as for the case of nitrate pollution in Brittany. We must look at things closer and make nuances.

Regarding the CAP bond proposition it is an interesting idea. But in relation to such a deep change as the one that we will have after 2013, there are two important things. First to agree on the target: how, how much and when; second to know how to deal with the transition period. Bonds are only a response to the second point. Defining the target, the size of the change, and obtaining transparency upon are already huge political issues. For the management of the transition the bond solution has advantages but there are two counter-arguments. Decoupled supports and their distribution have lost a lot of legitimacy today, maybe thanks to the increase in transparency. So the need for compensation bonds is less strong. Moreover there is a risk of political failure if a few million euros were given as compensation to some English aristocrat, or French large fortune, or corrupted manager of a private company in Eastern countries. On the other hand a smoother transition would also bring problems. For example the problem of permanent re-negotiation; but by setting pluri-annual budget lines the EU has made progress on that side and the risk may be lower.

Louis-Pascal Mahé concluded his speech saying that he had a dream, a dream of the day when the United-Kingdom will accept support capping per farm and France will decide dropping the financial solidarity.

Thierry Pouch then said that David Harvey's view on multifunctionality was interesting but also questioning on several points.

First David Harvey criticizes the idea that multifunctionality brings a need for public intervention to correct market failures in presence of externalities. This shows that analyses and approaches of multi-functionality create a deep dispute between the economists.

Second a definition of multifunctionality was missing in David Harvey's presentation. There is also a questioning on why economists have seized the concept of multifunctionality so strongly for a couple of years. Indeed either multifunctionality is a way to prepare the end of the CAP as it was and in that case multifunctionality is only a modality to pass from a policy to another that is not clearly defined yet. This modality would justify according to David Harvey to keep some support for farmers in order to have them adapt to the new system. Or multifunctionality expresses a political will to reorganise the European agriculture and thus resolve the previous problems so as to get better inserted in the WTO negotiation but also to answer global expectations of the society.

Third David Harvey's conclusion is that quasi-markets may be more efficient than an administrative organisation for the management of multifunctionality, with a remark on how state economies ended up. But if we accept that multifunctionality belongs to a scientific field which includes several knowledge sectors, of which political science and its public policy component, it becomes possible then to avoid the exclusive approach in which the demonstration is going. On the subject of agricultural multi-functionality taken as a project to solve some of the contradictions and imperfections of the CAP, decisions must and are taken by the European Union Member States according to principles of consistency and compromise.

There is a contradiction between David Harvey's interpretation of multifunctionality as a way to pursue state interventionism and part of the title of the conference which is new public agricultural policies.

Debate

A member of the audience mentioned the link between multifunctionality and the idea that the European agriculture may not survive to global competition. This argument may explain that we need to protect our agriculture since it brings many positive externalities. He asked how the multifunctionality concept is used to defend European agriculture in international trade negotiations in particular what are the links with non tariff barriers.

Jean-Pierre Butault said that this question was exactly in the line of Australian arguments which say that multifunctionality was invented by Europe in order to protect its agriculture.

A member of the audience said that the CAP is a policy that evolves permanently. There has been a decoupling of supports from production but actually we are now re-coupling them to territorial management. There is important progress to do and we may think that the SFP will be more and more an environmental and territorial instrument for multifunctionality in general, complemented by agro-environmental measures for more specific actions. We have to recognise these evolutions and not always focus on what is wrong.

Another question was then asked to David Harvey to know why non-profit organisations should be more efficient as regards transaction costs or contract negotiation with farmers for the supply of public goods and whether non profit organisation would more efficiently distribute supports.

Catherine Moreddu made some comments on the history of the multifunctionality concept. Some countries used this concept in WTO negotiations in order to justify price supports. Today this strategy has failed and the world multifunctionality is actually not much in use anymore. We have come back to the ideas of environmental sustainability or rural territories viability which multifunctionality was actually hiding. The word was obscure and it disappeared when people came back to their minds. OECD studies on links between farm production and environmental services show that in most cases these links are flexible, are not a general rule and depend a lot on land use. A land policy may be more justifiable on these issues. But a consequence is that farms with a larger area will provide more land related services so the smallest farms will not necessarily be the more multifunctional.

David Harvey then answered that policy needs to consider collective judgement on what is suitable to do. The big issue is how to make people participate in the decision. David Harvey suggests that if we encourage trusts and non-profit organisations and if we give them the responsibility to insure the supply of these services they will be the best mean for people, who are ready to pay, to pay for free-riders. It is not sure that our political machinery has the ability and the competences to do the right decision on what should be paid for. With the CAP evolution there are always more collective choice problems.

The idea that European agriculture may not be able to survive international competition is a non-sense. Europe has the best proportion of arable land with benign climatic conditions on the planet. It has on its doorstep the richest and largest market. It has technologies, abilities and art to cultivate at least as well as if not better than the rest of the world. If European agriculture cannot survive the international competition then no one can do so.

The main issue is when local authorities do not play their role properly. In that case quasi-market systems can be a remedy: create a trust and start a collective action. In a word we need to introduce competition to the administrations.

There is also a problem of historical dependency of farmers to supports. Ministries of agriculture today exist because there were ministries of agriculture before. There is a vested interest in not changing things. It will be difficult to convince them that we do not need a

ministry of agriculture anymore but that we need a ministry of competition, a ministry of environment, etc.

In answer to Louis-Pascal Mahé's dream it is sure that it is out of question that the English Crown, who receives already a lot of supports, would receive a large CAP bond.

François Lefebvre said that the word multifunctionality is not important. What is important is what we are putting behind it.

Louis-Pascal Mahé then explained that the debate on the use of multifunctionality as a justification for tariffs is already over. He said however that he did not think that a limited tariff in complement to other domestic policies may be a catastrophe. The problem in the farm sector is that tariffs are very high. Tariffs can only be a marginal complementary policy as there are economic arguments showing that tariffs are not targeted instruments that can cause negative side effects.

On the issue of non tariff barriers, as in the case of bovine hormone, the European Union does use them but without respecting international agreements. That is why there are trade retaliations on specific products from countries that are offensive in using such barriers (French Roquefort cheese for example). The WTO does not allow non tariff barriers to impose production methods to other countries. Only labels or other differentiations of that kind are allowed. So we should not count too much on these instruments to do what we wanted the multifunctionality argument to do.

Jean-Pierre Butault added that the problem is that these are not of the legal competences of the WTO. Environment protection does not belong to the WTO official assignments. That is why the WTO often judges not favourably such cases since the burden of proof is for the one who sets barriers, here the EU.

Session 7: Agriculture and Risk Management

The president of the session 7 on agriculture and risk management was Jean Cordier (Professor, Agrocampus Rennes). The Wiseman was Per Molander (Consultant, MAPSEC consulting) and the discussants were Jesus Anton (Senior Economist, Organisation for Economic Co-operation and Development - OECD) and Yves Salmon (Technical Adviser, Groupama Insurance; Director of the Farmer Union FNSEA (*Fédération Nationale des Syndicats des Exploitants Agricoles*) from 1993 to 2001).

Jean Cordier introduced the session by recalling the three reasons of the current focus on the risk management issue. International trade liberalization of agricultural markets has increased the volatility of agricultural prices and hence farmer incomes. Climate change increases the uncertainty about production levels. And the risk of international animal contagion has strengthened recently, as demonstrated by the avian flu epizootic.

Per Molander recalled that he was engaged in 1988 when the Swedish government launched a project of agricultural policy reform. At this time, Sweden was not yet a member of the European Union (EU), so it was free to form its own agricultural policy. These lead up to 80 reform decisions accepted in June 1990 by the Swedish Parliament with a wide political consensus. Only a few months later, in the autumn 1990, the Swedish government announced its intention to apply for EU membership. As a result, Sweden had to reintroduce the agriculture policy that it had just decided to abandon. What has been retained from this reform even though it has been reversed is the idea of equal treatment between economic sectors. Unless there are good reasons, agricultural sector should not be treated differently from other economic sectors. This is also the starting principle that Per Molander used in discussing risk assessment and risk management in the agricultural sector.

The risk spectrum is fairly wide but not exceptional. The combination is unique to the agricultural sector but other sectors exhibit the same risks - and even sometimes more pronounced than in the agricultural sector. Classical risks include risk coming from meteorology variability or disease matters. Every producer has to live with market risks: supply and demand variations. Political risks are overall more pronounced in the agricultural field because the actual regime implicates high subsidies. So producers are dependent on political decisions more than in other sectors. Human risks like accident, disease affecting the producers is not a characteristic of this sector as it is found everywhere else. Financial risks materialize themselves in variation of interest rates or currency rates. Tenancy is specific to agriculture but leasing land or other factors of production is not.

There is a very large literature on what is called the specificity of agriculture that has been recently investigated in this reform. The basic question is: are these particular features calling for special treatment? For all the risks mentioned earlier, examples of them in other sectors and sometimes more pronounced than in the agricultural sector can be found. Weather conditions affect people who depend on snow clearance or street sweep. Huge variations in income depending on snow precipitations may be even more drastic for these professionals.

Delays between investments and output characterize any investments. Generally they are no longer in agriculture than in other sectors. Capital costs as compared to other sectors dominated by small entrepreneurs are not higher in Sweden and in the EU generally, than in comparable sectors. In the United States (US) there is a difference since US agriculture is more capital-intensive - a factor to count for.

There is an idea of perverse supply curves with producers reacting anomaly to price signals. That seems to be mainly an error of analysis. Per Molander said that he did not see any reliable study confirming this.

There is also the argument of a shrinking sector. At the beginning of the 20th century when automobiles became common, blacksmiths lost their jobs. That was not a reason for maintaining that sort of capacity. Shrinking sectors are part of the business cycle.

There is a common agreement that there are collective goods associated with agricultural production. To remunerate somehow producers for these goods and services is feasible has been done in Sweden. After the reform, a list of collective goods that had to be remunerated was made. The two most important ones were: food security and environmental services. Food security was addressed by guaranteeing a certain level of oil seed production in the country. The government organized an auction and a sort of public procurement contract was sold with very few administrative costs. As for the environmental services, that was again solved on a contract basis by the regional organizations of the Environmental Protection Agency. In these two cases, it is quite feasible to take care of these collective goods under the conditions that are specified in the contract - what is demanded and how much one is prepared to pay. Of course, there are some risks which are of catastrophic nature. The radioactive downfall after the Chernobyl accident is a critical example and there is no discussion that the State has a role in this context. But those cases have to be treated on a case-by-case basis as it is very difficult to define rules for them.

Coping with risk is a very old problem in agriculture so there are many traditional solutions to operate. One of them is to absorb the risk. Small variations of income are easy to handle. Trade is also a very old countermeasure. Selling in the case of surplus and buying in the opposite situation contribute to avoid food shortage. Diversification at the household level is the most important single countermeasure that exists in the agricultural sector. Usually in the industrialized countries, one member of the household is working in the agricultural sector whereas the other may have a totally different profession. What is important is the total revenue of this household, not the specific revenue coming from agriculture. These supplemental resources may of course be more or less linked to agricultural activities. Earning machines and vehicles that are usable in other sectors is an asset. In Sweden, cutting down trees is very common - a lot of Swedish farmers have formed cooperatives to address these demands.

Insurance covers various types of accidents or diverse events. There are some market failures. Moral hazard and adverse selection problems have to be examined on a case-by-case basis to judge whether they justify public intervention or not. Forward contracts and futures are modern instruments. They are very much in fashion these days although perhaps right now they have lost some of their credibility with the current financial crisis. But the fact that they have been used inconsiderately in certain circles does not mean that they are inadequate. The right question when dealing with public policies is: what is the role for the State?

Sweden is a fairly typical industrialized country although maybe the development of the agriculture sector has gone further than in most European countries. It is a very small sector that employs about 2% of the labour force and contributes to only 0.5% of the GDP. Another important fact is that there is a very strong cooperative movement in Sweden. It is deeply engaged in industrial activities so Swedish farmers usually sell their production to factories owned by their cooperative movement. To judge how successful farmers are in coping with risks, the best indicators are the number of bankruptcies because that is the bottom-line of failure. In Sweden, the number of bankruptcies in this sector is very low compared to other sectors dominated by small entrepreneurs. It is about a factor 10 lower than the average of all

others business sectors. So entrepreneurs in the sector are very successful in dealing with risks. What is the recipe of such an achievement? Diversity of income at the household level is the major countermeasure used. The total income of the agricultural household is almost independent of the size of the land owned which is an indication that households manage to find supplementary incomes whatever their acreage is.

There was also a harvest insurance system that was dismantled in 1995 when Sweden joined the EU. The modern financial solutions are divided in two categories. Forward contracts are very common. Most producers of cereals and seeds use such form of contracts. They are very simple and both parties gain by reducing uncertainty. The purchasers are normally collectively owned enterprises which go on international financial markets to secure against risk. There is also a small category of large farms which goes directly to the financial markets and deals with futures and options.

The general conclusion would be not over-dramatizing these problems. This is an age-old issue and there are traditional solutions around the world which work very well. One of the most important is to diversify incomes. Farmers' households can be very inventive once they are induced to do so. As for the modern financial markets, the forward contracts are very well established and used by most crop producers and some animal producers whereas sophisticated futures and options are used mainly at the end of purchase level. In conclusion, the role of State is limited to catastrophic level associated with uninsurable risks and financial market supervision.

Jesus Anton concluded that there is a crucial need for diversified instruments to enable farmers to make their choices in how managing risk. To do so, one of the primary roles of the State is to encourage the establishment of mechanisms for private insurance. He then focused on three points:

- The need to link public interventions to clear and defined objectives. Thus, any public policy must be justified by an objective of efficiency, or market failure resumption, or public good provision, or redistribution.
- The importance of defining the scope of State intervention when natural disasters occur. In order to avoid case-by-case management and opportunities for rent-seeking, it is necessary to define on a quantitative basis (number of farmers affected by drought days, etc.) what a natural disaster justifying state intervention is.
- The link between targeting risk management and agricultural subsidies. Payments made by public authorities, such as decoupled payments, reduce incentive for farmers to insure themselves. Before any new measure of risk management, authorities must take into account the crossing effects of existing agricultural policies.

Yves Salmon began recalling the training needs of farmers to use financial products of insurance, such as forward contracts. This mission relies on agricultural unions, agricultural cooperatives and banks. He also emphasized the delay in the training of French farmers in comparison to those of the US, where farm-desks welcome many times in a year insurance consultants to help farmers to get insured.

He expressed his disagreement with Per Molander about the role devoted to government in agricultural risk management. Public intervention should not limit itself to natural disasters.

The State should intervene more actively because of the particular characteristics of the agricultural sector. In his view, public intervention can take place at three levels:

- Encouraging self-insurance for farmers through tax exemptions allowing them to smooth their incomes over the years.
- Subsidizing private insurance premium contracts and consolidating the private agricultural insurance sector, reassuring insurance companies.
- Insuring the risks that are uninsurable on private markets, including compensation for agricultural disasters.

He finished his speech by reminding the backwardness, in financial terms, of France in comparison to the US. Public policy for agricultural risk management is four times less important in France than in the US related to the relative weights of the agricultural sectors.

Debate

The audience raised the issue of the definition of insurable and uninsurable risks. They may be defined by the presence or absence of moral hazard. Under this criterion crop prices are obviously uninsurable. Indeed, as shown by the old system of guaranteed prices of the Common Agricultural Policy (CAP), insured crop prices push farmers to overproduce, which makes guaranteed price unsustainable.

Per Molander thinks that such a distinction is wrong. He cited the example of car insurance that may encourage the contractor to drive more dangerously. Yet car insurance exists, so traffic accident risk should be insurable. Nevertheless, he recognizes the difficulty of ensuring crop prices facing the increasing volatility of agricultural prices. Jesus Anton noted that there are more and more risks insurable on the market.

The session audience also raised the issue of integration of the agricultural risk management in the CAP, given the very active policy in this area of the US.

Per Molander said that the system of output insurance as it exists in the US can influence the choice of species grown and be economically inefficient. Jesus Anton believes that if the CAP does not deal with risk management, the total amount of agricultural support is two times higher in the EU than in the US, which could result in curbing the need for insurance of European farmers.

Jean Cordier ended the session recalling the need for research on actuarial risk. He noted that the main concern of farmers after the risk of price variability is the risk of illness and its impact on labour. Finally, he recalled the need to define the scope of State intervention, because if not, it is difficult for alternative insurance mechanisms to develop.

Session 8: Agriculture and Competition Policy

The president of the session 8 on agriculture and competition policy was Frederic Jenny (Professor, ESSEC Paris Business School, Chairman of the OECD Competition Committee). The Wiseman was David Spector (Associate Professor, Paris School of Economics) and the discussant was Jean Cordier (Professor, Agrocampus Rennes).

David Spector began his speech highlighting that the Common Agricultural Policy (CAP) and the competition policy are the two main European policies. However, they are based on contradictory principles.

The competition policy is based on the principle that productive and allocative efficiency is achieved through free pricing. Free markets permit the elimination of the least efficient producers in terms of cost and quality. Another principle for competition policy is the focus on consumer surplus. According to European laws, restrictions on competition must be justified by the presence of market failures.

However, many CAP instruments are designed to prevent pricing mechanisms. Milk quotas allocated in France to allow the maintenance of milk production in mountainous areas, prevent the increase in lower-cost milk production in plains. Helping troubled sectors like livestock when an increase in grain prices occurs is counterproductive as it prevents the consumers to adapt their consumptions to more cereals and less meat.

The CAP is often justified by the existence of market failures. Nevertheless, the proofs appear weak on the evidence of standards used in competition policy. The 2003 reform of the CAP has reduced the opposition between the two policies by giving more space for price signals. Decoupled aids have positive effects in terms of incentives, despite some perverse distributional effects lead to provide the greatest aids to producers that have reached in the past the greatest income.

In practice, the status of agriculture in competition law is somewhat ambiguous. If there is no explicit exemption, established case law is flexible when it comes to agriculture. Favourable decrees to the exchange of information between the producer of fruits and vegetables show that a practice deemed illegal in other sectors can be tolerated in the agricultural sector. The law is then quite able to take into account the specificities of agriculture (production time, cyclical nature of production, etc.).

Competition laws also protect farmers against anticompetitive practices of their suppliers as shown in the case of the “lysine cartel”. One issue remains controversial, the market power of large retailers and its effect on agricultural prices. The presumption in competition law is to welcome the role of central purchasing because they tend to lower consumer prices. However, if the market power of the buyer leads to a decrease in output quantities resulting in higher prices for consumers, competition law may apply. Professional agreements, common in agriculture, on production quotas to help forecast market prices are rather poorly received by the competition law, which favours the use of future contract production.

To conclude, David Spector told that this is not a new issue as demonstrated in the case of monopolistic factories of Roquefort in 1897. At the beginning of the century one of the effects seen as the most harmful from the existence of a monopoly was the economic dependence of suppliers, fairly close to the present farmers’ point of view on large retailers.

Jean Cordier took the floor then to make comments on David Spector’s speech. In recent

years, following the evolutions of the CAP and the decreasing number of farmers, horizontal competition was replaced by vertical competition. In the past, farmers were competing with each other. This tends to disappear. Physical markets attract no more than a tiny part of the production, which raises difficulties to define the price.

Farmers have increasingly resorted to contracting with distributors. These contracts contain quality specifications that often define the production chains. Competition is now between production-distribution channels. Producers have now to choose which one of the production-distribution line they will integrate. More and more goods called "trust goods" are incorporated in these contracts. "Trust goods" refer to techniques of farming - animal welfare, for example. Only the vertical channels can provide such guarantees to the consumer. All this leads to production contracts.

Low contracts imply that the quality rent is only partially covered by the producer. High contracts imply that the producer receives the largest share of it (like in the case of origin appellations). Contracting is therefore forecast to cover all agricultural products, for two reasons: risk prevention and the unmatched tool which is to capture quality rents.

Debate

Frederic Jenny raised the issue of the agricultural sector specificities. Could specific agricultural characteristics make market competition, allowed in other sectors of the economy, undesirable? Furthermore, if competition law can adapt to the agricultural sector, is competition policy really inconsistent with the CAP?

David Spector sees no contradiction in the practice of competition law with agricultural policies. Indeed, it adapts well to the existence of specific conditions and public policies of the sector. However, if the CAP was conducted according to similar principles to competition policy, namely confidence in free markets, it would certainly have taken very different forms.

Food safety or specific risks of the agricultural sector can perfectly justify State intervention. Nevertheless, David Spector expressed scepticism because of the variability of CAP justifications over agricultural prices fluctuations. When prices are low, the CAP is supposed to be necessary to maintain the level of agricultural output, while when prices are high the CAP is often advocated as the essential tool that will bring down these prices. The CAP needs to clarify its objectives and its cost. The role of economists is to develop the studies on agricultural externalities evaluation to assist the implementation of agricultural support policies.

The audience noted that the debate on liberalization and regulation of agricultural markets is one of the oldest debates in economic history. Extreme positions relying on free-market ideology that could lead to serious disorders in agricultural production have to be avoided.

David Spector added that adjustments which cannot be made on the regulated regional markets often occur on international markets in a violent manner. Erratic movements in world prices are partly caused by support policies and restriction of competition existing in developed countries.

He also noted that one must also take into account that the tools used by the CAP have often created rents that, if they were justified when they were established, do not disappear when they become irrelevant.

Catherine Moreddu, senior economist at the OECD, said that some countries like Australia do not consider agriculture as a specific sector. Moreover farmers are not the only ones to

provide public goods such as rural development. A consistent policy which targets such an objective cannot only consist in supporting farmers but must be able to deliver aid to anyone who is able to provide such public goods.

The audience raised then the issue of the recent formation of cooperative monopoly on domestic markets in Denmark and the Netherlands. More broadly, what should the competition policy do regarding abuse of dominant position of distributors? David Spector said that competition law should evolve to respond more generally to situations of market power of buyers.

Patrick Messerlin, professor at Sciences Po and director of GEM made an intervention about prior case law of competition policy on support for research and development. This field could be interesting for farmers as growing needs for innovation in the agricultural sector to cope with climate change are observed. David Spector thinks that it is part of the reflection on State aid. Competition policy allows such aids if they are not discriminatory and provide social benefits that the market is not able to provide.