



# Commodity Market Development in Europe – Outlook

Proceedings of the October 2011 Workshop

Thomas Fellmann, Sophie H elaine



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Thomas Fellmann, Sophie H elaine

## **Disclaimer:**

The views expressed are those given and presented at the workshop and may not in any circumstances be regarded as stating an official position of the European Commission or of the other institutions that participated at the workshop.



## Workshop background

This report contains a summary and the presentations of the expert workshop 'Commodity Market Development in Europe – Outlook', jointly organised by the European Commission's Joint Research Centre (Institute for Prospective and Technological Studies, JRC-IPTS) and the Directorate General Agriculture and Rural Development (DG AGRI). The workshop took place in Brussels on 25-26 October 2011 and is part of the workshop series on commodity market modelling and development, yearly held since 2006.<sup>1</sup>

The 2011 workshop was held to present and discuss the preliminary results of the European Commission's outlook on EU agricultural market developments. As part of the validation procedure, suggestions and comments made in the course of the workshop were taken into account to improve the final version of the outlook. Thus, for reference to the DG AGRI baseline projections refer to the final report:

‘Prospects for Agricultural Markets and Income in the EU 2011-2020’:  
[http://ec.europa.eu/agriculture/publi/caprep/prospects2011/index\\_en.htm](http://ec.europa.eu/agriculture/publi/caprep/prospects2011/index_en.htm)

The workshop gathered high-level policy makers, modelling and market experts from the EU, the United States and international organisations such as the FAO, OECD and World Bank. The workshop provided a forum to present and discuss recent and projected developments on the EU agricultural and commodity markets, to outline the reasons behind observed and prospected developments, and to draw conclusions on the short/medium term perspectives of European agricultural markets in the context of world market developments. Special focus was given to the discussion of the sensitivity of the projected market developments to different settings/assumptions (regarding e.g. drivers of demand and supply, macroeconomic uncertainties, etc.).

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<sup>1</sup> The proceedings of the respective workshops are listed below and can be downloaded at the JRC-IPTS website (<http://ipts.jrc.ec.europa.eu/publications/>):

Bartova, L., R. M'barek (Eds.) (2008): Commodity Modelling in an Enlarged Europe. November 2006 Workshop Proceedings. AGMEMOD Report V. JRC Scientific and Technical Reports, European Commission. EUR 22940 EN/5

Bartova, L., S.H. Gay, R. M'barek (Eds.) (2008): Commodity Market Development in Europe – Outlook. November 2007 Workshop Proceedings. JRC Technical Notes, European Commission. EUR 23377EN

Fellmann, T., R. M'barek, S.H. Gay (Eds.) (2009): Commodity Market Development in Europe – Outlook. November 2008 Workshop Proceedings. JRC Technical Notes, European Commission. JRC 51276

Fellmann, T., B. Van Doorslaer, R. M'barek, S.H. Gay (Eds.) (2010): Commodity Market Development in Europe – Outlook. November 2009 Workshop Proceedings. JRC Technical Notes, European Commission, JRC 60425

Fellmann, T., R. M'barek, S.H. Gay (Eds.) (2011): Commodity Market Development in Europe – Outlook. October 2010 Workshop Proceedings. JRC Scientific and Technical Reports, European Commission. JRC 65170

## Acknowledgements

The workshop 'Commodity Market Development in Europe - Outlook' was jointly organised by the European Commission's Joint Research Centre, Institute for Prospective Technological Studies (JRC-IPTS), Agriculture and Life Sciences in the Economy Unit (AGRILIFE) together with the European Commission's DG Agriculture and Rural Development (DG AGRI), Economic analysis of EU agriculture Unit (L2). We would like to acknowledge contributions made by all participants (a complete list is included in Annex 2) and their consent to share their knowledge and ideas. We thank all contributing and participating colleagues from the European Commission and especially the following invited external experts:

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Klaus-Dieter SCHUMACHER	Nordzucker, Germany
Laurine SIMON	Tallage, France
John TJAARDSTRA	International Grains Council, UK
Pavel VAVRA	OECD, France
Eckhard WURZEL	OECD, France

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## Workshop Agenda

**Date:** 25/26 October 2011

**Venue:** European Commission,  
Centre Albert Borschette, Rue Froissart 36, B-1040 Brussels

Organisers: JRC-IPTS and DG AGRI

### AGENDA - DAY I - 25 OCTOBER 2011

<b>09:30</b>	Welcome. Background of workshop	John Bensted-Smith, JRC-IPTS
<b>09:40</b>	Policy Background: Impact assessment CAP-post 2013	Tassos Haniotis, DG AGRI
<b>10:00</b>	Main conclusions of last year's outlook	Thomas Fellmann, JRC-IPTS
<b>10:10</b>	Baseline process and description of the uncertainty analysis	Pierluigi Londero, DG AGRI & Robert M'barek JRC-IPTS

#### **10:25 Session 1**      **Macroeconomic assumptions and the impact of related uncertainties for agricultural market developments** Chair: John Bensted-Smith, JRC-IPTS

(20 min)	EU agricultural outlook – settings and uncertainty analysis	S. Hubertus Gay, DG AGRI & Zebedee Nii-Naate, JRC-IPTS
(15 min)	Agriculture and the global economy	John Baffes, World Bank
<b>11:00 – 11:30</b>	<b>Coffee break</b>	
<b>11:30</b>	<b>Session 1 (continued)</b>	
(10 min)	Comparison FAPRI vs. EC outlook settings	Julian Binfield, FAPRI
(10 min)	Exchange rates and agri-food markets	William Liefert, USDA
(30 min)	Panel discussion	Björn Döhring, DG ECFIN Eckhard Wurzel, OECD Josef Schmidhuber, FAO
(40 min)	Open discussion	All participants

#### **13:00 – 14:30**      **Networking lunch**

#### **14:30 Session 2**      **Drivers of supply and demand for meat markets and related uncertainties** Chair: Miguel Garcia Navarro, DG AGRI

(20 min)	EU agricultural outlook and uncertainties	Edit Konya, DG AGRI & Emanuele Ferrari, JRC-IPTS
(30 min)	Panel discussion General reflections Beef markets Pork markets	Richard Brown, GIRA Consulting Philippe Chotteau, Institut de l'Elevage Sune Jin Christensen, Danish Meat Association
(40 min)	Open discussion	All participants

#### **16:00 – 16:30**      **Coffee break**

#### **16:30 Session 3**      **Drivers of supply and demand for milk and dairy markets and related uncertainties** Chair: Alison Burrell

(20 min)	EU agricultural outlook and uncertainties	Beatriz Velazquez, DG AGRI & Sophie Hélaine, JRC-IPTS
(30 min)	Panel discussion	Pavel Vavra, OECD Christophe Lafougère, GIRA Consulting
(40 min)	Open discussion	Andreas Lundby, Arla Foods All participants

#### **18:00**      **End of Day I**

## Workshop Agenda (Day 2)

**Date:** 25/26 October 2011

**Venue:** European Commission,  
Centre Albert Borschette, Rue Froissart 36, B-1040 Brussels

**Organisers:** JRC-IPTS and DG AGRI

### AGENDA - DAY II - 26 OCTOBER 2011

<b>09:00</b>	Wrap up day 1	Willi Schulz-Greve, DG AGRI
<b>09:15</b> <b>Session 4</b>	<b>Biofuels: a key source of uncertainty and volatility?</b> Chair: Chris Horseman, Informa Agra	
(20 min)	EU agricultural outlook and uncertainties	Alberto D'Avino, DG AGRI & Olexandr Nekhay, JRC-IPTS
(30 min)	Panel discussion	Caroline Midgley, LMC International Bruce A. Babcock, Iowa State University Claudiu Covrig, Kingsman
(25 min)	Open discussion	All participants
<b>10:30 – 11:00</b>	<b>Coffee break</b>	
<b>11:00</b> <b>Session 5</b>	<b>Cereals, oilseeds, sugar: production, productivity and related uncertainties</b> Chair: Jacques Delincé, JRC-IPTS	
(30 min)	EU agricultural outlook and uncertainties	S. Hubertus Gay, DG AGRI & Mihaly Himics, JRC-IPTS
(30 min)	Panel discussion	John Tjaardstra, International Grains Council Laurine Simon, Tallage/Stratégie Grains Klaus-Dieter Schumacher, Nordzucker
(45 min)	Open discussion	All participants
<b>12:45 – 14:15</b>	<b>Networking lunch</b>	
<b>14:15</b> <b>Session 6</b>	<b>Agricultural policy and markets: which relationship over time?</b> Chair: Roger Waite, EC Spokesman for Agriculture and Rural Development	
(15 min)	Evaluation of agricultural policy reforms in the European Union	Catherine Moreddu, OECD
(50 min)	Panel discussion	Tassos Haniotis, DG AGRI David Blandford, Pennsylvania State University George Rapsomanikis, FAO Joseph Glauber, USDA
(40 min)	Open discussion	All participants
<b>16:00</b>	<b>Concluding remarks</b>	DG AGRI & JRC-IPTS

## Acronyms

<b>ACP</b>	African, Caribbean and Pacific
<b>CAP</b>	Common Agricultural Policy
<b>CAPRI</b>	Common Agricultural Policy Regional Impact Analysis
<b>CGE</b>	Computable General Equilibrium
<b>CPI</b>	Consumer Price Index
<b>CV</b>	Coefficient of variation
<b>c.w.e.</b>	carcass weight equivalent
<b>DDA</b>	Doha Development Agenda
<b>DDG</b>	Dry Distillers Grain
<b>DG AGRI</b>	Directorate General 'Agriculture and Rural Development'
<b>DG ECFIN</b>	Directorate General 'Economic and Financial Affairs'
<b>EC</b>	European Commission
<b>ECB</b>	European Central Bank
<b>EDA</b>	European Dairy Association
<b>EFMA</b>	European Fertilizer Manufacturers Association
<b>ERS</b>	Economic Research Service
<b>EU</b>	European Union
<b>EU-12</b>	12 EU Member States of the 2004 and 2007 enlargements
<b>EU-15</b>	15 EU Member States before May 2004
<b>EU-25</b>	25 EU Member States after 2004 enlargement
<b>EU-27</b>	27 EU Member States after 2007 enlargement
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FAPRI</b>	Food and Agricultural Policy Research Institute, USA
<b>GMO</b>	Genetically Modified Organism
<b>GDP</b>	Gross Domestic Product
<b>IDF</b>	International Dairy Federation
<b>IGC</b>	International Grains Council
<b>ILUC</b>	Indirect Land Use Change
<b>IMF</b>	International Monetary Fund
<b>IPTS</b>	Institute for Prospective Technological Studies
<b>JRC</b>	Joint Research Centre
<b>LUC</b>	Land Use Change
<b>NREAP</b>	National Renewable Energy Action Plans
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PE</b>	Partial Equilibrium
<b>PSE</b>	Producer Support Estimate
<b>SAPS</b>	Single Area Payment Scheme
<b>SFP</b>	Single Farm Payment

<b>TRQ</b>	Tariff Rate Quotas
<b>UPM</b>	Universidad Politécnica de Madrid, Spain
<b>USD</b>	U.S. Dollar
<b>USDA</b>	U.S. Department of Agriculture
<b>WTO</b>	World Trade Organization

## Summary

The 2011 workshop ‘Commodity Market Development in Europe – Outlook’ forms part of the intensive validation procedure of the results of the DG AGRI outlook on EU agricultural market developments. In the following chapters the presentations and discussions of the workshop are briefly summarised. Suggestions and comments made during the workshop were taken into account to improve the final version of the outlook. Thus, for the DG AGRI baseline projections please refer to the report ‘Prospects for Agricultural Markets and Income in the EU 2011-2020’ which can be downloaded at the DG AGRI homepage<sup>2</sup>.

The workshop (and thus this summary) was structured as follows. First the background of the baseline construction process was delineated (Chapter 1). As the projections of an outlook are always subject to numerous uncertainties, some specific uncertainty analyses on the baseline projections have been carried out. The main assumptions of the uncertainty scenarios are described in Chapter 2. The macroeconomic environment (assumptions) can strongly influence the projected developments on agricultural markets. Therefore a specific session was dedicated to the discussion of the macroeconomic assumptions and the consequences of related uncertainties (Chapter 3). The sessions on drivers of supply and demand and related uncertainties are summarised for the meat markets in Chapter 4 and for the milk and dairy markets in Chapter 5. A specific session was also dedicated to biofuels (Chapter 6) and a summary of the session on production, productivity and related uncertainties for cereals, oilseeds, and sugar markets is given in Chapter 7. The workshop concluded with reflections on the relationship between agricultural policies and markets (Chapter 8).

### **1. Background of the baseline construction process**

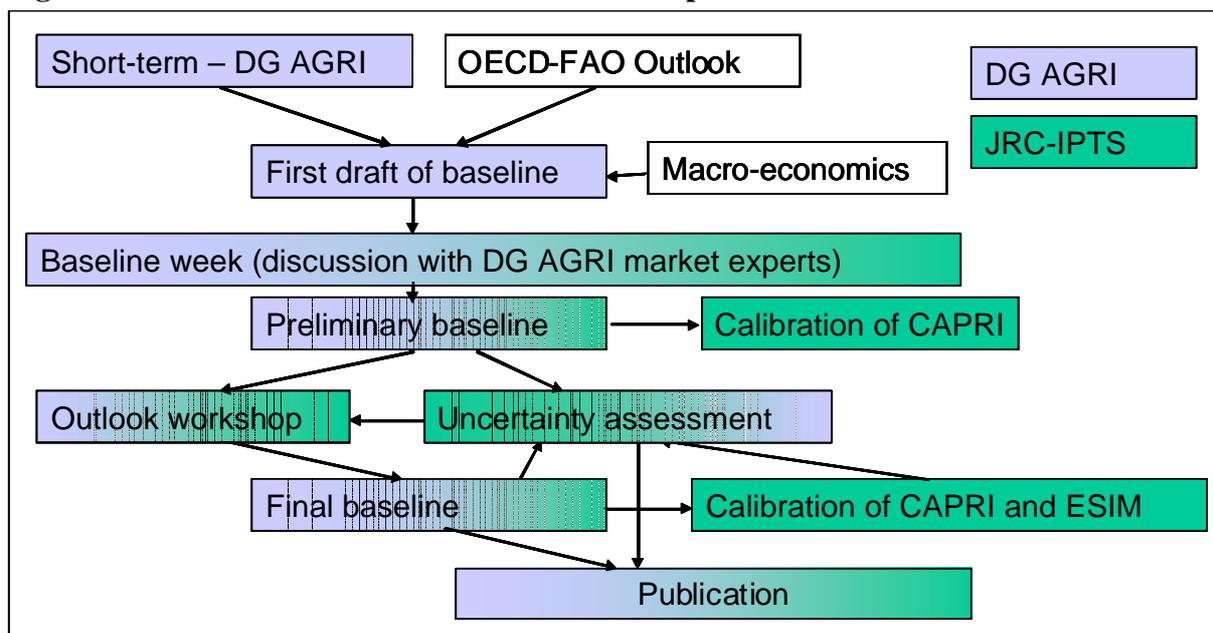
The European Commission annually constructs an outlook for the medium-term developments in agricultural markets in the EU. This outlook (also called baseline) helps to better understand the markets and their dynamics and it also contributes to identify key issues for market and policy developments. Furthermore, the outlook serves as a benchmark for assessing the medium-term impact of future market and policy issues. The model used for the

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<sup>2</sup> [http://ec.europa.eu/agriculture/publi/caprep/prospects2011/index\\_en.htm](http://ec.europa.eu/agriculture/publi/caprep/prospects2011/index_en.htm)

medium-term projections is the European Commission’s version of AGLINK-COSIMO<sup>3</sup>, a recursive dynamic partial equilibrium model with a detailed representation of world agriculture and policy. The data used to construct the outlook is based on the latest available market and policy information (in the case of the preliminary outlook this was the data available at the end of September 2011). Projection results are presented in balance sheets for main agricultural commodities, with detailed results for EU-27, EU-15 and EU-12 aggregates for cereal, oilseed, biofuel, meat and dairy markets, and as of 2011 also for the sugar market.

**Figure 1: Flowchart of the baseline construction process**



Source: Presentation Londero and M'barek (DG AGRI and JRC-IPTS)

The process of the baseline construction is depicted in Figure 1. In order to improve the accuracy, usefulness and relevance of the EU market prospects the entire process of the baseline construction has been reviewed in 2010 and considerably improved by increasing both the number of market and modelling experts involved, and the steps of evaluation and validation of the projection results. Starting point for the DG AGRI baseline is the latest available version of the AGLINK-COSIMO model, which was used for the OECD-FAO Agricultural Outlook.<sup>4</sup> The EU module of the AGLINK-COSIMO model is then modified, and an add-on for agricultural income included. The starting point for the adjustments in the EU module are the latest (internal) short-term forecasts (September version). Furthermore, the latest available macroeconomic projections are taken into account. An in-depth discussion of

<sup>3</sup> Note: The results of any analysis based on the use of the AGLINK-COSIMO model by parties outside the OECD are outside the responsibility of the OECD Secretariat. Conclusions derived by third-party users of AGLINK-COSIMO should not be attributed to the OECD or its member governments.

<sup>4</sup> The OECD-FAO Agricultural Outlook 2011-2020 is available online: <http://www.agri-outlook.org/>

the first baseline results takes place with modelling and market experts of DG AGRI and the JRC-IPTS during a ‘baseline week’ in September. After further adjustments the baseline is presented at the workshop ‘Commodity Market Development in Europe – Outlook’, organised by JRC-IPTS and DG AGRI. In order to assess the sensitivity of the baseline to some uncertainties, the results of additional scenarios with varying assumptions are presented during the workshop. Suggestions and comments made during the workshop are taken into account to improve the final version of the outlook, which is then published in the report ‘Prospects for Agricultural Markets and Income in the EU’ by DG AGRI in December.

## **2. Background of the uncertainty analyses and assumptions of the uncertainty scenarios**

Building a baseline and thus an outlook for agricultural market developments is always subject to numerous uncertainties, especially with regard to weather conditions, developments in the wider macro-economy (e.g. GDP growth, exchange rates, oil prices), market developments related to supply and demand patterns (e.g. yield trends and consumer preferences) or policy issues (like specific agricultural or trade related policies, renewable energy policies, etc.). However, a deterministic baseline is based on explicit assumptions regarding such exogenous variables, e.g. usually normal weather conditions, a specific path for GDP growth rates, exchange rates and oil prices are assumed. Consequently, a deterministic baseline provides a single set of outcomes for a single set of assumptions and it is important to keep the uncertainty of these assumptions in mind when looking at the results of the outlook. In order to show how the projected results of the EU agricultural market outlook would be impacted by alternative assumptions, some uncertainty analyses on the baseline have been carried out. These uncertainty analyses follow a ‘what-if’-approach, i.e. they try to exemplify *what* would change in the results of the outlook projections *if* a derivation of the ‘standard’ assumptions would occur.

For the uncertainty analyses, a set of five scenarios has been analysed using different agro-economic models (in addition to AGLINK-COSIMO also CAPRI and GLOBE have been

applied).<sup>5</sup> Discussions in the outlook workshop of last year revealed that a stochastic analysis could be helpful in order to capture the contribution of *uncertainties in macroeconomic developments* in the modelling approach of the outlook on agricultural market developments. Therefore, this year a partial stochastic simulation with respect to macroeconomic variables was conducted. Regarding drivers of demand, *the role of China* was raised several times in the workshop of last year. As the Chinese authorities communicated that they will try to slow their GDP growth for the period 2011 and 2015, an uncertainty scenario with slower GDP growth rates in China was carried out. Further uncertainties for the developments of agricultural commodity markets arise with regard to the drivers of supply. To assess the sensitivity of the baseline to some of the *uncertainties on the supply side*, three different scenarios were carried out. Firstly, one of the key drivers of production quantity is yields. To examine the different ways EU and global agricultural market projections may be impacted by variability in yields, a partial stochastic uncertainty analysis with respect to crop yields was applied. Secondly, increased operating costs in the agricultural sector in the EU have been observed in recent years. A further, and even faster increase in operating costs could impact the supply of agricultural commodities and farmers' income. The possible effects for the developments in agricultural markets were analysed in two scenarios with higher operating costs in the EU. Thirdly, the consequences of possible supply constraints in major supply countries were examined. For example Russia, Ukraine and Kazakhstan are key players on the world markets for cereals and in recent years it has been seen that harvest failures and related export restrictions in these three countries have impacted the world cereal markets. Therefore a scenario analysis with respect to limited availability of grains from the three countries was conducted. An overview of the uncertainty scenarios is given in Table 1, and the assumptions of each scenario are further delineated in the following subchapters.

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<sup>5</sup> CAPRI (Common Agricultural Policy Regional Impact): highly disaggregated (regions NUTS 2, products) partial equilibrium (PE) model. A model documentation is provided by Britz, W. and H.-P. Witzke (eds.) (2008): CAPRI Model Documentation 2008, Version 2. Institute for Food and Resource Economics, University of Bonn, Germany. [http://www.capri-model.org/docs/capri\\_documentation.pdf](http://www.capri-model.org/docs/capri_documentation.pdf)

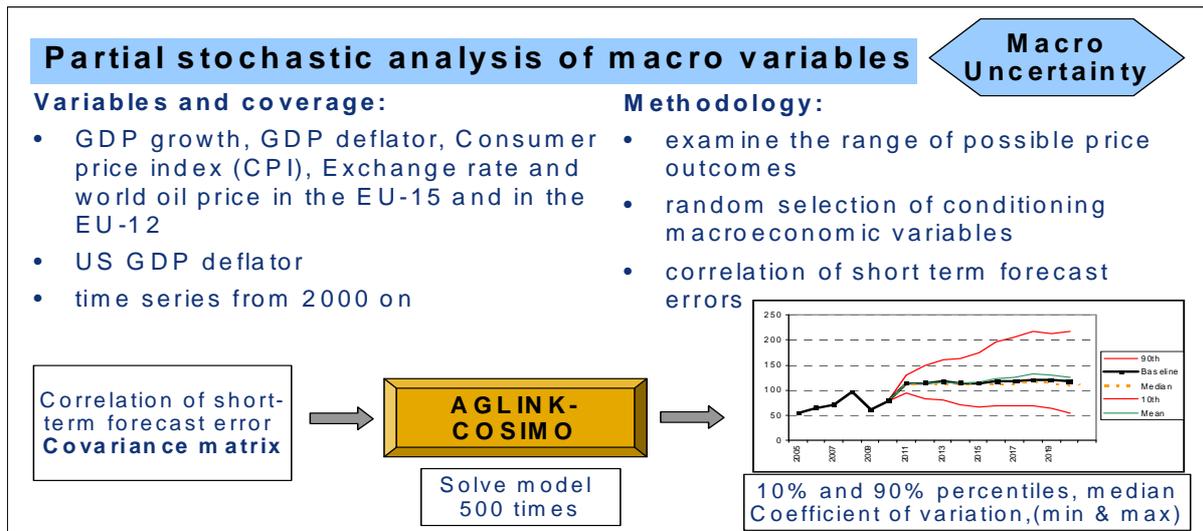
GLOBE: multi-regional, multi-sector computable general equilibrium (CGE) model. A model documentation is provided by McDonald, S., K. Thierfelder, and S. Robinson (2007): Globe: A SAM Based Global CGE Model using GTAP Data. Economics Working Paper, US Naval Academy, Annapolis, USA

**Table 1: Overview on the uncertainty scenarios**

Scenario Name	Uncertainty analysed	Scenario	Model used
<b>Macro Uncertainty</b>	Partial stochastic analysis of macroeconomic variables	random selection	AGLINK-COSIMO
<b>Slower Growth China</b>	Slower GDP growth in China	7% GDP growth	GLOBE and AGLINK-COSIMO
<b>Yield Uncertainty</b>	Partial stochastic analysis of yields	random selection	AGLINK-COSIMO
<b>Higher Costs</b>	Higher operating costs in the EU	30% increase 10% increase	CAPRI
<b>Harvest Failure East</b>	Limited availability of grains in Russia, Ukraine and Kazakhstan	No exports Lower exports	AGLINK-COSIMO

### 2.1 Macro Uncertainty Scenario: Partial stochastic analysis of macroeconomic variables

Developments in the macroeconomic environment are key drivers for the developments on agricultural commodity markets. However, the macroeconomic variables for the outlook projections are exogenous and their development is rather uncertain. In order to capture the consequences on the projected results of some uncertainties related to macroeconomic developments the AGLINK-COSIMO model was adapted to conduct partial stochastic simulations with respect to some exogenous macroeconomic variables. The specific macroeconomic variables covered in the partial stochastic analysis are Gross Domestic Product (GDP) growth, GDP deflator, consumer price index (CPI), oil price and the Euro-US Dollar exchange rate. For the uncertainty analysis the forecast errors of the respective macroeconomic variables are defined to be the realisation at time  $t$  minus the forecast made 18 months earlier. The forecasts errors are assumed to follow a multivariate normal statistical distribution. Out of this distribution, 500 sets of macroeconomic variables are incorporated into the model and 500 alternative baseline projections are obtained that lie between the boundaries of what might be possible given past levels of uncertainties. The scheme of the partial stochastic analysis of macroeconomic variables is delineated in Figure 2.

**Figure 2: Overview of the Macro Uncertainty Scenario**

Source: Presentation Londero and M'barek (DG AGRI and JRC-IPTS)

In general it can be said that, in contrast to a deterministic baseline, a partial stochastic analysis examines the range of possible outcomes through a random selection of variables. This can help to understand which uncertainties have the strongest influence on the projected results (variability in relation to the mean, coefficient of variation) and which sectors and products are most sensitive to these uncertainties (which might be policy relevant, e.g. with respect to intervention prices). However, also this stochastic analysis has its limits and may not capture all the variability observed in the past as the uncertainty underlying the EU macroeconomic assumptions is not the only uncertainty affecting EU commodity markets. In addition the stochastic analysis is based on past trends and it could be that the past has been more (or less) stable than the future will be.

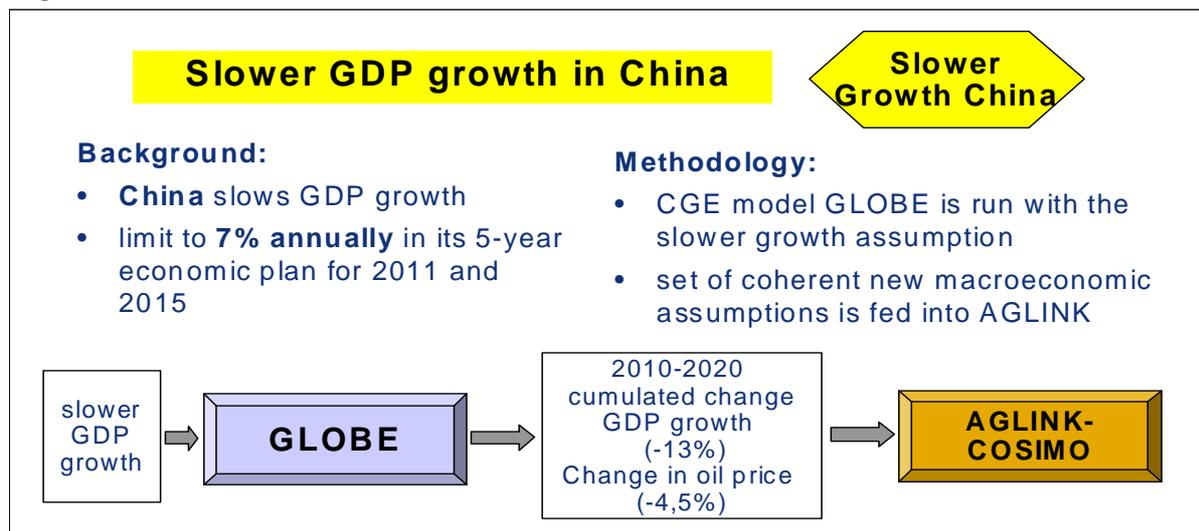
## 2.2 Slower Growth China Scenario: Slower GDP growth in China

The government of China communicated that it will try to slow down Chinese GDP growth for the period 2011 to 2015. The reasons behind a forced slow down of economic growth are twofold, on the one hand China wants to ease pressure on the environment, and on the other hand China seeks to reduce its inflation. Therefore the latest 5-year economic plan of the Chinese government foresees a limitation of the annual GDP growth rate to 7% for the period 2011 to 2015.

To identify and quantify the possible impacts of such a limitation of Chinese GDP growth a sensitivity analysis was conducted. The limited GDP growth of China was first introduced into the CGE model GLOBE, to obtain a cumulated change in GDP growth (2020/2010) in China (-13% compared to the baseline) and only limited effects on the GDP growth of other

countries (e.g. Mercosur +0.6%) and a change in world oil price (-4.5% compared to the baseline). These results obtained from the GLOBE model were then introduced into AGLINK-COSIMO in order to depict the possible impacts for the developments of agricultural commodity markets in the EU (cf. Figure 3).

**Figure 3: Overview of the Slower Growth China Scenario**

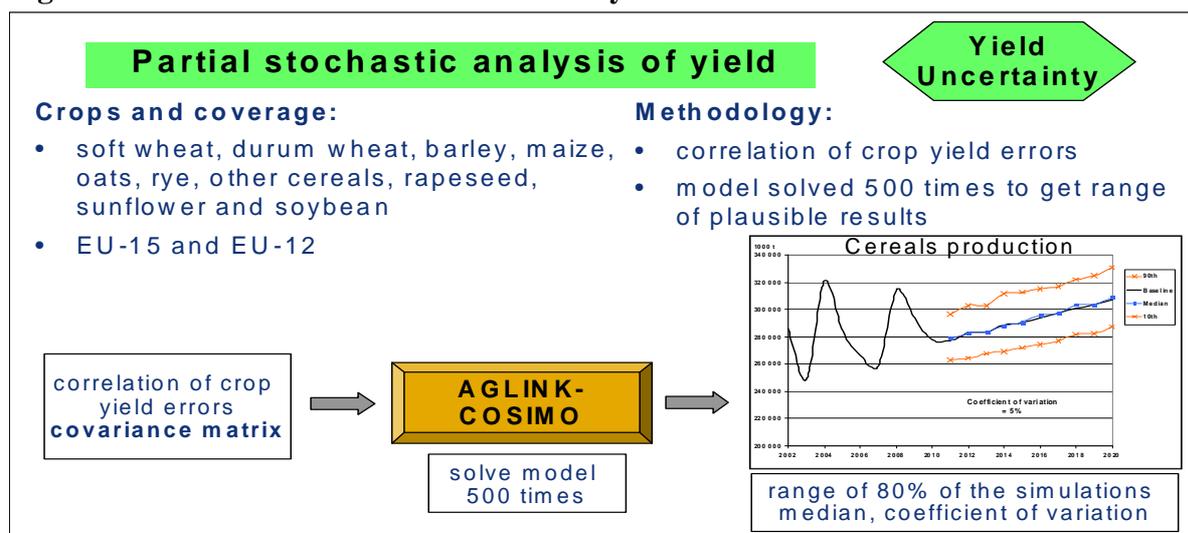


Source: Presentation Londero and M'barek (DG AGRI and JRC-IPTS)

### 2.3 Yield Uncertainty Scenario: Partial stochastic analysis of yield

Yield is one of the key drivers of production quantity – and is quite variable. For example there was an increase of the EU average yield per ha in wheat of more than one tonne from 2003 (4.5) to 2004 (5.6). Such variability in average yield per ha logically translates in the overall production quantity. While in the deterministic baseline usually a steady growth rate for yields is assumed, partial stochastic simulations provide a means to capture the contribution of crop yield uncertainty to the agricultural production and prices variability.

For the partial stochastic analysis of yields the error between the yield projected by the model (corresponding to the expected yield in normal weather conditions) and the observed yield in the past years is taken into account. Therefore the standard yield equations in AGLINK-COSIMO are augmented with this error term for the EU-15 and EU-12 for the following set of yields: soft wheat, durum wheat, barley, maize, oats, rye, other cereals, rapeseed, sunflower and soybean. The ‘errors’ for the different crops are assumed to be correlated, because if for example wheat yield is lower due to a draught, the yields of the other crops are most probably also lower. However, stochastic fluctuations are assumed to be independent between years and are not correlated with other arable crop producing countries. The partial stochastic analysis of yield provides a range of projected results around the deterministic baseline based on 500 simulations (cf. Figure 4).

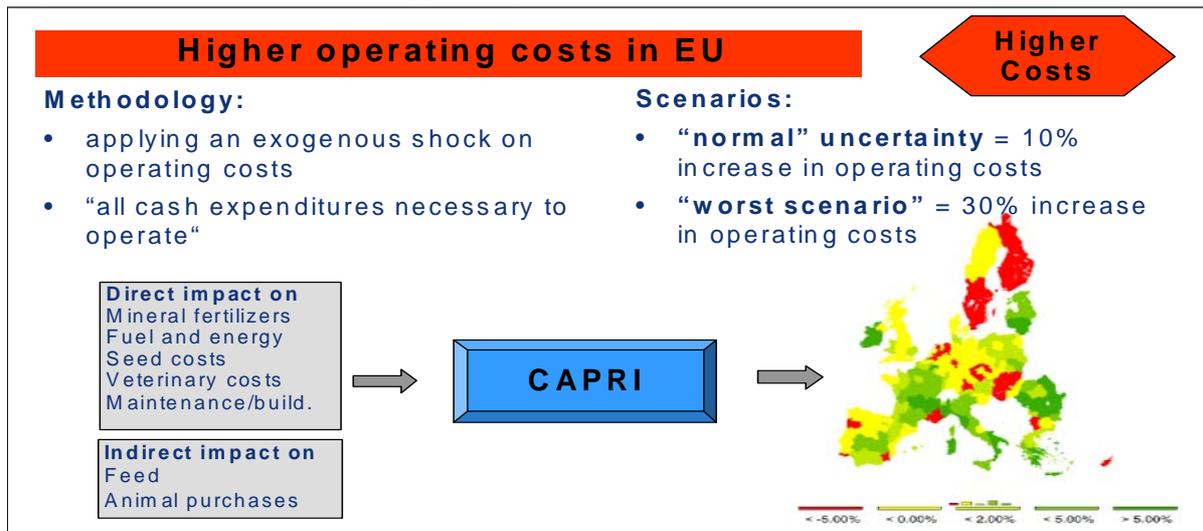
**Figure 4: Overview of the Yield Uncertainty Scenario**

Source: Presentation Londero and M'barek (DG AGRI and JRC-IPTS)

## 2.4 Higher Costs Scenario: Higher operating costs in the EU

In recent years pressure on the agricultural sector particularly increases on the cost side of production. In the EU operating costs increased steadily in nominal terms over the period 2000-2007. The main drivers of the increase depend on the sector, e.g. in the cereal sector the rise was mainly driven by increased costs for fertilisers, machinery, seeds and crop protection.<sup>6</sup> In order to demonstrate the effects of a further increase in operating costs on the results of the agricultural market outlook, two scenarios were conducted with the CAPRI model. In the 'Normal Uncertainty' scenario, operating costs are assumed to increase by 10% and in the 'Worst' scenario by 30% relative to the baseline assumptions. The operating costs directly increased in both scenarios are: mineral fertilizers, fuel and energy, seed costs, veterinary costs, maintenance and buildings. The direct increases in these costs also lead to an indirect increase of the feed and animal purchases costs (with the respective adjustment calculated endogenously by the model). For both scenarios the cost increase was introduced over all agricultural sectors and EU regions (cf. Figure 5).

<sup>6</sup> DG AGRI (2011): Farm Economics brief N°2: EU production costs overview. DG Agriculture & Rural Development, Microeconomic analyses of EU agricultural holdings, Brussels, <http://ec.europa.eu/agriculture/rica/pdf/Brief201102.pdf>

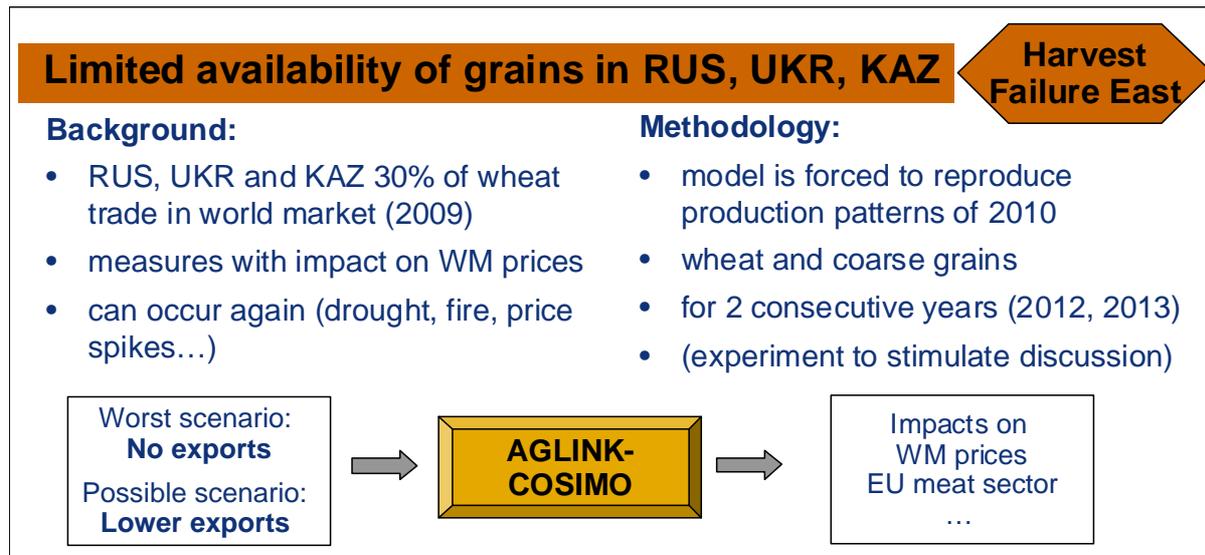
**Figure 5: Overview of the Higher Operating Costs Scenario**

Source: Presentation Londero and M'barek (DG AGRI and JRC-IPTS)

## 2.5 Harvest Failure East Scenario: Limited availability of grains in Russia, Ukraine and Kazakhstan

Russia, Ukraine and Kazakhstan (RUK) are key players on the world markets for cereals, e.g. in 2009 the three countries accounted for about 30% of wheat trade on the world market. However, due to forest fires, record droughts and price pikes, RUK governments feared in recent years that domestic prices for human consumption could rise too much and therefore implemented different measures to restrict grain exports. These measures (export bans, export quotas and export taxes) impacted the world market prices, and demonstrated the importance of these three countries for the international cereal markets. New exceptional events (e.g. droughts) in these three countries could again lead to limited grain availability and thus lower exports.

To depict the possible impacts on the projected agricultural markets in the EU of a limited availability of grains in RUK, two scenarios were analysed. In the ‘worst case’ scenario it is assumed that there are no wheat and coarse grains exports from RUK during two consecutive years (2012 and 2013), whereas in the second ‘possible’ scenario, exports are assumed only to be lower. For this uncertainty analysis the AGLINK-COSIMO model was used (cf. Figure 6).

**Figure 6: Overview of the Harvest Failure East Scenario**

Source: Presentation Londero and M'barek (DG AGRI and JRC-IPTS)

### 3. Macroeconomic assumptions and the impact of related uncertainties for agricultural market developments

Macroeconomic developments (assumptions) can strongly influence the projected developments on agricultural markets. Therefore the first session of the workshop was dedicated to a discussion on the macroeconomic assumptions taken in the EU agricultural outlook and their general implications for agricultural market developments.

Stephan Hubertus Gay (DG AGRI) presented the macroeconomic assumptions used for the EU agricultural outlook and also the aggregated results for income. The draft baseline assumptions on key macroeconomic variables are shown in Table 2.

**Table 2: Draft baseline assumptions on key macroeconomic variable, 2009-2020**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Population growth</b>												
<b>EU27</b>	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%
of which EU15	0.6%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%
of which EU12	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
<b>GDP growth</b>												
<b>EU27</b>	-4.2%	1.8%	1.7%	1.2%	1.8%	2.2%	2.3%	2.1%	2.1%	2.0%	2.0%	2.0%
of which EU15	-4.3%	1.8%	1.6%	1.0%	1.7%	2.0%	2.1%	2.0%	1.9%	1.8%	1.8%	1.8%
of which EU12	-3.6%	2.2%	3.3%	3.2%	3.9%	4.2%	4.3%	4.3%	4.2%	4.1%	4.0%	4.0%
<b>World</b>	-2.1%	4.2%	3.0%	3.4%	3.8%	4.2%	4.2%	4.0%	3.8%	3.8%	3.8%	3.8%
<b>Inflation</b>												
<b>EU27</b>	1.0%	2.1%	2.5%	2.0%	2.0%	2.0%	2.0%	2.0%	1.9%	2.0%	2.0%	1.9%
<b>Exchange rate</b>												
<b>USD/EUR</b>	1.39	1.33	1.43	1.36	1.27	1.32	1.41	1.44	1.46	1.47	1.47	1.48
<b>Price of crude oil</b>												
<b>USD per barrel</b>	61	76	102	107	111	109	107	111	113	114	114	112

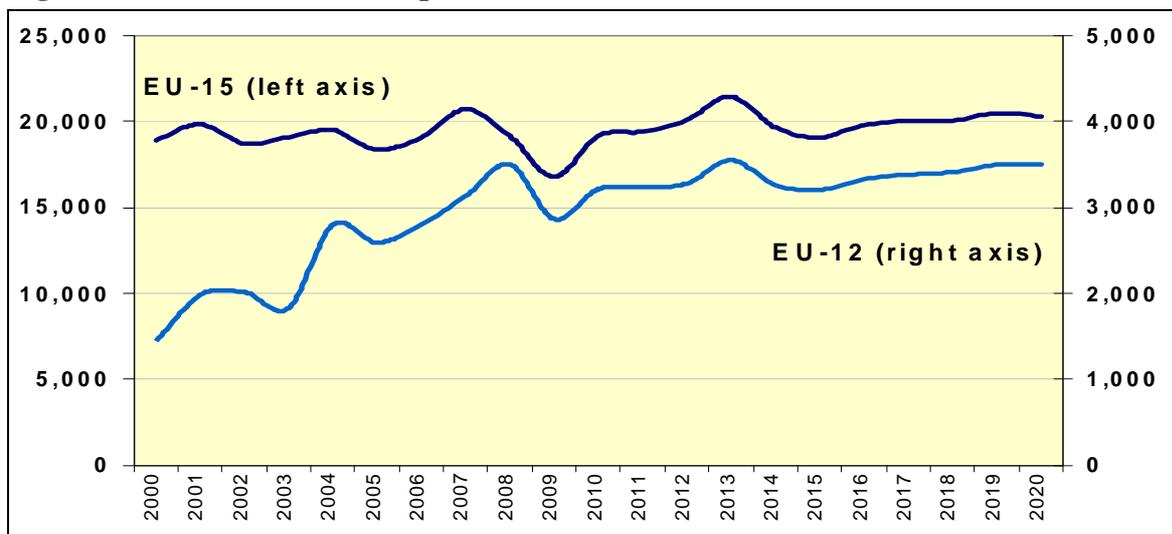
Source: Draft baseline DG AGRI and JRC-IPTS

Gay delineated that the starting point for the Commission projections is the OECD-FAO Agricultural Outlook 2011-2020. Projections for world market prices and also for the

agricultural commodity markets for the rest of the world are taken from this outlook. The EU Short Term Outlook is used as orientation for the first future years. The macroeconomic forecast comes from DG ECFIN for the close future and from other consistent sources for non EU countries and up to 2020.

For the development of agricultural income in the EU, projection results show that real factor income is declining, but increasing per labour unit due to structural change. Agricultural income is projected to grow faster in the EU-12 than in the EU-15, however it remains at a lower level (cf. Figure 7).

**Figure 7: Real factor income per AWU**



Source: Presentation Gay (DG AGRI)

Zebedee Nii-Naate (JRC-IPTS) presented major results of the partial stochastic uncertainty analysis of macroeconomic variables (cf. Chapter 2.1). The partial stochastic simulations were undertaken to examine the range of plausible balance sheet outcomes through a selection of correlated exogenous macroeconomic variables (GDP growth, CPI, GDP deflator, crude oil price and Euro-US Dollar exchange rate). It has to be kept in mind that over the projection period, the 90th and 10th percentiles move further away from the central projection. Hence, uncertainty increases with the projection horizon, i.e. forecast errors are accumulated over time.

With regard to *crude oil prices*, scenario results show that by 2020 the 90th percentile is nearly 220 USD per barrel and the 10th percentile is 60 USD per barrel. By 2020, we see an increasing distribution of possible crude oil prices around the non-stochastic baseline. The

coefficient of variation (CV)<sup>7</sup> is 24%, i.e. there is a large variation in the crude oil price relative to the mean. For the *Euro-US Dollar exchange rate* the variability relative to the mean is less than the one for crude oil prices but is still quite large (10%). The 90th percentile suggests an appreciation of the Euro relative to the US Dollar, i.e. the Euro is less competitive. This leads to larger imports of commodities and lower EU exports and thus a deterioration of the EU net trade position. In contrast, the 10th percentile suggests a depreciation of the Euro relative to the US dollar, i.e. the Euro is more competitive. This leads to smaller imports of commodities from other countries and higher exports from the EU and thus an improvement in EU net trade.

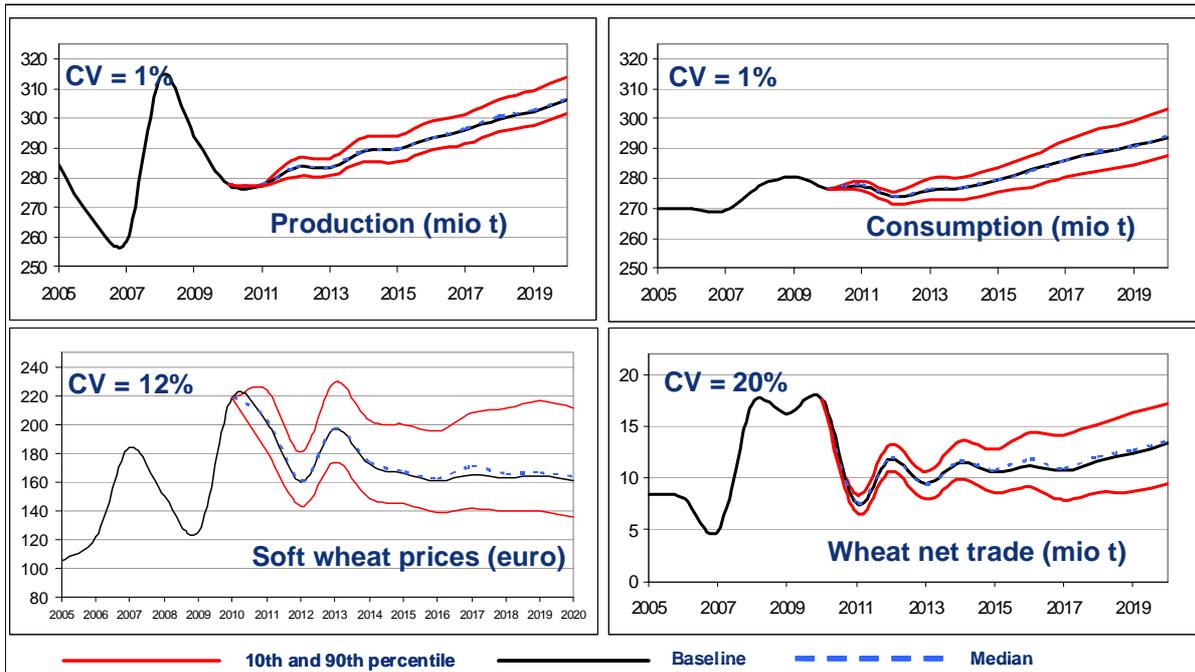
Concerning the *EU Consumer Price Index (CPI)*, the forecast error is relatively small for the EU. Consequently, the 90th and 10th percentiles for the CPI in EU-15 and EU-12 are close to the baseline. However, a larger variability relative to the mean can be observed in EU-12 (CV = 2%) compared to EU-15 (CV = 1%). When producing the deterministic baseline, *GDP growth* is used in the model to determine the increase in food use for each commodity. Results show that the variability relative to the mean is larger for GDP growth than CPI (which is consistent with results of other research) at 4% for the EU-12 and 3% for the EU-15.

Zebedee Nii-Naate also presented some aggregated results highlighting the agricultural commodity markets sensitivity to the uncertainties regarding macroeconomic variables. For the *EU cereals* (wheat and coarse grains), simulation results indicate that production is not particularly affected by the macroeconomic settings(cf. Figure 8). Even with high variability in producer prices, production and consumption vary only by a relatively small amount. In contrast, net trade seems to be more sensitive to the macroeconomic settings, with the variability of wheat net trade being about 20%, which is nearly comparable with the variability of crude oil prices. For EU total meats (beef, pork, poultry and sheep) less variability in projected meat prices and net trade is observed.

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<sup>7</sup> The coefficient of variation (CV) measures the variability relative to the mean. It is defined as the ratio of the average standard deviation of a particular variable (taking values between the 10<sup>th</sup> and 90<sup>th</sup> percentiles, i.e. over the 400 ‘central’ values out of the 500 simulation runs) to the average mean of that variable (also calculated from values between the 90<sup>th</sup> and 10<sup>th</sup> percentile), from 2011 to 2020.

**Figure 8: Macro Uncertainty Scenario: Overview for the EU cereals**



Source: Presentation Nii-Naate (JRC-IPTS). Note: CV = coefficient of variation

Overall, the aggregated results indicate that macroeconomic settings are important for the outcome of the agricultural commodity markets projections. While the settings have only a marginal impact on consumption and production, the partial stochastic analysis reveals significant impacts on projected prices and net trade. Furthermore, the cereal sector as a whole seems to be generally more affected than the total meat sector (nonetheless for certain meats the impact may be more pronounced than for certain cereals).

John Baffes (World Bank) gave a presentation on agriculture and the global economy, where he tried to assess if a new trend in agricultural market developments can be detected or if the latest developments are only a deviation from long term trends. Baffes delineated that energy and metal prices are likely to reach historical highs in 2011 in real terms, and agricultural commodity prices seem to follow this path. When looking at the cause of this increase in prices, it can be noted that most of the conditions for a ‘perfect storm’ are in place: in the past five years all factors moved together in a way that rather explains the high commodity prices observed today. Thus, analysts of the World Bank attribute the rises in agricultural prices to a perfect storm of various factors like poor harvests in various parts of the world (due to an increase in natural disasters), increasing crude oil prices, increasing biofuel usage, decreasing crop yields growth rates, global stock declines of several agricultural commodities, decreasing

interest rates, increasing investment in commodity funds, a depreciation of the US dollar and general changes in the world economy (cf. Table 3).

**Table 3: Factors for a ‘perfect storm’ and their developments**

	2001-05	2006-10	% change
Agricultural prices (nominal index, 2000 = 100)	117	198	+ 69
Grain/oilseed price volatility (stdev of log differences, monthly)	2.3	3.5	+ 52
Crude oil price (US\$/barrel, nominal)	33	75	+ 127
Fertilizer prices (nominal index 2000 = 100)	120	310	+ 157
Exchange rates (US\$ against a broad index of currencies)	119	104	- 13
Interest rates (10-year US Treasury bill)	4.7	4.1	- 14
Funds invested in commodities (\$ billion)	30	230	+ 667
GDP growth (low and middle income countries, % p.a.)	5.0	5.8	+ 16
Industrial production (low and middle income countries, % p.a.)	6.3	7.1	+ 13
Biofuel production (million of barrels per day equivalent)	0.4	1.3	+ 203
Stocks (total of maize, wheat, and rice, months of consumption)	3.2	2.5	- 21
Yields (average of wheat, maize, and rice, tons/hectare)	3.8	4.0	+ 7
Growth in yields (% change per annum, average)	1.4	1.0	- 32
Natural disasters (droughts, floods, and extreme temperatures)	374	441	+ 18

Source: Presentation Baffes (World Bank). Primary sources: Barclays Capital, CRED, FRED, IEA, IMF, USDA, World Bank

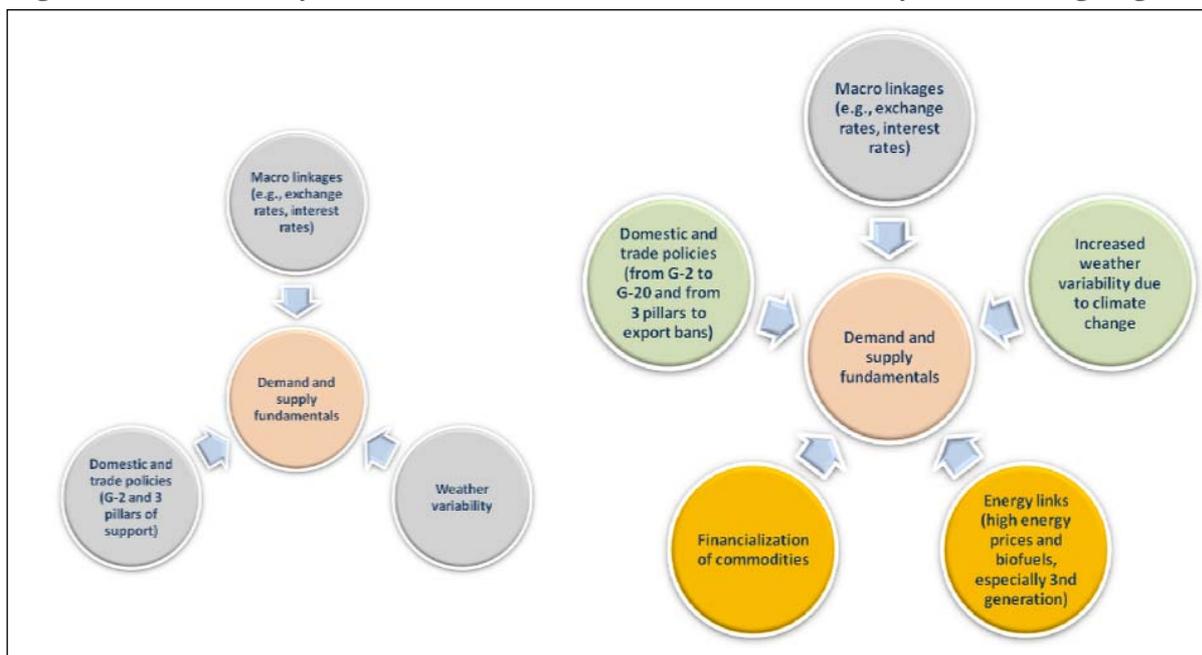
When estimating the impact of specific factors on agricultural market prices, the World Bank assessed in a simple model that oil prices matter most, but also exchange rates and the stock to use ratio drive agricultural commodity prices significantly. Furthermore, Baffes explained that the energy/non-energy link strengthened for all key price indices after 2005. Energy remains one of the key drivers of agricultural prices as agriculture is a rather very energy intensive sector. While the diversion of agricultural feedstock from food to biofuels production is still seen as one reason for increased prices this effect seems to be less than originally thought (the debate used to be heated and highly political, but seems to be less so now). Baffes highlighted also the two longer term issues with regard to biofuels: (a) biofuels will become profitable at current energy prices; (b) 2nd/3rd generations of biofuels may produce energy at much lower costs, thus putting further upward pressure on food prices. Both issues imply that energy prices are likely to set a floor to agricultural prices.

Reflecting on speculation in agricultural commodity markets, Baffes stated that funds invested in commodities (agricultural products, metals, energy) are still increasing and are expected to reach US\$ 430 billion in 2011. Nevertheless, such funds only represent a small fraction of invested assets in investment, pension, and sovereign wealth funds (SWFs) (estimated about US\$ 35-40 trillion). Baffes sees the debate on the speculation effect on agricultural prices increase as being quite heated and highly political, while the empirical evidence being rather weak. However, increasingly more evidence comes in favour of an

impact of speculation on the variability of agricultural commodity prices rather than on their levels.

Summing up, Baffes delineated that agricultural commodity markets might not function in the same way as they did in the past, where the market fundamentals of supply and demand were mainly influenced only by three factors: weather variability, macroeconomic linkages as well as domestic and trade policies. Nowadays, domestic and trade policies become more complex and weather variability increased due to climate change. As new factors, the financialization of commodities and the energy link have to be also taken into account (cf. Figure 9).

**Figure 9: Commodity markets as we knew them (left) and as they are evolving (right)**



Source: Presentation Baffes (World Bank)

Julian Binfield (FAPRI) compared the settings and basic results of the FAPRI and the EC Outlook. The figures Binfield presented for Europe were taken from FAPRI-MU's<sup>8</sup> latest outlook, and thus are not the same as those from FAPRI-ISU<sup>9</sup> which use different models and in 2011 also different world prices. For the FAPRI outlook world prices are taken from the January FAPRI-MU stochastic baseline, and oil prices are taken from Global Insight as provided in January but updated for the short-run. Binfield illustrated that the macroeconomic data used by FAPRI for 2020 does not show significant differences to the ones used in the EC outlook. Most of the results of the commodity market projections are also quite similar, with the exception of rapeseed area, where FAPRI expects more growth due to demand for biofuels. Binfield highlighted that biogas might be a main source of uncertainty for the EU

<sup>8</sup> FAPRI-University of Missouri–Columbia

<sup>9</sup> FAPRI-Iowa State University

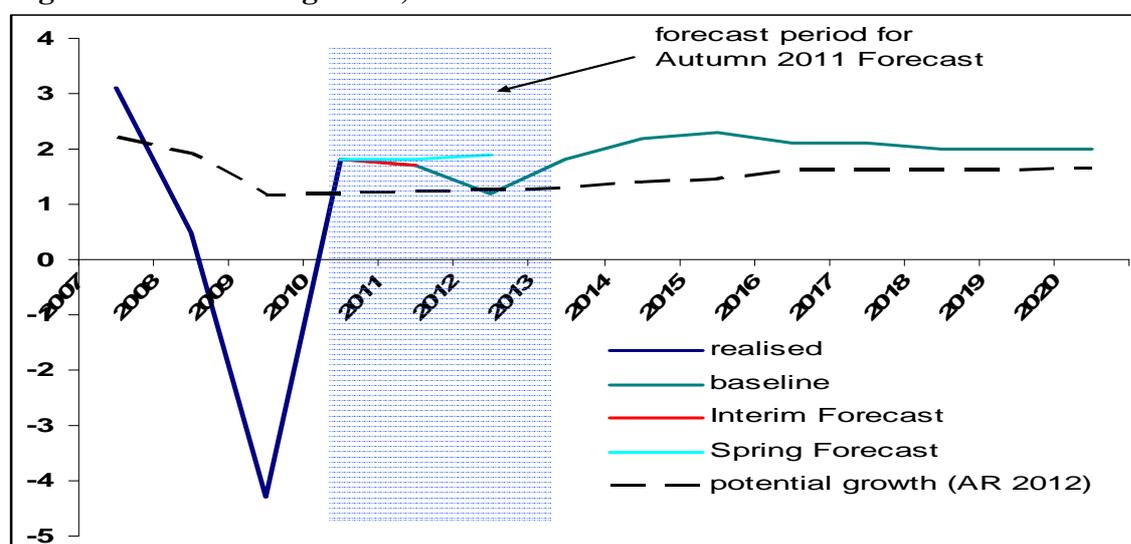
projections, as it already plays an important role in Germany (silage maize) and might also gain importance in other parts of Europe. However, producing biogas needs investment, and this may be difficult to get in the context of the current financial and economic environment. As major source of uncertainty Binfield highlighted biofuels. The demand for biofuels is strongly correlated to the crude oil price, and while with low crude oil prices renewable energy mandates and standards are binding, with rising oil prices biofuel production could go beyond the blending mandates in the US and in the EU. Reflecting further on biofuels, Binfield questioned that it will be possible that consumption of ethanol is above consumption of biodiesel in the EU market projections. As sustainability requirements could constrain the import of potential feedstocks, and with the EU looking for about 6 billion extra litres and the US for about 15 billion litres, the question is where that ethanol would come from.

William Liefert (USDA-ERS) focused his contribution to the panel discussion on the impact of exchange rates on world agricultural markets, especially by drawing on the example of Russia. Between 2000 and 2010, Russian agricultural imports have grown in both value and volume. The import growth has made Russia the second largest agricultural importer among emerging markets, after China, with main imports being meat, highly processed products, fruits, and vegetables. During the same period, Russia's agricultural exports have also grown, however from a much lower base in value terms (and with most of the increase coming from grains). Liefert explained that there are two main macroeconomic causes for the rise in Russia's agricultural imports during the 2000s. The first is high GDP growth, which increased consumer income and demand for food (although to the benefit of both foreign suppliers as well as domestic producers); the second is a major real appreciation of the Russian Ruble compared to foreign currencies. Liefert delineated that a change in the real value of a currency takes into account not only movement in the currency's nominal exchange rate, but also the difference in price inflation between the country in question and its trading partners. Thus, the real exchange rate captures all the main variables that affect the price competitiveness of a country's domestically produced tradable goods compared to foreign products. The reason for the Rubles appreciation in real terms since 2000 is that the relatively high inflation in Russia has exceeded the nominal depreciation of the Ruble. This development improved the price competitiveness of imports into Russia relative to domestic goods. Usually, if a country has high inflation, its currency depreciates in nominal terms, which makes the foreign currency more expensive in terms of domestic currency and hence makes all foreign goods more expensive for the country's consumers, i.e. improving the price competitiveness of

domestically produced goods compared to foreign goods. However, since 2000, the Russian Ruble was fairly stable and has not depreciated nominally against the U.S. dollar, the Euro and other major currencies to correct for Russia's much greater inflation.

Björn Döhring (DG ECFIN) gave a brief overview on recent developments and a short-term outlook for the EU economy. Within the EU-27, recovery of GDP growth is rather slow and the picture for the next year is seen as rather bleak. DG ECFIN forecasts currently a lower GDP growth for the EU in the short- and medium-term than this was assumed for the draft EC agricultural markets outlook (cf. Figure 10).

**Figure 10: Real GDP growth, EU-27**



Source: Presentation Döhring (DG ECFIN). Note: AR 2012 refers to the 2012 Ageing Report of DG ECFIN

In order to address the question where the EU currently stands with its economic recovery, Döhring explained some features of the subdued “post-financial-crisis” growth in the EU. He stressed some sectoral adjustment needs, the need for deleveraging (debt reduction), and a damaged growth potential with a higher NAIRU (Non-Accelerating Inflation Rate of Unemployment, i.e. a higher level of unemployment below which inflation rises). Furthermore, Döhring pointed out that a multi-speed economic recovery within the EU can be expected. Economic improvement has also weakened outside the EU, with a softening of the recovery in the US and a moderated growth in emerging markets economies. With regard to world trade, stagnation could be observed during summer 2011 as dynamics in GDP strongly influence world trade.

According to DG ECFIN calculations, commodity prices are assumed to have peaked, which would be good news for the consumers. However, the sovereign debt crisis deepened and spilled over, which bears the risk of further credit constraints. In general, credit growth

remains weak with banks tightening the credit conditions (which is also due to pressure from the institutional side, e.g. Basel III). While actually a “broadening of the recovery” was expected, this seems to be put on hold. Leading indicators like the Economic Sentiment Indicator and the Purchasing Managers Index have deteriorated sharply, as for example firms postpone investments because they are uncertain about the growth perspective. With numerous factors indicating downward pressure for economic growth, recent economic forecasts saw a cycle of downward revisions, and latest forecasts of both ECB and IMF expect a decline in real GDP growth for the Euro area in 2012 compared to 2011.

In a further contribution to the panel discussion, Eckhard Wurzel (OECD Economics Department) presented a similar picture as given by Björn Döhring before. Wurzel outlined that the two most recent negative events, namely the European debt crisis and the debt ceiling in the USA, led to a reassessment of the state of the world economy. The risk awareness in the commodity markets increased, a tendency that can be observed as well in the capital markets. Moreover, business surveys also point to a much weaker outlook for economic development. Altogether, Wurzel sees a general change in the awareness and mood of market participants, which seems to be something deeper with profound impacts on the markets.

Josef Schmidhuber (FAO) pointed out that the macroeconomic assumptions underlying the projections for the EU agricultural markets rather take a business as usual approach. However, the underlying assumptions are quite uncertain as there is brace for macroeconomic volatility on all fronts: GDP growth, inflation, exchange rates in the USA, the EU and the BRICS countries (Brazil, Russia, India and China). On the other hand the relative importance of the macroeconomic variables is rather unclear; however the energy sector and exchange rates seem to play an important role for the developments on agricultural commodity markets. To get a better picture stochastic simulations are needed, and in this sense the partial stochastic analysis done within the uncertainty assessment of the EC outlook seems to be already a beneficial step. However, with growing income disparity Schmidhuber sees also a need for a more disaggregated picture for GDP growth. Food demand has become rather income inelastic in general. But as income disparities are rising and as income growth in different income strata evolves differently, an average GDP growth assumption applied to one consumer segment may not appropriately capture likely changes in food consumption due to a rise in GDP.

In the general discussion the outlook assumptions of a rather quick return to a stable economic growth path along the lines of the previous decade has been challenged. Some experts are less positive about the assumed positive macroeconomic environment. Especially further financial market tensions and a stronger short-run impact of fiscal consolidation are expected. Therefore, experts assume a rather longer and more difficult period of adjustment in the macroeconomic environment. This would imply also downside effects on the outlook for agricultural commodity markets.

There was consent that oil prices are important for the developments in the agricultural commodity markets, especially in the context of biofuels. However, as an additional issue in this context it was pointed out that huge oil reserves were discovered in Brazil, and Brazil will soon become a net exporter for oil. It is unclear what effects this might have on ethanol markets, but in any case Brazil will be more flexible in the future and could export ethanol to the EU without the need to expand the respective sugarcane area for production. This increased flexibility for Brazil with regard to ethanol may not only impact developments in the biofuels markets but also the markets for cereals and oilseeds, with respective spillover effects for livestock production.

As the developments of macroeconomic variables are rather uncertain and may differ from the assumptions taken for the baseline exercise, it is difficult to depict their impact on the future developments in agricultural commodity markets. Therefore the partial stochastic analysis of macroeconomic variables in the context of the uncertainty analyses on the EC outlook was appreciated by the workshop participants, as this helps to highlight and better understand the sensitivity of the baseline results to the related uncertainties.

#### **4. Drivers of supply and demand for meat markets and related uncertainties**

The preliminary results of the European Commission's outlook on meat markets were presented by Edit Konya (DG AGRI). The world market perspectives are driven by bullish demand and show that the aggregated world demand for meat is projected to recover from the setback caused by the economic crisis. The assumed macroeconomic environment has a mixed impact on the meat market prospects. On the one hand, macroeconomic assumptions suggest a weakening export potential when the Euro strengthens against the US Dollar over the outlook (from 2013 onwards). Furthermore, the gradual increase of the crude oil price has

to be taken into account, as this has impacts on input costs (energy, fertilizers and feed costs). On the other hand, there is the economic recovery and the population growth, both implying improved prospects for total meat consumption in the EU. The status quo policy assumptions for the outlook imply a continuation of the restructuring process of sheep, goat and cattle herds already induced in the past by the decoupling of direct payments. Beef production could be indirectly impacted by the phasing out and abolition of the milk quota system, as this may have an impact on the dairy cow herd.

In general the EU meat commodity markets show a mixed picture, with a relatively favourable outlook for non-ruminants on the one hand and a continuing decline in the production of beef and sheep meat on the other hand. Results for the aggregated meat consumption (kg/capita) show that on a per capita basis EU meat consumption would be more or less at the same level in 2020 as it was in 2010 (i.e. around 83 kg). Poultry meat consumption is projected to increase most, by more than 4%, while growth in pig meat consumption would remain below 3% on aggregate between 2010 and 2020. Nevertheless, pig meat would remain the most preferred meat in the EU at 41.2 kg/capita in 2020, compared to 23.6 kg for poultry, 15.8 kg for beef and veal and 2 kg for sheep and goat meat. Projection results also show that consumption would grow faster in the EU-12, but total per capita meat consumption at 84.4 kg would remain higher in the EU-15 than in the EU-12 with 75.4 kg in 2020. Overall meat production is driven by increasing poultry and pig meat consumption. While both pig and poultry meat production is projected to increase by 3% and 4% respectively, beef (-2%) and sheep meat (-8%) production is assumed to continue its declining trend by 2020. Figure 11 shows the change in meat production between 2010 and 2020 per commodity.

**Figure 11: Change in EU-27 production (2020/2010), in % and thousand tonnes c.w.e.**



Source: Presentation Konya (DG AGRI)

In the *beef market*, demand for beef and veal meat is projected to slightly decrease further by -1.1% over the projection period. This implies that per capita consumption will be reduced by more than 3% less than the level reached in 2010. Beef exports (namely fresh and frozen meat) have increased significantly during 2010 and 2011, especially due to an increase in exports to Turkey and Russia. As a consequence, the EU has become a net beef meat exporter in 2011, also by taking advantage of decreasing imports from South American beef producers. However, it is assumed that the EU will not remain a net exporter but come back to a net import situation at a level similar to 2010. Following the current situation of tight world beef supplies, the EU beef imports are projected to increase slightly by 2020, albeit at levels considerably below the high of 2007.

For the *pig meat market*, world demand for pork is projected to increase, with consumption increasing by 8.6% at global level, and by 2.5% in the EU-27. However, per capita consumption in the EU would remain at the same level until 2020. Even though total EU pig population is decreasing, higher productivity and concentration and further structural changes in the sector will result in a net production increase. At present, trade with third countries shows a strong export performance due to the high demand from Russia and major markets in Far East (South Korea, Hong Kong). However, pig meat exports may decrease in the next couple of years due a contraction in exports to Far East and therefore EU exports are projected to be at a similar level in 2020 as in 2010.

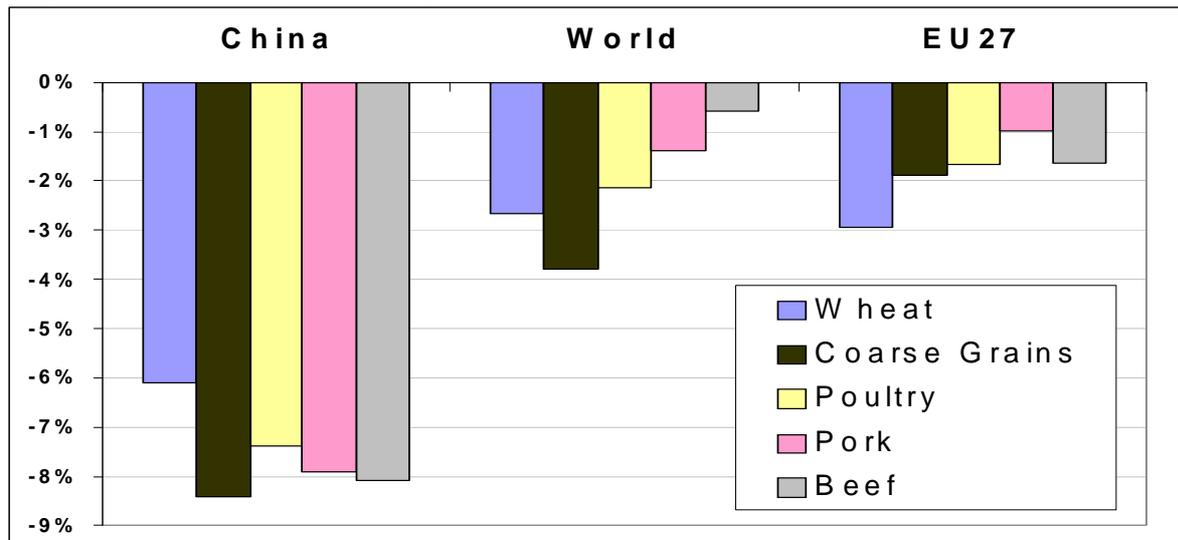
World demand for *poultry meat* is growing, which could be a long term tendency from which the EU could take advantage. In addition, chicken is expected to continue benefiting from its image as being ‘good value and healthy’. With domestic demand also being high, total EU poultry meat consumption is expected to increase as well as production. EU trade in poultry meat shows a stable situation with strong export performance due to demand from Asia, Africa and the Middle-East. However, in the medium-term a strengthening of the Euro could result in a decrease in exports in 2020 below the 2010 level by 2%. Overall imports of poultry meat into the EU show a decrease in the medium term by -1.4% in 2020.

*Sheep and goat meat* production is projected to further decline. With demand for sheep and goat meat projected to further contract, the overall consumption is decreasing by 4% by 2020. Given that New Zealand would recover from the 2008/2009 droughts and poor lambing years, and import quotas would be filled, imports of sheep meat are projected to increase by 11% in 2020 in comparison to 2010.

Emanuele Ferrari (JRC-IPTS) presented the major results of the uncertainty analyses for the EU meat sector. In the Harvest Failure East Scenario (cf. Chapter 2.5) lower or missing wheat and coarse grains exports from Russia, Ukraine and Kazakhstan would lead to lower world grain availability, and thus higher grain prices and higher feed cost. This would have an adverse effect on EU meat production, implying a loss of EU competitiveness relative to competitors with feeding systems based on grass (e.g. Brazil). The net trade position of the EU would deteriorate, with beef trade being affected most.

For the Higher Costs Scenario (cf. Chapter 2.4), Ferrari reflected specifically on the effects in the pig meat sector. Regarding pig fattening, higher fertilizer, energy, seed, veterinary and maintenance costs would affect feed and animal purchase costs only indirectly. Thus, the effects on total production costs in livestock farming are mainly secondary effects and are smaller compared to the effects in the cereals and oilseeds sectors. A 10% increase in the costs listed above would imply only a 2% increase of total pig costs on EU-27 average, with the cost increase being around 2-2.5% in most EU regions, and always below 5%. In the 30% increase scenario, a similar regional pattern in the EU can be observed, but effects are larger, with total pig costs increasing in the EU-27 by 6% on average and above 10% in very few EU regions. Regarding the change in gross value added per animal, scenario results indicate that in many regions higher operating costs are compensated by higher revenues (i.e. the higher prices resulting from the decrease in production level out the increase in operating costs. As a result, the gross value added remains stable on EU-27 average in the 10% increase scenario.

Results of the Slower Growth China Scenario (cf. Chapter 2.2) show bigger effects of a slower economic growth in China on the EU prices for wheat and coarse grains than on meat prices. Nevertheless, EU prices for poultry and beef meat would decrease by about -1.5% and for pork by about -1% (cf. Figure 12). Due to the downward pressure on wheat and coarse grain prices, aggregated feed costs are projected to decline by about -2.5%. While the EU could slightly improve its net trade position for pork and beef, poultry trade would be negatively affected by the slower economic growth in China.

**Figure 12: Selected price changes in the Slower Growth China Scenario (2020/2010)**

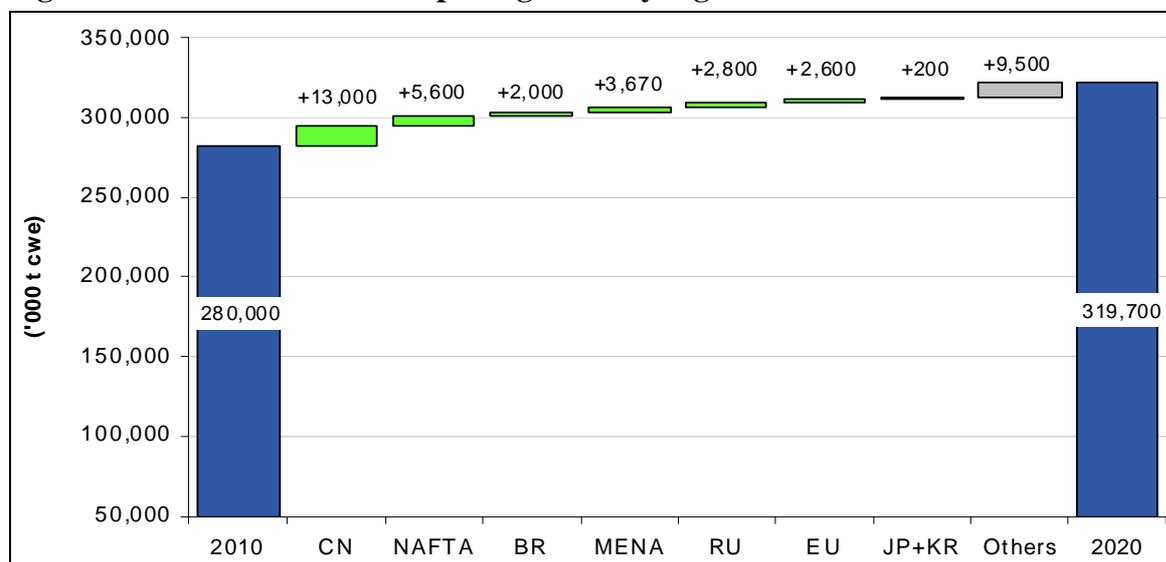
Source: Presentation Ferrari and H elaine (JRC-IPTS)

In the Macro Uncertainty Scenario (cf. Chapter 2.1), the EU trade for meat varies significantly, given that trade flows are highly sensitive to the macroeconomic assumptions especially with respect to exchange rates. The EU remains a net exporter of beef meat and live animals until 2015, regardless of what the macroeconomic uncertainty is. On the other hand, in 2020 the EU is a net importer of beef in 50% of the simulations. For poultry, imports are limited by the tariff rate quota (TRQ) of 856 thousand tonnes which is fulfilled at 90% in 50% of the simulations. Exports of EU low quality poultry are much more sensitive to the macroeconomic uncertainty. The range of exports around the median is widening on the projection period, being 600 thousand tonnes in 2020 for 80% of the simulations. For pig meat the variability is less than for the other meats and the EU keeps its export position in all simulations.

In the panel discussion Richard Brown (GIRA Consulting) reflected on the results of the EC outlook based on Gira's long term strategic trends in world meat markets. Global meat demand has increased impressively and is recovering from the 2009 downturn, with demand in 2011 increasing more than was predicted. Furthermore, world meat expenditure still shows positive trends. According to Gira, global meat consumption continues to grow, pulled mainly by per capita demand in emerging markets. Between 2010 and 2020 global meat consumption would grow by about 40 million tonnes (+14%), which would be less than in the previous decade, but could be seen as a good recovery from the 2009 credit crunch. Due to relative price and production complexities poultry is foreseen to continue closing the gap on pig meat. Beef and sheep meat grow very slowly, due to poor efficiencies and high costs. The global

growth in meat consumption is seen as quite broadly based (China, South East Asia, Russia, Middle East and North Africa, South America), with Chinese growth being less dominant than in the past. Overall, global meat demand is forecasted by Gira to experience a higher increase than is projected in the EC outlook (cf. Figure 13).

**Figure 13: Global meat consumption growth by region 2010-2020**



Source: Presentation Brown (Gira); primary source: Gira Long-Term Meat Study

The positive meat forecast of Gira is based on a remarkably good recovery from the 2009 demand downturn and a modest further meat consumption growth. With rising disposable income Gira expects especially more growth for EU-12. Pig meat and poultry seem to be favoured by consumers because they are ‘cheaper, quicker and convenient’. Gira expects also more meat imports than projected in the preliminary EU outlook as a consequence of WTO and bilateral Free Trade Agreements. Meat expenditure within the EU shows an increasing trend in real terms, and this is likely to continue due to high costs and tighter global supply. The world meat price index and the EU meat prices show a rising trend in real terms, which Gira forecasts at a higher rate than the EC projection results.

Discussing specifically the prospects for the beef market, Philippe Chotteau (Institut de l’Elevage) was less optimistic than the other speakers. Chotteau explained that for production the cows herd is the key factor. However, latest prospects show a reduction of 8.7% for the dairy herd, which translates into a reduction of about 2 million cows in 2020 compared to 2010. Having this in mind the EC preliminary outlook seems to be rather optimistic with regard to beef production, as results show only a reduction of 1.6% by 2020 (compared to -6.7% as given in the 2010 EC Outlook). Chotteau further delineated that he doubts that

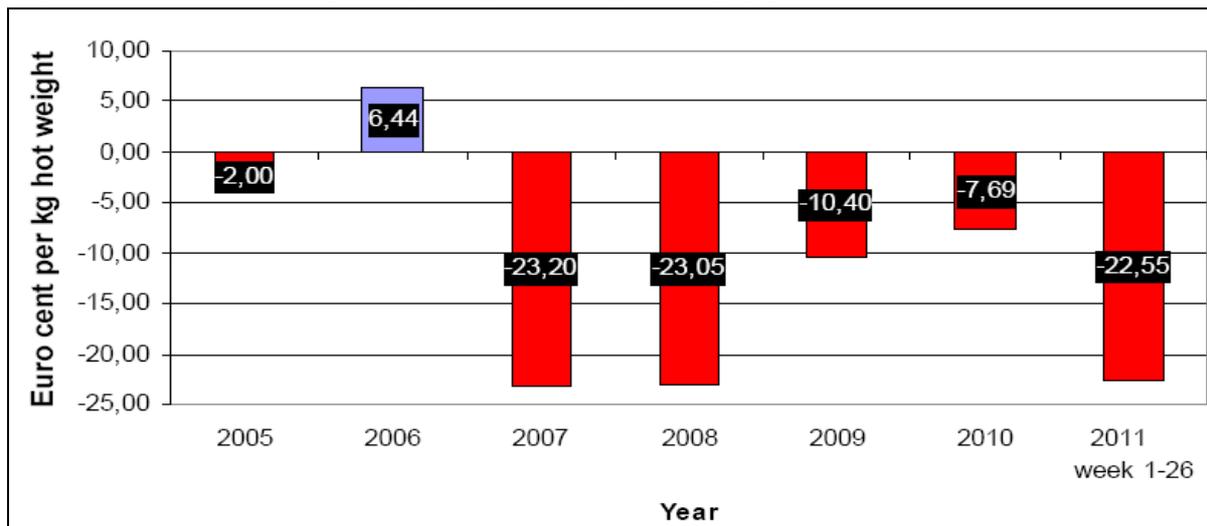
production will be backed up by an increase in suckler cow herds. Despite herds have been stabilised in the EU in the last 10 years, decapitalisation is likely to occur in the next few years, especially in France, Ireland, Belgium, Italy, and probably also in Spain, because suckler cows suffer from a lack of profitability compared to dairy cows or crops.

With regard to export supply and world market prices Chotteau pointed out that Brazil will play a major role. Profitability of EU beef production seems to be rather weak, with for example the French beef cost of production global index (IPAMPA) being still at an historical peak. Furthermore, according to Agribenchmark network data the gap in production costs between Brazilian and European beef farmers (breeders or fatteners) is still between 1:2 to 1:2.5. Chotteau also argued that the EC outlook for beef demand in the EU seems to be rather optimistic. This is especially true when keeping in mind that in times of economic crisis beef demand is very sensitive to prices, mainly for mince or burgers which represent a great and still growing share of the market, e.g. 50% in the UK (45% in 2006) and 1/3 in France (+20% since 2003).

Sune Jin Christensen (Danish Meat Association) discussed the pig meat market and outlined that the global production in pig meat is continually rising (with 83.3 million tonnes in 1999, 98.8 million tonnes in 2010 and a forecasted 100.9 million tonnes in 2011). The largest share in global production is held by China (about 51%), followed by the EU (23%) and the USA (10%). As drivers for global pig meat demand, Christensen pointed out the significant importance of imports from China, Japan, the USA and Russia. Commenting specifically on China, Christensen highlighted the increase in per capita consumption in this country (19.7 kg/capita in 1990 compared to 39.3 kg/capita in 2011). With a domestic production in China also increasing (even though a lot of the production is still backyard), there is an increasing need for imported feed, which results in greater worldwide competition for feed stuff. In the long run, Christensen recalled the increased demand for food (meat) due to the general growth in global population and more specifically due to the growth in the middle/upper-class. In summary for the world market, Christensen concluded that global consumption in pig meat will continue to grow and importing countries will remain the same. However there are several uncertainties that may alter the production level among key players such as: developments in exchange rates and the general economic conjuncture, consumer preferences, different legislations (e.g. related to welfare or environment), feed availability, diseases and food scandals and also the impact of bilateral free trade agreements and the ongoing WTO negotiations.

Commenting on the specific situation on the pig market in the EU, Christensen highlighted that EU pig meat production has increased in total by only 1% since 2006 and that EU pig producers have actually experienced losses for a five year period (cf. Figure 14). Due to the negative margins in pig production for five consecutive years and problems to get financing from banks and financial institutions a decrease in EU pig production could be expected in 2012.

**Figure 14: Profitability per kg slaughter weight EU pig producers**



Source: Presentation Christensen (Danish Meat Association); primary source: Interpig and L&F Estimates

In the open discussion it was stressed that a number of factors are influencing the market perspectives for meat, especially the general economic environment and the global market context. Part of the discussion specifically focused on the developments in China. Even though meat production in China is still mainly based on backyard production, a steady move to more organised production can be observed. If this trend continues (which is expected) then competition for feed stuff will certainly increase on the world market and the striking question might be ‘how to feed the animals’ rather than ‘how to feed the people’. On the other hand it was also stressed that feed conversion in China is rather low and it might be cheaper and hence likely that specific meat production is set up outside China in order to satisfy the Chinese market (thus China might import the meat instead of feed for the animals).

Reflecting on meat prices, it was discussed if the rather flat development of EU meat prices as projected in the EC preliminary outlook is consistent with the positive picture that panel discussants gave with respect to increasing global meat demand. Some of the participants are indeed more optimistic on price developments. Conversely, some of the workshop participants see that demand growth for meat will in general rather slow down as there are

alimentary limits to meat consumption. Such a slowdown in consumption would have an adverse effect on prices. It was also pointed out that the recent rise in EU beef prices was only due to exceptional export levels.

Uncertainty for livestock production could arise if countries would implement specific policies to restrict agricultural greenhouse gas (GHG) emissions in the context of climate change. This is expected to impact specifically ruminants, however would on the global level also depend on which countries would implement GHG mitigation measures. Unilateral commitments would certainly lead to shifts in world meat production, with adverse effects on the GHG abatement efforts at a global level.

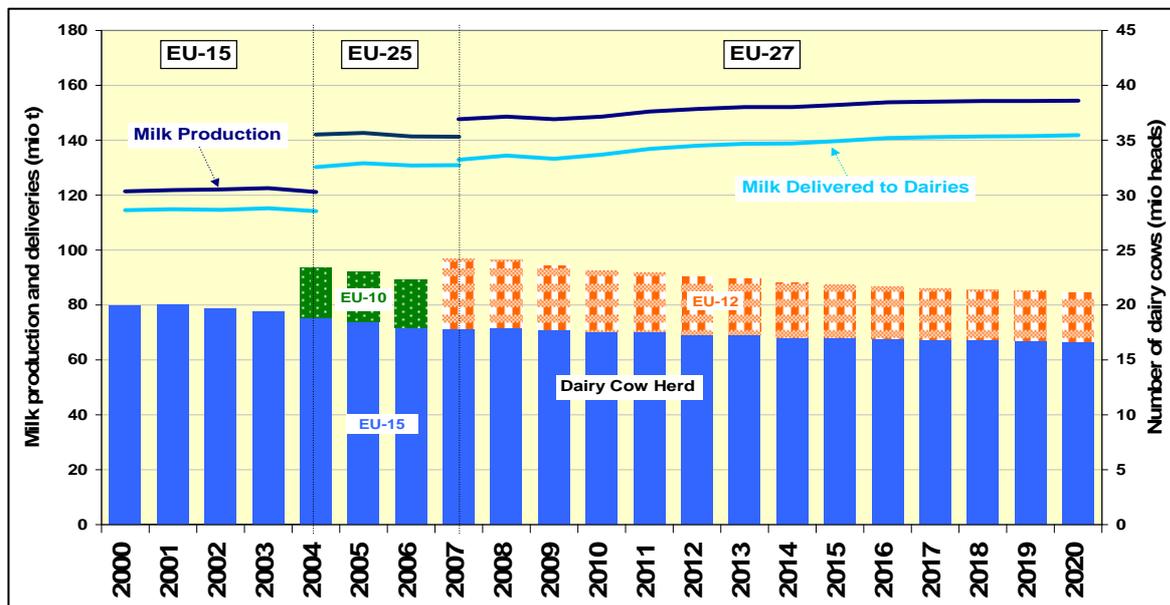
## **5. Drivers of supply and demand for milk and dairy markets and related uncertainties**

Beatriz Velazquez (DG AGRI) presented the preliminary outlook results for the dairy markets. In the medium term, perspectives for the dairy markets are favourable. With continued expansion of world demand EU exports will increase (but market shares decrease, as the Euro strengthens and world exports increase at a higher rate) and this will also support producers' gross margins (mainly due to increasing cheese and powder prices, and stable cereal prices). However, the dairy market perspectives are particularly sensitive to economic developments. The potential for further demand growth (mainly in emerging countries) remains the key driver for medium- to long-term market prospects, facilitated by economic growth, increasing population as well as continued preference towards dairy consumption.

Cow milk production in the EU is projected to continue increasing from 2011 onwards. However the increase will be at a moderate growth rate and production will remain below the possible augmentation provided by the gradual elimination of the milk quota regime. EU milk production is projected to reach 154.4 million tonnes in 2020 (i.e. a cumulative increase of 4% compared to 2010). The overall increase in milk production is mainly driven by a continued increase in the average yield per dairy cow, which is projected to reach about 7 300 kg by 2020 (i.e. a cumulative increase of about 14%). At the same time, the EU dairy herd is projected to decrease by almost 9% to the level of 21 million animals in 2020 (cf. Figure 15). Due to continuous restructuring of milk production the decrease in dairy cows is more pronounced in the EU-12 (-18%) than in the EU-15 (-5%), while at the same time the average yield per cow is also projected to grow more in the EU-12 (+21%) than in the EU-15

(+12%). Notwithstanding, average cow productivity in the EU-15 (7 700 kg) would remain well above the average cow productivity in the EU-12 (5 900 kg).

**Figure 15: Milk production, deliveries and number of dairy cows in the EU**



Source: Presentation Velazquez (DG AGRI)

For the *cheese market* the medium-term projections are fuelled by growth in demand at both domestic and world level. During the outlook period EU consumption depicts a return to the growth trend observed prior to 2007, albeit at a much lower rate, as consumer prices would remain at relatively elevated levels. Cheese consumption per capita is projected to reach 17.4 kg in 2020 (i.e. +7% compared to 2010). The positive domestic consumption projection derives mainly from an increase in per capita consumption in the EU-12. Cheese production is projected to grow by 10% between 2010 and 2020. Substantial demand from the main cheese importers (Russia, Japan, USA, etc.) will allow for a progressive increase of EU exports to reach 754 thousand tonnes in 2020. However, the EU will gradually lose world market share, but will still remain at around 28% of global exports in 2020.

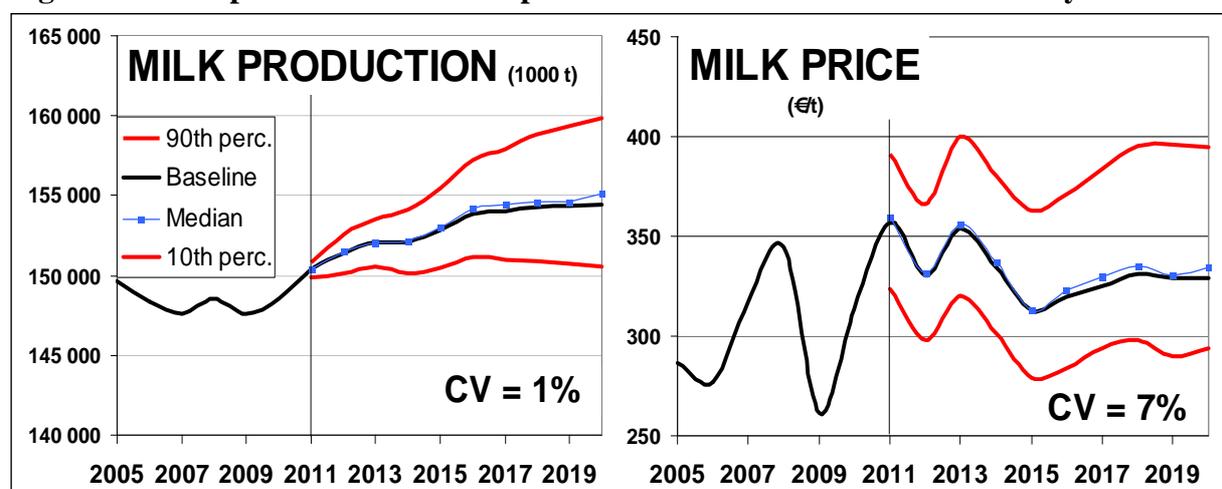
The *SMP market* is projected to be balanced through exports. In 2010 and 2011 market conditions have been quite favourable due to strong demand on the world market, with China gradually becoming an important player in world SMP imports. The further perspective for EU SMP exports are favourable, but the EU will see a deterioration of its world market share, which will remain at around 23% of global exports in 2020. SMP intervention stocks built up in 2009 are expected to be completely eliminated by the end of 2012 through a combination of sales by open tender and release under the food programme for the most deprived persons. In addition, with an assumed increase in world prices EU production is projected to increase by almost 10% throughout the projection period to reach 996 thousand tonnes in 2020. On the

other hand, prospects for domestic SMP consumption are quite weak, with consumption projected to decline -1% in 2020 compared to 2010.

In the *butter market*, total EU butter production is projected to slightly increase by 0.7% between 2010 and 2020, indicating a stable butter market, with a solid EU demand at about 2 million tonnes. Projections for butter exports are less favourable, given the assumed strengthening of the Euro and increasing supply from other exporting countries. For the *WMP market*, production is projected to recover from recent contractions due to good market conditions, leading to a production increase in the EU of 8.5% by 2020 in comparison to 2010. EU WMP exports are projected to increase by about 10% due to increasing world demand, led by China.

The uncertainty analyses on the dairy baseline projections were presented by Sophie H elaine (JRC-IPTS). Results of the Macro Uncertainty Scenario (cf. Chapter 2.1) show that the EU milk projections are quite sensitive to the macroeconomic uncertainties. Macroeconomic uncertainties imply that the 10<sup>th</sup> and the 90<sup>th</sup> percentiles of the EU milk production are higher or lower by 5 million tonnes than the non-stochastic baseline in 2020. The milk producer price also shows a very high variability due to the macroeconomic uncertainties. For dairy products the world price in Euro varies much more than the world price in USD and this variability, mainly linked to the uncertainties on the  /USD exchange rate, is transmitted to the European market (cf. Figure 16). Trade flows are also highly sensitive to the macroeconomic assumptions, with for example the variability of SMP net trade being 14% relative to the mean.

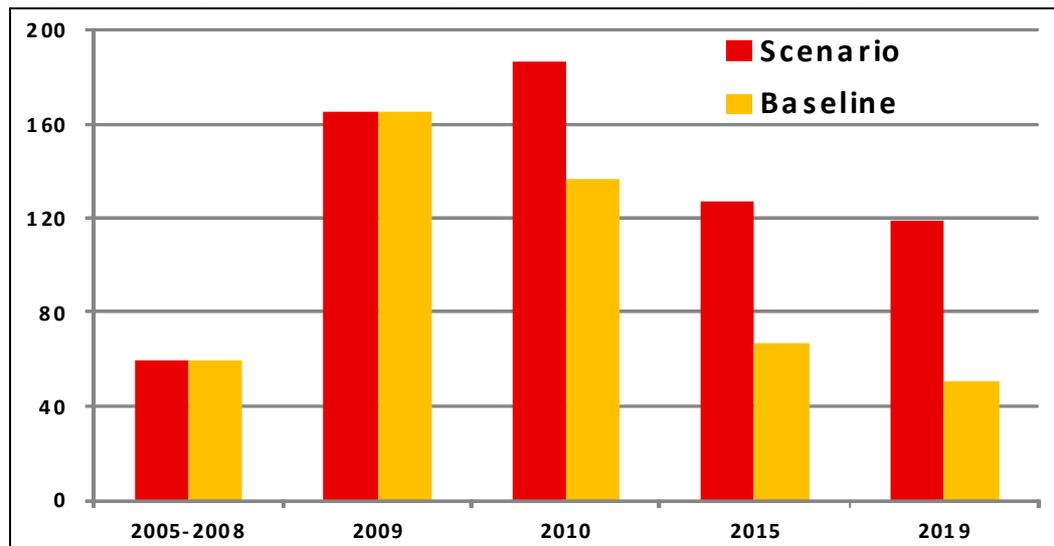
**Figure 16: Milk production and milk price variation in the Macro Uncertainty Scenario**



Source: Presentation H elaine (JRC-IPTS). Note: CV = coefficient of variation

In the Harvest Failure East Scenario (cf. Chapter 2.5) lower or no exports of wheat and coarse grains from Russia, Ukraine and Kazakhstan would lead to higher feed costs, inducing a price increase for butter, cheese and SMP in 2013 while at the same time the respective EU exports would contract. In the Higher Cost Scenario (cf. Chapter 2.4) the feed and animal purchase costs are affected only indirectly. Therefore a 10% increase in operating costs (fertilisers, energy, maintenance, and veterinary) implies on average only a 2% increase of total dairy costs in the EU-27. In certain regions (Scandinavia, Eastern Germany, South England) the costs increase by more than 4%. In the 30% scenario similar regional pattern can be observed, but effects are larger with costs per animal increasing by 7% in the EU-27. Higher operating costs imply lower margins and thus a decrease in production which then results in higher producer prices. Due to higher producer prices the EU is less competitive on the world market which has deteriorating effects on the EU net trade position. However, with regard to income per animal, income in the EU-12 would increase because operating costs are relatively low in the EU-12 and thus the higher costs are more than compensated by higher revenues. The same effect can generally be observed in regions where the feed system is mainly based on grass. In the 30% scenario, effects are generally larger, with an overall income decrease per animal of 1% in the EU-27.

In the panel discussion Pavel Vavra (OECD) pointed out the following factors as key market drivers in the milk and dairy sector: demand growth (especially in developing countries), convergence in consumption patterns, increased health and nutrition concerns, supply adjustment to higher production costs and international investment. As key uncertainties he identified weather, the general macroeconomic environment, developments in domestic policies, the outcome of the ongoing WTO negotiations as well as consumer confidence and milk products competitiveness. Furthermore the magnitude of potential Chinese imports remains an important uncertainty, as especially the exchange rates of the Yuan make an important difference to projection results (cf. Figure 17). With respect to the preliminary results of the EC outlook for the milk and dairy sector, Vavra questioned the results on EU milk production, as they seem to be rather pessimistic especially in the light of milk quota abolishment. Indeed some Member States may increase production and the delivery ratio in the EU-12 could improve more.

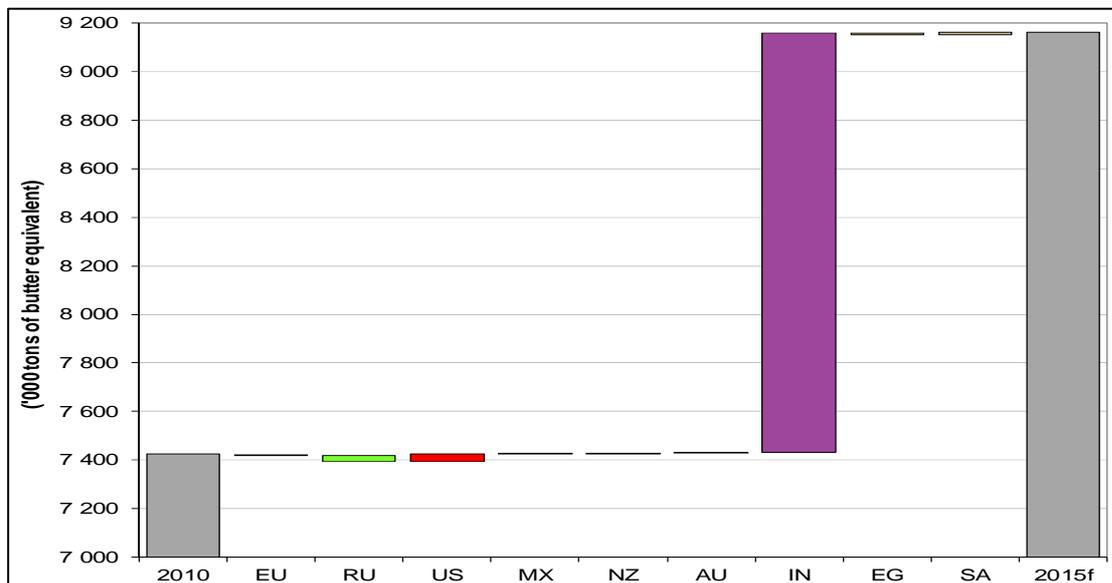
**Figure 17: Impact of 10% stronger Yuan on Chinese WMP imports (thousand tonnes)**

Source: Presentation Vavra (OECD)

Christophe Lafougère (GIRA Consulting) focused on the main differences between the preliminary outlook results of the Commission and the forecasts of Gira up to 2015. With regard to total milk production the Gira forecast shows also an increase, however at a lower level than in the EC outlook. Furthermore, Gira foresees fewer declines in dairy cow herds but also smaller yield increases. Volatility of prices (inputs and milk) and price uncertainty through 2015 will discourage technical improvement and thus yields are expected not to increase that much. With the abolishment of the milk quota, Lafougère questioned the outlook results regarding an increase of milk production by only 1.5 billion litres in total between 2015 and 2020 (which corresponds only to a yearly increase of 0.2%), as it is unclear if production in the EU-12 would continue to decline enough in order to balance production growth in the EU-15 (especially in Ireland, the Netherlands and Brittany). For cheese, Gira has similar results as the EC outlook but foresees slightly higher consumption growth through 2015, whereas export growth is identical with EC projections. While Gira agrees with the trade growth for butter in the EC projections, it sees more increase in butter production in the view of continuing higher prices. Prices will be supported by a growing (unsatisfied) world demand, where especially demand from India could destabilise the global butter market. India already accounts for 43% of global butterfat consumption and is projected to increase its consumption significantly more than its production, which could lead to imbalances in global butterfat markets (cf. Figure 18). For SMP Gira agrees with the projected trade increase in the Commission's outlook, but foresees a lesser increase in production due to restricted milk availability till 2015. Given the strong competition in exports from New Zealand and

continuing attractiveness of cheese, Gira assumes that lower milk production growth will above all be reflected in lower WMP production and exports.

**Figure 18: Dairy fats consumption changes, 2010-2015**



Source: Presentation Lafougère (GIRA Consulting). Primary source: Gira

Andreas Lundby (Arla Foods) sees a generally positive picture for the milk and dairy markets, with consumption and prices being rather high and most likely continuing to grow further. Even though prices had been very volatile in the most recent years, and could be expected to remain volatile, Lundby expects that in the medium- to long-term milk and dairy prices will increase by about 2-3 % per year. Global demand will further increase, especially in China. The significant increase in Chinese demand can not be expected to be satisfied by domestic production, and China will need to import at least 30 million tonnes. While about some of Chinas extra demand could be supplied by New Zealand and Australia, the question remains who will be able to supply the rest. It has also to be kept in mind that demand for milk powder will further increase in Russia and the Middle East. Lundby further stated that the EU demand for dairy products seems to be generally overestimated, as consumer confidence is low due to the financial crisis. The EC outlook seems to be also too optimistic about cheese consumption, because for example with the newly introduced fat tax in Denmark the Danish government expects a 10% reduction in domestic consumption.

In the open discussion it was stressed that the outlook of the Commission does not depict volatility in milk prices, because it is a deterministic baseline that is based on ‘normal’ assumptions. However, the uncertainty analyses help to get a better picture. With respect to the cheese market it was discussed why EU production would increase even though cheese

has the lowest price increase among the dairy products. It was explained that this is rather a technical problem, as for the world market prices the projections of the latest OECD-FAO outlook are taken, whereas the market developments in the EC baseline for the short-term are based on the most recent short-term forecasts of the Commission. This can sometimes create a short-term gap in the baseline between EU and world market prices. However, in this context it was again stressed that the EC outlook actually focuses on the medium-term, i.e. on the results for the projection year (in this case 2020).

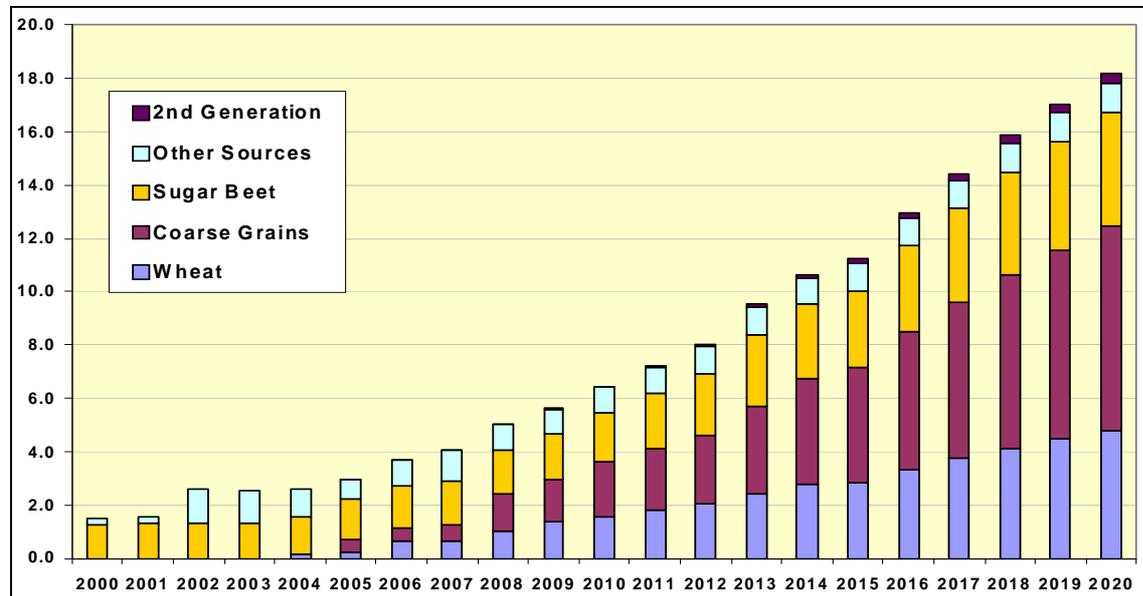
With respect to trade in dairy products the importance of the share of traded products for the determination of the world prices was discussed. Only about 7% of the milk produced is traded, and when taking into account that food is mostly consumed where it is produced, then it could be expected that the share in trade will rather remain the same, even though demand will increase in some countries. This would imply that an increase in demand in some countries will also trigger an increase in domestic production in these countries, minimising the effects on the world market for dairy products.

## **6. Biofuels: a key source of uncertainty and volatility?**

Alberto D'Avino (DG AGRI) presented the preliminary outlook results for the EU biofuels markets. For the outlook it is assumed that the mandate of the Renewable Energy Directive (RED) is met in the final projection year 2020, i.e. in 2020 at least 10% of transport fuel is coming from renewable sources. In contrast to assumptions in previous outlooks, a lower share of second generation biofuels is assumed, with 0.7% instead of 1.5% in the last outlook. As second generation biofuels are counted double in terms of meeting the 10% target, the share of first generation biofuels would be 8.6%. While the share of first and second generation biofuels is determined exogenously, the allocation of ethanol versus biodiesel consumption is determined endogenously in the model. Main results on energy share show that ethanol would represent 11.6% of EU gasoline consumption and biodiesel 8.2% of EU diesel consumption in 2020. The relative larger share in fuel use for ethanol than for biodiesel would be a reversal of the current situation, where biodiesel dominates the EU biofuel market. Moreover, this outcome is also in contrast with notified plans from Member States in the Renewable Energy Action Plans. EU ethanol production would further increase over the medium term, with an acceleration projected after 2012. Wheat and especially maize would remain the major ethanol feedstocks, with projection results showing a considerable increase in coarse grains (maize) but the share of sugar beet is also projected to increase (cf. Figure

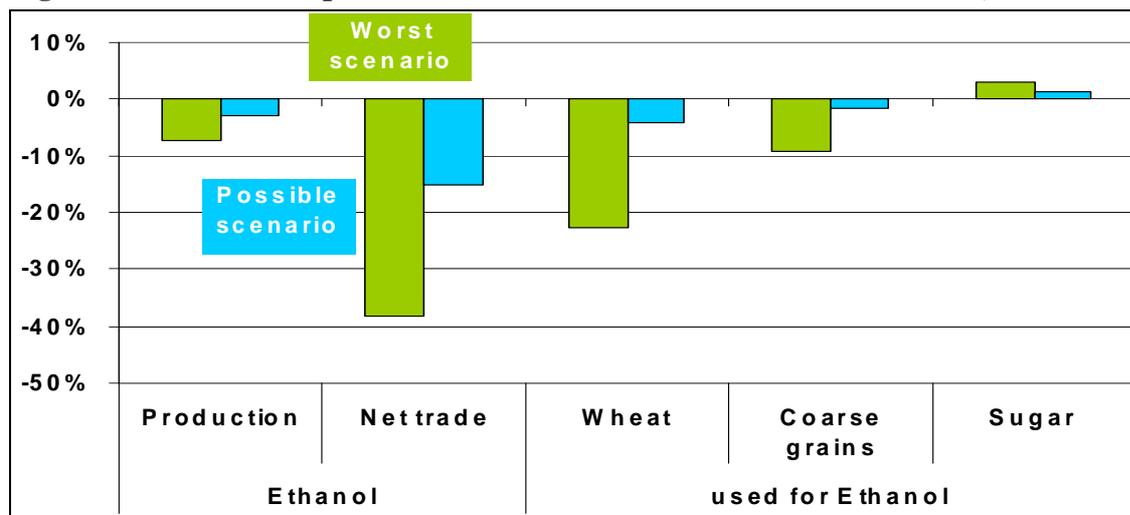
19). The production increase in EU biodiesel production shows a rather gradual pattern. About half of the EU production would be based on imports of raw materials, especially palm oil, oilseeds oils and also oilseed grains and beans.

**Figure 19: EU ethanol production by feedstock (billion litres)**



Source: Presentation D'Avino (DG AGRI)

Olexandr Nekhay (JRC-IPTS) presented the main results for the biofuel sector of the uncertainty analyses. In the Slower Growth China Scenario (cf. Chapter 2.2) EU bioethanol production would be affected mainly through the lower oil price. Ethanol production in the EU is projected to decrease by 3% and would be substituted by ethanol imports from third countries to meet the mandate (because the decrease in prices for ethanol feed stocks is relatively higher in the world market than in the EU). In the Harvest Failure East Scenario (cf. Chapter 2.5) limited or no exports of wheat and coarse grains of Russia, Ukraine and Kazakhstan imply less availability of grains in the world market and this would drive their respective prices up. As a consequence the higher world prices for bioethanol feedstock would cause a decrease in EU ethanol production and a further deterioration of the EU net trade position for ethanol in 2014 compared to 2010 (cf. Figure 20).

**Figure 20: EU biofuels production in the Harvest Failure East Scenario, 2014**

Source: Presentation Nekhay and Van Doorslaer (JRC-IPTS)

Note: Possible scenario = lower exports, Worst scenario = no exports

In the Macro Uncertainty Scenario (cf. Chapter 2.1) EU production of ethanol is projected to increase in all simulations, with only the pace being different. The variability relative to the mean of EU ethanol production is about 10% and the range of 80% of the simulations varies between 14 and 24 billion litres. Similar variability is observed for biodiesel. Ethanol producer prices in the EU show a variability of 11%, with the 90<sup>th</sup> percentile not going above 95 Euro and the 10<sup>th</sup> percentile not below 50 Euro per hectolitre. For ethanol net trade the EU is projected to stay a net importer regardless of what the extreme macro scenario would be. However, the variability of outcomes for the EU net trade position in 2020 is quite large, with a coefficient of variability of 33%, ranging from almost a break even position to -11 billion litres of net trade. The producer price for biodiesel in the EU shows a variability of 9%, with prices between 89 Euro and 143 Euro per hectolitres. EU biodiesel net trade shows a considerably high variability of 57%, with the EU becoming a net exporter of biodiesel in 2020 in the 90<sup>th</sup> percentile whereas for the baseline, median and the 10<sup>th</sup> percentile the EU's biodiesel net imports are projected to increase. The range between the extreme net trade positions (90<sup>th</sup> and 10<sup>th</sup> percentiles) varies from 2 billion litres of biodiesel exports to almost 5 billion litres of imports.

In the panel discussion Caroline Midgley (LMC International) outlined that if a full implementation of the RED is assumed, demand for biofuels will grow strongly in the EU. LMC projections show that bioethanol will expand at the expense of biodiesel while the use of second generation biofuels will be limited. LMC sees the ethanol forecasts according to the National Renewable Energy Action Plans (NREAP) of the EU Member States as overly

optimistic in the short-term but similar to the medium-term forecasts of LMC by 2020. On the other hand, forecasts of NREAP and LMC for EU biodiesel diverge substantially, with LMC being far more pessimistic than the EU Member States. Even though biodiesel is cheaper than ethanol, it faces several problems which will limit future growth. These problems include a B-7 limit on new diesel cars<sup>10</sup>, poorer sustainability characteristics, potentially greater indirect land use change (ILUC) penalties and more limited access to raw materials. Mainly due to these problems LMC assumes a general under fulfilment of the EU mandate.

EU-27 demand for ethanol (fuel and non-fuel) is projected by LMC to grow by 12 billion litres between 2010 and 2020. With rather weak ethanol production growth this rising ethanol demand in the EU will push net imports of ethanol up to over 6 billion litres. However, in order not to exceed these 6 billion litres of imports, new investment would be needed in EU ethanol production, otherwise ethanol imports could be over 11 billion litres in 2020. Historically, capacity utilisation rates for biofuels production plants have been less than 80%, but by 2015 the need to raise output will push rates to over 90%. Midgley indicated that since mid 2010, EU prices have followed the cost of E-90<sup>11</sup>. Prior to that EU prices were linked to Brazilian replacement costs. With regard to supply prices for EU ethanol production, LMC forecasts the total future (average 2015-2020) delivered cost of EU ethanol will be between 600-700 Euro/m<sup>3</sup> for grains and up to over 900 Euro/m<sup>3</sup> for sugarbeet (as world sugar prices are projected to be high, there are high opportunity costs for the industry) (cf. Figure 21). US imports of E-90 are a major threat undercutting the bulk of domestic supply. However, if imports face the ethanol tariff, the bulk of local supply will be cheaper.

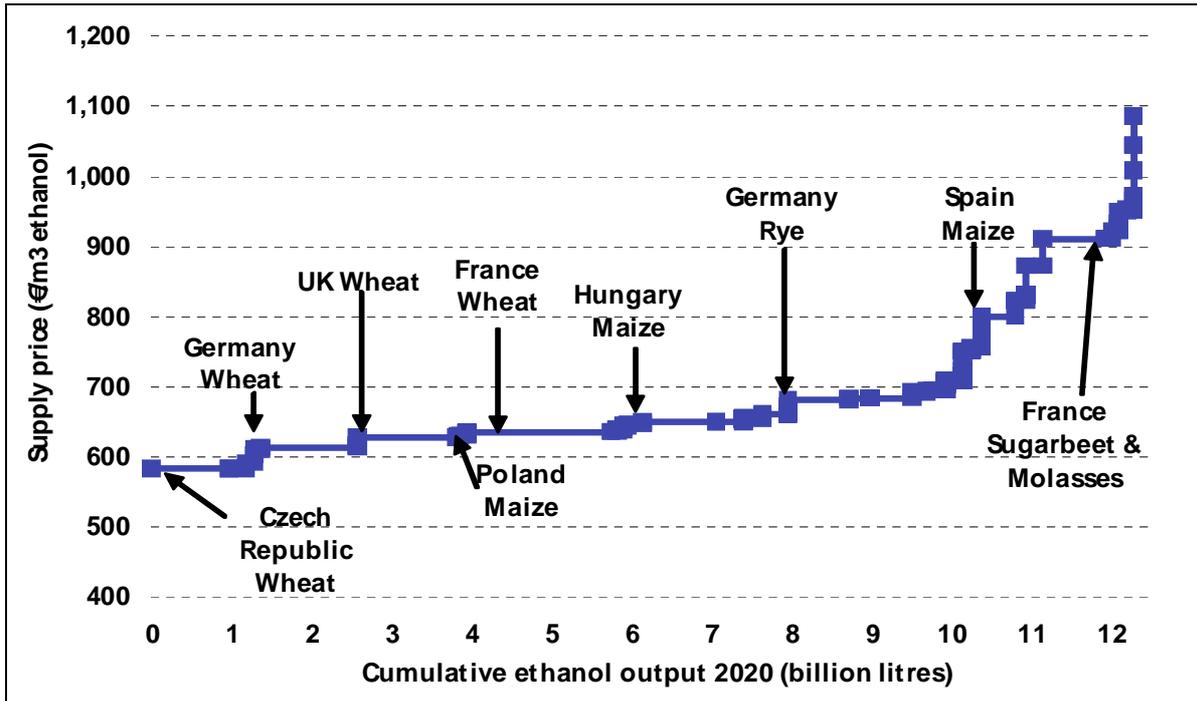
Midgley pointed out several risks for the developments in the EU biofuels sector. One of the risks is the slow implementation of the RED in EU Member States. Policy changes that impose more stringent sustainability requirements could be also a risk for biofuels supply, albeit they would more likely have an impact on biodiesel rather than on bioethanol production. Lower crude oil prices which make gasoline cheaper than ethanol would increase the incentive to buy-out of mandates. Furthermore high volatility in grains prices are also a risk to the biofuels sector and with global stocks expected to be at relatively low levels, the grain market is more vulnerable to supply shocks.

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<sup>10</sup> B-7 is a standard outlined in the Fuel Quality Directive that allows a biodiesel content of 7% in diesel fuel

<sup>11</sup> E-90 is a fuel that contains 90% ethanol and 10% gasoline.

**Figure 21: Supply prices for EU ethanol production**



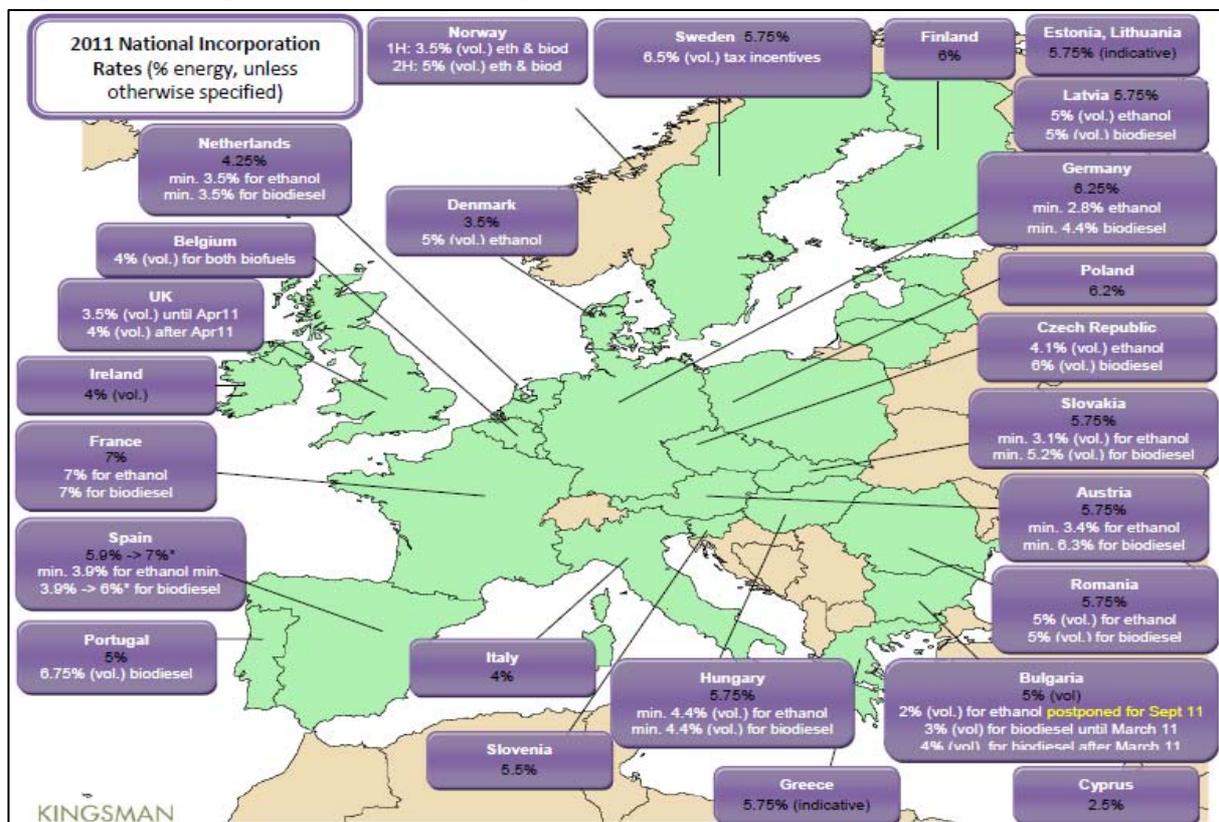
Source: Presentation Midgley (LMC)

Bruce A. Babcock (Iowa State University) highlighted the huge uncertainties related to the fulfilment of the mandates in the EU by 2020. Babcock also pointed out that the EU preliminary baseline underestimates how the US will meet their blending mandate. The US might increase their biofuel demand by 3 to 7 billion litres in the next three years, which could substantially influence the projected prices in the EC baseline (i.e. prices could be much higher). However, the US producer costs for biofuel is about twice the price of fossil fuels, and it could be questioned if the US congress will follow this and keep the mandate in the longer run. Babcock further delineated that it is also not clear if the US would import sugar ethanol from Brazil. Ethanol production in Brazil is decreasing, there are hardly any investments and the only extra ethanol production Brazil could come up with in the next three years would be between 5 and 7.5 billion litres. Babcock also sees the possibility that Brazil could import corn-based ethanol from the US while at the same time exporting sugarcane-based ethanol to Europe as it would comply with sustainability criteria.

In a further presentation during the panel discussion Claudiu Covrig (Kingsman) pointed out that in 2010 world ethanol demand was 3.77 times higher than biodiesel demand, but by the end of 2011 demand is expected to be only 3.25 times higher. Thus worldwide fuel ethanol demand is losing pace versus biodiesel demand. However, Europe shows a different picture, with biodiesel demand being currently far higher than demand for bioethanol. In 2010 the

world biofuel demand was mainly supplied by Central and South America. However, in 2011 high prices for sugar led to a decline in bioethanol production in Brazil. In 2011 the USA and Brazil have a share in world fuel ethanol supply of 62% and 24% respectively. The biggest shares in world biodiesel supply fall on productions from the USA (14%), Germany (12.5%) and Argentina (11.5%). The highest shares in world fuel ethanol demand can be found in the USA (60%) and Brazil (24%), whereas the USA (13%), Germany (12%), France (11%) and Brazil (11%) have the highest shares in world demand for biodiesel. An increase of biofuels demand can be observed in the majority of the EU Member States, with the EU demand particularly being driven by national and EU mandates and targets (cf. Figure 22).

**Figure 22: European biofuels blending obligations, 2011**



Source: Presentation Covrig (Kingsman)

With respect to the food versus fuel debate, Covrig argued that estimates for 2011-2012 show that the industrial use of grains in the EU is about 29.3 million tonnes, out of which around 9.1 million tonnes will be used for fuel ethanol production. Compared to the total usable grains output of about 274.8 million tonnes, this would represent only about 3.3% and thus should not be blamed for being the only responsible for the rather big volatility in grain prices.

In the open discussion several comments were made on the link between energy and food markets and the influence of policies was further emphasised. The impact of policy on biofuels production was generally considered as quite profound, at least in the EU and the USA. In the EC outlook developments in the markets are mostly driven by the assumption that the mandate of the Renewable Energy Directive is met in the final projection year 2020. Even though the fulfilment of the mandate is supported by the forecast of National Renewable Energy Action Plans of the EU Member States, it is questionable that the targets will be really met. In this context it was discussed why the EC outlook does not foresee an eventual shortcoming in reaching the target. However, the baseline approach is usually to take existing and already agreed policies as given, and therefore it is also assumed that the EU mandate of the Renewable Energy Directive will be met.

It was also discussed that the gradual enforcement of sustainability criteria in the EU could be expected to cause decreases in imports of biofuels made from palm oil and soybean, which in turn would have further effects on the markets. In the EC outlook the sustainability criteria is considered, but this assumption means a continuation of existing trends because feedback from the industry states that the industry will be able to meet the sustainability targets. Nevertheless, if the rules on ILUC become stricter over time this could be expected to lead to shifts in the market.

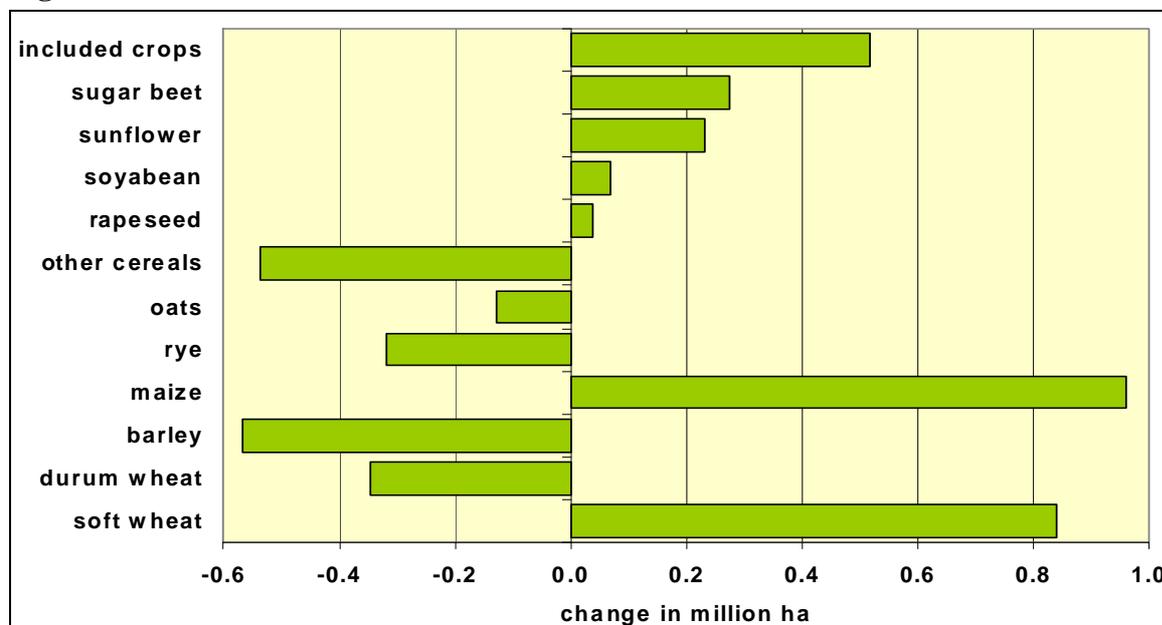
With regard to 2<sup>nd</sup> generation biofuels it was asked what the source for the assumed 0.7% of 2<sup>nd</sup> generation in total biofuels production in the EC outlook would be. It was clarified that a big part of the 0.7% is assumed to come from waste oils. A further point of discussion was on how an improved technology for 2<sup>nd</sup> generation biofuels would probably impact LUC and ILUC.

## **7. Cereals, oilseeds, sugar: production, productivity and related uncertainties**

Stephan Hubertus Gay (DG AGRI) presented the preliminary outlook results for cereals, oilseeds and sugar. With respect to the cereal balance, production growth in the EU is affected by the increasing use for ethanol feedstock. EU yield growth is expected to be lower than in most competitive regions and supply growth in the EU is projected to result from a very moderate yield growth and due to some area reallocation between crops. Domestic use of cereals is projected to notably increase due to the growing use for ethanol and biomass. EU

cereal exports will be lower in 2020 than they have been in 2009 and 2010 but slightly increase compared to 2011. EU prices for wheat and coarse grains are expected to remain at a relatively high level. For soft wheat continued high EU exports are projected while for barley there is rather no recovery expected after the 2011 drop and exports will stay at a quite low level. The balance sheet for maize in the EU is marked by a steady increase of both demand and production. Vegetables oils production is projected to increase in the EU, mainly driven by increases in demand. However, to satisfy demand also imports of vegetable oils will increase significantly. EU sugar production is projected to increase, mainly driven by a growth in use for ethanol and despite a decrease in EU prices. With respect to area allocation a continued shift to wheat and maize is projected in the EU between 2010 and 2020 (cf. Figure 23).

**Figure 23: Shift in EU area allocation between 2010 and 2020**



Source: Presentation Gay and Londero (DG AGRI)

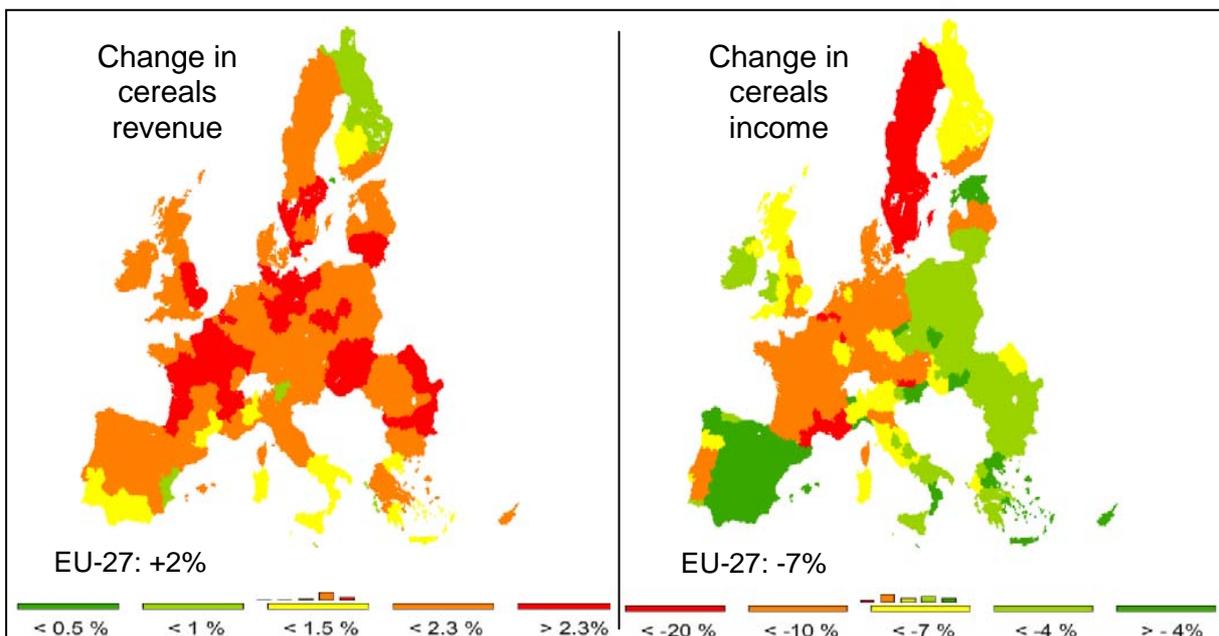
After the latest rise in cereals prices, which was essentially due to the draught-driven short harvests in Russia and Ukraine (followed by export restrictions), world cereal prices are projected to decrease in the short term, but grow over the medium term, staying well above the historical average. As a response to higher returns, world cereal production is expected to increase significantly in the short-term, and then increase gradually in the medium-term.

Mihaly Himics (JRC-IPTS) presented the major results for the grains sector of the uncertainty analyses. In the Harvest Failure East Scenario (cf. Chapter 2.5) limited or no exports of wheat and coarse grains from Russia, Ukraine and Kazakhstan have significant impacts on the world markets. In the worst scenario (no exports) world prices increase by almost 30% for wheat

and by almost 15% for coarse grains. The increase in world prices is transmitted to the EU domestic prices, with prices for wheat and coarse grains increasing by 20% and 10% respectively in the worst scenario. The EU is projected to increase its cereals exports considerably, partially taking over the export markets of Russia, Ukraine and Kazakhstan. These changes in the trade balance are accompanied by an increasing domestic supply. By the second year of harvest failure the farmers in the EU would have adapted their harvested area (+4%) and EU production would increase by 5%.

In the Higher Costs Scenario (cf. Chapter 2.4) the higher operating cost would increase total variable costs in crop production by 10% and 30% respectively due to the scenario assumptions. As a primary effect cereals production would decrease, and as demand would not decrease as much as supply, producer prices would increase. Less production and an increased domestic market price imply lower exports and also an increase in imports. Cereals revenues (value of outputs, no premiums) per hectare of harvested area show an average increase in the EU-27 of about 2% and 7% respectively in the two scenarios. However, the increase in revenue is lower than the increase in operating cost and consequently the income is affected negatively. Most negatively affected regions would be those with input intensive production systems (e.g. in France) and those with small profit margins (e.g. Portugal). At EU-27 level income for cereals would decrease by -7% and -19% respectively in the two scenarios (cf. Figure 24). The impacts of higher operating costs are very similar in all crops sectors, i.e. also for the balances for oilseeds.

**Figure 24: Change in cereals revenue and income in the Higher Costs Scenario, 10% increase in operating costs, 2020**

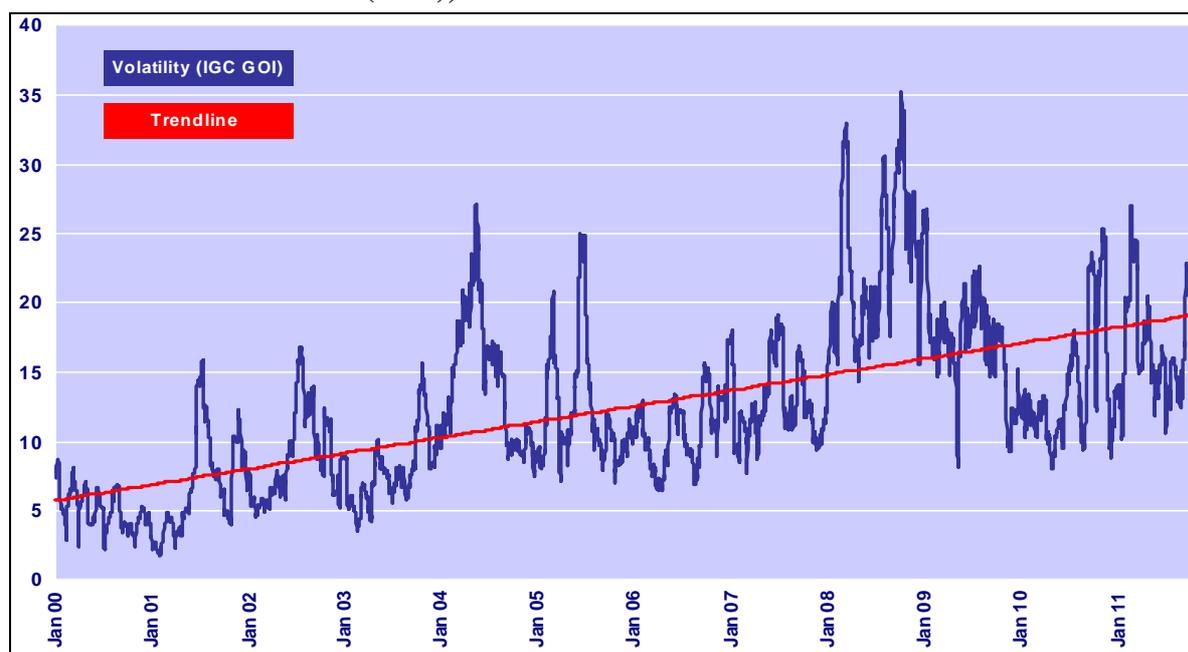


Source: Presentation Himics and Nii-Naate (JRC-IPTS)

In the Yield Uncertainty Scenario (cf. Chapter 2.3) the random variation of crop yields in the EU is based on the fluctuations observed in the past, with the correlation between crop yields being taken into account. Variability of total EU cereals supply is about 4% relative to the mean, which corresponds to a difference of 40 million tonnes between the 90<sup>th</sup> percentile and the 10<sup>th</sup> percentile. Almost no variation can be seen in food use and only small variability in total feed use (1%). However, substitution between feed crops takes place, with the variability for some single crops in feed use being 3-4%. The crop price variation is also depicted in the feed cost index, with for example the EU-15 non-ruminant feed cost index showing a variation of 15%. However, the impact on the feed costs results in only a small impact on total meat production (less than -1%). With rather inelastic demand the variability in supply is mostly transmitted into trade and the variation in the EU net trade positions for cereals is big, like for example for wheat 46%.

In the panel discussion John Tjaardstra (International Grains Council) presented the IGC projections for grain production and highlighted the differences between the IGC projections of the previous year. In the IGC 5-year projections for wheat production, higher estimates (especially in Kazakhstan, the EU and Australia) for 2010/11 and 2011/12 lift the projections from one year ago considerably. The same effect can be seen in the IGC 5-year projections for maize production, where estimates have been increased especially in China, the EU, Ukraine and South America. The world grains balance has eased somewhat in the past month, and the outlook for global closing stocks is slightly easier than a year ago. However, while world wheat ending stocks are projected to be at their highest level since 2001/02, further stock decreases are forecasted for maize and barley. Global grains area is estimated to increase by 1.7%, thus returning to that of 2009, after a recovery in Russia from last year's drought. To a large extent, the upward crop revisions will be absorbed by forecasted consumption increases, particularly in China. A high proportion of demand has been answered in the first part of the season by Black Sea exports, especially from Russia. Tjaardstra pointed out that even though Russia may eventually introduce measures to control shipments of wheat beyond a certain level they are still forecasted to set new records. Furthermore exports by Ukraine are expected to accelerate following the recent removal of taxes. With respect to prices, the IGC Grains and Oilseeds Index (GOI) shows that prices in the current months return to the levels of last year. Tjaardstra also highlighted the more pronounced volatility in grains and oilseeds markets over the past decade (cf. Figure 25).

**Figure 25: Volatility in grains and oilseeds prices according to the IGC Grains and Oilseeds Index (GOI), HV 20**



Source: Presentation Tjaardstra (International Grains Council). Note: HV 20 refers to the % standard deviation of daily price movements over a 20 day period

Laurine Simon (Tallage/Stratégie Grains) presented the forecast for crops and oilseeds of Tallage/Stratégie Grains. Simon first briefly delineated the main assumptions and methodology for the area and production forecast, which consists of the following three main steps: (1) forecast for total area used for crop cultivation, (2) area breakdown by culture and (3) yield forecast. The forecast is based on each crop share of total area including agronomical constraints. The rapeseed area is assumed to be maximised (taking into account rotation constraints) as the forecasted demand shows a sharp rise by 2020. Furthermore, climate change impacts on winter/spring crop distribution are also taken into account. For 2020 the forecast results show a change of +10% in rapeseed area, +14% in sunseed area, +1% in soft wheat area, -5% in barley area, +5 in maize area and +9% in silage maize area (mainly due to biogas developments) in comparison to 2010.

Further focusing on rapeseed area, the forecast of Tallage shows area increases in comparison to 2010 by 11% in Germany (i.e. +70 000 ha compared to the maximum reached in 2007), 16% in France (i.e. +70 000 ha compared to the maximum reached in 2007), 15% in the UK (+30 000 ha compared to the maximum reached in 2011) and 4% in Poland (+30 000 ha compared to the maximum reached in 2011). In addition to the increase in area, rapeseed yields are also forecasted to increase in both the EU-15 and the EU-12. For sunseed, the Tallage forecast shows the most significant area increases by 16% in Spain (which is still 40 000 ha less compared to the maximum reached in 2009), 3% in France (which is 20 000 ha

less compared to the maximum reached in 2011), 9% in Hungary, 16% in Romania and 24% in Bulgaria. Sunseed yields are also predicted to increase in the EU-27, with the yields growing somewhat more in the EU-12 than in the EU-15. As main factors of uncertainties Simon highlighted potential changes in the CAP, the effects of abolishing sugar quotas, the ability of farmers to effectively increase rapeseed area by 2020 (as climatic and agronomic constraints might probably be underestimated) and the biodiesel development in the EU which may have an impact on the long term use of vegetable oils (due to the sustainability criteria and its implementation).

Klaus-Dieter Schumacher (Nordzucker) commented specifically on the sugar market. He agreed with all the assumptions in the Commission's preliminary outlook for sugar, except the increase in sugar production due to a higher use for biofuels, which he sees as rather questionable. Domestic demand seems to be currently underestimated, with the sweets industry growing especially with respect to exports. A major uncertainty on the supply side is Brazil where in the next 2-3 years no growth could be expected because no necessary investments have been made. This constitutes a fundamental change, as in recent years the growth in global market demand was mainly served by Brazil. Without Brazil increasing its sugar production, the situation on the world market can become quite tight, with high prices and most likely also high volatility. The ability of ACP nations to supply the EU is also questionable because with sugar prices being higher on the world market, there is not a big incentive to export to the EU, moreover domestic demand in ACP is increasing, thus sugar imports from ACP will very likely go down in the EU. Within the EU, Schumacher sees the mandate for biofuels as most crucial, and he actually expects a debate on the mandate to arise soon. With respect to the abolishment of the sugar quota in the EU, Schumacher pointed out that resulting production effects are not clear as they mainly depend on the price relation of sugar to wheat and oilseeds prices, in addition isoglucose should be looked at carefully.

In the open discussion the quite optimistic outlook for developments in the grains markets was confirmed. It was also highlighted that there is a general tendency that stocks for grains are at a rather low level, which makes the market vulnerable to any interruptions or shortcomings on the supply side. As a general rule, without sufficient stocks volatility is a logical consequence.

A lot of the discussion was dedicated to the abolishment of the sugar quota in the EU, and it does not seem to be clear what the actual effects will be for the market. However, discussants

are rather sceptical with regard to an increase in sugar prices in the medium-term. Even though there is a lack of investment in Brazil, they could be expected to increase sugar production within 2-3 years as a response to higher sugar prices. On the other hand the supply response in the sugar market also depends on the developments in the biofuels sector. Some additional sugar supply could be expected from Thailand and also from some sub-Saharan countries, which seem to be in a rather good position for an export oriented sugar production. However, problems with infrastructure might detain these countries to explore their potential. A further issue discussed was the need to close the yield gap in the context of global food security. Declines in yield growth rates reflect missing investment due to lower output prices and discussants were rather confident that yields would increase due to price incentives in the case of increased demand.

## **8. Agricultural policy and markets: which relationship over time?**

The final session was dedicated to the general relationship between agricultural policy and markets, how this relationship evolved in the past and how it might evolve in the future.

Catherine Moreddu (OECD) presented the outcome of the recent OECD study ‘Evaluation of agricultural policy reforms in the European Union’. Moreddu marked out that the CAP has a history of 25 years in which it has been regularly adapted to evolving situations, like (i) the enlargement from 6 to 27 Member States which meant a constantly larger and more diverse agricultural sector, (ii) from production deficit to a surplus situation, (iii) increasing budget and international pressure; and (iv) the growing importance of environmental issues. The CAP developments have been monitored and evaluated since the mid-80s by the OECD.

Moreddu highlighted that since 1992 the CAP gradually and consistently moved towards greater market orientation. Support to producers has been significantly reduced and there is a clear trend towards decoupling support from current production. With market intervention and border protection decrease, domestic prices became more closely aligned to world prices (7% higher in 2008-10 compared to 71% in 1986-88). According to OECD classifications, the share of the most distorting support has been reduced from 92% to 29% (OECD average is 51%). The share of support that does not require any production is increasing (47% in 2010), and most of the remaining area payments are not linked to specific commodities. These changes in the way of providing support to farmers clearly increased the income efficiency of the transfer payments.

In the evolution of the CAP a clear development to more attention to environmental issues can be observed. There is a generalisation of constraints on production practices, with over 50% of the support having mandatory input constraints (cross compliance), and 12% having voluntary input constraints (compared to 2% in 1990). Moreover, more funds are used directly for land management and local public goods, with more funds for Pillar II from 10% of CAP expenditures in 2000 to 20% in 2010 and a minimum share for land management from 2007 (25% for Axis 2). There is quite diversity in the use of Pillar II measures, which reflects differences in priorities and conditions between the EU Member States (cf. Table 4).

**Table 4: Diversity in the use of pillar II measures, 2010**

	EU-27	EU-15	Minimum	Maximum
Pillar II in CAP expenditures	20%	15%	5-10% DK, BL, FR, NL	50-60% EU-12
Axis 1 in Pillar II	35%	27%	Around 10% IE, UK, SE	Over 40% BL, ES, PT, EU-12
Axis 2 in Pillar II	51%	62%	Under 40% NL, new MS	Over 70% AT, FI, FR, IE, SE, UK
- Agri-environment in Pillar II	27%	33%	Under 15% BG, PL, PT	Over 40% AT, BE, DK, IE, SE, UK
- LFA in Pillar II	19%	22%	Under 10% BE, BG, DK, EE, HU, NL	Around or over 30% FI, FR, GR, PT, SI
Axes 3+4 in Pillar II	13%	11%	10 MS under 10%	47% NL, 40% BG, over 20% EE, DE, CZ, LV

Source: Presentation Moreddu (OECD)

Moreddu pointed out that even though the environmental performance of the CAP is rather difficult to measure, some general observations can be made. Set-aside in the EU had significant environmental impacts, positive overall. Decoupling of support is expected to be beneficial through extensification. The cross-compliance conditions are expected to deliver a minimum level of environmental management across farmland, albeit it has to be stated that it does not target specific problems. The evaluation of agri-environmental measures of the CAP showed benefits for biodiversity (at least a reduction of the rate of losses) and positive impacts on landscape, but due to a lack of data the evaluation could not show much evidence for the effects on soil and water quality.

Moreddu also highlighted that the evaluation of the CAP reforms showed that some challenges still remain. Especially in terms of the income objective a better targeting could be envisaged. Largest farms receive most support, with the 25% largest farms receiving 75% of all support; as they produce 82% of the EU agricultural production their farm income is about three times the average of all farms. Moreddu also stressed that more could be done to improve competitiveness, as for example the share of general services such as research and infrastructure investment remains modest (12% of total support). Also some impediments

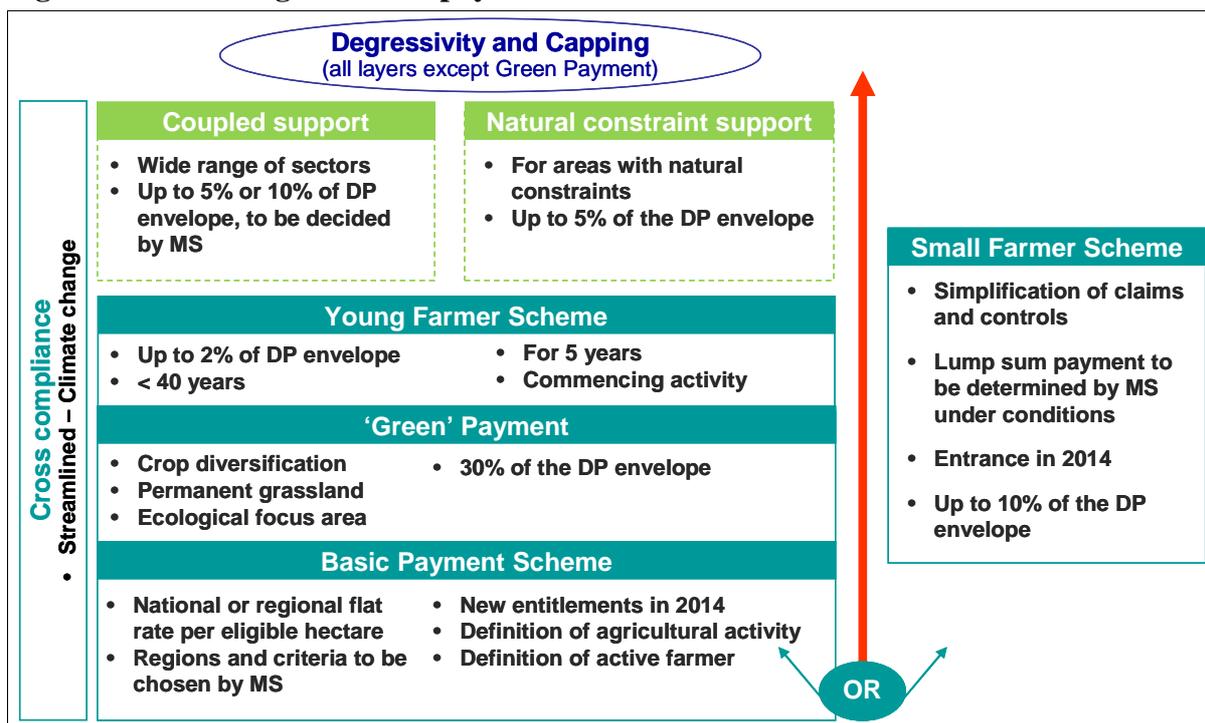
remain, e.g. measures that slow structural adjustment or that increase land value. In general, an increasing flexibility to respond to higher diversity in the EU would have to be balanced against EU-wide priorities.

With respect to the CAP post-2013, Moreddu depicted a favourable context for a new approach that is building on past successes and responds to present challenges and opportunities. A further shift of policy emphasis from supporting farm income to investing in further improving the productivity, profitability, sustainability and long-term competitiveness of the agri-food sector is needed. Such a move implies more investment in innovation, the provision of an effective framework for producer risk management, the usage of a range of instruments adapted to specific situations to improve the long run sustainability of agriculture, the adoption of a place-based, non sectoral, approach to rural development and the consideration of income issues on the basis of reliable and comparable information on income and wealth across the economy.

Tassos Haniotis (DG AGRI) specifically reflected on the European Commission's proposals in the policy framework of the CAP towards 2020 and the impact of alternative scenarios. With respect to market measures Haniotis pointed out that the proposals will lead to more structural adjustment in the EU as continued market orientation is envisaged, e.g. with the end of certain aid schemes (Skimmed Milk Powder, hops and silkworms) and the end of production limits (sugar). The proposals generally foresee improved instruments to address market developments, with an enhanced safety-net that includes (i) exceptional measures that allow for more flexibility and greater coherence, (ii) simplified public intervention and private storage that is more responsive to crises, and (iii) a "crises reserve". Furthermore, common action of farmers to get a better position in the food supply chain will be encouraged, for example through a facilitated recognition of Producer Organisations (PO), Associations of POs, and Interbranch Organisations, as well as through more clarity as regards competition rules and through a link to Rural Development funds (for start-up and co-operation measures). Commenting specifically on direct payments, Haniotis delineated the dual role of direct payments in the CAP, as they aim to contribute to keep farming in place throughout the EU territory by supporting and stabilising farmers' income and providing basic public goods through their link with cross compliance. More targeted and regionally specific agri-environmental and climate measures are included in Pillar II. In the future, direct payments will generally enhance the environmental performance of EU agriculture through "greening" measures. With the proposals for a new design of direct payments, farmers would have

generally access to compulsory schemes in all MS (basic payment scheme, ‘green’ payment, young farmers scheme) and voluntary schemes depending on the MS choice to implement them (coupled support, support in natural constraint areas). All direct payments would have to be subject to cross compliance and all farmers will have access to the Farm Advisory System. As alternative to these compulsory and voluntary schemes, it is compulsory for MS to offer a simplified scheme for small farmers which small farmers can claim for on a voluntary basis. An overview on the new design of direct payments in the CAP is given in Figure 26.

**Figure 26: New design of direct payments in the CAP**



Source: Presentation Haniotis (DG AGRI)

Regarding the issue of redistribution of direct payments Haniotis pointed out that it is getting increasingly difficult to justify high differences between farmers in the level of direct payments based on historic references. Therefore it is proposed to abolish the historic model for the basic payment scheme and to move to a national or regional flat rate per eligible hectare in all Member States. In addition, the difference between Member States in the per ha direct payment level is also strongly questioned. However, the redistribution of direct payments among Member States comes along with several difficulties. A unique EU ‘flat rate’ basic direct payment would ignore existing economic differences between Member States (e.g. wage levels and input costs). Furthermore, the relation to overall economy must be considered, as the share of direct payments in GDP is very high in many Member States with below average direct payments per hectare. The overall balance of incomes must also be taken into account, because a disproportionate increase of direct payments in some Member

States could lead to sectoral income bias towards agriculture. In addition, other subsidies must be considered, as Pillar II support and structural and cohesion funds also contribute to overall support levels. After assessing the impact of various options for the redistribution of direct payments among Member States, the Commission proposes a formula of redistribution where all Member States with direct payments below 90% of the EU average will see one third of this gap closed by 2020.

Haniotis also briefly delineated the key measures in the reform proposals for rural development under the CAP, which comprise measures for knowledge transfer, information actions and advisory services as well as for investments in physical assets (with higher support rates for young farmers, collective investments and integrated projects). Measures for farm and business development provide extended support for small farmers, young farmers and small businesses. Specific support will be granted for the setting up of producer groups in all EU Member States. With respect to agri-environment-climate payments and organic farming more flexibility and reinforced support for joint actions are foreseen. The co-operation measure will be significantly reinforced and include pilot projects, short supply chain and local promotion. Furthermore, a new toolkit for risk management will be provided and the leader approach will be strengthened across EU funds.

David Blandford (Pennsylvania State University) highlighted three major challenges for the developments on agricultural commodity markets in the short- and medium-term: the macroeconomic environment, the energy market, and domestic agricultural and trade policies. Blandford is rather pessimistic about the future development in agricultural markets especially due to the significant downside risk of the current macroeconomic developments and financial crisis. Shifts in real exchange rates and more inflation also bear major threats for agricultural markets. The question is how much of this could and should be incorporated in the analysis and projections for the outlook on agricultural commodity markets. In this context the stochastic analysis conducted in the uncertainty analysis of the EC baseline is very helpful and important. Blandford also pointed out that in the current macroeconomic environment it is very likely that budgets will be cut back for agricultural policy and this could also have an effect on the outlook projections. However it is not clear which measures would be cut, but in the EU and the US there seems to be an emphasis on preserving direct payments.

Regarding biofuels, Blandford foresees that the US will play a major role in the markets. Mandates might stay in both the US and the EU, however biofuels will be seen more critical

and the achievement of mandates could be more under threat in the EU than in the US. Developments in Brazil are quite uncertain, but Brazil will not only produce ethanol but also more petroleum. Furthermore, Brazil will export blended fuel to catch the added value. In general Blandford thinks that the importance of fossil fuel will rather decrease while natural gas will become more important (there are already enormous investments), which will also impact on renewables.

With respect to domestic agricultural and trade policies, Blandford highlighted that even though during the workshop there was actually not much discussion on the WTO negotiations, a possible outcome of the DDA could influence market developments. As an important issue Blandford also pointed out that it is not clear what will happen in the future with the agricultural and trade policies in emerging and developing countries. Observations show that there is a move towards input subsidies in these countries. China is also moving towards a net support position and is probably getting more protective to its agricultural sector. Such a development will certainly also impact the developments on the world markets for agricultural commodities.

George Rapsomanikis (FAO) presented results of an interagency report on food price volatility.<sup>12</sup> The preparation of the report was coordinated by FAO and OECD, and jointly done by several organisations and agencies, following a request by G20 leaders. It is shown in the report that volatility in international agricultural commodity prices has been higher since 2000 than during the previous two decades and this is also the case of wheat and rice prices in the most recent years (2006-2010) compared to the 1970s. Irrespective of any conclusion about the long term trends, there is no doubt that the period since 2006 has been one of extraordinary volatility. Prices rose sharply in 2007 and 2008, and for some products prices peaked in the second half of 2007, for other products in the first half of 2008. Prices then fell sharply in the second half of 2008. Market tensions emerged again during 2010-2011 and there have been sharp rises in some food prices (cf. Figure 27), with the FAO food price index in early 2011 again reaching the peak of 2008.

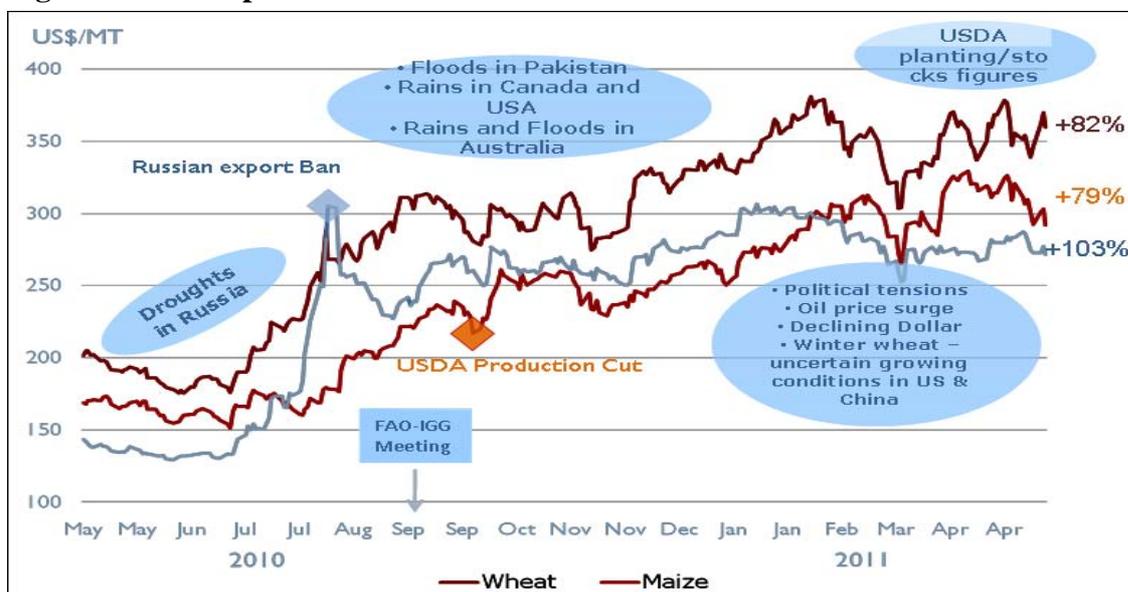
Rapsomanikis pointed out that there are several determinants for further increases in food prices and volatility in the future. By 2050 the world's population is expected to have reached about 9 billion people and the demand for food to have increased by between 70% and 100%.

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<sup>12</sup> The report 'Price Volatility in Food and Agricultural Markets: Policy Responses' can be downloaded at: [http://www.fao.org/fileadmin/templates/est/Volatility/Interagency\\_Report\\_to\\_the\\_G20\\_on\\_Food\\_Price\\_Volatility.pdf](http://www.fao.org/fileadmin/templates/est/Volatility/Interagency_Report_to_the_G20_on_Food_Price_Volatility.pdf)

On the other hand, the rate of yearly growth in agricultural production is estimated to decrease to 1.5% (2010-2030) and further to 0.9% between 2030 and 2050. These estimates suggest that in the future, with the supply of food not growing at the same pace as demand, there will be more upward pressure on prices in world food markets. Moreover, predictions show lower stocks than in the past and low stock levels relative to use will also put pressure on prices and will especially add to a high risk of volatility in prices. In order to address the problem of rising demand and high price volatility, the interservice group recommends increasing investment in agricultural productivity growth. The required investment is estimated to amount to an average of USD 83 billion annually, which includes investment in primary agriculture and necessary downstream services such as storage and processing facilities.

**Figure 27: Grain prices 2010-2011**



Source: Presentation Rapsomanikis (FAO)

As further recommendations for policies that can help to reduce food price volatility, Rapsomanikis mentioned improved market access and the development of a ‘notification process’ for export restrictions in WTO, with an operational definition of critical food shortage to justify export restrictions. Concerning biofuels, flexible mandates should be introduced that allow the adjustment to safeguard food security. With regard to speculation, more transparency about transactions across futures markets and especially across over-the-counter (OTC) markets is recommended. Comprehensive trading data need to be reported, in order to enable regulators and participants to monitor information and understand what is driving commodity prices.

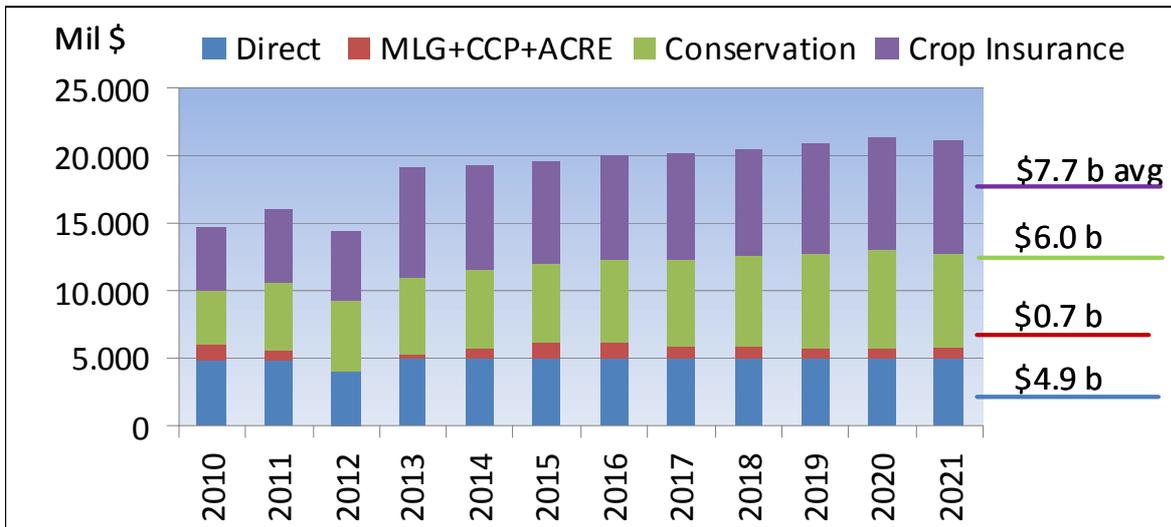
Joseph Glauber (USDA) commented on the reforms in the agricultural policy of the USA. In order to discuss current issues on the 2012 Farm Bill, he set the current debate into the historical context of reforms in US agricultural policy. Reforms between 1985 and 1996 were characterised by lower support prices, moves towards greater planting flexibility, moves towards decoupling payments from production, and the introduction and extension of conservation programs. The 1996 Farm Bill foresaw a freeze of loan rates, the elimination of set aside, even more planting flexibility, the replacement of deficiency payments with fixed transition payments, and the elimination of honey and wool support as well as the phasing out of dairy support. Glauber explained that then something like a ‘counter-reformation’ in US farm policy could be observed, due to the collapse in producer prices in the late 1990s which lead to ad hoc legislations and the extension of the dairy programme. In the 2002 Farm Bill, loan rates were raised and extended to pulses, counter-cyclical payments (CCP) were reintroduced and payment bases had been updated. Afterwards, in the 2008 Farm Bill also the programs ACRE (Average Crop Revenue Election) and SURE (Supplemental Revenue Assistance Payments) had been introduced.

Glauber highlighted that the current debate on the 2012 Farm Bill is marked by discussions on the budget. The initial budget proposals by Administration foresaw a cut of the agricultural budget of \$33 billion over 10 years, while the Agricultural Committees proposed a cut of \$23 billion over 10 years with \$15 billion coming from commodity programs. Still the crucial question on what the Super Committee will propose remains open, but in any case it becomes obvious that the budget for agricultural policy will be cut. High agricultural commodity prices in the recent past have kept outlays and levels for Marketing Assistance Loans (MAS) low, but the potential to breach limits remains non-trivial if prices fall. Figure 28 gives an overview on the projected outlays for selected programs in the US Farm Bill if the current programmes would be continued.

In the current debate on a new Farm Bill there is particularly dissatisfaction with direct payments. The debate is centred around several aspects, especially on the need for payments in times of high prices, the fact that benefits accrue largely to landowners, the wide differences between planted and base acres as well as payment limitation issues. On the other hand, it is also often argued that for many producers direct payments are the only payments received over the past several years as no loan rates or counter-cyclical payments were granted given the high producer prices. Furthermore, the US direct payments are considered as minimally trade distorting and are notified as green box measures. Moreover, the direct payments are tight to conservation compliance. The latest program proposals for the 2012

Farm Bill foresee a transfer from the budget for direct payments to the ACRE/shallow loss programs (which would be qualified as green box in the WTO, at least if they are not product-specific), the extension of supplemental disaster payments, tying direct payments to the cost of production and a margin-based dairy program (which would be potentially blue or green box at least for base level protection).

**Figure 28: Projected outlays for selected programs in the US farm bill**



Source: Presentation Glauber (USDA). Primary source: CBO Baseline (March 2011). Note: MLG = Marketing Loan Gains, CCP = Counter-Cyclical Payments, ACRE = Average Crop Revenue Election

In the open discussion it was highlighted that the relationship between agricultural policy and markets has been ambiguous over time. On the one hand the EU clearly moved from the support of agricultural prices to support that is decoupled from production and aims more directly on farmers’ income. On the other hand, many other countries show signs of more protectionism and support that is more tied to prices and actual plantings, in fact shifting agricultural programs and measures from green box to amber box. Actually, the current macroeconomic environment, and with budgets under pressure in many countries, could provide opportunities to make some significant changes in farm policies. In addition it remains unclear what a WTO agreement might bring for the development of agricultural commodity markets. Likewise it was stressed that there are more and more bilateral free trade agreements coming into place that also will impact the markets.

It was also discussed what kind of risk management could be provided by governments and what has to be handled by the farmers. In general, the risk management of low impact risks has to be managed by farmers, and the government can provide training and information on risks. In general, for the management of risks where market instruments can and should play a

role, the government can help for a good functioning by providing the legal framework and information. It was also highlighted that governmental support should be temporary and not prevent the creation of private risk management markets. On the other hand, catastrophic risk can not really be managed by farmers alone and the government might have to step in. However, the rules for government intervention in the event of a catastrophe should be defined before the event happens and also the rule and amount of compensation has do be defined before.

In the concluding remarks the usefulness of the workshop was highlighted, as many valuable comments on the DG AGRI baseline have been made, and the discussions have helped to get a better picture of the drivers of supply and demand in the markets as well as on the related uncertainties. The uncertainty analyses are seen as an important complement to the DG AGRI baseline, as they help to identify and quantify potential risks to the ‘standard’ projections of the development of agricultural commodity markets. According to the discussions at the workshop it seems to be a rather solid assumption that agricultural prices will stay higher in the medium-term, but input prices will also stay at a higher level. Nevertheless, major uncertainty is seen with regard to general macroeconomic developments, and due to current global economic and financial imbalances it can not be excluded that agricultural prices will rather fall back in the short-term.

## **Workshop Presentations**

# The CAP towards 2020: Legal proposals

## Tassos Haniotis (DG AGRI)



### How will the CAP be financed?

- Commission proposals on Multi-Annual Financial Framework for 2014-2020 to maintain CAP spending at 2013 levels in nominal terms

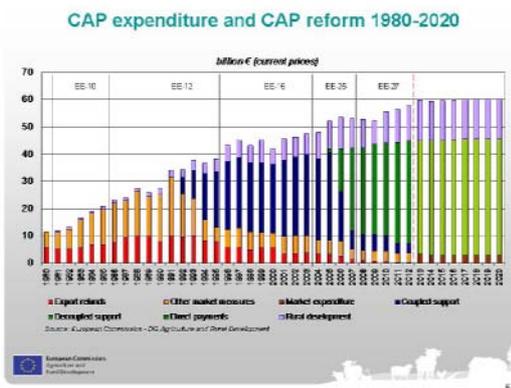
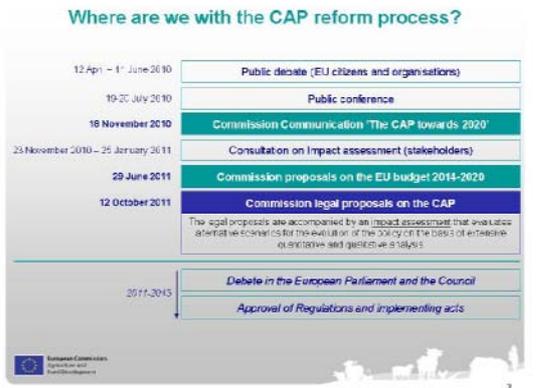
in bn EUR	Current prices
- Pillar I - Direct payments and market-related expenditure	317.2
- Pillar II - Rural development	101.2
<b>Total Pillar I and II</b>	<b>418.4</b>
- Food safety	2.5
- Most deprived regions	2.8
- Reserve for crises in the agricultural sector	3.9
- European Globalisation Fund	-16 to 2.0
- Research and innovation in food security, bio-economy and sustainable agriculture	5.1
<b>Total additional amounts</b>	<b>Up to 17.1</b>
<b>Total proposed amounts for the period 2014-2020</b>	<b>Up to 436.5</b>

Source: Commission Communication 'Budgetary Framework for 2014-2020' (COM(2011) 617)

- ### Outline
1. Process of the CAP reform
  2. Policy challenges and objectives
  3. CAP proposals in detail
  4. What's next?

### Comparing CAP costs (in bn EUR, current prices)

	2013	2020
Market measures	3.31	2.70
Direct payments	42.17	43.45
<b>Pillar I</b>	<b>45.48</b>	<b>46.15</b>
<b>Pillar II - RD</b>	<b>14.82</b>	<b>14.46</b>
<b>Total</b>	<b>60.30</b>	<b>60.61</b>

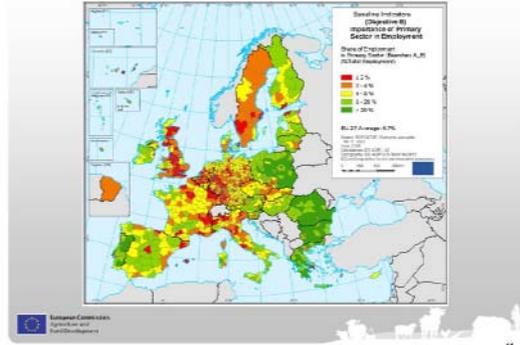


Outline

1. Overview of the CAP system
2. Policy challenges and objectives
3. CAP proposals in detail
4. What's next?



Importance of primary sector in employment



What are the challenges for agriculture...

Commission Communication 'The CAP towards 2020'

**Challenges**

- Economic**
  - Food security
  - Price variability
  - Economic crisis
- Environmental**
  - GHG emissions
  - Soil depletion
  - Water/air quality
  - Habitats and biodiversity
- Territorial**
  - Vitality of rural areas
  - Diversity of EU agriculture



... and how will the CAP address them?

Commission Communication 'The CAP towards 2020'

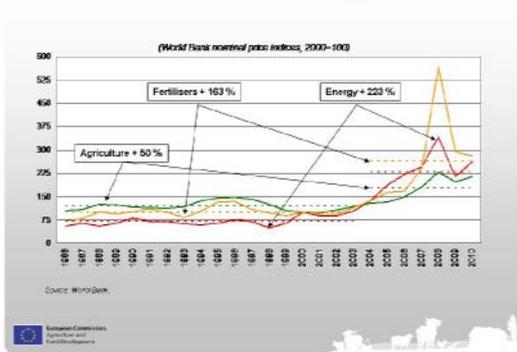
**Challenges** → **Policy objectives** → **Legal proposals**

**Policy objectives:** Europe 2020, Viable food production, Sustainable management of natural resources and climate action, Balanced territorial development, Simplification

**Legal proposals:** Reform objectives (Enhanced competitiveness, Improved sustainability, Greater effectiveness)



Recent trends in commodity prices

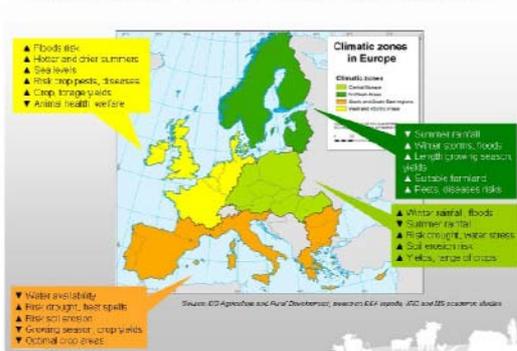


Outline

1. Overview of the CAP system
2. Policy challenges and objectives
3. CAP proposals in detail
4. What's next?



Climate change – Possible impacts on EU agriculture



New design of direct payments (1)

In 2014, EU farmers would have access to:

- Compulsory schemes (all MS):**
  - Basic payment scheme
  - 'Green' payment\*
  - Young farmers scheme
- Voluntary schemes (MS choice):**
  - Coupled support
  - Support in natural constraint areas

All payments subject to cross compliance  
All farmers will have access to the Farm Advisory System

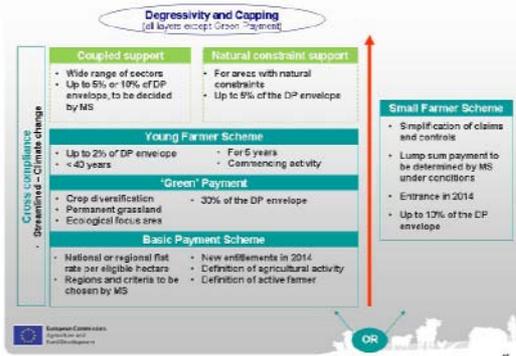
OR

A simplified scheme for small farmers (compulsory for MS, choice for farmer)

\* Payment for agricultural practices beneficial to climate change and the environment



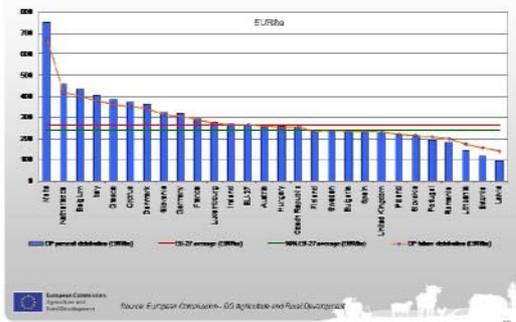
## New design of direct payments (2)



## Rural development in a Common Strategic Framework



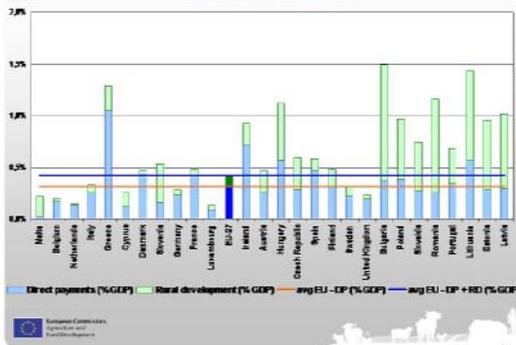
## Redistribution of DP - Closing one third of the gap between current level and 90% of EU average by 2020



## Key measures under Rural development

- Knowledge transfer, information actions and advisory services
- Investments in physical assets:
  - higher support rates for young farmers, collective investments and integrated projects
- Farm and business development
  - extended support for small farmers, young farmers and small businesses
- Support for setting up of producer groups in all EU Member States
- Agri-environment-climate payments and organic farming: more flexibility and reinforced support for joint actions
- Significantly reinforced co-operation measure including pilot projects, short supply chain, local promotion
- New risk management toolkit:
  - Leader approach strengthened across EU funds
- European Innovation Partnership and Prize for innovative, local cooperation

## Direct payments and Rural Development budget as % of GDP (average 2007-09)

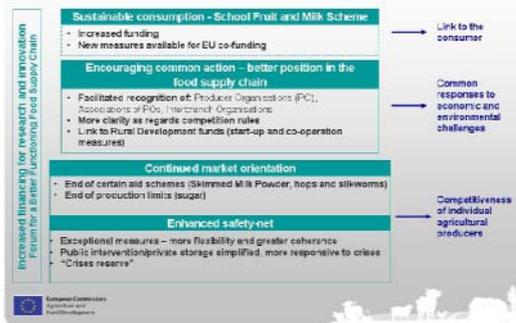


## An overarching objective: Simplification

### Examples

- Policy instruments**
  - A simple and specific scheme for small farmers (around 30% of beneficiaries)
  - Greening as simple as possible, includes only measures that have an environmental impact AND are manageable / controllable without major extra cost;
- Payments**
  - Only one Paying Agency for all CAP measures in a MS/Region
  - A range of approaches to reimbursing payments by beneficiaries on the basis of simplified costs (II Pillar).
- Controls**
  - MS with properly functioning control systems and low error rates may be authorised to reduce the number of controls
  - Cross-compliance: reduction and better streamlining of the obligations (13 SMRs instead of 18 and 8 GAEC instead of 15), follow-up checks to minor infringements repealed; farmers using certification systems less likely to be controlled.

## Improved instruments to address market developments (sCMO)



## Outline

1. Overview of the CAP reform
2. Policy challenges and objectives
3. CAP proposals in detail
4. What's next?

## The future CAP at a glance

<b>Enhanced competitiveness</b>	→	Innovation, knowledge transfer, risk management, cooperation in the food supply chain
<b>Improved sustainability</b>	→	Green payment, enhanced cross compliance, resource efficiency, research and innovation
<b>Greater effectiveness</b>	→	Improved targeting, redistribution, Common Strategic Framework, simplification

European Commission  
Agriculture and Rural Development

## For further information

- The CAP after 2013  
[http://ec.europa.eu/agriculture/cap-post-2013/index\\_en.htm](http://ec.europa.eu/agriculture/cap-post-2013/index_en.htm)
- Commission Communication 'The CAP towards 2020'  
[http://ec.europa.eu/agriculture/cap-post-2013/communication/index\\_en.htm](http://ec.europa.eu/agriculture/cap-post-2013/communication/index_en.htm)
- Impact assessment  
[http://ec.europa.eu/agriculture/analysis/perspec/cap-2020/index\\_en.htm](http://ec.europa.eu/agriculture/analysis/perspec/cap-2020/index_en.htm)
- Legal proposals  
[http://ec.europa.eu/agriculture/cap-post-2013/legal-proposals/inc\\_ex\\_en.htm](http://ec.europa.eu/agriculture/cap-post-2013/legal-proposals/inc_ex_en.htm)

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## Main conclusions of last year's outlook Thomas Fellmann (JRC-IPTS)

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Agriculture and Rural Development

**Main conclusions of last year's outlook**

Workshop on "Commodity Market Development in Europe - Outlook"  
25/26 October 2011, Brussels

Thomas Fellmann



European Commission  
Joint Research Centre  
IPTS - Institute for Prospective Technological Studies  
AGRI LIFE Unit  
Seville - Spain

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Agriculture and Rural Development

**Flashback - Outlook 2010  
Market Projections**

- **Meat**
  - Total meat production expected to recover in the short-term, but only modest mid-term growth
  - Beef/veal (-7%) and sheep/goat (-11%) production decreases
  - Pig and poultry production increases (+7% each)
- **Milk and Dairy**
  - Return to a (rather modest) increasing path, driven by a fairly optimistic demand outlook based on improved macroeconomic prospects
  - Production of fresh dairy products to increase by about 7%
  - Production of cheese to increase by about 10%
- **Agricultural Income**
  - Gradual, albeit slow improvement over most of the outlook period
  - Steady, albeit overall lower increase in input costs

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**Flashback - Outlook 2010  
Market Projections**

- **Macro-economic assumptions**
  - Global economic recovery after 2010, but a lot of uncertainties on length and breadth of economic crisis and scale of negative feedback loops
  - EU GDP growth to stabilise at: about 2%/year
  - Steady appreciation of the EUR to around 1.47 USD/EUR
  - Steady increase in crude oil price to around 97 USD/barrel
- **Cereals**
  - Relatively positive picture with tight market conditions, low stock levels and prices remaining above long term averages
- **Oilseeds**
  - Relatively positive picture with strong demand and high oilseed oil prices (esp. due to emerging biodiesel and biomass industry)
- **Biofuels**
  - EU policy will drive production upwards

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**Flashback - Outlook 2010  
The Baseline Approach**

- **Joint efforts by DG AGRI and JRC-IPTS**
  - Increased number of involved market and modelling experts
  - Validation procedure of the baseline results extended
- **"What if" - approach**
  - Additional scenarios with varying assumptions in order to identify and quantify main uncertainties of the market projections

⇒ **Both the joint efforts and the "what if" - approach have been further developed for the Outlook 2011**

- Last year we organised the sessions according to drivers (e.g. demand/supply)
  - Sometimes it was not clear what consequences the drivers imply for the outlook of specific agricultural markets
  - ⇒ **This year: we organise the sessions according to markets**
- Macro-economic assumptions influence the outlook (1)
  - Macro-economic developments (assumptions) can strongly influence the projected developments on agricultural markets
  - Return to a stable path of economic growth along the lines of previous decades?
  - What are the impacts of exchange rates?
  - ⇒ **This year: we put more emphasis on macro-economic assumptions and their implications for developments on agricultural markets**

- Drivers of supply
  1. Yields are one of the key drivers of production quantity, but how to capture its variability? Stochastics could be helpful.
    - ⇒ **This year: we have a partial stochastic uncertainty analysis with respect to crop yields**
  2. What is the impact of export restrictions in major export countries?
    - ⇒ **This year: we have an uncertainty analysis with respect to limited availability of grains in RUS, UKR, KAZ**
  3. Production costs in the EU are increasing, what is their influence on the supply?
    - ⇒ **This year: we have an uncertainty analysis with respect to higher operating/production costs in the EU**

- Macro-economic assumptions influence the outlook (2)
  - How can uncertainties in macro-economic developments be best captured in the modelling approach of the outlook on agricultural market developments?
  - Stochastics could be helpful...
  - ⇒ **This year: we have a partial stochastic uncertainty analysis with respect to macro-economic variables**
- Drivers of demand
  - What role does China play?
  - ⇒ **This year: we have an uncertainty scenario with slower GDP growth rates in China**

- Last year the workshop was an excellent opportunity to discuss recent and projected developments on agricultural markets
  - ⇒ **This year it should be the same (or even better)!**

## Baseline process and description of the uncertainty analysis

Pierluigi Londero (DG AGRI) and Robert M'barek (JRC-PTS)

### Modelling tools for baseline work at the EC – state of the art / improvements

Workshop on "Commodity Market Development in Europe - Outlook"  
25/26 October 2011, Brussels

Pierluigi Londero\* and Robert M'barek\*\*

With contributions from:  
A. Sunell, F. Chiar, A. D'Avino, T. Fellmann, E. Ferrar, SH, Gay, A. Gonzalez-Meliso, S. Hélène, M. Hrnics, E. Konya, J. Michalek, C. Nekhay, D. Nekrasius, Z. Ni-Naete, B. Totti, B. Van Doorelaer, B. Velazquez, C. Vinyaz

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DG Agriculture and Rural Development  
Directorate L – Economic analysis  
E.L.L.O.N.

\*\* European Commission  
Joint Research Centre  
JRC-PTS - Institute for Prospective Technological Studies  
Serpis - Seap



Oh no! Not another baseline...

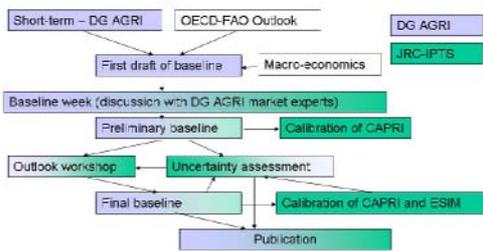
- Why?
  - EU market projections to better understand markets and their dynamics
  - identification of key issues for market and policy developments
  - benchmark for assessing the medium-term impact of future market and policy issues
- What?
  - 10-year markets and income projections with focus on the EU
  - not as a forecast of what the future will be, but a description of what may happen under a specific set of assumptions, which at the time of making the projections were judged plausible
- When?
  - published annually in November/December

## “Prospects for EU agricultural markets”

- **How?**
  - **Model used:** current market projections based on EC version of Aglink-Cosimo (recursive dynamic partial equilibrium model with a detailed representation of world agriculture and policy, EU-15&EU-12)
  - **Data used:** market and policy information available at the end of September
  - **Results:** balance sheets for main commodities
  - **Detailed results for:**
    - EU-27, EU-15 and EU-12 aggregates
    - cereal, oilseed, biofuel, meat and dairy markets
    - sugar as of 2011
- **What's new? (New features starting in 2010)**
  - longer time period and larger product coverage
  - “new” model and larger modeling team
  - more validation (market experts + seminar)
  - assessment of uncertainties
  - sugar and stochastic analysis 

## Overview of the EU baseline process

- Who does what? (if you really want to know...)



## Uncertainty analysis

## Assessment of uncertainties



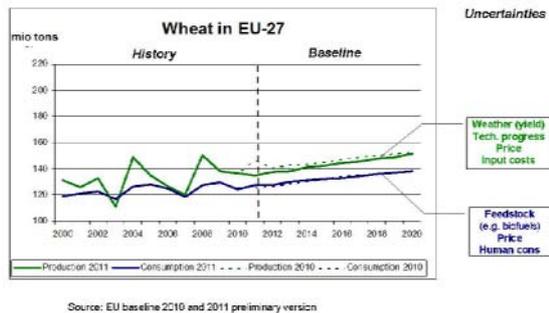
What kind of uncertainties affect the EU market outlook?

- weather
- macro-economics (growth, exchange rate, macro-economics)
- market developments (supply and demand patterns)
- policies (agricultural, trade, renewable energy)

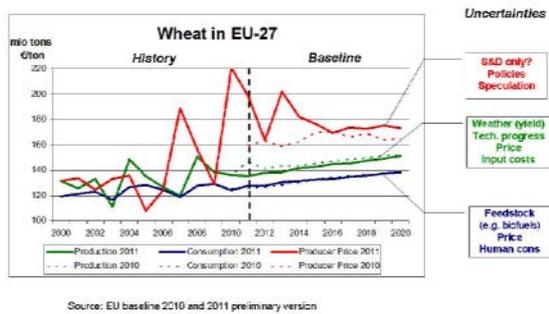
## Why is uncertainty analysis relevant?

- **Deterministic baseline** provides a *single set of outcomes for a single set of assumptions*
- **Scenario analysis** (what if...) allows to analyse the *impacts of alternative assumptions*
- **Partial stochastic analysis** examines the *range of possible outcomes through random selection of variables*
  - to understand which uncertainties have strongest impact (variability in relation to the mean, coefficient of variation)
  - information on their impact on different sectors/products (policy relevance – intervention price)
- **Limits**
  - stochastic analysis based on past trends
  - past has been more stable than future will be (probably) 

## Drivers of uncertainty



## Drivers of uncertainty



## Models used

- **Agro-Economic Modelling Platform (iMAP)** 
  - coordinated by JRC-IPTS in cooperation with DG AGRI
  - widely used, robust and scientifically acknowledged tools
  - partial-equilibrium (PE) and general equilibrium (CGE) models
- **Modelling tools used for EU baseline and uncertainty analysis**
  - AGLINK-COSIMO** EC version
  - CAPRI** highly disaggregated (regions, products)
  - GLOBE** multi-regional, multi-sector CGE model

### Macroeconomics

**Partial stochastic analysis of macro variables** **Macro Uncertainty**

**Variables and coverage:**

- GDP growth, GDP deflator, Consumer price index (CPI), Exchange rate and world oil price in the EU-15 and in the EU-12
- US GDP deflator
- time series from 2000 on

**Methodology:**

- examine the range of possible price outcomes
- random selection of conditioning macroeconomic variables
- correlation of short term forecast errors

Correlation of short-term forecast error Covariance matrix → **AGLINK-COSIMO** → Solve model 500 times

10% and 90% percentiles, median  
Coefficient of variation (min & max)

### Supply side 3

**Limited availability of grains in RUS, UKR, KAZ** **Harvest Failure East**

**Background:**

- RU, UKR and KAZ 30% of wheat trade in world market (2009)
- measures with impact on WM prices
- can occur again (drought, fire, price spikes...)

**Methodology:**

- model is forced to reproduce production patterns of 2010
- wheat and coarse grains
- for 2 consecutive years (2012, 2013)
- (experiment to stimulate discussion)

Worst scenario: **No exports**  
Possible scenario: **Lower exports** → **AGLINK-COSIMO** → Impacts on WM prices EU meat sector ...

### Demand side

**Slower GDP growth in China** **Slower Growth China**

**Background:**

- China slows GDP growth
- limit to **7% annually** in its 5-year economic plan for 2011 and 2015

**Methodology:**

- CGE model GLOBE is run with the slower growth assumption
- set of coherent new macroeconomic assumptions is fed into AGLINK

slower GDP growth → **GLOBE** → 2010-2020 cumulated change GDP growth (-13%)  
Change in oil price (-4,6%) → **AGLINK-COSIMO**

### Scenarios and labels

Uncertainties analysed	Scenarios	Scenario label
Partial stochastic analysis of macro variables	random selection	<b>Macro Uncertainty</b>
Slower GDP growth in China	7% GDP growth	<b>Slower Growth China</b>
Partial stochastic analysis of yield	random selection	<b>Yield Uncertainty</b>
Higher operating/production costs in the EU	30% increase 10% increase	<b>Higher Costs</b>
Limited availability of grains in Russia, Ukraine and Kazakhstan	No exports Lower exports	<b>Harvest Failure East</b>

### Supply side 1

**Partial stochastic analysis of yield** **Yield Uncertainty**

**Crops and coverage:**

- soft wheat, durum wheat, barley, maize, oats, rye, other cereals, rapeseed, sunflower and soybean
- EU-15 and EU-12

**Methodology:**

- correlation of crop yield errors
- model solved 500 times to get range of plausible results

correlation of crop yield errors covariance matrix → **AGLINK-COSIMO** → solve model 500 times

range of 50% of the simulations  
median, coefficient of variation

**JRC ipf**  
EUROPEAN COMMISSION

**Organisation of workshop**

European Commission  
Agriculture and Rural Development

- Session on macro-economic assumptions
- Sessions organised for each commodity market
  - presentation of European Commission's outlook on EU agricultural market developments
  - presentation on how different settings and assumptions regarding selected factors and uncertainties influence the projected developments
  - panel discussions with short presentations
- Final panel discussion on agricultural policy and markets

### Supply side 2

**Higher operating costs in EU** **Higher Costs**

**Methodology:**

- applying an exogenous shock on operating costs
- "all cash expenditures necessary to operate"

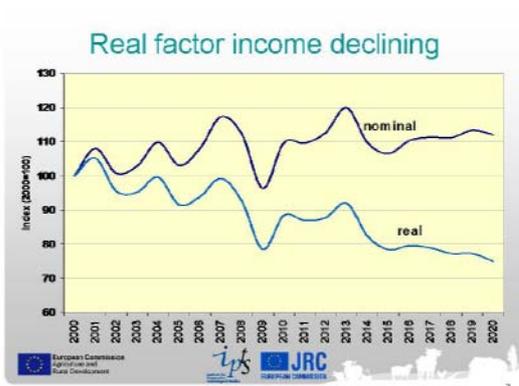
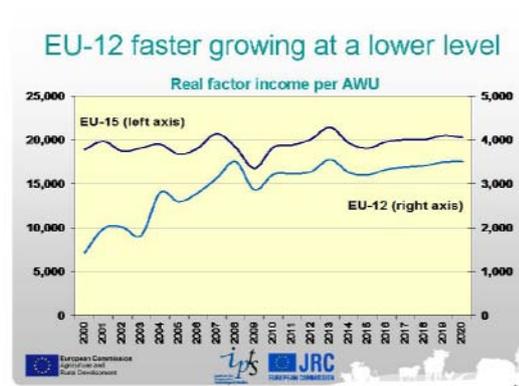
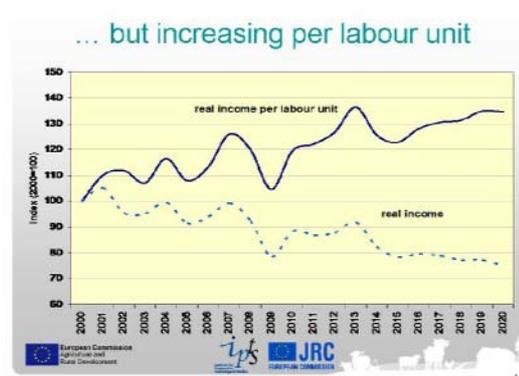
**Scenarios:**

- "normal" uncertainty = 10% increase in operating costs
- "worst scenario" = 30% increase in operating costs

Direct impact on Mineral fertilizers  
Fuel and energy  
Seed costs  
Veterinary costs  
Maintenance/build.  
Indirect impact on Feed  
Animal ureasas → **CAPRI** →

# EU agricultural outlook: settings and income results

Stephan Hubertus Gay (DG AGRI)

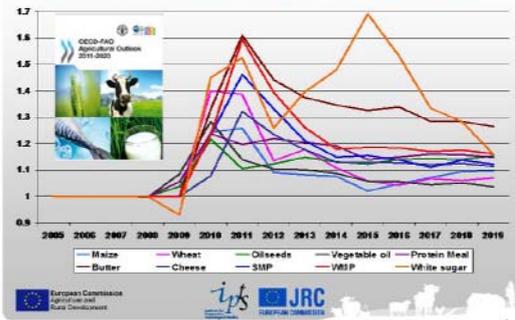


### Starting point

- **OECD/FAO Agricultural Outlook 2011-2020**
  - Agricultural commodity markets for the rest of the world
- **EU Short Term Outlook**
  - Recent years and orientation for first future years
  - First time published in October 2011
- **Macro-economic forecast**
  - DG ECFIN for the close future
  - Consistent source for main countries and up to 2020

The slide includes three small images: the cover of the OECD/FAO Agricultural Outlook 2011-2020, the cover of the EU Short Term Outlook, and a photograph of a green field with sheep.

OECD/FAO Agricultural Outlook 2011-2020  
Comparison of world market prices to previous year

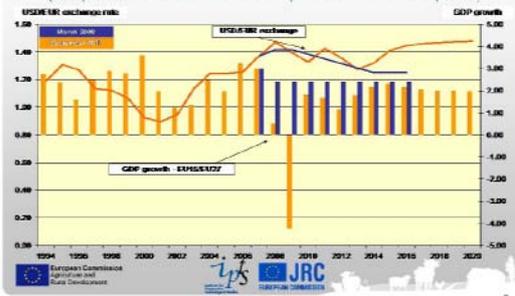


Policy assumptions

- CAP in its current (post Health Check) form including
  - Phasing out/abolition of milk quotas
  - End of sugar quotas in 2015
- World trade remains in conformity with the Uruguay Round Agreement on Agriculture
- No new FTAs enter into force before 2020

Macroeconomic assumptions

High degree of uncertainty surrounding the economic outlook  
(comparison of March 2008 and September 2011 assumptions)



Macroeconomic uncertainties  
Zebedee Nii-Naate (JRC-IPTS)



Macroeconomic uncertainties

Workshop on "Commodity Market Development in Europe - Outlook"  
25/26 October 2011, Brussels

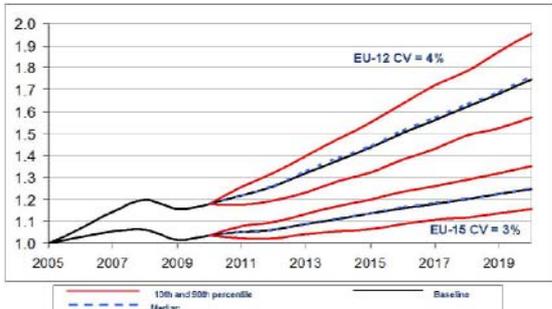
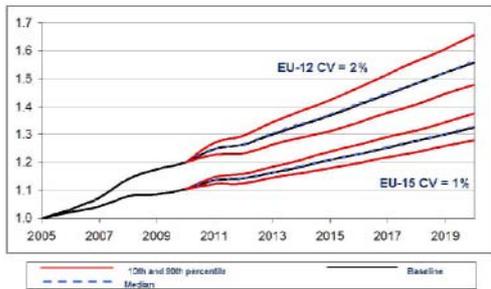
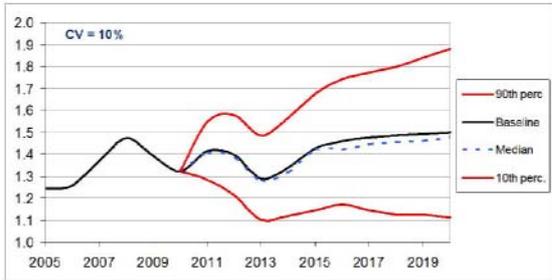
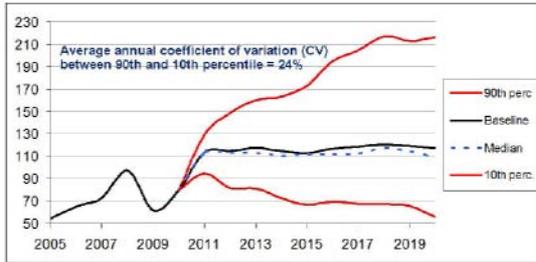


\*Zebedee Nii-Naate and \*\*Hubertus Gay

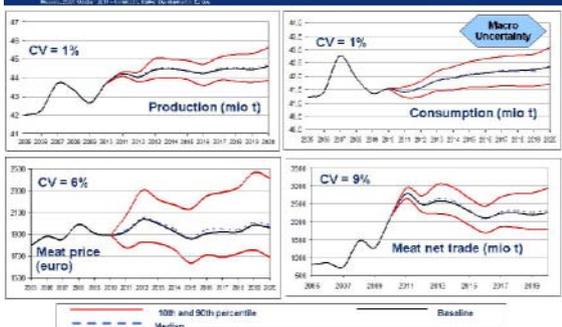
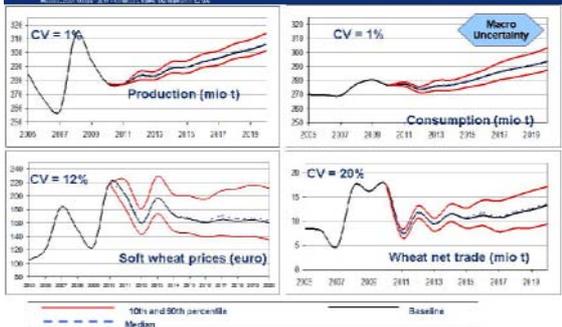
Macroeconomic settings

\*European Commission  
Joint Research Centre  
IPTC – Institute for Prospective Technological Studies  
Division – I2/1P

\*\* European Commission  
DG Agriculture and Rural Development  
LE – Economic analysis of EU agriculture  
Economic, Belgium



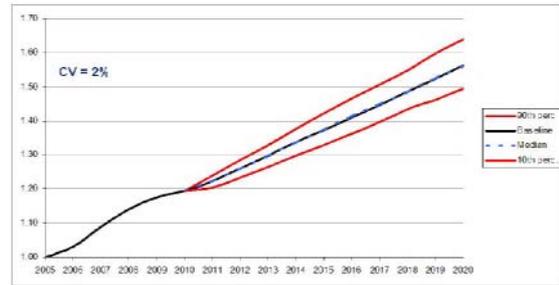
## Highlight Results



- Macroeconomic settings are important
- Marginal impact on consumption and production
- Significant impact on prices and net trade
- Meat sector less affected than cereals

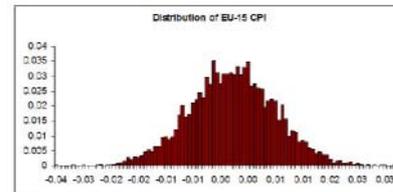
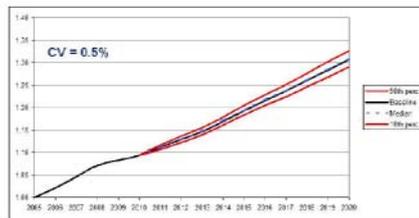
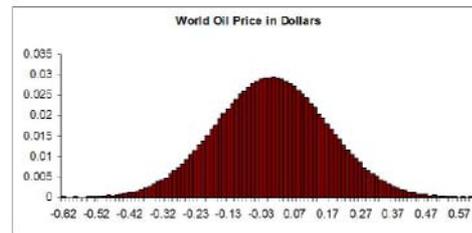
# Commodity Market Development in Europe – Outlook

## Annex

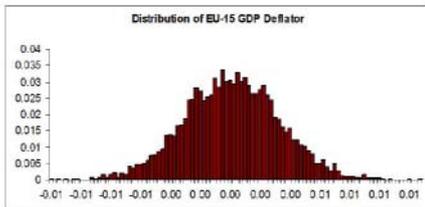
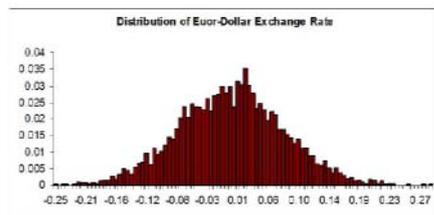
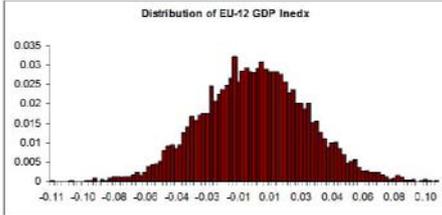
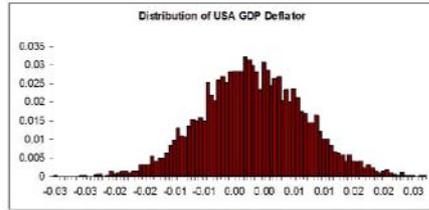
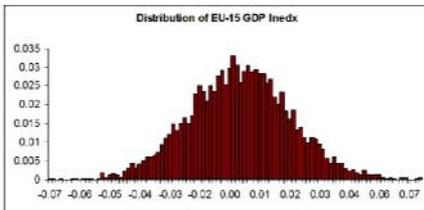
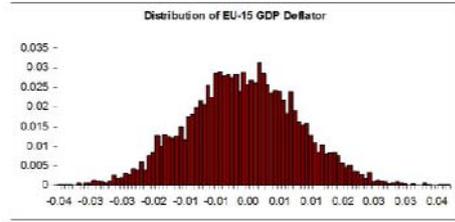
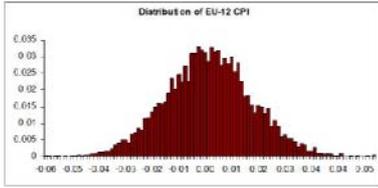


- Correlation of short term forecast errors
  - stochastic variable =  $\text{baseline}/\text{baseline}(-1) - \text{forecast}/\text{forecast}(-1) - (\text{mean}(\text{baseline}/\text{baseline}(-1) - \text{forecast}/\text{forecast}(-1)))$
  - New exogenous variable =  $\text{New exogenous variable}(-1) * (1 + (\text{baseline} - \text{baseline}(-1))/\text{baseline}(-1) + \text{stochastic variable})$
  - Covariance matrix of stochastic variable is computed
  - Expected value of stochastic variable is assumed to equal 0
  - Multivariate normal distribution imposed (means covariance matrix)
  - Assume no correlation of variables between years.
- 364 successful solutions out of 500 simulations

	EU15 CPI	EU-12 CPI INDEX	EU-15 GDP INDEX	EU-12 GDP INDEX	EU-15 GDP DEF.	EU-12 GDP DEF.	USA GDP DEF.	EURO/USD	OIL PRICE
EU15 CPI	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-4.3000
EU-12 CPI		0.0002	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	-4.3610
EU-15 GDP INDEX			0.0004	0.0005	0.0000	0.0000	0.0000	0.0000	-4.3614
EU-12 GDP INDEX				0.0000	0.0000	0.0000	0.0000	0.0000	-4.3611
EU-15 GDP DEF.					0.0000	0.0000	0.0000	0.0000	-4.3601
EU-12 GDP DEF.						0.0000	0.0000	0.0000	-4.3604
USA GDP DEF.							0.0000	0.0000	-4.3604
EURO/USD								0.0000	-4.3604
OIL PRICE									0.0000



# Commodity Market Development in Europe – Outlook



# Commodity Markets: A New Structure or Deviations from Long Term Trends?

John Baffes (World Bank)

World Bank – Prospects Group

## Commodity Markets: A New Structure or Deviations from Long Term Trends?

**JOHN BAFFES**  
The World Bank  
Workshop on  
*Commodity Market Developments in Europe—Outlook*  
October 25-26, 2011  
European Commission, Brussels

World Bank – Prospects Group

### Short-term movements



Sources: World Bank

World Bank – Prospects Group

### Issues on post-2005 developments in commodity markets

- A “perfect storm” that still continues? (# 3-5)
- What can simple models tell us? (# 6-9)
- What about facts? (# 10-16)
- Are we experiencing the emergence of a structural transformation or just deviations from longer term trends? Or, a storm that goes on for 6 years is no longer a storm (# 17-19)

World Bank – Prospects Group

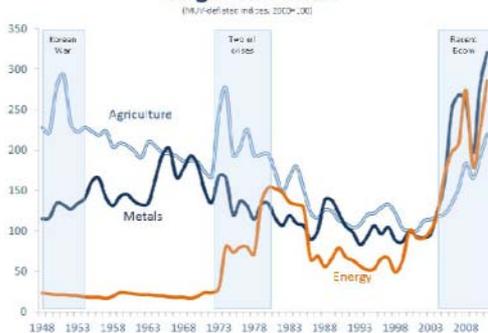
### Most of the ‘perfect storm’ conditions are still in place

	2001-05	2006-10	change
Agricultural prices (nominal index, 2000 = 100)	117	198	+69%
Grain/oilseed price volatility (stdev of log differences, monthly)	2.3	3.5	+52%
Crude oil price (US\$/barrel, nominal)	33	75	+127%
Fertilizer prices (nominal index 2000 = 100)	126	310	+157%
Exchange rates (US\$ against a broad index of currencies)	119	104	-13%
Interest rates (10-year US Treasury bill)	4.7	4.1	-14%
Funds invested in commodities (\$ billion)	30	230	+667%
GDP growth (low and middle income countries, % p.a.)	5.0	5.8	+16%
Industrial production (low and middle income countries, % p.a.)	6.3	7.1	+13%
Biofuel production (million of barrels per day equivalent)	0.4	1.3	+203%
Stocks (total of maize, wheat, and rice, months of consumption)	3.2	2.5	-21%
Yields (average of wheat, maize, and rice, tons/hectare)	3.8	4.0	+7%
Growth in yields (% change per annum, average)	1.4	1.0	-32%
Natural disasters (droughts, floods, and extreme temperatures)	374	441	+18%

Sources: Barclays Capital, CRED, FRED, IEA, IMF, USDA, World Bank, and author's calculations

World Bank – Prospects Group

### Long term trends



Source: World Bank. Note: 2011 figures as of August 2011

World Bank – Prospects Group

### A simple model

$$\log(P_{i,t}) = \mu + \beta_1 \log(S/U_{i,t-1}) + \beta_2 \log(P_{i,t-1}) + \beta_3 \log(XR_t) + \beta_4 \log(R_t) + \beta_5 \log(GDP_t) + \beta_6 \log(MUV_t) + \beta_7 t + \epsilon_t$$

$P_{i,t}$ : the annual average nominal price of commodity (maize, wheat, rice, soybeans, and palm oil)

$(S/U)_{i,t-1}$ : lagged stock-to-use ratio

$P_{i,t-1}$ : price of crude oil (average of Brent, WTI, and Dubai)

$XR_t$ : exchange rate [US\$ against a broad index of currencies]

$R_t$ : interest rate (10-year US Treasury)

$MUV_t$ : inflation (exports price index of manufactures by G-5)

$GDP_t$ : world GDP (global; GDP in US\$)

$t$ : time trend

$\beta_j$ s: parameters to be estimated

$\epsilon_t$ : error term

# Commodity Market Development in Europe – Outlook

## World Bank – Prospects Group

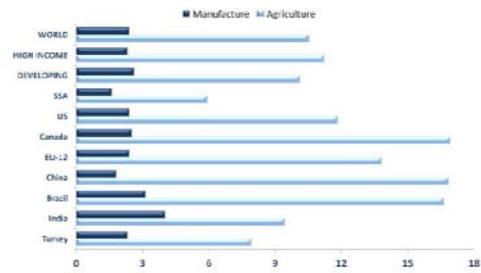
### Parameter estimates

	Maize	Wheat	Rice	Soybeans	Palm oil
S/U ratio	-0.45***	-0.53***	-0.08	-0.17**	-0.38**
Oil price	0.19***	0.24***	0.25***	0.31***	0.45***
Exchange rate	0.02	-0.81***	-2.83***	-1.31***	-1.09*
Interest rate	-0.05	0.05	0.34***	-0.06	-0.04
GDP	-0.01	-0.01	-0.05**	0.01	0.01
Inflation	0.64	0.08	0.62	-0.01	0.04
Trend*100	-1.76***	-0.65	-0.75	-1.14*	-2.17**
Adjusted-R <sup>2</sup>	0.87	0.91	0.76	0.84	0.62
DW	1.03	1.10	1.03	1.27	1.24
ADF	-3.90***	-5.52***	-3.95***	-4.68***	-4.43***

Notes: Asterisks indicate levels of significance: (\*) for 10%, (\*\*) for 5%, and (\*\*\*) for 1% levels. DW is the Durbin Watson statistic for serial correlation. ADF is the Augmented-Dickey-Fuller statistic for unit root.

## World Bank – Prospects Group

### Energy remains one of the key drivers of agricultural prices (cost of energy component measured in 2007, percent)



Source: GTAP preliminary release 0, version 8.  
Note: Agriculture refers to crops (i.e., it excludes livestock). It includes both direct energy costs (in costly fuel) and chemicals (the most important of which is fertilizer). To avoid double-counting, manufacture does not include the refining sector.

## World Bank – Prospects Group

### What matters most

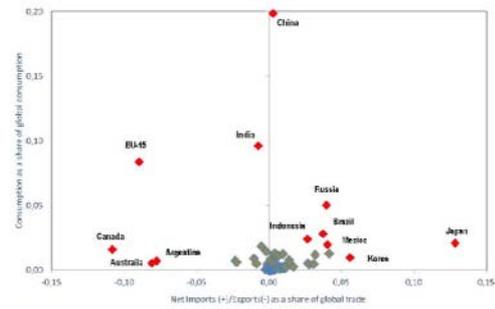
Contribution of each variable to price changes from 2003 Q5 to 2006-10, percent

	Maize	Wheat	Rice	Soybeans	Palm oil
S/U ratio	12.0	14.4	0.9	-2.4	1.3
Oil price	32.6	41.4	27.2	57.0	58.2
Exchange rate	-0.1	11.5	25.4	19.9	11.9
Interest rate	0.5	-0.5	-2.0	0.6	0.3
GDP	0.4	0.4	1.2	-0.4	-0.3
Inflation	13.6	1.7	-8.4	-0.2	0.7
Trend	-0.3	-0.1	-0.1	-0.2	-0.3
SUM (of the above)	58.7	68.8	44.2	74.3	71.8
Residual	41.3	31.2	55.8	25.7	28.2
ALL (SUM + Residual)	100	100	100	100	100

Notes: The contributions were based on the parameter estimates reported earlier.

## World Bank – Prospects Group

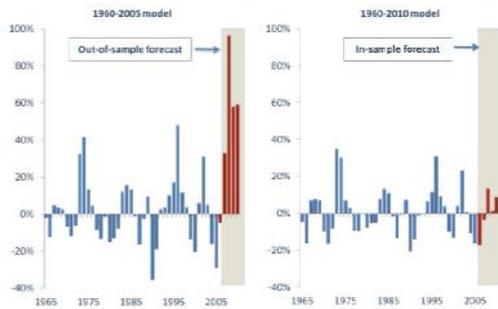
### Net imports and consumption shares, 1990-99



Source: Authors' calculations from US Department of Agriculture data.  
Note: The US is not included in the figure. Its (net) exports and consumption shares were 39% and 13%.

## World Bank – Prospects Group

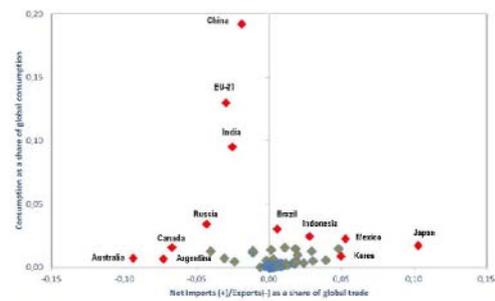
### Gap between actual and model-generated prices: wheat



Source: Author's estimates

## World Bank – Prospects Group

### Net imports and consumption shares, 2000-09

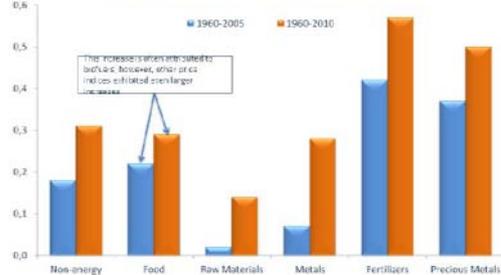


Source: Authors' calculations from US Department of Agriculture data.  
Note: The US is not included in the figure. Its (net) exports and consumption shares were 35% and 14%.

## World Bank – Prospects Group

### The energy/non-energy link strengthened for all key price indices after 2005

Transmission elasticity estimates based on 2-DC regression on 1960-2005 and 1960-2010

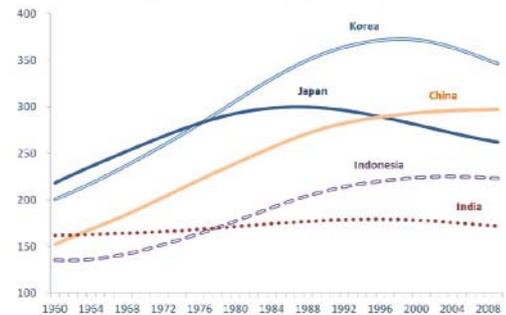


Source: Author's estimates

## World Bank – Prospects Group

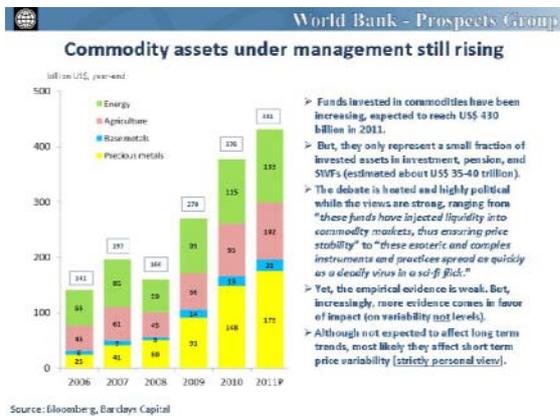
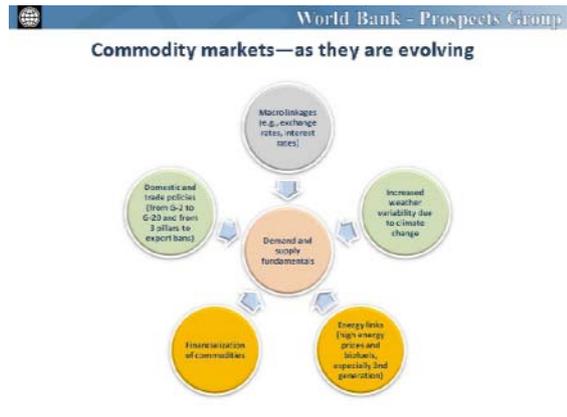
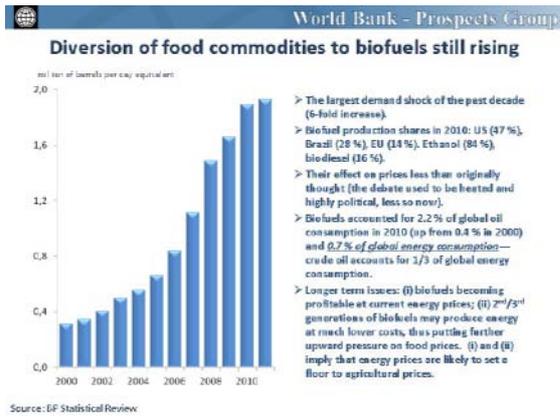
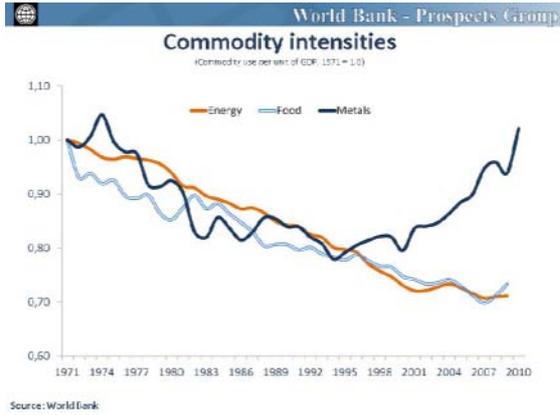
### Per capita cereal consumption

(based on a non-parametric, locally weighted smoothing)



Source: Author's calculation from US Department of Agriculture data

# Commodity Market Development in Europe – Outlook



## Comparison FAPRI vs EC Outlook Settings

Julian Binfield (FAPRI)



### Comparison FAPRI vs EC Outlook Settings

Brussels, 25<sup>th</sup>/26<sup>th</sup> October, 2011

#### Most of the time not different

Crop areas- million hectares

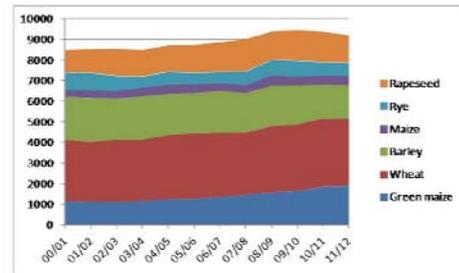
	FAPRI-MU	EU Commission
Wheat	26.0	26.2
Barley	11.9	11.7
Maize	9.2	9.1
Rapeseed	7.7	6.9
Sunflower	4.0	3.9

#### FAPRI-MU EU stuff this year

- The figures for Europe that I have here are from FAPRI-MU's latest outlook
- They are not the same as those from FAPRI-ISU which use different models, and this year different world prices
- We drive world prices off the January FAPRI-MU stochastic baseline so we have January Global Insight oil prices in, updated for the short run

#### Biogas?

Major cereals area in Germany – '000 ha

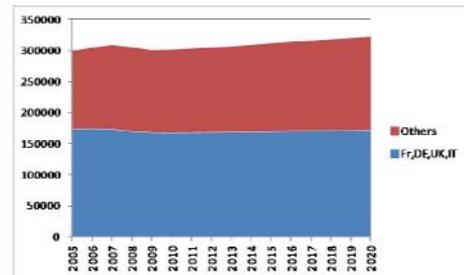


#### Macro data that we use, 2020

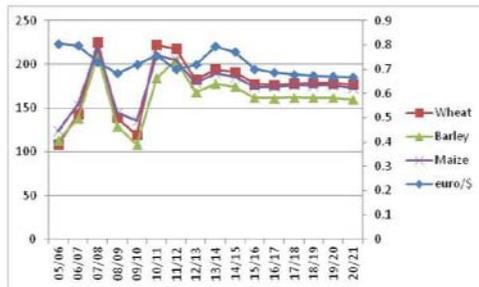
	From Global Insight	EU Commission
USD/EUR	1.50	1.48
EU-27 inflation (GDP defl.?)	2.0	1.9%
GDP growth	2.1	2.0%
Oil price	\$103	\$112
Population growth	0.1%	0.2%

#### Income is important for biofuels

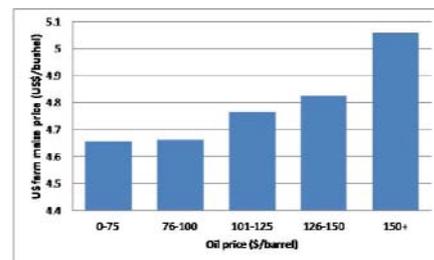
EU-27 total energy cons. road trans. '000 toe



#### Euro/\$ exchange rate and cereals prices



#### Corn and oil price, 2012-2020 average



Factors influencing impact of oil price changes on biofuels demand

- |   |  |
|---|--|
| <p><b>US</b></p> <ul style="list-style-type: none"> <li>• Mandates can be waived</li> <li>• Mandates and blend will determine consumption over a range of prices</li> <li>• If price falls to energy equivalent, flex fuel market likely to expand</li> </ul> | <p><b>EU</b></p> <ul style="list-style-type: none"> <li>• Some countries have penalties for not meeting mandates</li> <li>• Mandates and standards determine consumption over a range of prices</li> <li>• Can EU expand flex fuel market to the same extent?</li> </ul> |
|---|--|

Sugar – with or without reform

- FAPRI-US model has different prices for each fuel – biodiesel, conventional ethanol, advanced ethanol, cellulosic ethanol
- Sugar counts as an advanced biofuel and meets sustainability requirements, will be in demand
- Will sugar ethanol be worth more in the EU?
- What will the end of quotas mean?
- If ‘greening’ requirements of the CAP are passed how will this impact sugar?

Trade in biofuels

- Consumption of ethanol above consumption of biodiesel? Is that possible?
- What do sustainability requirements mean for potential feedstocks?
- Where will all that ethanol come from?
  - EU looking for 6 billion extra litres, US looking min. 15+ billion litres, asking Brazil to nearly double prod.
  - Economic climate will place a role
- Could EU export 1<sup>st</sup> gen., cellulosic or sugar ethanol?
- (US/Brazil) policy uncertainty important too

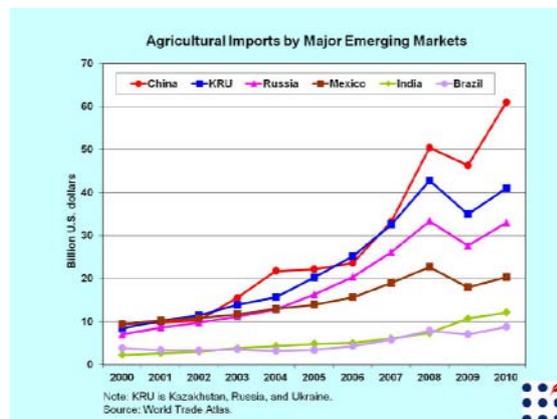
Exchange Rates and World Agricultural Markets

William Liefert (USDA-ERS)

**Author contact information:**  
[wliefert@ers.usda.gov](mailto:wliefert@ers.usda.gov)

See the briefing rooms of the Economic Research Service of USDA at  
[www.ers.usda.gov](http://www.ers.usda.gov)

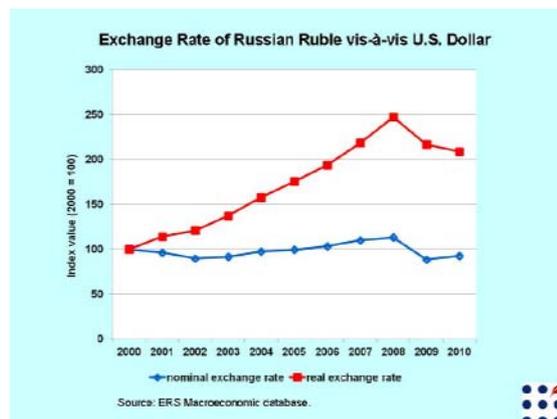
Thank you for your attention!



**Exchange Rates and World Agricultural Markets**

William Liefert  
 Market and Trade Economics Division  
 Economic Research Service  
 U.S. Department of Agriculture

Commodity Market Development in Europe – Outlook  
 Brussels, October 25-26, 2011



**Relevant Work**

Liefert, William, Olga Liefert, and Mathew Shane. *Russia's Growing Agricultural Imports: Causes and Outlook*. Outlook Report WRS-09-04, ERS, USDA, 2009.

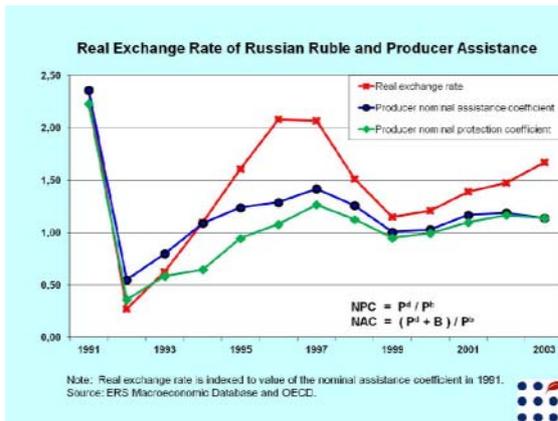
Liefert, William, Olga Liefert, and Mathew Shane. "Russia's Agricultural Imports: Will the High Growth of the 2000s Continue?" *EuroChoices* 9, 3:43-49, 2010.



**Relevant Work**

Liefert, William. "Decomposing Changes in Agricultural Price Gaps: An Application to Russia." *Agricultural Economics* 40, 1:15-28 (January 2009).

Liefert, William. "Decomposing Changes in Agricultural Producer Prices." *Journal of Agricultural Economics* 62, 1:119-136 (February 2011).



**The EU economy: Recent developments and short-term outlook**  
 Björn Döhring (DG ECFIN)

1

**The EU economy:  
 Recent developments  
 and short-term outlook**

Björn Döhring  
 DG ECFIN

**Workshop on  
 Commodity Market Developments**

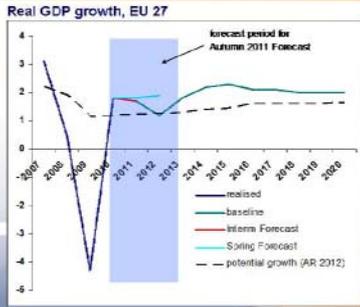
**Brussels, 25 October 2011**

2

**Main points**

1. Recoveries after financial crises are slow and bumpy
2. The global economy has weakened
3. The sovereign debt crisis might impact credit supply
4. Leading indicators point to a sharp slowdown

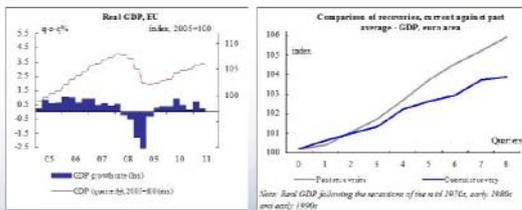
## The short term and the medium term



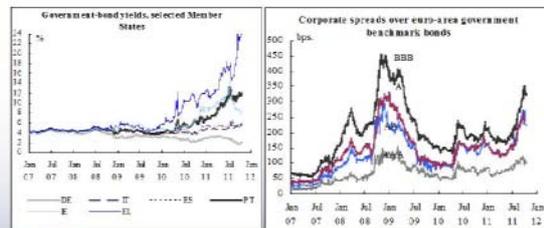
## Commodity prices assumed to have peaked



## Where do we stand with the recovery?

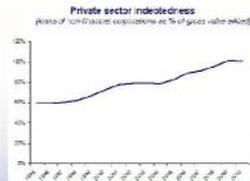


## The sovereign debt crisis deepened... and spilled over

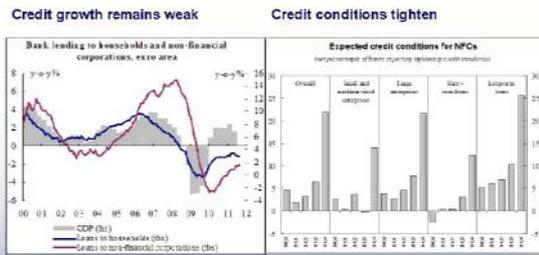


## Some features of the recovery

- Subdued "post-financial-crisis" growth
- Sectoral adjustment needs
- Deleveraging
- Damaged growth potential (and higher NAIRU)
- A multi-speed recovery



## Risk of credit constraints?

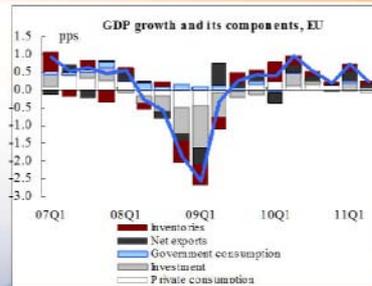


## The external side has weakened

- Softening of the recovery in the US
- Growth moderation in EMEs
- Slowing dynamics of world trade

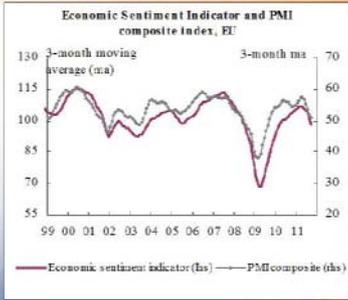


## The "broadening of the recovery" is on hold



Leading indicators have deteriorated sharply

11



Issues for our Autumn Forecast

12

- How bad will it be?
- When will it get better?
- Will there be a credit crunch?

Recent forecasts  
(euro area, for the ease of comparison)

12

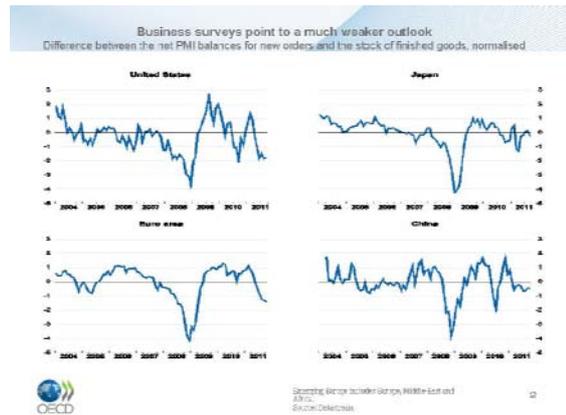
Real GDP growth - euro area

		2011	2012
ECB	08-Sep	1.4 - 1.8	0.4 - 2.2
IMF WEO	20-Sep	1.6	1.1
consensus	10-Oct	1.6	0.6
Commission interim	15-Sep	1.6	

Macroeconomic Settings: Comments I  
Eckhard Wurzel (OECD)

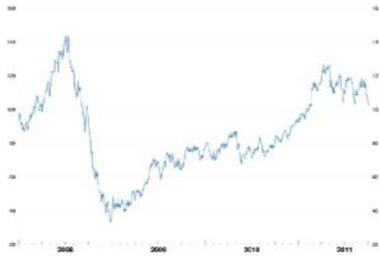
Background

Eckhard Wurzel  
OECD Economics Department



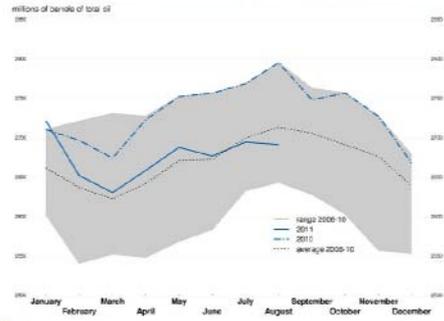
# Commodity Market Development in Europe – Outlook

### Brent daily



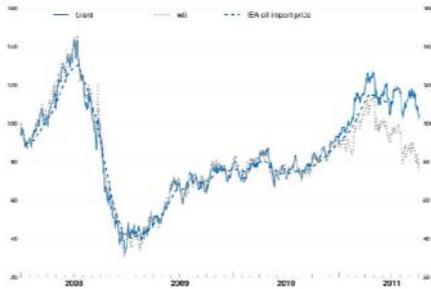
3

### Level of OECD industry stocks



7

### Brent, WTI and IEA oil import price



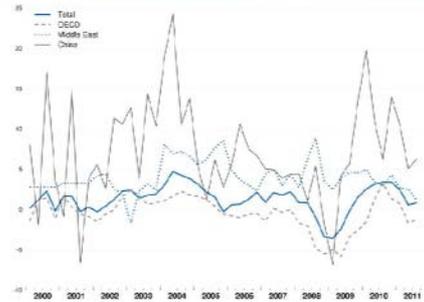
4

### Brent spot and future price



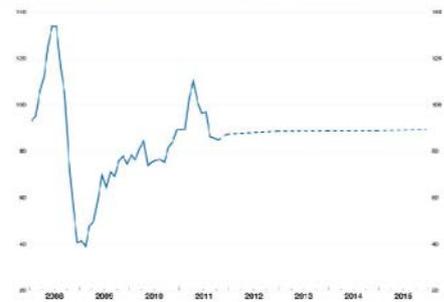
8

### Oil demand (year on year growth)



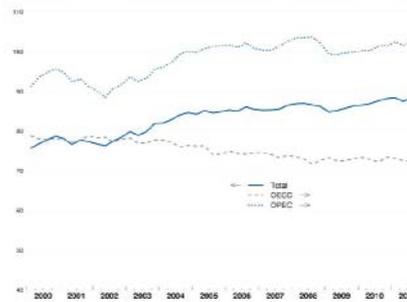
5

### WTI and WTI futures



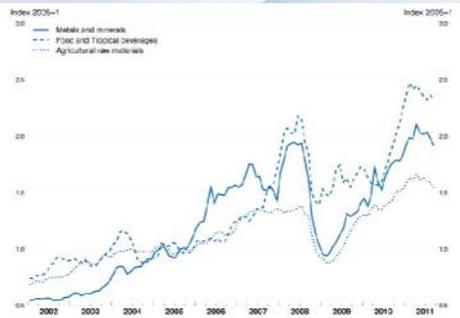
9

### Oil supply (million barrels per day)



6

### Non oil commodity prices



10



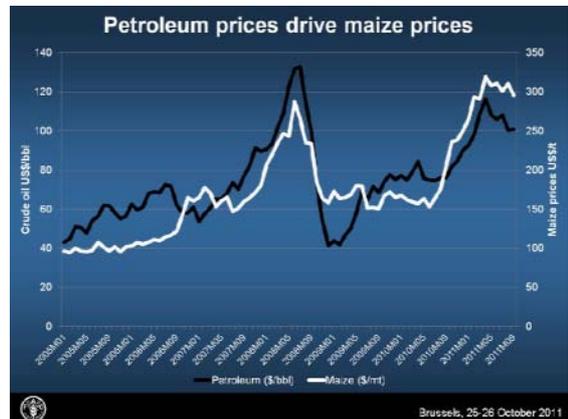
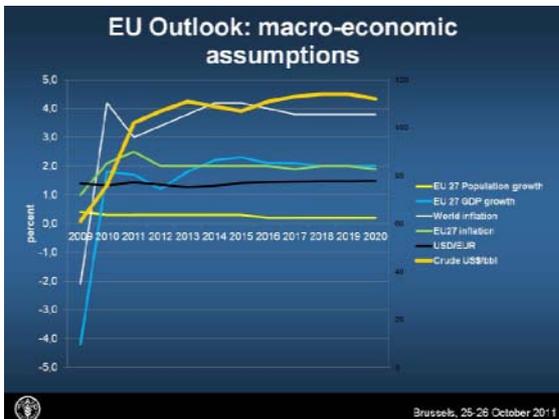
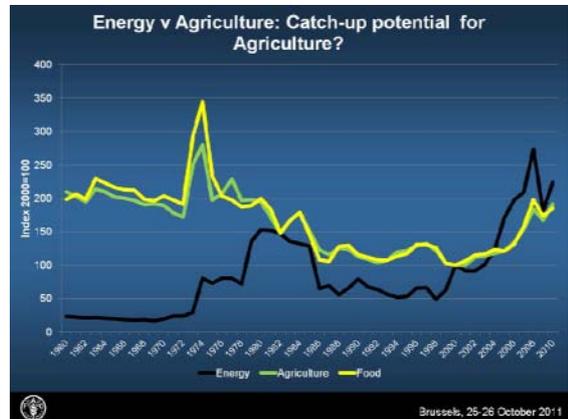
## Macroeconomic Settings: Comments II

Josef Schmidhuber (FAO)

**Workshop "Commodity Market Developments in Europe - Outlook"**  
25/26 October

Josef Schmidhuber  
FAO

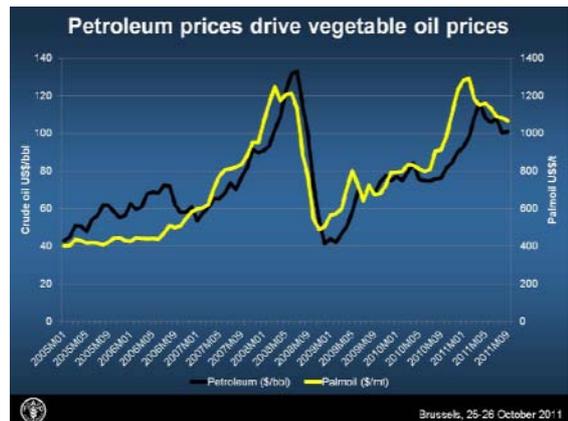
Brussels, 25-26 October 2011



### Talking points: macro

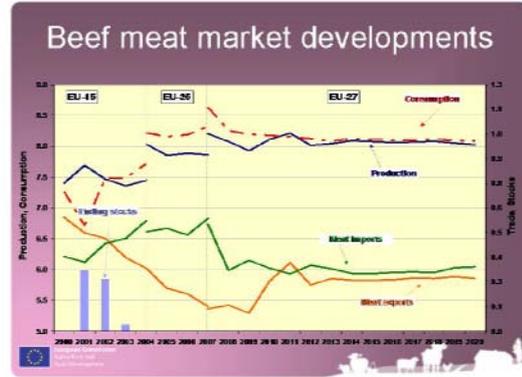
- Stable macro outlook for a deterministic outlook scenario hides more than it reveals
- Baseline is model based but expert-driven
- Growing income disparity: disaggregated picture for GDP growth needed
- Brace for macro-economic volatility on all fronts: GDP growth, inflation, x-rates, US, EU and BRICS
- Relative importance of the macro variables unclear: energy sector/x-rates
- Stochastic simulations needed

Brussels, 25-26 October 2011



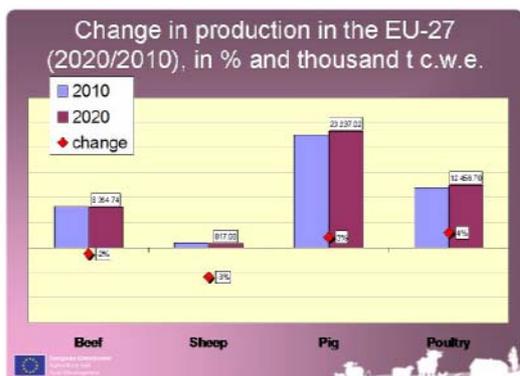
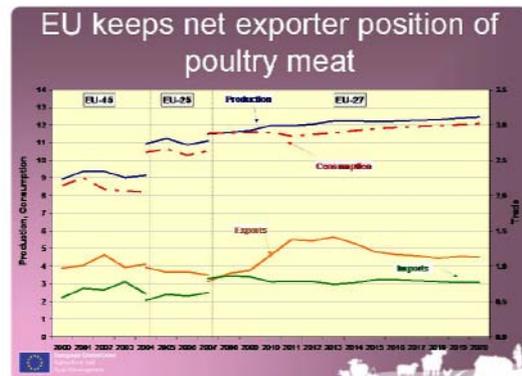
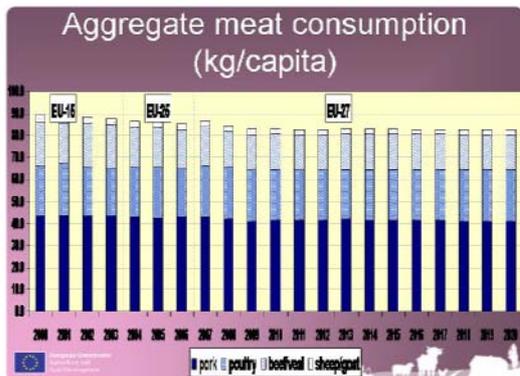
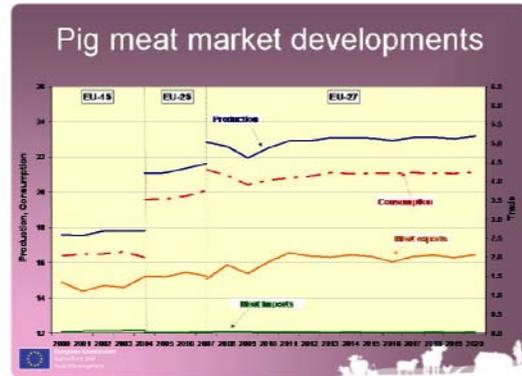
# EU Agricultural Outlook: Meat Markets

Edith Konya (DG AGRI)



### Meat markets

- Bullish demand to drive world market perspectives
- Macroeconomic environment has mixed implications for meat market prospects
- Domestic policy setting has limited effects on meat markets
- Feed cost developments could support producers' gross margins
- Market prospects remain conditional upon a number of uncertainties



### Conclusions

- EU meat commodity markets show a mixed picture
  - Relatively favourable outlook for non-ruminants
  - Continuing decline in the production of beef and sheep meat
- Poultry meat **consumption** would grow the most, but pig meat would remain the most preferred meat in the EU
- The EU would have **net exporter position** of poultry and pig meat



## Impact of the uncertainties in the EU Meat sector

Emanuele Ferrari and Sophie H elaine (JRC-IPTS)



### Impact of the uncertainties in the EU Meat sector

Workshop on "Commodity Market Development in Europe - Outlook"  
25/26 October 2011, Brussels

Emanuele Ferrari and Sophie H elaine

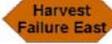
With contributions from:  
A. Burrell, P. Clemen, T. Fellmann, A. Gonzalez-Melado, M. Himes, R. Mbeke, J. Michalek, C. N ekhey, B. Van Doorslaer, C. Vryjns

European Commission  
Joint Research Centre  
IPTS - Institute for Prospective Technological Studies  
Slovakia - Opava

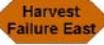



### Summary

- Lower world grain availability
  - ↳ Higher grain prices
  - ↳ Higher feed costs
- Loss of EU competitiveness relatively to competitors with feeding systems based on grass (Brazilian Beef)
- Beef trade is affected most




### Limited availability of grains in RUS, UKR, KAZ



In brief:

- Wheat and coarse grains
- For 2 consecutive years (2012, 2013)
- Worst scenario: No exports
- Possible scenario: Lower exports

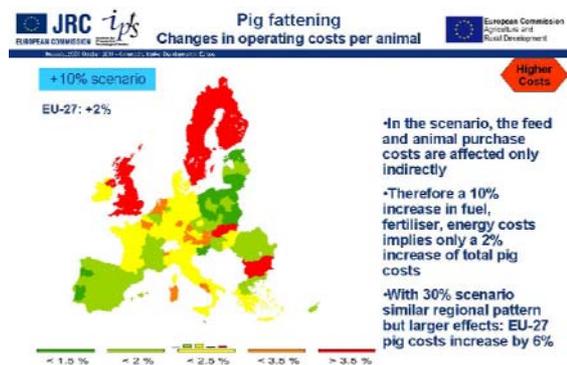
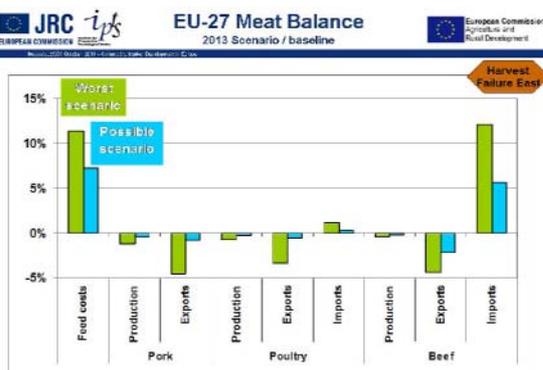



### Higher operating costs in EU

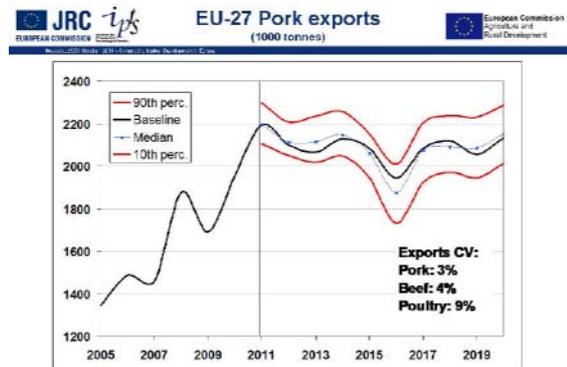
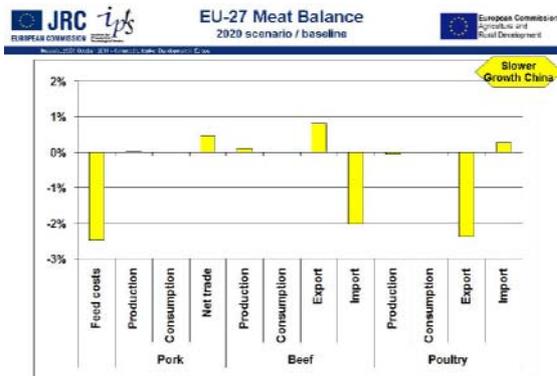
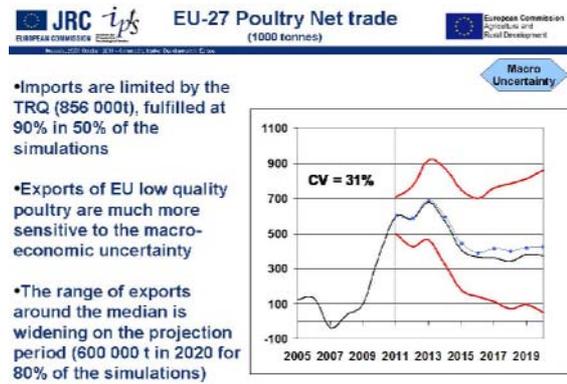
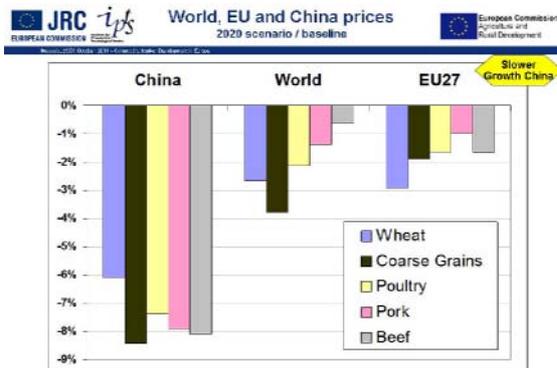
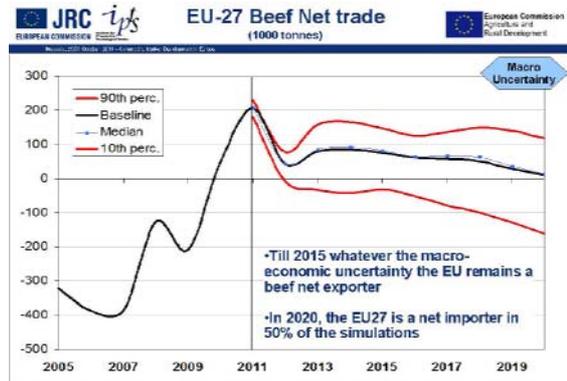
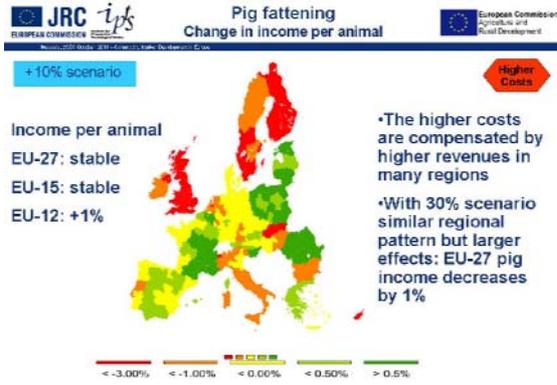


In brief:

- "All cash expenditures necessary to operate"
- Normal uncertainty = 10% increase in costs
- Worst scenario = 30% increase in costs

# Commodity Market Development in Europe – Outlook



# Meat Markets: Comments I

Richard Brown (GIRA Consulting)

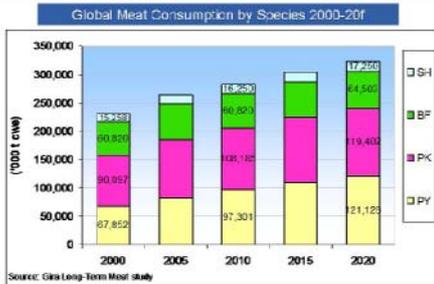
**Gira**  
Consultancy & Research  
Prospective of Strategic

**Gira reflections to EC "Commodity Market Development in Europe - Outlook 2010-2020"**  
Based on Gira's Long Term Strategic Trends in World Meat Markets 2010-2015-2020

**EC-Outlook meeting**  
Richard Brown  
October 25<sup>th</sup> 2011

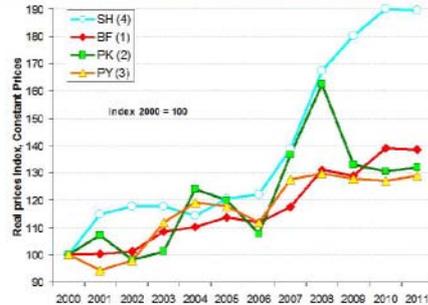
13, chemin du Levant  
01210 Ferney-Voltaire - France  
Tel. + (33) 4 50 40 24 00  
Fax. + (33) 4 50 40 24 02  
contact@girafood.com  
www.girafood.com

**Gira** Global meat consumption continues to grow, pulled by mainly by per capita demand in emerging markets



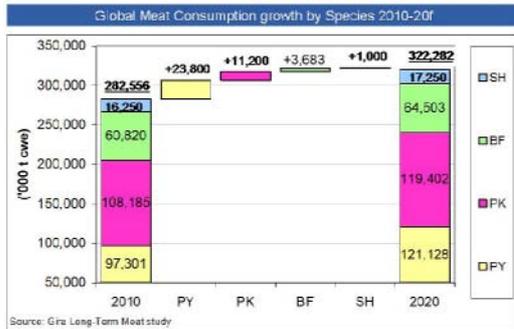
40m t of meat consumption growth 2010 to 2020f (+14%), less than previous decade, but good recovery from 2009 credit crunch

**Gira** World meat price index (Y2000) shows rising real meat price trend – understated for 2011f



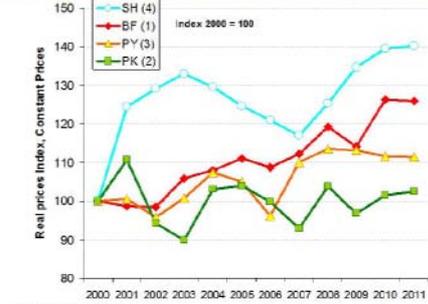
Source: GIRA compilations

**Gira** Global meat consumption growth dominated by poultry, driven by its relative price



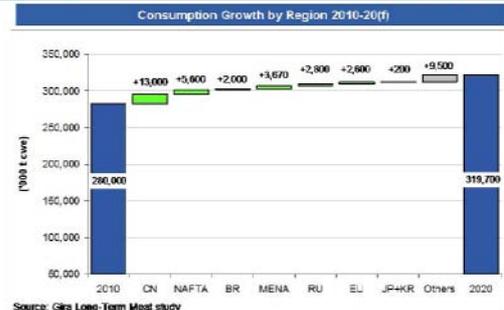
Source: Gira Long-Term Meat study

**Gira** World price index (Y2000) (excl. CN) rises at a slower rate ... but is still upward (and understated for 2011)



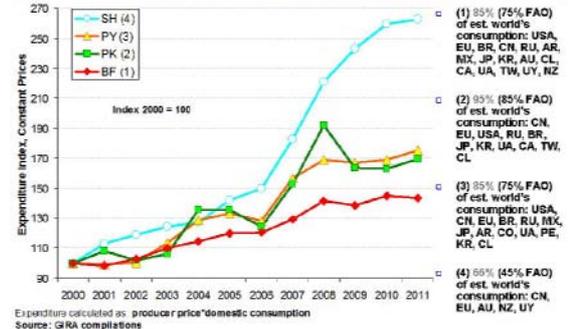
Source: GIRA compilations

**Gira** Global consumption growth quite broadly based, but led by China



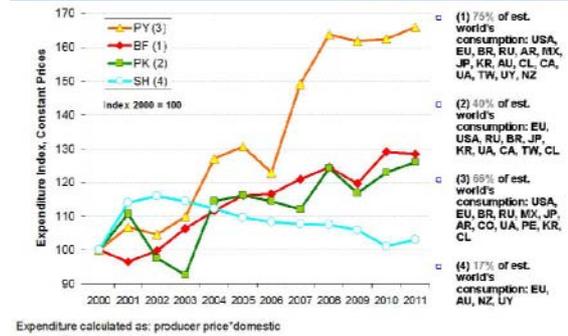
Chinese growth less dominant than in the past. EU more than EC forecast

**Gira** Global meat demand has increased impressively: recovering 09 downturn: 2011 was better than forecast

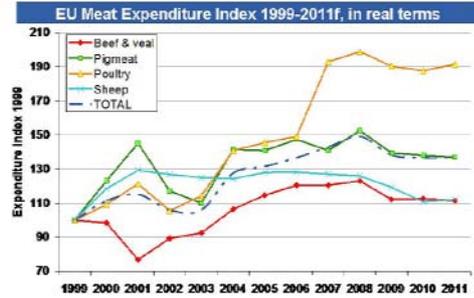


Expenditure calculated as: producer price\*domestic consumption

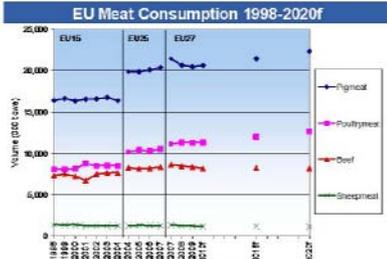
**Gira** World Meat expenditure (excl. CN) still shows positive trends (SH small sample)



Expenditure calculated as: producer price\*domestic consumption

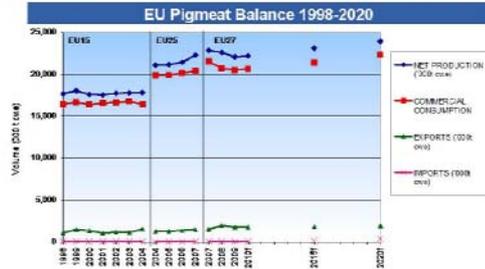
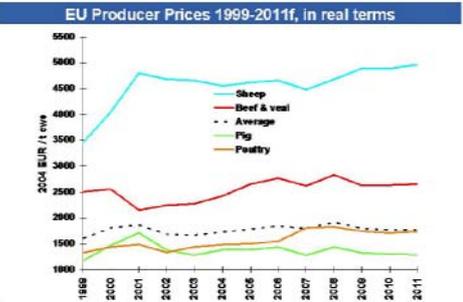
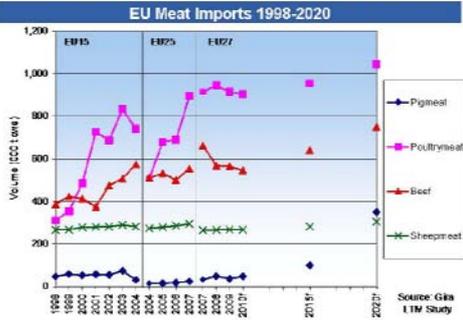


- High costs and tighter global supply due to other opportunities



- Remarkably good recovery from 2009 demand downturn
- Modest, further meat consumption growth – in spite of EU15 maturity
- PK and PY favoured: cheaper, quicker, convenient

- Global demand better than Gira expected
- Global and EU meat prices likely to rise by more than EC forecast
  - Global meat prices have risen to reflect firm 3<sup>rd</sup> country demand (China, S E Asia, Russia, MENA, S America etc)
  - Global supply tightness reflecting alternative agri-opportunities
  - Higher feed costs
- EU imports likely to be higher than forecast
  - Impact of FTA's ... and motivation of 3<sup>rd</sup> country exports to access EU market
- EU Consumption forecast seems slightly low
  - Especially for EU12: where Gira expects more growth with rising disposable income
- Short term dip in EU PK production with 2013 loose housing requirement on sows



- Increased welfare measures will further increase EU production costs
- Small, but strategic concession on 3<sup>rd</sup> country import access
- concentration and specialisation of producers (and processors)

**Gira** EU demand for fresh poultry will prevent dramatic import penetration

**EU Poultrymeat Balance 1998-2020**

- Imports of processed & meat for Further Processing
- Exports for less favoured cuts & by-products to selective 3<sup>rd</sup> countries

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**Gira** Either via FTA's or WTO the EU will increase access to its markets...but it will *not* become a "free for all"

- WTO negotiations for EU access will in the future be based on the July 08 offer tabled at the Doha Round:
  - Beef TRQ will increase by 300,000 t pw
  - Poultry will be similar to beef, with 300,000 t pw
  - Pigmeat import quota will be an additional 200,000 t pw
  - Sheepmeat import quota will increase by 40-50,000 t pw
  - Over-quota shipments will still face high tariffs (but they will be reduced)
- The aim is to comply with WTO demands whilst protecting the future of EU food security ... and the rural environment / economy
- Gira expects these volumes to be achieved by 2020 whether by a WTO agreement ... or via...
- several FTA's are currently being negotiated to fill the gap left by the stalled WTO, significant are: Mercosur, Canada, Ukraine, ASEAN
  - Outcome will be to offer some of the increased import volumes tabled under WTO
  - In exchange for increased access for EU services & industrial goods.

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**Gira** Beef production driven down by low profitability in beef cattle & reduced dairy herd

**EU Beef Balance 1998-2020**

- Increased, but managed, import access via WTO / FTA's will benefit both S.America & N.America, ... also keeping a lid on EU prices

18

**Gira** EU per capita meat consumption volume is relatively consistent between countries, but with significant regional differences

**EU National Meat Consumption 2010**

- Pigmeat dominates in most countries;
  - Except - the UK, Slovenia & Bulgaria
- Beef demand strongest in EU15
- Sheepmeat is a niche product
- Important regional variations meat preferences

22

**Gira** EU Sheep production has been in long term decline, but this will slow due to robust niche demand support

**EU Sheepmeat Balance 1998-2020**

- Fairly robust residual demand (including ethnic)
- Higher price environment helps to stem production decline
- Major NZ import penetration continues, with growing AU interest when TRQ allows

19

**Gira** Observations for EU, from global meat market conditions

- Basically good news, for EU producers (and processors) 'protected' by EU AgriFood and Environmental policy
  - Relative currency development is a key issue
- Competitive advantage (within EU) from grass for sustainable production of BF and SH ... which are globally supply constrained
  - Privileged access to relatively high price EU market
  - Credible retail relations, through well regarded processors
  - But need to continually work on strategies / tactics to reduce the major cost inefficiency from small farm structure (especially in beef & sheepmeat) and excess capacity (everywhere) and tougher regulatory requirements
  - Opportunities for better 5<sup>th</sup> quarter valorisation (specialised 3<sup>rd</sup> country exports, and niche marketing of anything, to maintain a reasonably broad customer portfolio)
- Sustainable pigmeat and poultry sector
  - Cost penalty on feeds and location vs. commercial advantage of privileged access to fresh EU market, and continued specific TRQ protection
- Intra-EU changes in the share of production

23

**Gira** EU agri-politics continue to protect

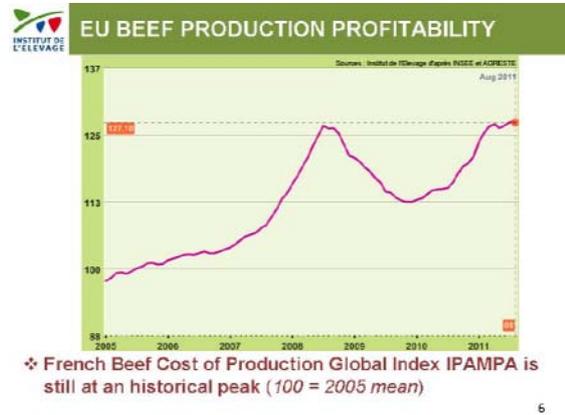
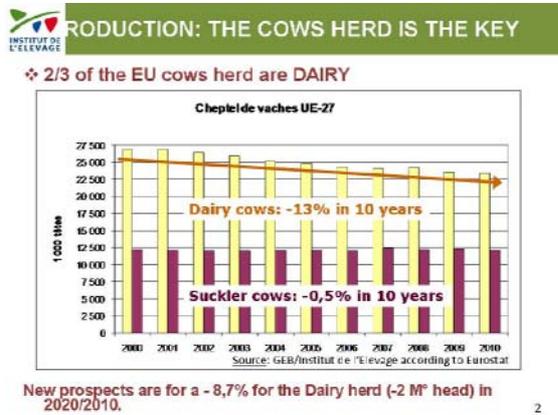
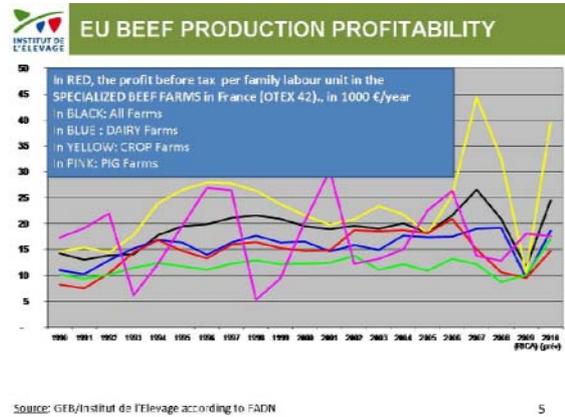
**EU CAP Expenditure Segmentation 1993-2010e**

- CAP direct income support likely to continue to counteract global cost disadvantage:
  - Land, Labour, Production Standards
- Tighter production standards and controls
- Some further import market access granted
- Political concern on food security, environment, price volatility and margins

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## Meat Markets: Comments II

Philippe Chotteau (Institut de l'Elevage)



**RODUCTION: THE COWS HERD IS THE KEY**

Rather optimistic outlook ...  
→ about the production: 2020 = 2010 - 1.6% (comparative to -8.7% for 2010)

❖ Suckler cows herd have been stabilized in the EU in the last 10 years.  
- But decapitalization should continue in the next few years :  
in France, in Ireland, in Belgium, in Italy... and probably in Spain...  
- Because lack of profitability compared to dairy or crops.

⇒ Hard to imagine a suckler herd increase

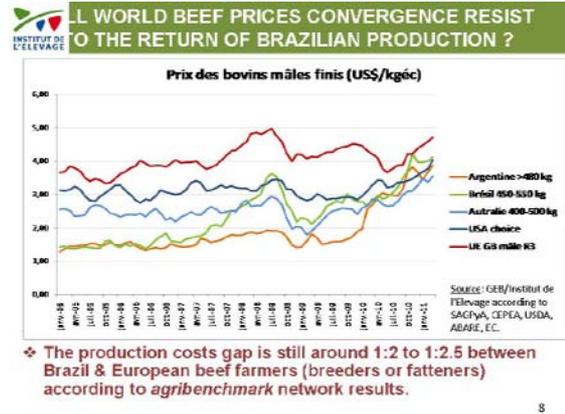


**RODUCTION: THE COWS HERD IS THE KEY**

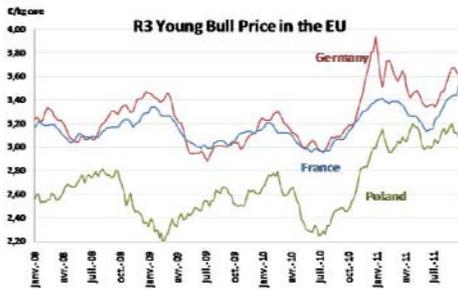
❖ Other levers:

- Veal production: stabilized « dairy calves extraction » (# 22% in the EU-27) and it might remain stable – Very well managed industry.
- No more imported calves or live cattle
- But more exported weanlings (« broutards ») to Mediterranean countries
- Will carcass weights still increase in the future ?

→ a question of profitability & of adequation with the demand



**A LATE IMPACT OF WORLD PRICE INCREASE IN THE EU**



Source: GIB-Institut de l'élevage according to the EC

**DEMAND ON THE EU SIDE**

Rather optimistic outlook ...  
-> about beef prices: at World level & in the EU

❖ Sensitivity of prices in times of economic crisis, mainly for mince or burgers which represent a greater & greater share of the market

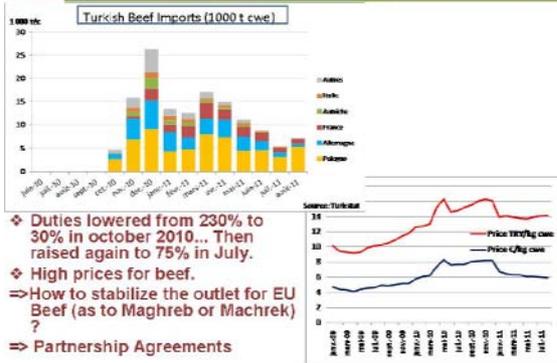
50% in the UK (45% in 2006);

1/3 in France (+20% since 2003)... and 36% of beef is further processed...

9

11

**YOUNG BULL PRICE BONUS: THE TURKISH EFFECT!**



- ❖ Duties lowered from 230% to 30% in October 2010... Then raised again to 75% in July.
- ❖ High prices for beef.
- ⇒ How to stabilize the outlet for EU Beef (as to Maghreb or Machrek) ?
- ⇒ Partnership Agreements

**Meat Markets: Comments III**  
Sune Jin Christensen (Danish Meat Association)



*Outlook for Pigmøat*

Sune Jin Christensen  
DANSKE SLAGTERIER, SA  
(Danish Bacon & Meat Council)

Brussels, 25 October, 2011

Snapshot of the global meat/pigmeat situation

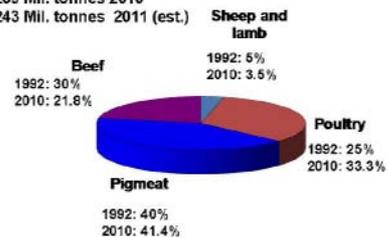
**Agenda**

- Snapshot of the global meat/pigmeat situation
- The drivers of pigmeat consumption
- Forecasts
- The European pigmeat sector
- Summary/conclusions



**World meat production in mil. tonnes**

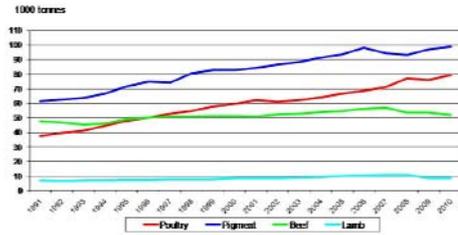
Total: 155 Mil. tonnes 1992  
Total: 239 Mil. tonnes 2010  
Total: 243 Mil. tonnes 2011 (est.)



Source: GIRA

## Development in World Meat production

DANSKE BLAISTERIER 



Source: GIRA

## A couple of comments on China

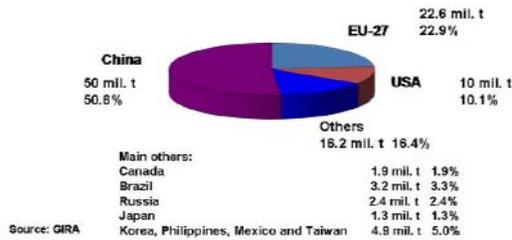
DANSKE BLAISTERIER 

- Increasing consumption (19.7 (1990) to 39.3 (2011) kg. per capita).
- Increasing domestic production (still very much backyard, but...)
- Other consequences
  - Increasing import of feed stuff (forecast of 56 million tonnes of soy bean = >5% in 2010). Domestic production approx. 16 million tonnes.
  - Greater competition/demand for feed stuff worldwide.
- Exporters US, Canada, Denmark, France, Spain, and *now Brazil and UK*.

## Pigmeat - global production (mil. tonnes)

DANSKE BLAISTERIER 

Total: 83.3 mil. tonnes 1999  
Total: 98.8 mil. tonnes 2010  
Total: 100.9 mil. tonnes 2011 (forecast)



Source: GIRA

## ...a couple of comments on Japan and South Korea

DANSKE BLAISTERIER 

- Japan:
  - Tragic situation (tsunami and Fukushima)
  - Approx. same level of export
- South Korea:
  - Food and Mouth disease
  - Tariff-free pigmeat quota (see next slide)
  - FTA EU-South Korea

## Increase of export to South Korea (1000 tonnes)

DANSKE BLAISTERIER 

Tonnes	Jan-June 2009	Jan-June 2010	Jan-June 2011	11-10 %-change
US	47.2	42.1	86.3	105.3%
Canada	29.3	29.7	44.0	48.0%
Chile	18.8	21.6	20.4	-5.6%
Mexico	0.9	4.6	4.7	2.2%
Austria	8.0	7.4	12.9	74.2%
Denmark	4.9	4.3	11.0	155.5%
Netherlands	5.5	6.4	10.9	59.1%
France	8.0	7.5	10.5	39.5%
Belgium	6.5	7.4	9.3	24.4%
Finland	2.7	2.0	3.4	70.0%

## The drivers of pigmeat consumption

### Top importing countries in 2010 ('000 tonnes)

DANSKE BLAISTERIER 

- China/HK + 2000
- Japan 1179
- Russia 898
- USA 1008
- Mexico 452
- Korea 354

Source: GIRA, USDA, DG AGRI, Statistics Canada and World Trade Atlas

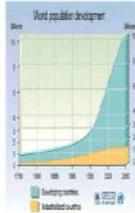
## Forecast

# Commodity Market Development in Europe – Outlook

## In the long run.....

DANSKE BLASTERIER 

- Increased demand for food (meat)
  - Growth in global population and middle/upperclass



## Global production – forecast 2011 and 2012

DANSKE BLASTERIER 

Year/ Country	2009	2010	2011 (forecast)	2012 (forecast)
China	5.5%	2.2%	3%	(+)
EU	-2.4% (EU-27)	2.0% (EU-27)	0.3% (EU-27)	-
US	-2.0%	-4.0%	0.8%	+
Canada	1.8%	-2.0%	2.6%	(+)
Brazil	5.4%	0.9%	1.2%	+
Russia	6.0%	6.6%	6.4%	(+)
Total	2.7%	1.4%	2.1%	+

## However, in the short and medium run (uncertainties)....

DANSKE BLASTERIER 

- Exchange rates/economic conjunctures
- Level of supply of different types of meat
- Consumer preferences and different legislation
- Feed supply/good and bad harvests
- Diseases and food scandals
- FTA's vs DDA

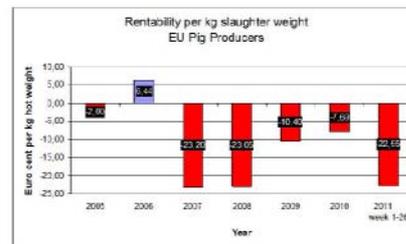
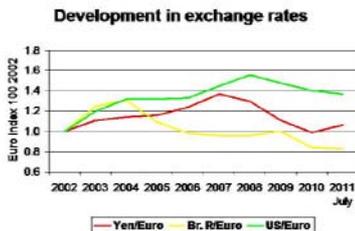
DANSKE BLASTERIER 

## European pig production

## EU pig producers have experienced losses for a five year period

DANSKE BLASTERIER 

DANSKE BLASTERIER 



Source: Interpigg and L&F Estimates

## Production in selected countries 1999-2011 – GIRA (1000 t cwe)

DANSKE BLASTERIER 

Year/ Country	1999	2003	2006	2009	2011 (forecast)
China	40,066	42,386	46,506	48,700	51,500
EU	18,009 (EU-15)	17,787 (EU-15)	21,398 (EU-25)	22,049 (EU-27)	22,655 (EU-27)
US	8,744	9,047	9,550	10,380	10,100
Canada	1,584	1,881	1,900	1,576	1,955
Brazil	1,833	2,897	2,870	3,190	3,260
Russia	1,485	1,706	1,805	2,120	2,500
Mexico	994	1,035	1,103	1,160	1,176
Japan	1,277	1,259	1,247	1,285	1,290
Korea	1,020	1,139	1,002	1,280	1,140
Selected countries/ global prod.	74.9/ (90%)	78.9/ (90.2%)	87.4/ (94.2%)	82.1/ (94.5%)	95.6/ (94.7%)

## EU pigmeat production has increased in total 1% since 2006

DANSKE BLASTERIER 

Year	000 tonnes	%-change per year
2006	21,819	+1.3
2007	22,629	+3.7
2008	22,370	-1.1
2009	21,884	-2.2
2010	22,014	+0.6
2011	22,070	+0.3

Source: GIRA

**Decrease in EU pig production is expected in 2012?**

DANSKE BLÅSTERIER 

- Poor economy in pig production for five years
- Problems with financing from banks and financial institutions
- New legislation from 2013 requiring 'group housing' for pregnant sows

DANSKE BLÅSTERIER 

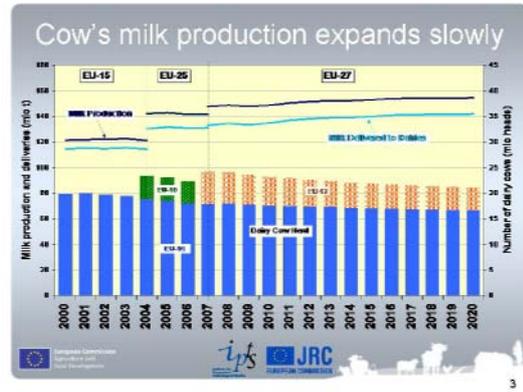
**Summary/conclusions**

DANSKE BLÅSTERIER 

- Global consumption will continue to grow.
- Importing countries will remain the same.
- Uncertainties
  - Various factors may alter production level among key players
- Drop in European production.

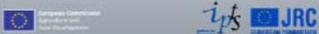
Summary/Conclusion

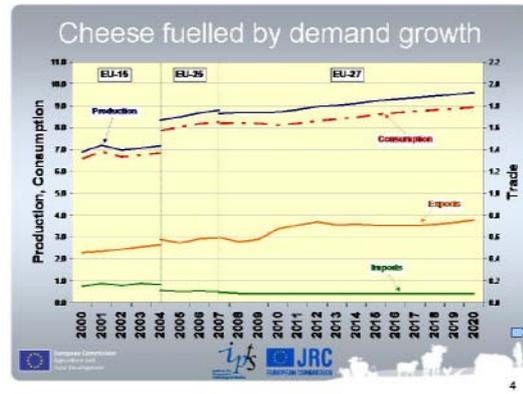
**EU Agricultural Outlook: Milk and Dairy Markets**  
Beatriz Velazquez (DG AGRI)

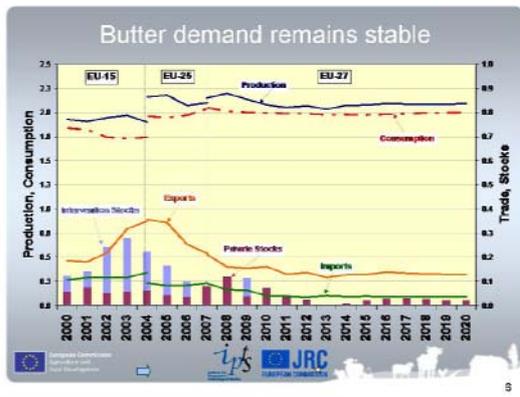
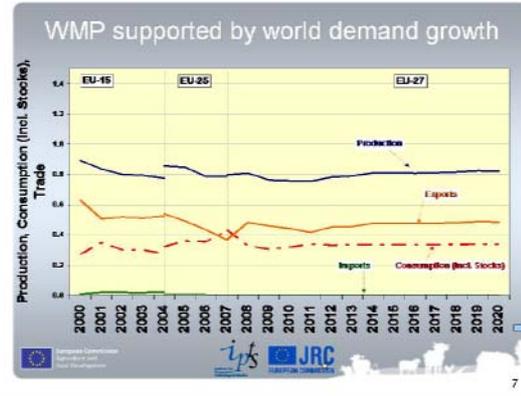
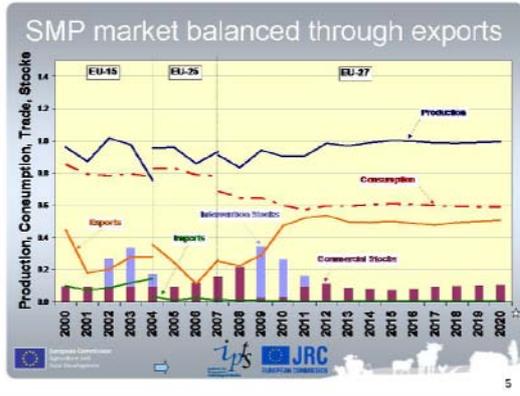


**Favourable long term perspectives for dairy markets**

- Continued expansion of world demand (population & economic growth, increasing per capita consumption)
- to fuel EU exports (but market shares decrease, as euro strengthens and world exports increase at a higher rate) ⇄
- and support producers' gross margins (increasing cheese and powder prices, stable cereal prices)
- Dairy market perspectives particularly sensitive to economic developments







## Impact of the uncertainties in the EU dairy sector

Sophie Héline (JRC IPTS)

**JRC IPTS** European Commission Directorate-General for Economic and Financial Affairs  
European Commission Directorate-General for Economic and Financial Affairs

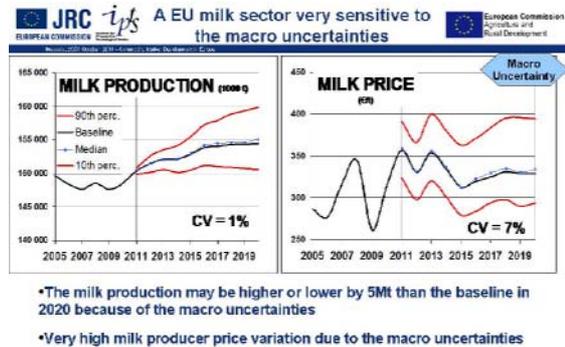
**Impact of the uncertainties in the EU dairy sector**

Workshop on "Commodity Market Development in Europe - Outlook"  
25/26 October 2011, Brussels

Sophie Héline

With contributions from  
A. Burrell, P. Cizian, T. Fellmann, E. Ferrar, A. Gonzalez-Mellado, S. Héline, M. Hrnica, R. Mbarak, J. Micallef, O. Neuhay, Z. Nishizato, B. Van Doornik, C. Vinayes

European Commission  
Joint Research Centre  
IPTS - Institute for Prospective Technological Studies  
Source: Sophie



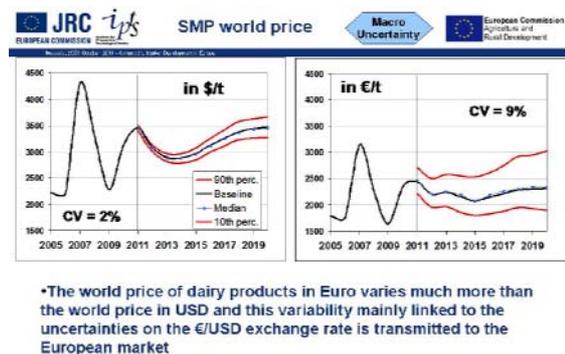
**JRC IPTS** European Commission Directorate-General for Economic and Financial Affairs  
European Commission Directorate-General for Economic and Financial Affairs

**Partial stochastic analysis of macro variables** Macro Uncertainty

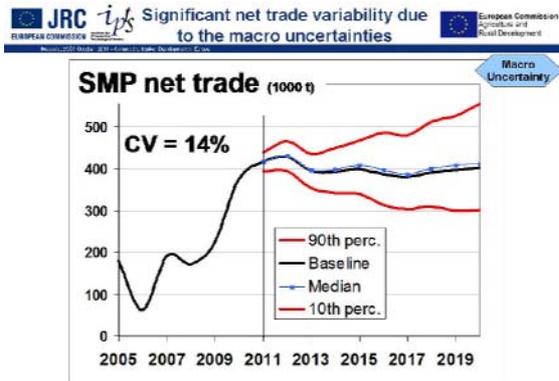
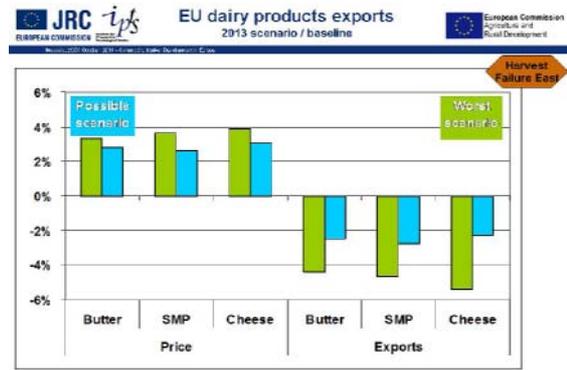
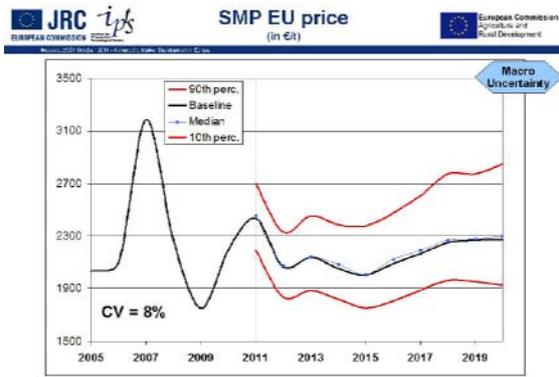
In brief:

- GDP growth, GDP deflator, Consumer price index (CPI), Exchange rate and world oil price in the EU-15 and in the EU-12
- US GDP deflator
- The correlation between macros is taken into account

**AGLINK-COSIMO**



# Commodity Market Development in Europe – Outlook



**JRC ipts** European Commission  
Agriculture and  
Rural Development

**Higher operating costs in EU** Higher Costs

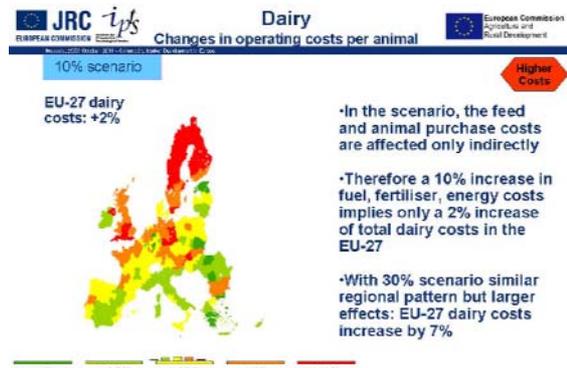
In brief:

- "All cash expenditures necessary to operate"
- Normal uncertainty = 10% increase in costs
- Worst scenario = 30% increase in costs

**CAPRI**

**JRC ipts** Comparison of the dairy products variability related to the mean European Commission  
Agriculture and  
Rural Development

CV	Milk	Butter	SMP	Cheese	WMP
Production	1%	1%	4%	1%	4%
Consumption		0%	0%	1%	0%
EU price in €/t	7%	6%	8%	7%	8%
World price in €/t		8%	9%	9%	8%
World price in \$/t		4%	2%	3%	3%
Exports		13%	9%	6%	6%
Imports		9%	0%	5%	0%
Net trade		21%	9%	7%	6%



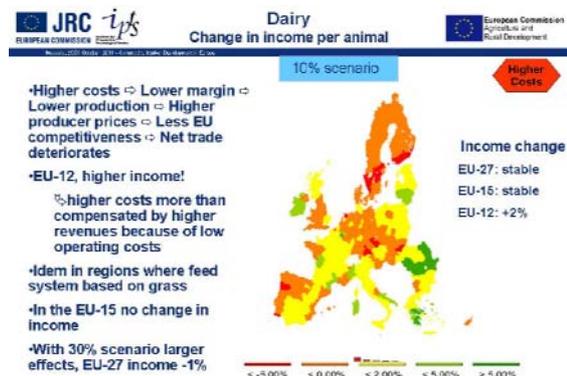
**JRC ipts** European Commission  
Agriculture and  
Rural Development

**Limited availability of grains in RUS, UKR, KAZ** Harvest Failure East

In brief:

- Wheat and coarse grains
- For 2 consecutive years (2012, 2013)
- Worst scenario: No exports
- Possible scenario: Lower exports

**AGLINK-COSIMO**



# Milk and Dairy Markets: Comments I

Pavel Vavra (OECD)



Pavel Vavra  
OECD Trade and Agriculture

Workshop on "Commodity Market Development in Europe - Outlook"  
25-26 October 2011, European Commission, Brussels

## Key Market Drivers

- Demand growth – above all in developing countries
- Convergence in consumption patterns
- Increased health and nutrition concerns
- Supply adjusting to higher production costs
- International investment

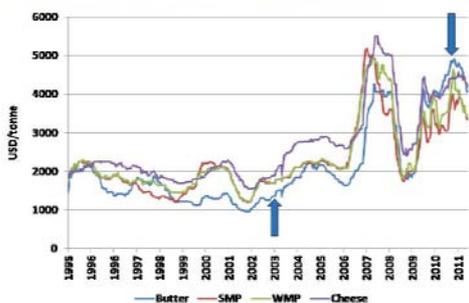


## Key issues and uncertainties

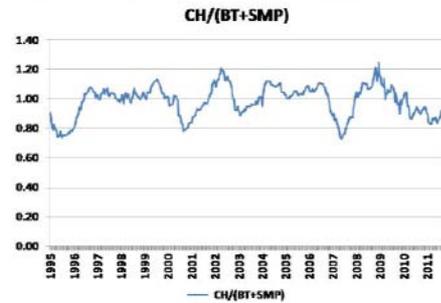
- Weather and economic stability
- Macroeconomic environment
- Developments in domestic policies
- Outcome of WTO negotiations
- Consumer confidence and milk product competitiveness
- Increased price volatility?



## Bi-weekly global dairy prices - Oceania

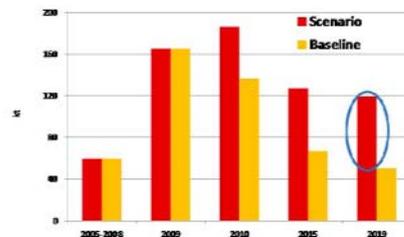


Value of milk in cheese compared to value of milk in butter and SMP (Oceania, FOB prices)



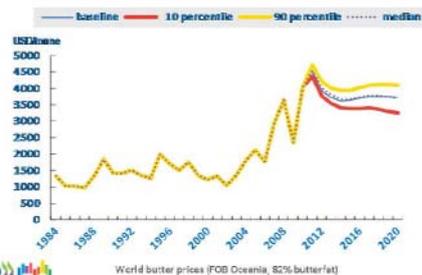
The magnitude of potential Chinese imports remains an important uncertainty

Impact of 10% stronger Yuan on the WMP imports to China



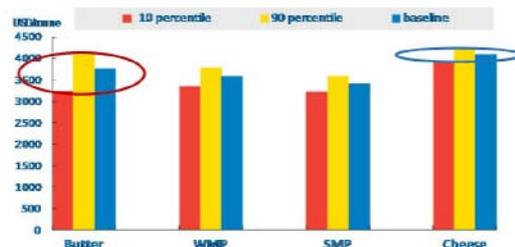
## Stochastic simulations on Oceania production patterns

- 500 Monte Carlo simulations on Oceania milk production levels
- 500 model runs showing a range of world dairy butter prices
- median values slightly above the baseline values



## Stochastic simulations on Oceania production patterns

- the most affected commodity is butter (New Zealand has the dominant share)
- cheese less affected – larger market, lower share of Oceania



# Milk and Dairy Markets: Comments II

Christophe Lafougère (GIRA Consulting)

**Gira**  
Consultancy & Research  
Prospective et Stratégie

**Outlook Baseline Comments**  
Dairy session

Christophe Lafougère, Director

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Tel: +33(0) 4 51 40 74 80  
Fax: +33(0) 4 51 40 74 82  
contact@girafood.com  
www.girafood.com

**The new order of prices**  
"Global" is taking over from "local" – even in the EU?

Source: GLN, New ZMPC et al

**Gira**  
Comments on Outlook EU Baseline of October 2011  
**1. NON-DAIRY TABLES**

- Page 1, Macroeconomic
  - Inflation post 2013 appears too low (by 1% pa?), given the need to reflate economy (quantitative easing) & need to reimburse debt – UK already >5% (although £ stable against €)
  - US\$ rate likely to vary more strongly than EC year-on-year post 2015 (as in the past: 1,20 – 1,50 range in 18 month cycles since 2009)
  - Crude price understated (assuming not in deflated \$ here): just +1% pa 2011-2020
    - i.e. well under inflation, with a stable €/S rate. Means a significant decline in real terms (>20% over 5 years?).
    - Unlikely – given growing demand, cost of shale production, speculative funds
    - Underestimates volatility ...
- Impact (direct and indirect) High on agricultural/crops production costs  
(a cost apparently not reflected here (?) in wheat & maize – i.e. volumes up, prices down)
- Page 4, Arable area
  - Total "selected" area is static, i.e. assumes no increase in grazing land. Implies no significant increase in dairy grazing land post 2015 - realistic? Means any change in herds (down ~10% over 2013-20 on Milk table page 7) will be in the fed herd?

2

**Gira**  
Comments on Dairy

- Page 8 & 9, the commodities
    - EC prices are too stable and post-2015, unicyclic
    - Unless the world changes radically, there is no reason to expect volatility in the future to be much less than 2009/9 and 2010/1.
    - Unthinkable to expect a return to the relative price stability of pre-2007
- This is important because commodity prices increasingly have an impact on the milk price - and hence on farms: behaviour (yields, herds) - and hence increasingly on milk volumes



**Gira**  
Total milk production and yields  
Differences EC & Gira



Total milk production: we are more prudent ...  
• Less decline in herds foreseen by Gira than EC, but smaller yield increase

Yields:  
• Volatility of prices (inputs and milk) and price uncertainty through 2015 will discourage technical improvement

3

**Gira**  
The 4 commodities  
Differences EC & Gira up to 2015

- Cheese:
- Gira agrees globally with EC but it foresees slightly higher consumption growth through 2015
  - This partially compensates our SMP and WMP differences
  - Export growth is identical with EC
- Butter:
- Gira believes that production will increase somewhat in view of continuing higher prices. Prices supported by a growing (unsaturated) import demand gap (India)
  - Gira believes the decline in butter consumption is over in the EU
  - We agree with EC trade growth

7

**Gira**  
Comments on Outlook EU Baseline of October 2011  
**2. DAIRY**

- Page 7, Milk
  - EC assumes milk production slowing to just +1.5 bn litres in total 2015-20 (= +0.2% pa). Is this not too low given the number of declared intentions to increase production after 2015? Will NMS continue to decline enough to compensate EU-15 growth?
  - Over the next 20 years, unlikely that fat and protein contents will remain static if price of butter & powder remains high
  - Milk price too stable, given its correlation with the cheese price (which is also too stable – see next)

4

**Gira**  
Imbalances in global butterfat markets  
India is likely to destabilise the global butter market

**Dairy fats consumption changes, 2010-2015(f)**

**Production and consumption changes in India between 2010 and 2015(f)**

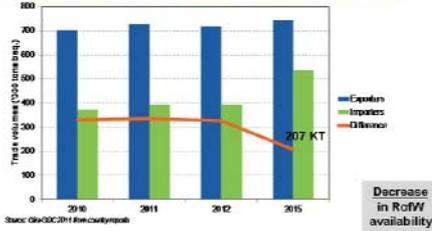
2010 global butterfat production : 9.6 mio tons 2010  
India accounts for 43% of global butterfat consumption

9



Increasing Butterfats import demand but exporters can't keep up; decreasing availability to RoW

Fats: total from major exporters to major importers, 2010-2015f



Note:  
- These figures only refer to countries covered directly by Gira, however they do cover the main trading countries  
- Difference = is the amount available for export to the rest of the world.



The 4 commodities Differences EC & Gira up to 2015

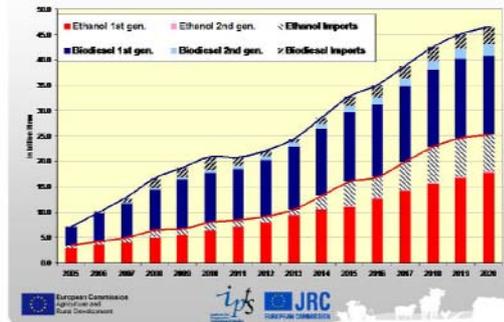
- SMP:**
- We agree with EC trade increase, but we increase production less than EC (milk availability)
- WMP:**
- Strong competition in exports from New Zealand and continuing attractiveness of cheese, mean that Gira has taken the option that lower milk production growth will above all be reflected in lower WMP production and export (with Gira forecasting lower milk production growth than EC);
  - We believe that the impact of this will be felt in lower WMP production and exports.

## EU Agricultural Outlook: Biofuels

Alberto D'Avino (DG AGRI)



### Composition of EU biofuel use

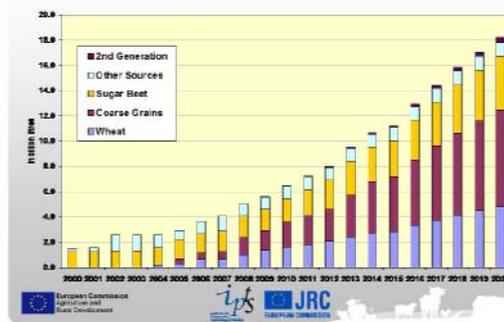


### Biofuels policy assumptions

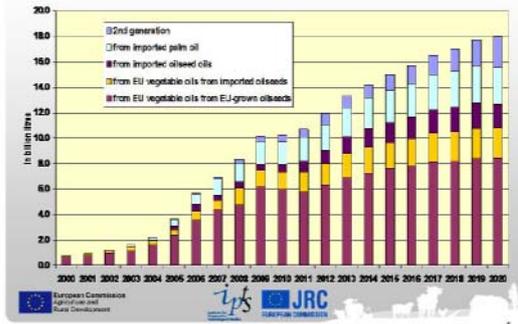
- Achieving the mandates of RED by 2020
- Lower share of 2<sup>nd</sup> generation biofuels compared to previous projections
- Endogenous allocation of ethanol vs. biodiesel consumption



### EU ethanol production by feedstock



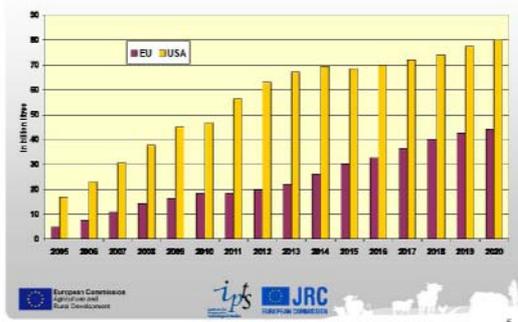
EU Biodiesel: mainly domestic production?



Trends for 2020 shown in the outlook

- Larger relative share in fuel use for ethanol than for biodiesel (this outcome being in contrast with notified MS plans)
- Partial EU import dependency for ethanol, but also for biodiesel feedstocks
- Increasing importance of the EU on global biofuels market

EU vs. USA total biofuels use



Impact of different uncertainties on the EU biofuel sector

Olexandr Nekhay and Ben Van Doorslaer (JRC-IPTS)

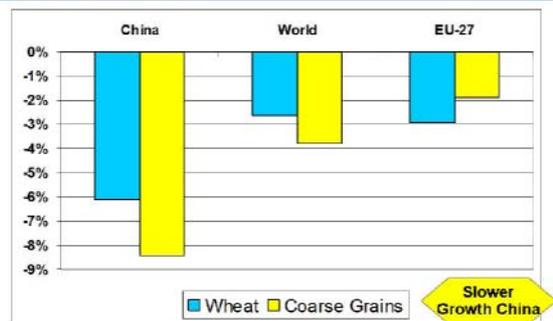
Impact of different uncertainties on EU Biofuel sector

EU outlook - sensitivity analysis

Workshop on "Commodity Market Development in Europe - Outlook" 25/26 October 2011, Brussels

Olexandr Nekhay and Ben Van Doorslaer

With contributions from: A. Sunell, P. Cléjan, T. Faloutsos, E. Ferrati, A. Gonzalez-Medrano, S. Hélière, M. Himics, R. Mounak, J. Michalek, Z. Nis-Norlat, C. Vreyes

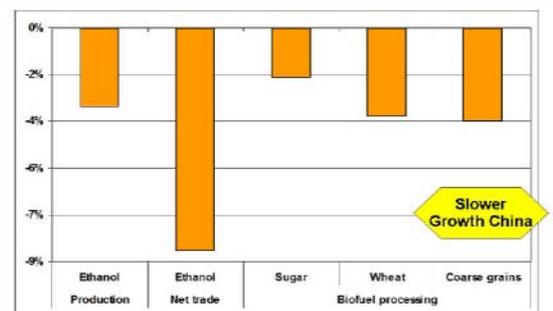
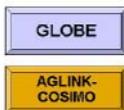


Slower GDP growth in China



In brief:

- 2010-2020 cumulated change in growth: -13%
- World oil price is - 4.5% in 2020
- Cumulated changes from GLOBE model transmitted into AGLINK-COSIMO



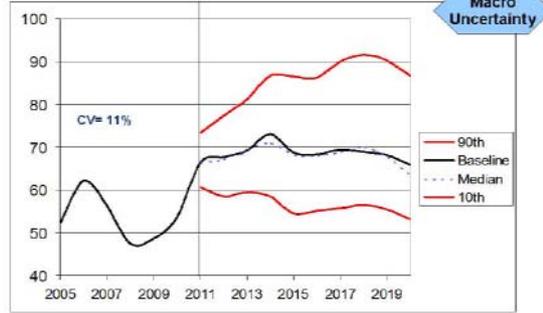
# Commodity Market Development in Europe – Outlook

Limited availability of grains in RUS, UKR, KAZ Harvest Failure East

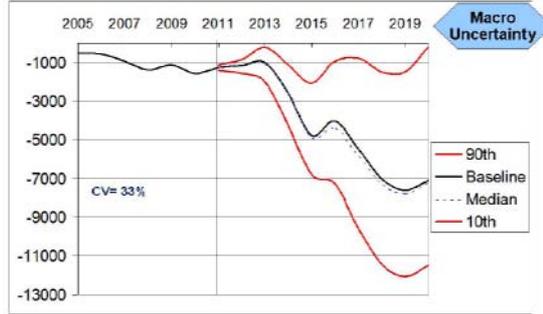
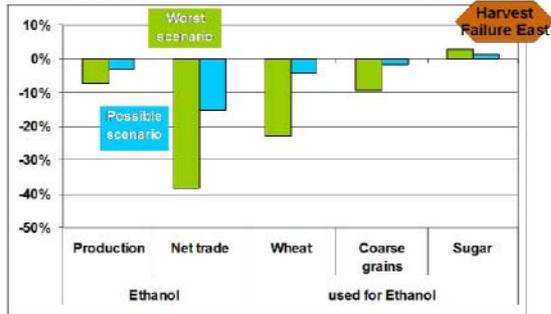
In brief:

- Wheat and coarse grains
- For 2 consecutive years (2012, 2013)
- Worst scenario: No exports
- Possible scenario: Lower exports

AGLINK-COSIMO



Macro Uncertainty



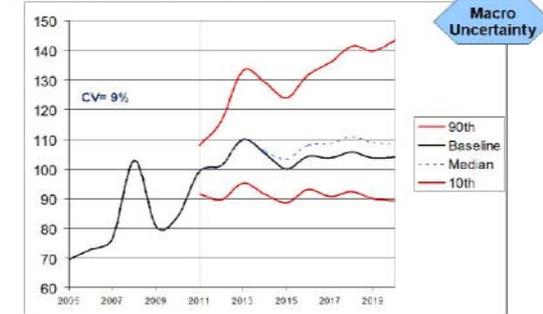
Macro Uncertainty

Partial stochastic analysis of macro variables Macro Uncertainty

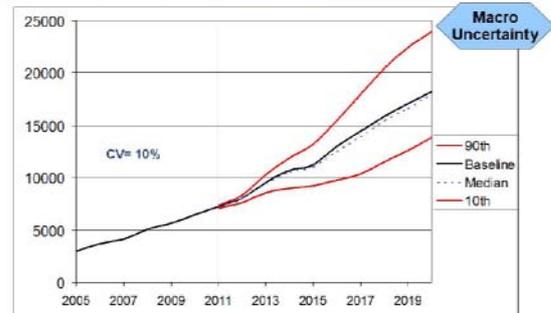
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- GDP growth, GDP deflator, Consumer price index (CPI), Exchange rate and world oil price in the EU-15 and in the EU-12
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- The correlation between macros is taken into account

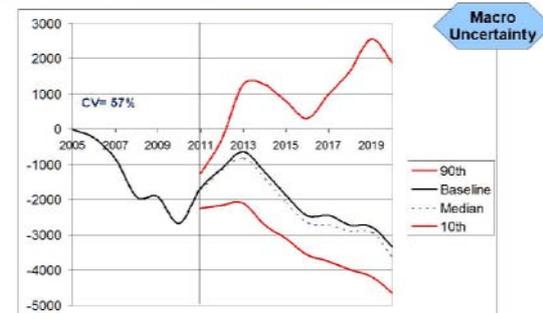
AGLINK-COSIMO



Macro Uncertainty



Macro Uncertainty



Macro Uncertainty

## Biofuels: Comments I

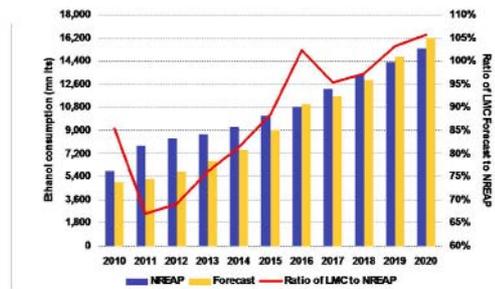
Caroline Midgley (LMC International)

### Ethanol in Europe

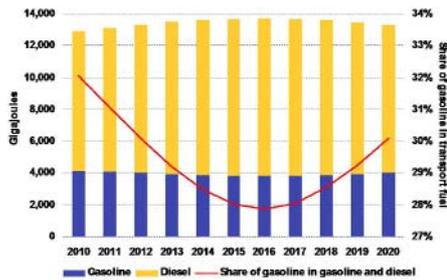
Caroline Midgley, LMC International,  
Oxford, UK [www.lmc.co.uk](http://www.lmc.co.uk)  
October 2011  
Thank You.



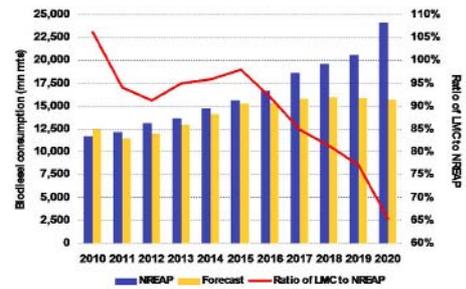
### NREAP ethanol forecasts are overly optimistic in short term but similar to LMC's by 2020



### Gasoline demand projected to follow a parabola, halting previous decade of decline



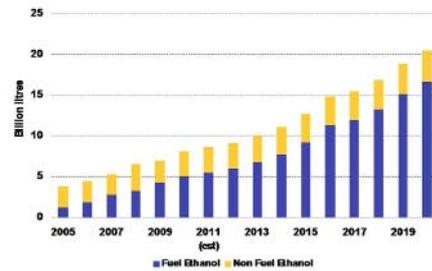
### NREAP and LMC biodiesel forecasts diverge >2015 as B-7 limit comes into play



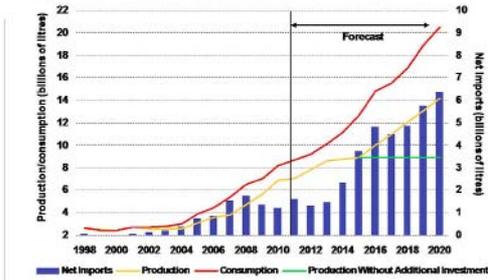
### Ethanol will expand at the expense of biodiesel; second generation will be limited

	2011	2020
<b>Ethanol (bn lts)</b>		
Cellulosic/Ethanol	0.0	0.8
Other	5.3	16.0
Total	5.3	16.7
<b>Etobutanol (bn lts)</b>	0.0	0.3
<b>Biodiesel (mm mt)</b>		
From Wastes & Byproducts	1.2	3.7
Other	10.5	12.4
Total	11.8	16.1
<b>Renewable Diesel (mm mt)</b>	0.9	1.1
<b>Gasoline (bn lts)</b>	127.1	125.2
<b>Diesel (mm mt)</b>	210.1	216.4
<b>Biofuels % Gasoline</b>	2.7%	9.8%
Biofuels % Diesel	5.3%	7.0%
Total Biofuels % Transport Fuels	4.5%	7.6%
Total Biofuels % Transport Fuels (inc double counting)	4.8%	8.7%

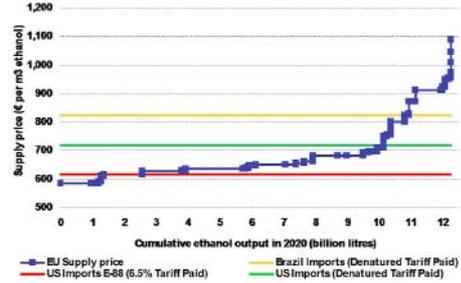
### EU-27 demand for ethanol (fuel and non-fuel) projected to grow by 12 bn lts (2010-2020)



Rising EU-27 demand coupled with weak output growth will push net imports to > 6 bn lts (>11 bn lts with no new investment)



US imports of E-90 are a major threat undercutting the bulk of domestic supply. However, if imports have to pay the ethanol tariff, the bulk of local supply will be cheaper.



Historically, capacity utilisation rates have been <80%. By 2015, the need to raise output will push rates to >90%

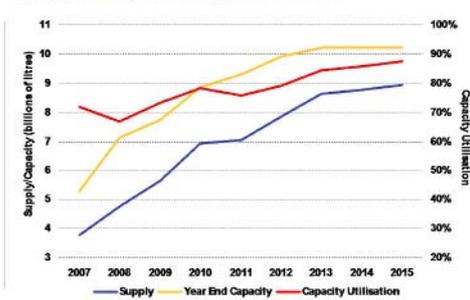
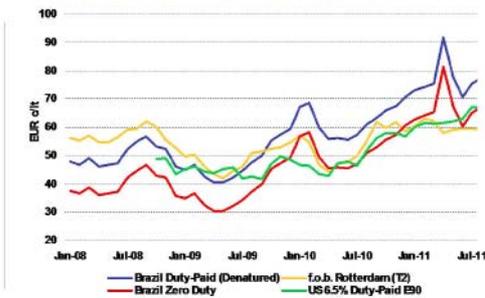


Table EXEC.6: Typical values of different biofuels, GHG emitted (g CO2eq/MJ)

	Cultivation	Processing	Transport & Total distribution	
Sugar beet ethanol	12	19	2	33
Wheat ethanol (Eggrife as process fuel in CHP plant)	23	32	2	57
Wheat ethanol (NG as process fuel in conventional boiler)	23	21	2	46
Wheat ethanol (NG as process fuel in CHP plant)	23	14	2	39
Wheat ethanol (straw as process fuel in CHP plant)	23	1	2	26
Corn ethanol, EC produced (NG as process fuel in CHP plant)	20	15	2	37
Sugar cane ethanol	14	1	9	24
Rapeseed oil biodiesel	28	16	1	46
Soybean oil biodiesel	19	18	13	50
Palm oil biodiesel	14	35	5	54

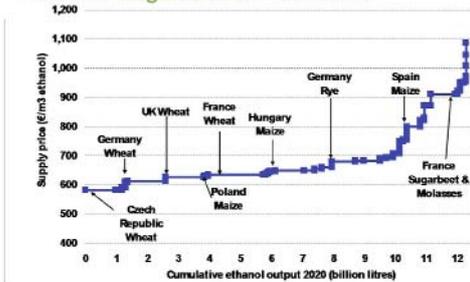
Since mid 2010, EU prices have followed the cost of E-90. Prior to that EU prices were linked to Brazilian replacement costs



Conclusions (Demand)

- Assuming that the RED is implemented, demand for biofuels will grow strongly. Demand for ethanol will slightly exceed NREAP expectations while demand for biodiesel will fall far short.
- While biodiesel is cheaper than ethanol, it faces several problems which will limit future growth. These include a B-7 limit on new diesel cars, poorer sustainability characteristics, potentially greater ILUC penalties and more limited access to raw materials.

The total future (av. 2015-2020) delivered cost of EU ethanol for grains is €600-700/m3. Sugarbeet is > €900/m3



Conclusions (Output)

- In the near term, output growth will be driven by projects in the pipeline as well as increased rates of capacity utilisation. Today, ethanol prices are too low to bring fresh investment into the sector. Even if the industry expands quickly in the second half of the decade, there will be a growing gap between demand and supply.
- The EU will therefore become increasingly reliant on imports. Imports from the US are unlikely to suffice and imports from Brazil will be needed.

Conclusions (Outlook for Prices)



- Based on LMC's 2011 Carbohydrate Outlook study, raw material prices are expected to trade at relatively high levels in the coming decade, albeit at a lower level than 2011. We project feed wheat prices (in Northern Europe) will trade in a range of €190-210/mt in 2015-2020.
- EU ethanol prices will need to rise in order to bring fresh investment into the sector, raise rates of domestic capacity utilisation as well as create an incentive for imports from Brazil. We therefore project T2 prices will trade in a range of €780-870/m3 in 2015-2020



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Future Risks



- Slow implementation of the RED. Implementation has been disappointing to date. The EC recently said it would take action against states that fail to transpose the RED in full.
- Policy changes that impose more stringent sustainability requirements (more likely to impact on biodiesel)
- Lower oil prices (<\$100/bbl) which make gasoline cheaper than ethanol, increasing the incentive to buy-out of mandates.
- High volatility in grains prices. With global stocks expected to be at relatively low levels, the grain market is more vulnerable to supply shocks.

Biofuels: Comments II  
Claudiu Covrig (Kingsman)



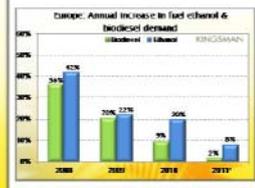
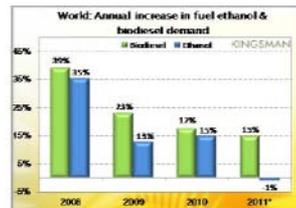
Biofuels – an opportunity?... or a reason to fear?

Claudiu COVRIG, PhD  
Market Research Analyst  
Biofuels & Related Commodities  
claudiu@kingsman.com  
Yahoo: claudiucovrig

Presentation to Commodity Market Development in Europe, EC, Brussels  
26<sup>th</sup> October 2011



...worldwide fuel ethanol is losing pace vs biodiesel...but in Europe...

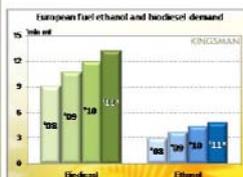
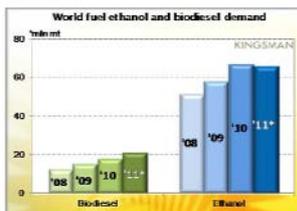


Fuel ethanol demand '11: 66 mln mt (83.5 bln l) (-1%)  
Biodiesel demand '11: 20.29 mln mt (23 bln l) (+15%)  
Fuel ethanol demand '11: 4.76 mln mt (+8%)  
Biodiesel demand '11: 12.1 mln mt (+2%)

\*\*\*IEA forecast for 2016: Ethanol to displace 5.3% of total gasoline demand  
Biodiesel to displace 1.5% of total diesel demand  
Ethanol production: 3.6-3.9 x higher than the biodiesel one



Where do we stand now? Which are the biofuels used worldwide?

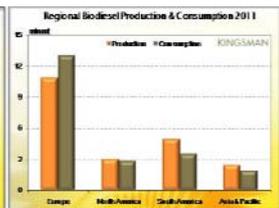
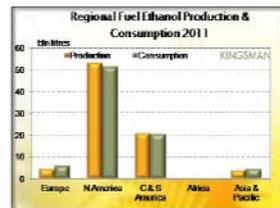


In 2010 world ethanol demand was 3.77 x higher than the biodiesel one and is expected to be 3.25 x higher at the end of 2011

\*\*\*IEA forecast for 2016 - Biofuels production: +28% from 2010 figures

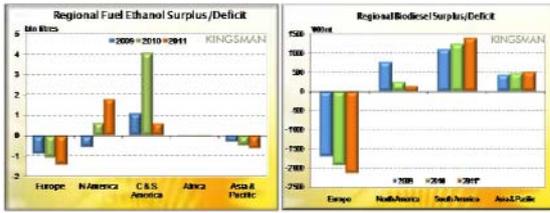


...actually, who's burning biofuels?

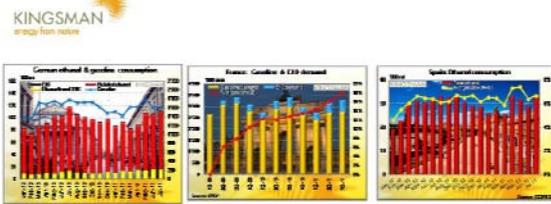


# Commodity Market Development in Europe – Outlook

KINGSMAN **...and who's supplying the world markets?**



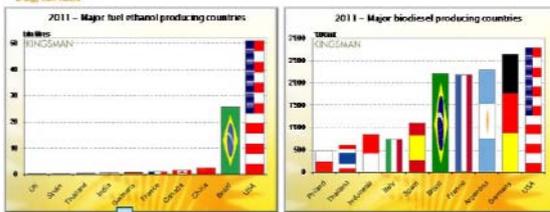
Increase of demand in the majority of the EU countries



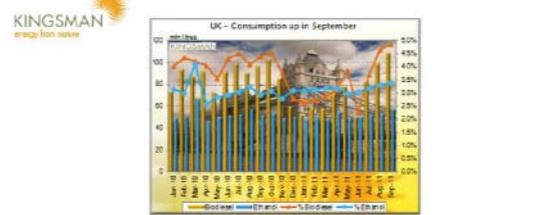
Statistics Update: 2011 Global demand in major countries (in m and % change 2010/2011)

Country	Volume	Change	Country	Volume	Change	Country	Volume	Change
USA	107720	-0.7%	Canada	87	0.0%	UK	119700	-2.6%
Br	63440	-3.0%	China	428	-2.7%	France	119700	-2.6%
Ind	88740	-0.7%	India	78700	-2.7%	Germany	128700	-7.2%
It	71700	-3.2%	Japan	10500	-2.4%	Spain	107700	-1.9%
UK	119700	-2.6%	South Korea	12700	-1.5%	Italy	107700	-1.9%
EU	119700	-2.6%	USA	107700	-0.7%	China	428	-2.7%
World	470000	-0.2%	EU	119700	-2.6%	India	78700	-2.7%

KINGSMAN **Top 10 producers**

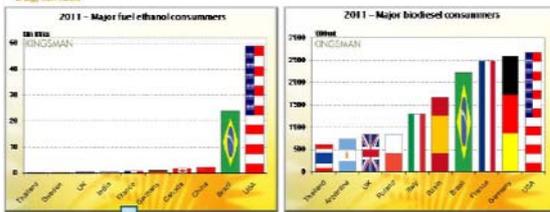


Slowdown of consumption in the UK



- First 3Q 2011:
- ethanol consumption 2.7% below last year's figures at 464 mln l
  - 5.4% fall in petrol consumption
  - diesel demand: +0.4% y-o-y
  - biodiesel demand stood even worse at 657 mln litres, -17% y-o-y
  - incorporation rate in petrol has been 3.17% (on vol)
  - biodiesel share at 3.43% (on vol)
  - total biofuels incorporation rate into regular fuels at 3.31%, below the 4% target established by the RTFO after Apr11

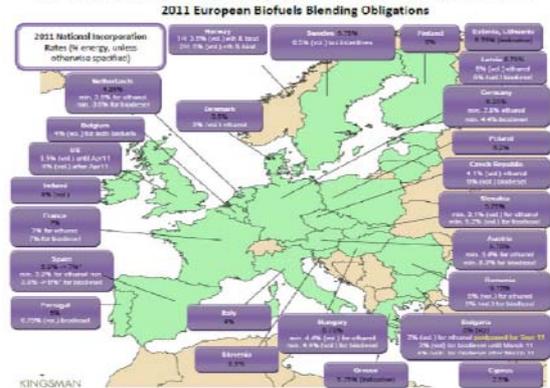
KINGSMAN **...and the top 10 consumers**



KINGSMAN **Fuel ethanol – a "regular" trade pattern**



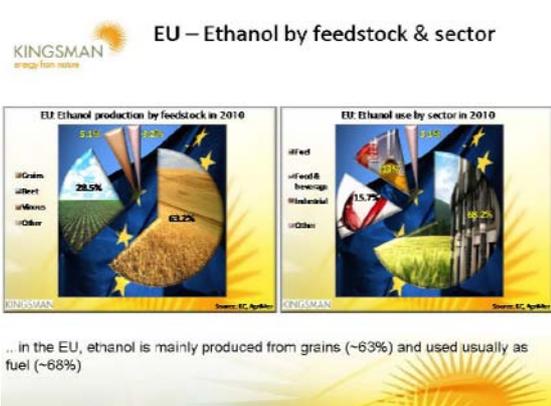
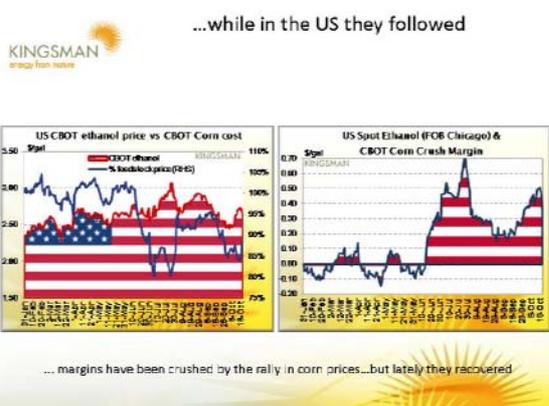
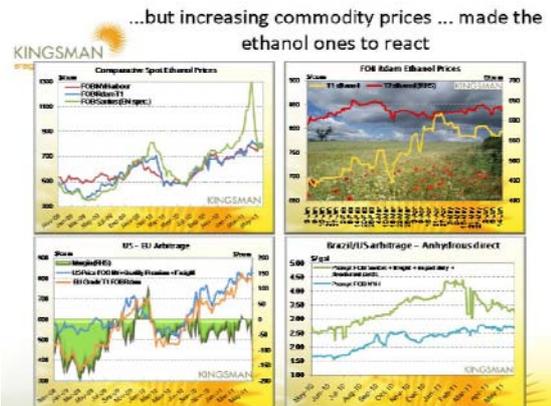
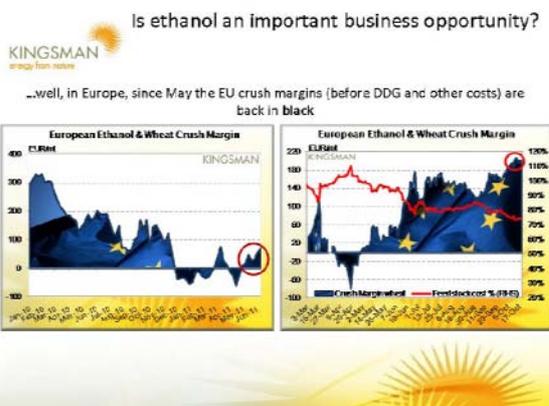
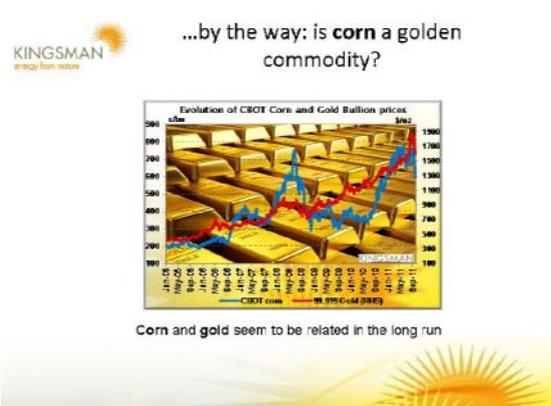
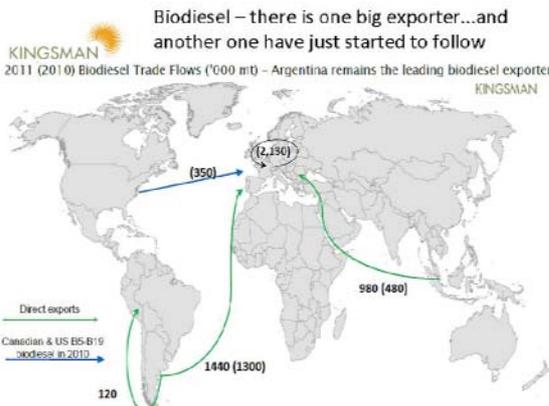
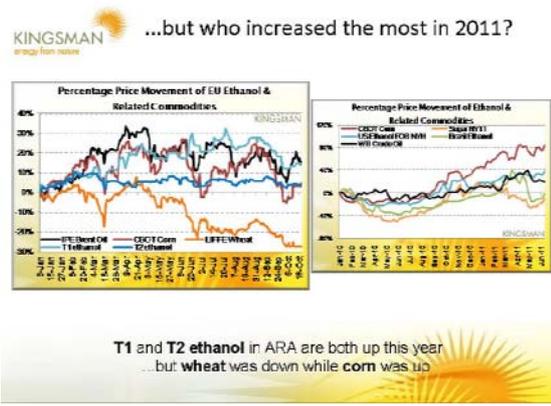
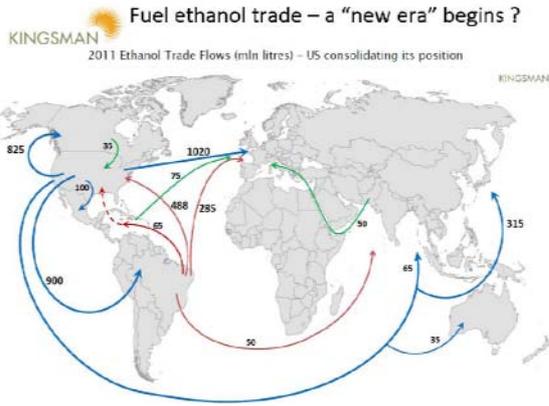
The EU demand is driven up by national & EU mandates/targets



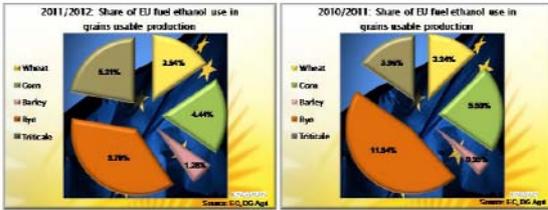
KINGSMAN **Fuel ethanol trade – transition period**



# Commodity Market Development in Europe – Outlook



**EU – Fuel ethanol share in grains...a food vs fuel debate?**



2011-2012 EC estimates: that the industrial use of grains 29.3 mln mt, out of which around 9.1 mln mt will be used for fuel ethanol production.  
 Compared to the total usable grains output of 274.8 mln mt, this represents only **3.3%** (almost unchanged y-o-y).

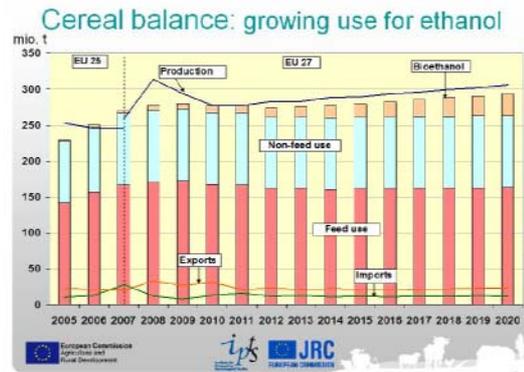
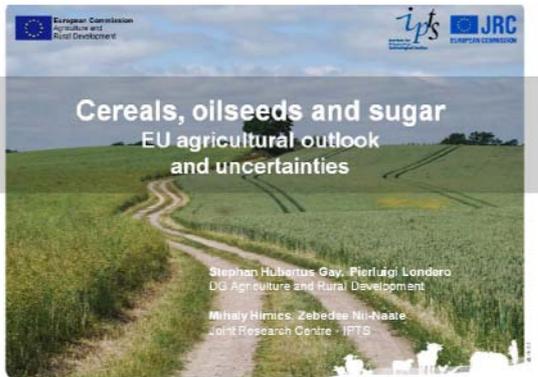
**US - Is the situation different than in the EU?**

1. US ethanol production uses only about 3% of the world's grain supply.. but this 3% consists of feed grains, large y corn for livestock. The food grains that people actually eat (mainly rice and wheat) aren't affected by biofuels production
2. About 1/3 of the corn used for ethanol becomes a co-product (DDG): livestock feed for cattle, poultry and hogs
3. Volatile energy costs are the real drivers of all consumer prices (including for food). Energy impacts every facet of food production from growing the crops to processing the food to transporting it to market.
4. The US farmers are increasing their productivity. Ethanol's demand for corn has grown dramatically during the past decade. But so has the crop of corn produced by US farmers. Corn production more than doubled from '77 to '07: 13.1 bin bu from 6.5 bin bu
5. Economists at Iowa State University and the University of Wisconsin shows that ethanol production has reduced wholesale gasoline prices by **25 cents/gal** on average over the past decade noting that any disruption to ethanol supply could cause a dramatic increase in gasoline prices.

**EU - How can a 3.3% market be responsible for such a volatility in grain prices?**

- perhaps it would be better to blame gold or other metals for that ☺
- or to be more serious, we should charge crude oil and other energy prices
- one more thing ... do we have a real food vs fuel debate in the EU27 when actually there is SO MUCH unused land especially in the EU12 countries?
- ... and how are we going to solve our main problems such as : CO2 emissions, unused arable land, employment, addition to foreign crude oil imports & other energies, the sustainable future of our planet ???

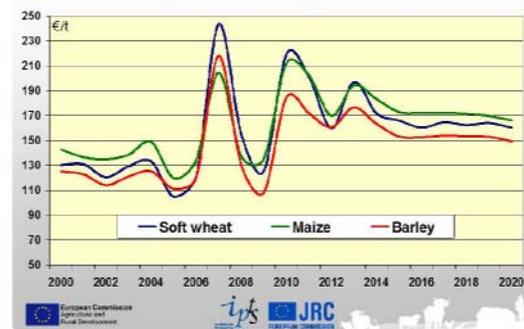
**EU Agricultural Outlook: Cereals, Oilseeds and Sugar**  
 Stephan Hubertus Gay, Pierluigi Londero (DG AGRI)



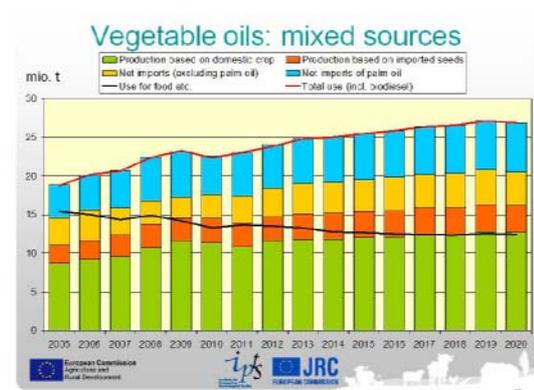
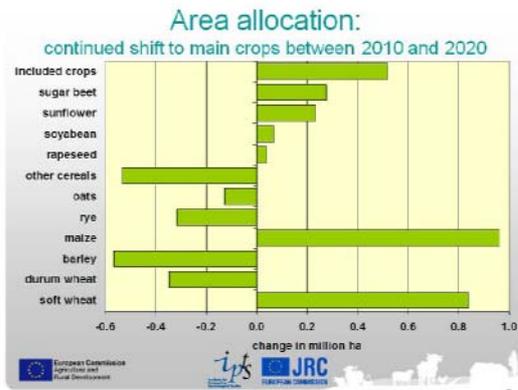
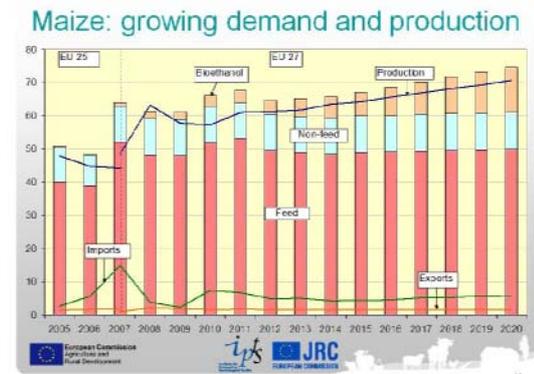
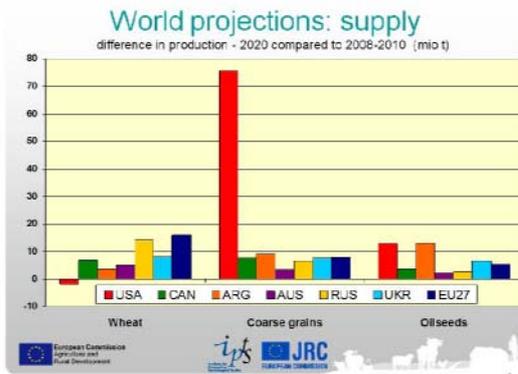
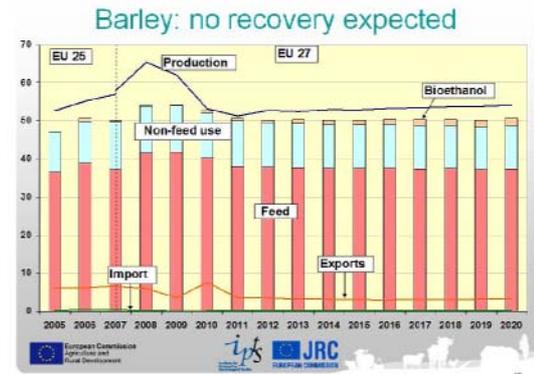
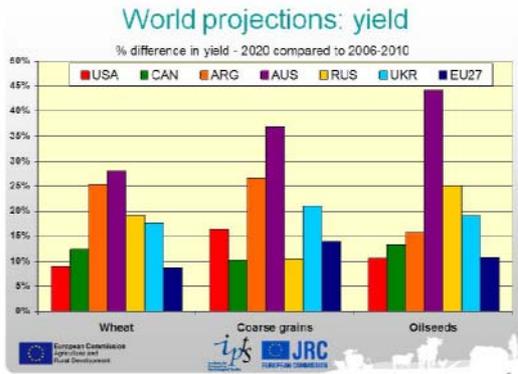
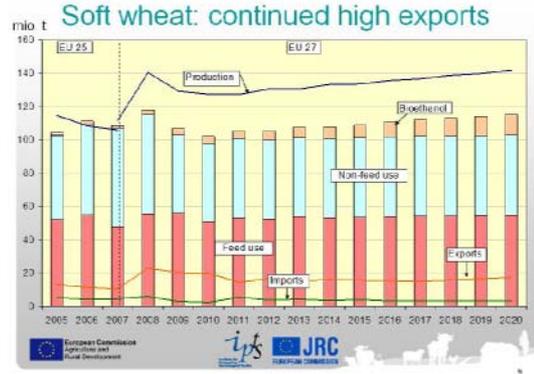
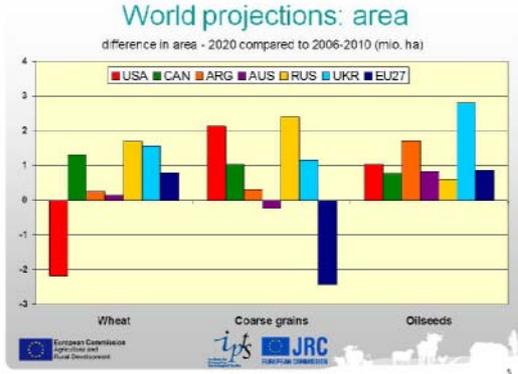
**Arable crops: cereals, oilseeds and sugar**

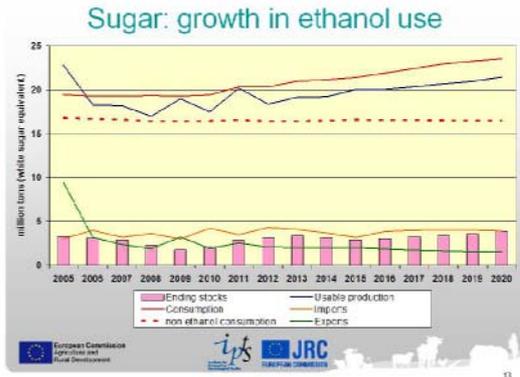
- Biofuel feedstock demand determines growth
- Prices are expected to remain high
- EU yield growth lower than in most competitive regions
- Maize and soft wheat will continue to gain against other grains
- Oilseeds continue to expand but at lower pace
- Sugar beet production increasing

**EU prices: at higher level**



# Commodity Market Development in Europe – Outlook





## Impact of different uncertainties on the EU crops sector

Mihály Himics and Zebedee Nii-Naate (JRC-IPTS)

**JRC iips** European Commission agriculture and Rural Development

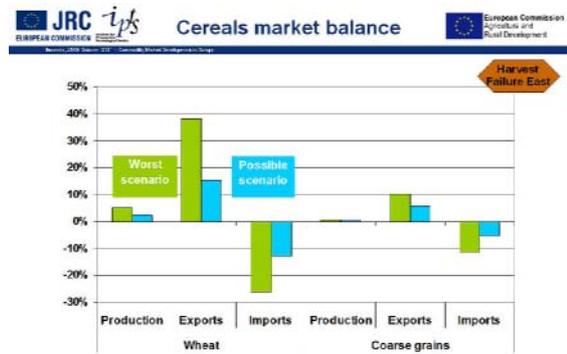
**Uncertainties in the crops sectors**  
EU outlook - sensitivity analysis

Workshop on "Commodity Market Development in Europe - Outlook"  
25/26 October 2011, Brussels

Mihály Himics and Zebedee Nii-Naate

With contributions from:  
A. Burrell, P. Ciaian, T. Fellmann, E. Ferrari, A. Gonzalez-Melado, S. Haldrup, R. M. Borek, J. Michalek, O. Nekhay, B. Van Doorstaer, C. Vinnyes

European Commission  
Joint Research Centre  
ITCS - Institute for Prospective Technological Studies  
Source: own



**JRC iips** European Commission agriculture and Rural Development

**Limited availability of grains in RUS, UKR, KAZ** Harvest Failure East

**In brief:**

- Wheat and coarse grains
- For 2 consecutive years (2012, 2013)
- Worst scenario: No exports
- Possible scenario: Lower exports

AGLINK-COSIMO

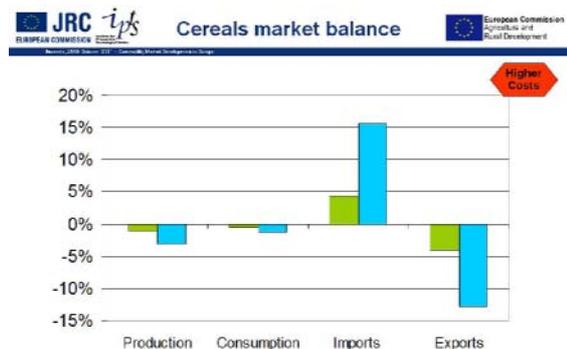
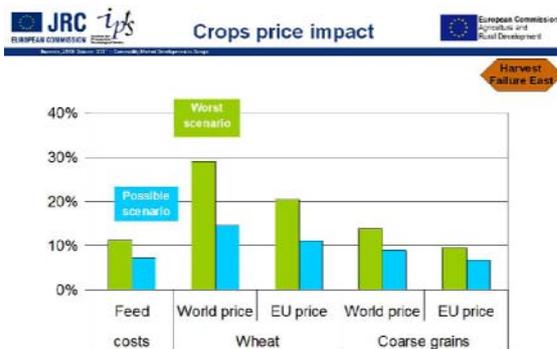
**JRC iips** European Commission agriculture and Rural Development

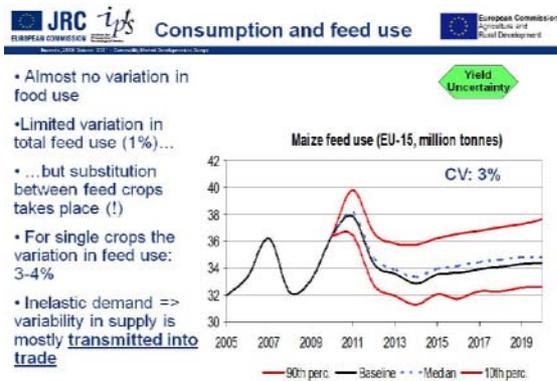
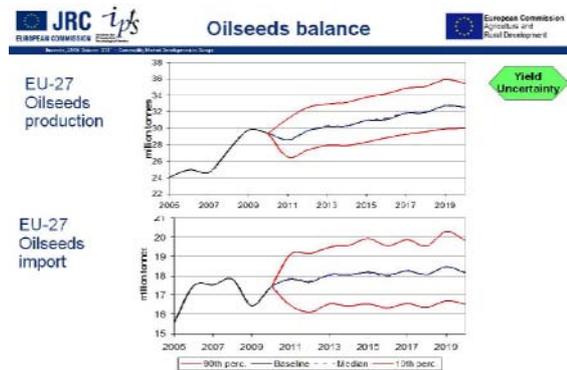
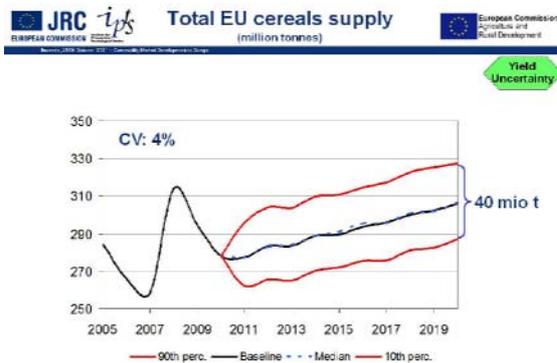
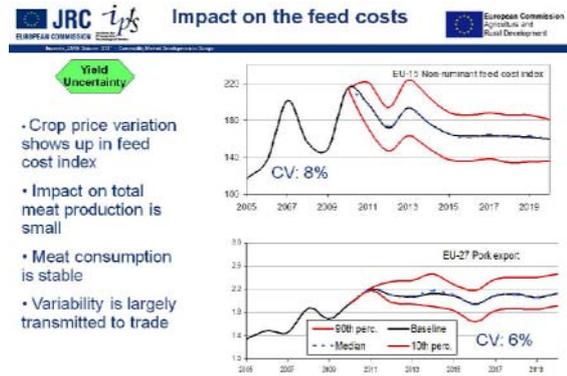
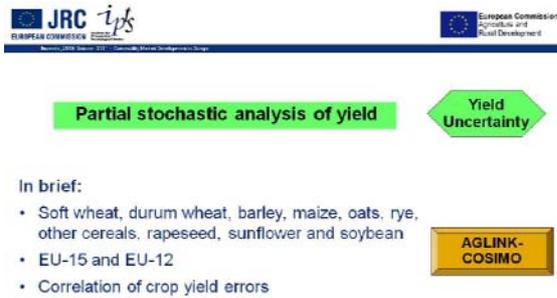
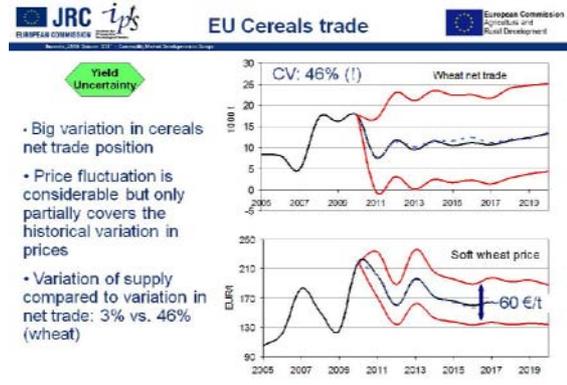
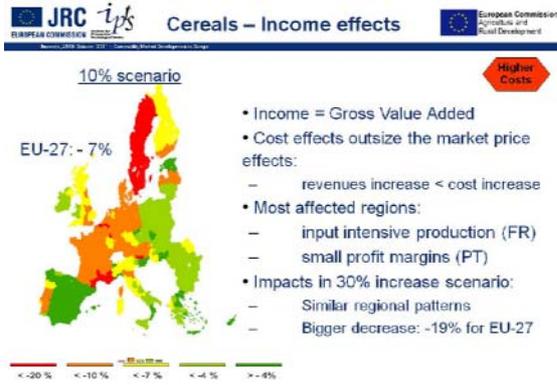
**Higher operating costs in EU** Higher Costs

**In brief:**

- "All cash expenditures necessary to operate"
- Normal uncertainty = 10% increase in costs
- Worst case scenario = 30% increase in costs

CAPRI





# Cereal Markets: Comments

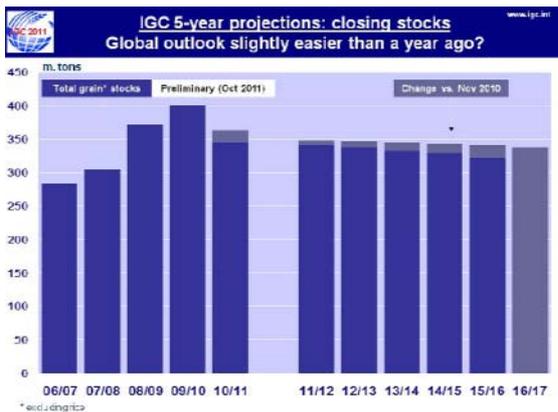
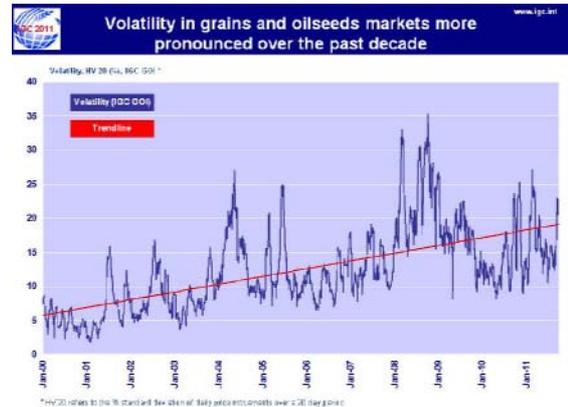
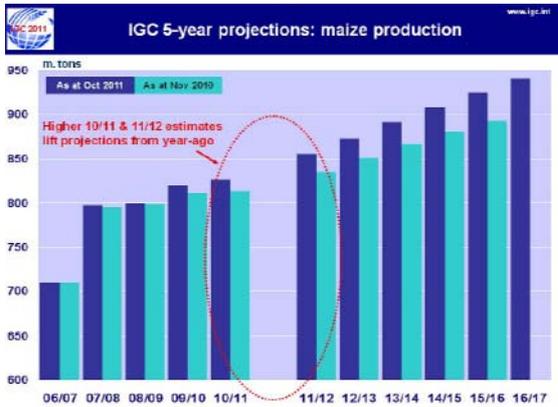
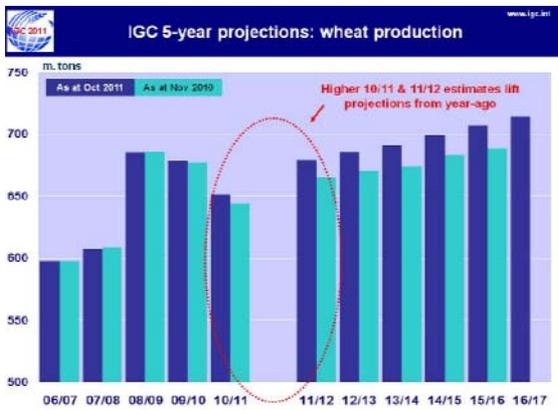
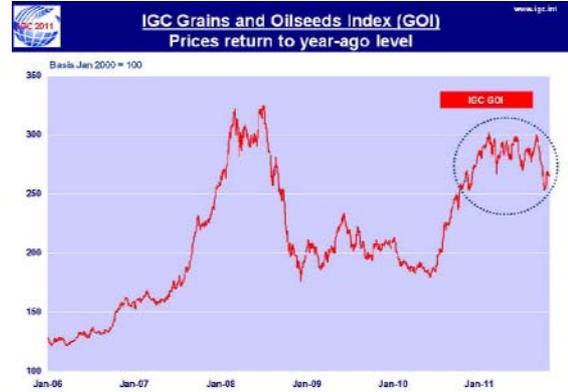
John Tjaardstra (International Grains Council)

26 October 2011

Commodity Market Development in Europe - Outlook



**John Tjaardstra**  
 Assistant Executive Director  
 International Grains Council  
 Email: jtjaardstra@igo.int



## Oilseeds Markets: Comments

Laurine Simon (Tallage/Stratégie Grains)



### Outlook 2020: Oilseed area and yield in the EU 27

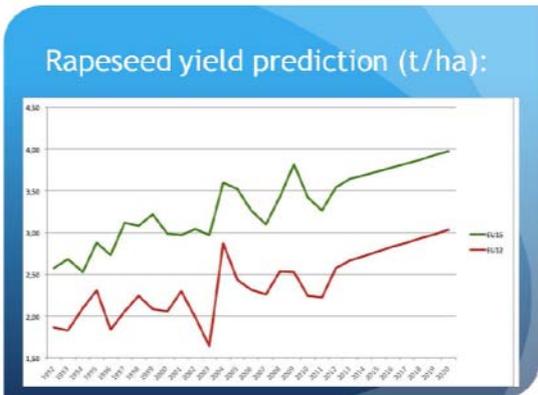
Tallage/Strategie grains (Agri-market: forecasting)  
Laurine Simon (laurine@tallage.eu)  
Pauline Boissinot (pauline@tallage.eu)

### Where rapeseed area should increase?

- ✓ +11% in Germany versus 2010 (+70 kha compared with max reached in 2007)
- ✓ +16% in France vs 2010 (+70 kha compared with maximum reached in 2007)
- ✓ +15% in the UK vs 2010 (+30 kha compared with max reached in 2011)
- ✓ +4% in Poland (+30 kha compared with max reached in 2011)

### 2020 area and production: main assumptions and methodology

- 3 main steps:
  - ✓ Forecast for total area used for crop cultivation
  - ✓ Area breakdown by culture
  - ✓ Yield forecast
- Based on each crop share of total area including agronomical constraints
- Maximisation of rapeseed area as demand forecast to rise sharply by 2020 (taking into account rotation constraints)
- Climate changes impact on winter/spring crop distribution



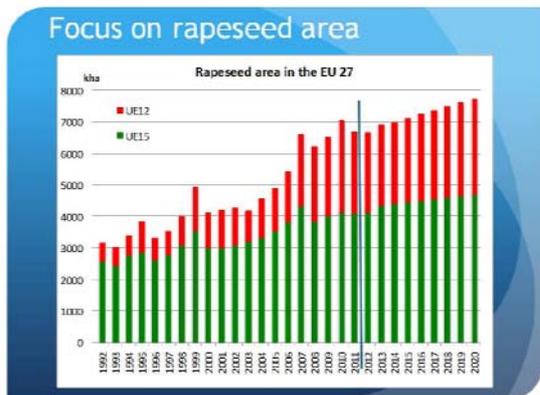
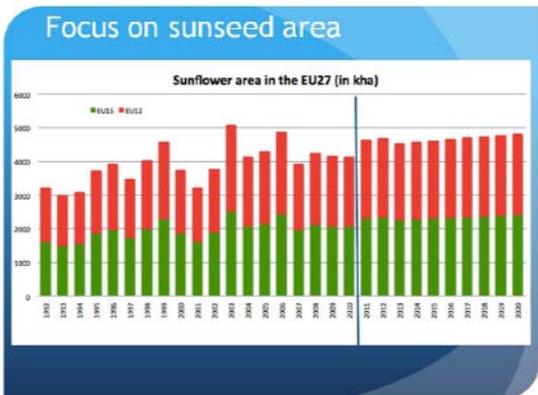
### EU 27 CROP AREA

Mha	Strategie grains' predictions					EC predictions
	2009/10	2010/11	2011/12	2012/13	2020/21	2020/21
Soft wheat	22,5	22,8	23,1	23,0	23,0	23,8
Barley	13,9	12,2	12,0	12,4	11,8	11,7
Maize	8,5	8,0	8,9	8,9	8,5	9,1
Rye	2,8	2,8	2,4	2,5	2,1	2,3
Rapeseed	6,5	7,0	8,7	6,8	7,7	6,9
Sugarbeet	1,6	1,6	1,7	1,7	1,3	1,5
Sunflower	3,9	3,7	4,1	4,1	4,2	3,6
Other crops	11,8	10,9	11,8	11,2	11,8	NA
Uncultivated area	6,3	7,2	8,5	8,0	6,2	NA
Total area*	77,4	75,7	75,3	76,1	75,9	79,2

\* Total area for Strategie grains (kha) (to account crops maize, which is not included in total area of EC)

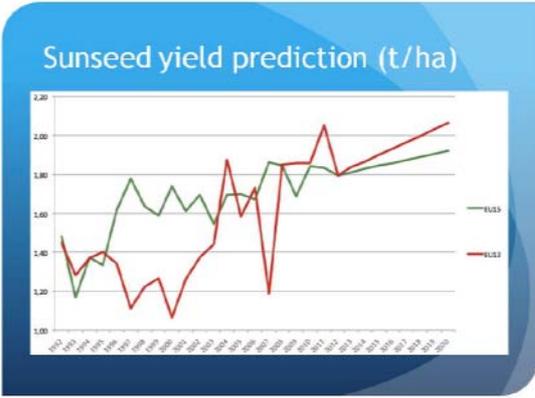
Versus 2010:

- +10% increase in rapeseed area, +14% in sunseed area
- +1 in soft wheat area
- -5% in barley area
- +5 in maize area
- +9% in silage maize area (biogaz development)



### Where sunseed area should increase?

- ✓ +16% in Spain versus 2010 (-40 kha compared with max reached in 2009)
- ✓ +3% in France vs 2010 (-20 kha compared with maximum reached in 2011)
- ✓ +9% in Hungary vs 2010
- ✓ +16% in Romania vs 2010
- ✓ +24% in Bulgaria



- ### Main swing factors
- CAP post 2013
  - Ability for rapeseed to effectively increase the area forecast in 2020 (climatic and agronomic constraints underestimated?)
  - Biodiesel development in the EU: sustainability criteria and its implementation (certification schemes, ILUC debate) - Impact on long term use of vegetable oils
  - Sugar quotas?

## Evaluation of Agricultural Policy Reforms in the European Union

Catherine Moreddu (OECD)



### Evaluation of Agricultural Policy Reforms in the European Union

Catherine Moreddu  
Trade and Agriculture Directorate



Workshop on "Commodity Market Development in Europe – Outlook"  
Brussels, 26 October 2011

### 25 years of changes

- The Common Agricultural Policy has regularly adapted to an evolving situation:
  - From 6 to 27 member states: larger and more diverse agricultural sector;
  - From production deficit to surplus situation;
  - Increasing budget and international pressure;
  - Growing importance of environmental issues.
- Gradual and consistent move since 1992 towards greater market orientation.
- The OECD has been monitoring and evaluating CAP developments since the mid-80s, using indicators of support and impact assessment models.

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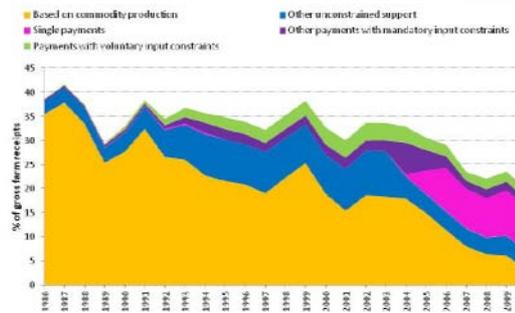
### CAP developments: Greater market orientation

- **Reduction of support to producers** from 39% of farm receipts in 1986-88 to 22% in 2008-10 (OECD 20%). This amounted to EUR 77 Billion in 2010.
- Trend towards **decoupling** support from current production:
  - As market intervention and border protection decreased, domestic prices became more closely aligned to world prices (7% higher in 2008-10; 71% in 1986-88).
  - Reduction in share of most distorting support from 92% to 29% (OECD 51%).
  - Increasing share of support with no requirement to produce (47% in 2010).
  - Most remaining area payments not linked to specific commodities.
- This has increase the efficiency with which income is transferred to farmers.
- But a large share of support remains capitalised into land values.

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### Level and composition of producer support



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4

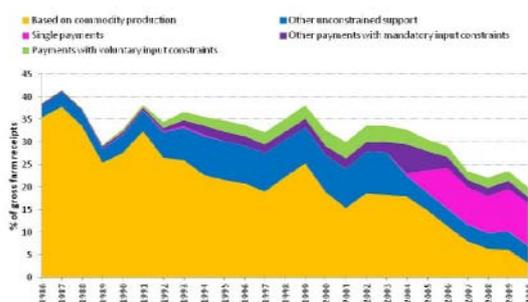
## CAP developments: More attention to environmental issues

- Generalisation of constraints on production practices:
  - Over 50% of support has mandatory input constraints (cross compliance);
  - 12% has voluntary input constraints (compared to 2% in 1990).
- More funds for land management and local public goods:
  - More funds for Pillar II (modulation) from 10% of CAP expenditures in 2000 to 20% in 2010 (EUR 53 Billion);
  - Minimum share for land management from 2007 (25% for Axis 2);
  - Wide differences across countries.

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## Generalisation of input constraints



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6

## Diversity in the use of pillar II measures, 2010

% share	EU27	EU15	Minimum	Maximum
Pillar II in CAP expenditures	20%	15%	5-10% DK, BL, FR, NL	50-60% new member states (MS)
Axis 1 in Pillar II	35%	27%	Around 10% IE, UK, SE	Over 40% B, ES, PT, new MS
Axis 2 in Pillar II	51%	62%	Under 40% NL, new MS	Over 70% AT, FI, FR, IE, SE, UK
- Agri-environment in Pillar II	27%	33%	Under 15% BG, PL, PT	Over 40% AT, BE, DK, IE, SE, UK
- LFA in Pillar II	19%	22%	Under 10% BE, BG, DK, EE, HU, NL	Around or over 30% FI, FR, GR, PT, SI
Axes 3+4 in Pillar II	13%	11%	10 MS under 10%	47% NL, 40% BG, over 20% EE, DE, CZ, LV

reflects differences in priorities and conditions

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## Environmental performance is difficult to measure

- Set-aside had significant environmental impacts, positive overall;
- Decoupling is expected to be beneficial through extensification;
- Cross-compliance conditions are expected to deliver minimum level of environmental management across farmland, but they do not target specific problems;
- The evaluation of agri-environmental measures showed:
  - Benefits for biodiversity, at least reduction of the rate of losses,
  - Positive impact on landscape,
  - Little evidence on soil and water quality due to lack of data.

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## Some challenges remain

- Targeting still limited, particularly in terms of income objective.
- Largest farms receive most support: 25% largest farms receive 75% of all support; they produce 82% of agricultural production; their farm income is 3 times the average of all farms.
- More could be done to improve competitiveness:
  - the share of general services such as research and infrastructure investment remains modest (12% of total support);
  - Impediments remain, e.g. measures that slow structural adjustment or that increase land value, including regulations;
- Increasing flexibility to respond to higher diversity in the EU
- ... must be balanced against EU-wide priorities.

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## The EU Common Agricultural Policy post-2013

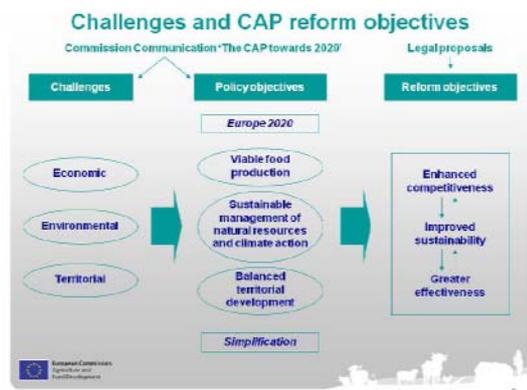
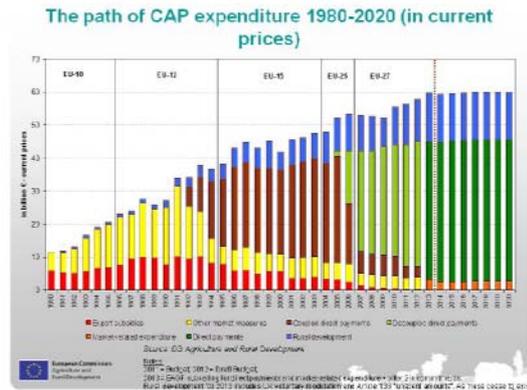
- A favourable context for a new approach, building on past successes and responding to challenges and opportunities.
- Shift of policy emphasis from supporting farm income to investing in further improving the productivity, profitability, sustainability and long-term competitiveness of the agri-food sector.
- This means:
  - investing more in innovation;
  - providing an effective framework for producer risk management;
  - using a range of instruments adapted to specific situations to improve the long run sustainability of agriculture;
  - adopting a place-based, non sectoral, approach to rural development;
  - considering income issues on the basis of reliable and comparable information on income and wealth across the economy.

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# The CAP towards 2020: The future policy framework and impact of alternative scenarios

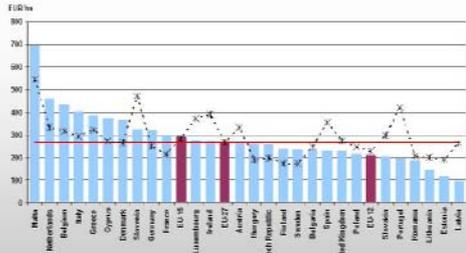
Tassos Haniotis (DG AGRI)





# Commodity Market Development in Europe – Outlook

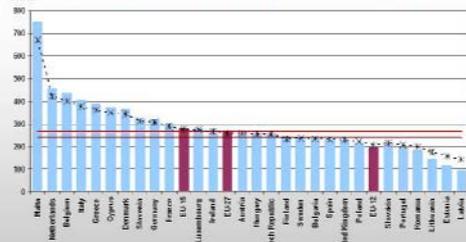
## Redistribution of DP – environmental criteria



Source: European Commission, 2016 Agriculture and Rural Development – Commission Staff Working Paper: Impact Assessment – CAP Post-2020 (https://doi.org/10.1016/j.ecolecon.2016.04.004) (working paper) (2016). Accessed 12/05/2016.



## Redistribution of DP – closing 1/3 of the gap between current level and 90% of EU-27 average by 2020



Source: European Commission, 2016 Agriculture and Rural Development – Commission Staff Working Paper: Impact Assessment – CAP Post-2020 (https://doi.org/10.1016/j.ecolecon.2016.04.004) (working paper) (2016). Accessed 12/05/2016.



## Impact of the different criteria compared to the flat rate

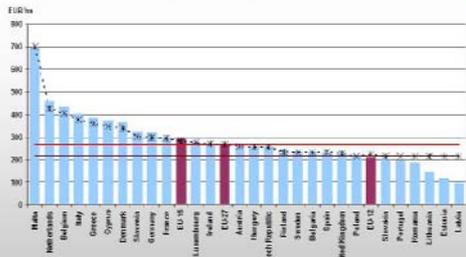
	PPS	CDP/eq	CVL/ha	ASMI/ha	LF2 - 10/5	Miles 2008 - 10/5	Flattened ground - 10/5
BE	++	++	++	-	-	-	+
BG	-	-	-	++	-	-	++
CZ	-	-	-	-	-	-	-
DE	++	++	-	-	-	-	-
DK	+	++	-	-	-	-	-
EE	-	-	-	-	-	++	-
EL	+	++	-	-	++	-	++
ES	-	+	-	-	++	-	+
FR	+	+	-	-	-	-	-
GR	-	-	++	++	+	-	-
CY	+	+	++	++	+	++	-
LV	-	-	-	+/	++	+/	+
LT	-	-	-	-	+	-	-
LU	++	++	-	-	++	-	++
HU	-	-	-	+/	-	++	-
MT	-	-	++	+/	+	-	-
PL	++	++	++	+/	+	-	++
PT	-	-	-	+/	+	-	-
RO	-	-	+	++	-	-	++
SI	-	-	-	++	++	++	++
SK	-	-	-	-	+	++	-
FI	++	++	-	-	++	++	-
SE	+	++	-	-	++	++	-
HR	+	++	-	-	++	++	-



## Rural development



## Redistribution of DP – minimum 80% of EU-27 average



Source: European Commission, 2016 Agriculture and Rural Development – Commission Staff Working Paper: Impact Assessment – CAP Post-2020 (https://doi.org/10.1016/j.ecolecon.2016.04.004) (working paper) (2016). Accessed 12/05/2016.



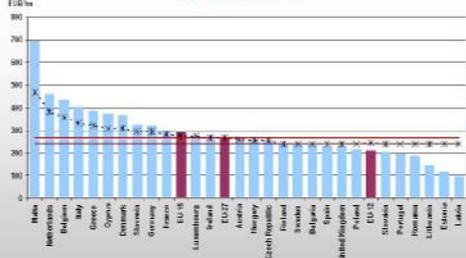
## Role of rural development

### Policy objectives

- Within the CAP framework rural development contributes to the following policy objectives:
  - Competitiveness of agriculture
  - Sustainable management of natural resources and climate action
  - Balanced territorial development of rural areas
- In the service of the Europe 2020 strategy for smart, sustainable and inclusive growth, these objectives are pursued through a set of six priorities that also translate the thematic objectives of the CSF



## Redistribution of DP – minimum 90% of EU-27 average with objective criteria



Source: European Commission, 2016 Agriculture and Rural Development – Commission Staff Working Paper: Impact Assessment – CAP Post-2020 (https://doi.org/10.1016/j.ecolecon.2016.04.004) (working paper) (2016). Accessed 12/05/2016.



## Current distribution and rationale for redistribution

### Current distribution

- Distribution in the current period (2007-2013) reflects to a large extent the historical shares of Member States in the Guarantee, Guidance and Leader funds that were brought together into a single fund, the EAFRD
- In addition, the additional amounts from modulation are distributed according to the following formula (with each MS receiving at least 80%):
  - $(0.55 \text{ Area} + 0.35 \text{ Labor}) \times \text{GDP inverse index}$

### Rationale for redistribution

- Ensure a better fit between funding and policy objectives and thus a more efficient use of budgetary resources in the pursuit of Europe 2020
- Provide for a smooth transition from current distribution



## Impact of alternative distribution scenarios

The impact assessment considered alternative distribution scenarios:

- Using criteria linked to the policy objectives, such as:
  - Objective 1 (competitiveness of agriculture): Area, Labor, Labor productivity inverse index
  - Objective 2 (sustainable management of natural resources and climate action): Area, N2000, NHA, Forest, Permanent pasture areas
  - Objective 3 (balanced territorial development): Rural population, GDP inverse index

And

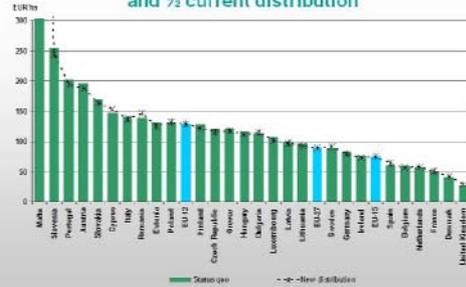
- Factoring in the current distribution

### Impact

- Use of objective criteria allows for a better use of budgetary resources
- Smooth redistribution allows for continuity in spending



## Example: 1/2 objective criteria within 90-110% range and 1/2 current distribution



Source: European Commission (2016) Agriculture and Rural Development – Commission Staff Working Paper: Impact Assessment – CAP towards 2020  
Note: This distribution may represent one of the possible ones through the internet reforms in the tobacco, cotton and wine sectors (they are subject to the national decisions after the redistribution of the amount without transfer).



## Impact of criteria compared to current distribution

	Area	Labor	Productivity	NHA	Natura 2000	Forest	Permanent pasture	Rural population	GDP
BE	++	++	++	++	++	++	++	++	++
BG	++	++	++	++	++	++	++	++	++
CY	++	++	++	++	++	++	++	++	++
DK	++	++	++	++	++	++	++	++	++
DE	++	++	++	++	++	++	++	++	++
EE	++	++	++	++	++	++	++	++	++
EL	++	++	++	++	++	++	++	++	++
ES	++	++	++	++	++	++	++	++	++
FR	++	++	++	++	++	++	++	++	++
IT	++	++	++	++	++	++	++	++	++
LU	++	++	++	++	++	++	++	++	++
LV	++	++	++	++	++	++	++	++	++
LT	++	++	++	++	++	++	++	++	++
IE	++	++	++	++	++	++	++	++	++
HU	++	++	++	++	++	++	++	++	++
MT	++	++	++	++	++	++	++	++	++
NL	++	++	++	++	++	++	++	++	++
AT	++	++	++	++	++	++	++	++	++
PL	++	++	++	++	++	++	++	++	++
PT	++	++	++	++	++	++	++	++	++
RO	++	++	++	++	++	++	++	++	++
SI	++	++	++	++	++	++	++	++	++
SK	++	++	++	++	++	++	++	++	++
FI	++	++	++	++	++	++	++	++	++
SE	++	++	++	++	++	++	++	++	++
UK	++	++	++	++	++	++	++	++	++

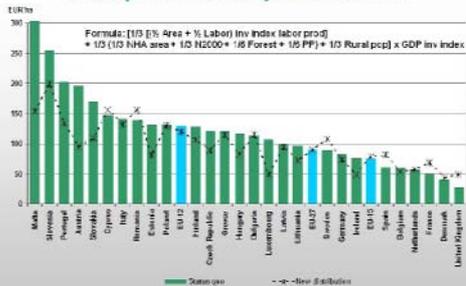


## For further information

- The CAP after 2013  
[http://ec.europa.eu/agriculture/cap-post-2013/index\\_en.htm](http://ec.europa.eu/agriculture/cap-post-2013/index_en.htm)
- Commission Communication 'The CAP towards 2020'  
[http://ec.europa.eu/agriculture/cap-post-2013/communication/index\\_en.htm](http://ec.europa.eu/agriculture/cap-post-2013/communication/index_en.htm)
- Impact assessment  
[http://ec.europa.eu/agriculture/analysis/perspec/cap-2020/index\\_en.htm](http://ec.europa.eu/agriculture/analysis/perspec/cap-2020/index_en.htm)
- Legal proposals  
[http://ec.europa.eu/agriculture/cap-post-2013/legal-proposals/index\\_en.htm](http://ec.europa.eu/agriculture/cap-post-2013/legal-proposals/index_en.htm)



## Example: use of objective criteria



Source: European Commission (2016) Agriculture and Rural Development – Commission Staff Working Paper: Impact Assessment – CAP towards 2020  
Note: This distribution may represent one of the possible ones through the internet reforms in the tobacco, cotton and wine sectors (they are subject to the national decisions after the redistribution of the amount without transfer).



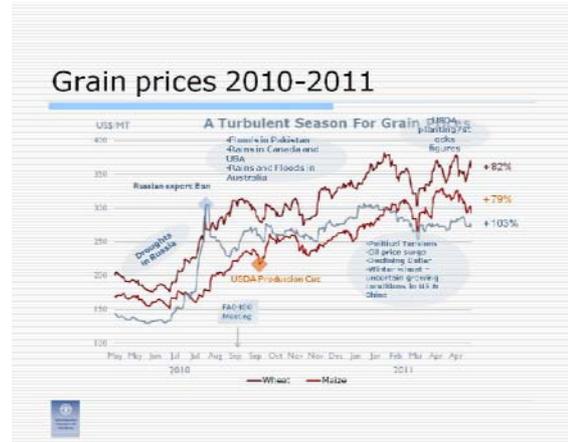
# Food Price Volatility: Impact and policies

George Rapsomanikis (FAO)

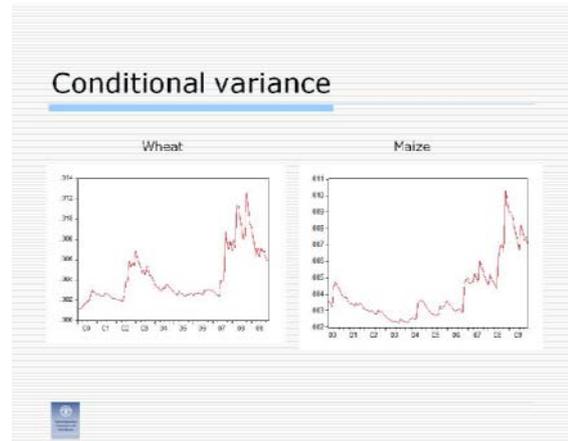
## Food Price Volatility Impact and policies

George Rapsomanikis  
Senior Economist

Agricultural Economics Development Division  
Economic and Social Development Department  
Food and Agriculture Organization of the UN

## Interagency Report on Food Price Volatility to the G20



- ## Food market
- More production from less stable regions (in terms of yields)
  - Population estimated to increase to 9.1 billion from 5.8 billion
  - Rate of growth in agricultural production estimated to fall to 1.5% (2010-2030) and to 0.9% (2030-2050)
  - Lower stocks than in the past - upward pressure on prices
    - stock/utilisation
    - information on stocks - Agricultural Market Information System (AMIS)
    - China, India
  - Recommendation: Increase investment - USD 52 billion annually
    - agricultural production should increase by 70% globally

### Biofuels

- Food and energy markets are more integrated – crops are quasi fixed inputs
- Non-linear: Oil prices have to increase over a certain threshold for the oil-food price relationship to be active
- Recommendation: abolish mandates, and policies
  - or adjust them to safeguard food security

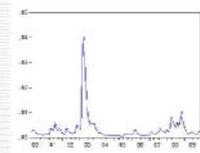


### Speculation

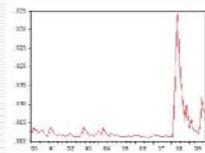
- Recommendation: More transparency – OTC markets
  - transfer risk
  - price discovery
- Money supply – overshooting model
  - commodity prices increase fast – flexible
  - overshoot their LR path

### Trade: example from the rice market

India



World



### CFS agenda October 2011

- Three policy roundtables
  - food price volatility
  - investment in agriculture and new sources of funding
  - gender, food security and nutrition



### Policies to reduce food price volatility: Domestic and trade policies

- Improve market access and develop a 'notification process' for export restrictions in WTO
  - Operational definition of critical food shortage to justify export restrictions
  - Time limited measure of last resort
  - Fast-track consultation process
- Eliminate trade and support measures on biofuels sector
  - or, introduce flexible mandates

## Annex: List of Participants

1. Bruce A. BABCOCK	Iowa State University, USA
2. John BAFFES	World Bank, USA
3. Adam BELL	DEFRA, UK
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12. Sune Jin CHRISTENSEN	Danish Agriculture and Food Council, Denmark
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22. William LIEFERT	USDA, USA
23. Andreas LUNDBY	Arla Foods, Denmark
24. Caroline MIDGLEY	LMC International, UK
25. Catherine MOREDDU	OECD, France
26. George RAPSOMANIKIS	FAO, Italy
27. Petra SALAMON	vTI, Germany
28. Guna SALPUTRA	LVAEI, Latvia
29. Josef SCHMIDHUBER	FAO, Italy
30. Klaus-Dieter SCHUMACHER	Nordzucker, Germany
31. Laurine SIMON	Tallage, France
32. John TJAARDSTRA	International Grains Council, UK
33. Pavel VAVRA	OECD, France
34. Eckhard WURZEL	OECD, France

**European Commission**

35. Monika ANTAL (JRC)
36. John BENSTED-SMITH (IPTS)
37. Florence BUCHHOLZER (DG AGRI)
38. Mark CROPPER (DG AGRI)
39. Alberto D'AVINO (DG AGRI)
40. Jacques DELINCE (IPTS)
41. Björn DOHRING (DG ECFIN)
42. Myriam DRIESSEN (DG AGRI)
43. Fernando FELIU BERNARDEZ (DG AGRI)
44. Thomas FELLMANN (IPTS)
45. Emanuele FERRARI (IPTS)
46. Livia GALITA (DG AGRI)
47. Miguel GARCIA NAVARRO (DG AGRI)
48. S. Hubertus GAY (DG AGRI)
49. Tassos HANIOTIS (DG AGRI)
50. Sophie HELAINE (IPTS)
51. Mihaly HIMICS (IPTS)
52. Giel KATTENBELT (DG AGRI)
53. Edit KONYA (DG AGRI)
54. Notis LEBESSIS (DG AGRI)
55. Pierluigi LONDERO (DG AGRI)
56. Robert M'BAREK (IPTS)
57. Magdalena MISKIEWICZ (DG AGRI)
58. Christine MOELLER (DG CLIMA)
59. Jens-Aksel MUNCH (DG AGRI)
60. Olexandr NEKHAY (IPTS)
61. Dangiris NEKRASIUS (DG AGRI)
62. Zebedee NII-NAATE (IPTS)
63. Dominik OLEWINSKI (DG AGRI)
64. Helena RUIZ FABRA (JRC)
65. Andreas SCHMIDT (DG TRADE)
66. Willi SCHULZ-GREVE (DG AGRI)
67. Kai-Uwe SPRENGER (DG AGRI)
68. Bence TOTH (DG AGRI)
69. Monika TOTHOVA (DG AGRI)
70. Benjamin VAN DOORSLAER (IPTS)
71. Beatriz VELAZQUEZ (DG AGRI)
72. Roger WAITE (EC Spokesman)

European Commission

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**Abstract**

This report contains a summary and the presentations of the expert workshop 'Commodity Market Development in Europe – Outlook', held in October 2011 in Brussels. The workshop was held in order to present and discuss the preliminary results of the DG AGRI outlook on EU agricultural market developments.

The workshop gathered high-level policy makers, modelling and market experts and provided a forum to present and discuss recent and projected developments on the EU agricultural and commodity markets, to outline the reasons behind observed and prospected developments, and to draw conclusions on the short/medium term perspectives of European agricultural markets in the context of world market developments. Special focus was given on the discussion of the influence of different settings/assumptions (regarding e.g. drivers of demand and supply, macroeconomic uncertainties, etc.) on the projected market developments.

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