



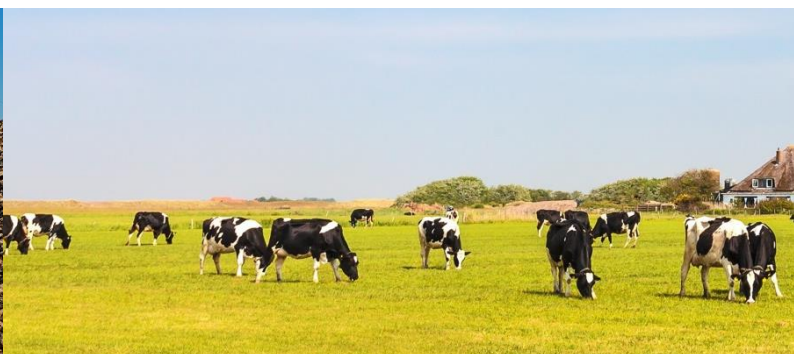
# CONFERENCES AND WORKSHOPS ORGANIZED BY THE JRC

## Medium-term outlook for the EU agricultural commodity market

*Proceedings of the October  
2015 workshop*

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**Abstract**

The aim of the expert workshop “Medium-term outlook for the EU agricultural commodity market”, held in October 2015 in Brussels, was to present and discuss the preliminary results of the outlook of the Directorate-General for Agriculture and Rural Development (DG AGRI) on European Union (EU) agricultural market developments. Participants included high-level policy makers and modelling and market experts and the workshop provided a forum in which to present and discuss recent and projected developments in the EU agricultural and commodity markets, and to outline the reasons behind observed and prospective developments. This year, the “Medium-term outlook for the EU agricultural commodity market” workshop included a special focus on the impact, on agricultural markets, of macroeconomic variables, such as changes in the euro exchange rate, changes in the Brent crude oil price and changes in animal food consumption in China. This document summarises the presentations and discussions on the macroeconomic and energy assumptions associated with this outlook, and on each of the EU agricultural markets addressed, namely the biofuel market, the arable crop market, the sugar market, the milk and dairy market, and the meat market. To conclude, the development of agricultural income in the EU is discussed and, finally, a special section on agricultural market developments in China is presented.

# **Medium-term outlook for the EU agricultural commodity market**

**Proceedings of the October 2015 workshop**

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 in the workshop.



## Workshop background

This report contains a summary of the discussions held and the presentations made at the 2015 workshop on the “Medium-term outlook for the EU agricultural commodity market”, jointly organised by the European Commission’s Joint Research Centre (JRC) Institute for Prospective and Technological Studies (IPTS) and the Directorate-General for Agriculture and Rural Development (DG AGRI). The workshop took place in Brussels on 22–23 October 2015 and is part of the series of workshops on commodity market modelling and development which have been held annually since 2006<sup>1</sup>.

These annual workshops are held, as part of a validation procedure, to present and discuss the preliminary results of the DG AGRI’s 10-year projections on European Union (EU) agricultural market developments. Participants in the 2015 workshop included high-level policy makers and modelling and market experts from the EU, the USA, Brazil, New Zealand and Switzerland and representatives from international organisations such as the Organisation for Economic Co-operation and Development (OECD) and the World Bank. It provided a forum in which to present and discuss recent and projected developments in the EU agricultural and commodity markets, including those at national/regional levels, to outline the reasons behind these developments and to draw conclusions regarding the short- and medium-term prospects for European agricultural markets in a global context. Special attention was given to discussions of the sensitivity of the projections to different settings/assumptions (e.g. uncertainties regarding macroeconomic or climatic conditions, specific policies, different drivers of demand and supply, etc.).

Suggestions and comments made during the course of the workshop have been taken into account to produce an improved final version of the outlook, which was released at the Outlook conference, held on 1–2 December 2015 in Brussels. Hence, for further information on the DG AGRI baseline projections refer to the final report “Prospects for EU agricultural markets and income, 2015-2025” (available at <http://ec.europa.eu/agriculture/markets-and-prices/medium-term-outlook>).

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<sup>1</sup> The proceedings of the workshops are listed below and can be downloaded from the JRC-IPTS website for publications prior to 2014 (<http://ipts.jrc.ec.europa.eu/publications/>), and from the JRC Science Hub website for 2015 publications (<https://ec.europa.eu/jrc/en/topic-related-publications-list/42%2C43/9823>):

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

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

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

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

Fellmann, T., Hélaïne, S. (2011). Commodity Market Development in Europe—Outlook. October 2011 Workshop Proceedings. JRC Scientific and Technical Reports, European Commission, JRC 67918.

Fellmann, T., Hélaïne, S. (2012). Commodity Market Development in Europe—Outlook. October 2012 Workshop Proceedings. JRC Scientific and Policy Reports, European Commission, JRC 76028.

Fellmann, T., Santini, F. (2014). Commodity Market Development in Europe—Outlook. October 2013 Workshop Proceedings. JRC Scientific and Policy Reports, European Commission, JRC 85607.

Şuta, C-M., Araujo Enciso, S. R., et al. (2014). Commodity Market Development in Europe—Outlook Workshop 2014. Proceedings. JRC Scientific and Policy Reports, European Commission, JRC 92558.

## Acknowledgments

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, as well as the staff particularly involved in the organisational arrangements, in particular Alexandra Von Der Pahlen and Isabelle Vanloo. We thank all contributing and participating colleagues from the European Commission, in particular Giampiero Genovese, Mihaily Himics, Guna Salputra, Jean-Michel Terres Maria Bielza Diaz-Caneja, Adrian Leip, Franz Weiss and Szvetlana Acs, within the JRC, and Tassos Haniotis, Jens Schaps, Pierluigi Londero, Sophie H elaine, Koen Dillen, Koen Mondelaers, Benjamin Van Doorslaer and Maciej Krzysztofowicz, in DG AGRI, as well as the following invited external experts, who were involved in the chairing of sessions or formal presentations:

Thais Affonso	Syngenta
John Baffes	The World Bank
Oliver Balkhausen	ADM
Kevin Bellamy	Rabobank
Errin Borrer	US Meat Export Federation
Richard Brown	GIRA
Jean-Marc Chaumet	Institut de l'Eleavage (IDELE)
Philippe Chotteau	Institut de l'Eleavage (IDELE)
Christophe Cogny	Tallage
Darren Cooper	IGC
Stephen George	KBC Advanced Technologies
Zacchary Gidwitz	Smart Agriculture Analytics
Joe Glauber	IFPRI
Benjam� G�ix�ns	Danone
Lindsay Jolly	ISO
Ilmari Lastikka	Neste Oil
Christophe Lafoug�re	GIRA
Pascale Magdelaine	ITAVI
Gerald Mason	Tate & Lyle Sugar, ASR group
Leonardo Mirone	Barilla
Plinio Nastari	DATAGRO
Ermis Panagiotopoulos	Fertilizers Europe
Christian Palli�re	Fertilizers Europe
Martin Todd	LMC
Elisabeth Waelbroeck-Rocha	IHS Global Insight

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## Workshop agenda

**Date: 22–23 October 2015**

Organisers: JRC-IPTS and DG AGRI

AGENDA DAY 1 - 22 OCTOBER 2015		
08:30	Registration	
9:00 – 9:30 <i>Session 1</i>	Background of the workshop	
	Welcome and background	Tassos Haniotis, DG AGRI Giampiero Genovese, JRC-IPTS
9:30 – 11:15 <i>Session 2</i>	Macroeconomic and energy context Chair: Joe Glauber (IFPRI)	
(20 min)	Baseline macro assumptions and scenario	Pierluigi Londero, DG AGRI Ignacio Pérez Dominguez, JRC-IPTS
(40 min)	Presentations	Elisabeth Waelbroeck-Rocha, HIS Stephen George, KBC Advanced Technologies John Baffes, World Bank Christian Pallière, Fertilizers Europe
(45min)	Open discussion	All participants
11:15 – 11:45	<b>Coffee break</b>	
11:45– 13:00 <i>Session 3</i>	Biofuels Chair: Christophe Cogny (Tallage)	
(15 min)	EU agricultural outlook	Koen Dillen, DG AGRI
(30 min)	Presentations	Plinio Nastari, DATAGRO Ilmari Lastikka, Neste Oil
(30 min)	Open discussion	All participants
13:00 – 14:00	<b>Networking lunch</b>	
14:00 – 16:00 <i>Session 4</i>	Arable crops Chair: Darren Cooper (IGC)	
(25 min)	EU agricultural outlook Uncertainties	Koen Mondelaers, DG AGRI Sergio René Araujo Enciso, JRC-IPTS
(30 min)	Presentations	Thais Affonso, Syngenta Oliver Balkhausen, ADM
(65 min)	Open discussion	All participants
16:00 – 16:30	<b>Coffee break</b>	

<b>16:30 – 18:00</b>		<b>Sugar</b>	
<b>Session 5</b>		<b>Chair: Lindsay Jolly (ISO)</b>	
(15 min)	EU agricultural outlook	Koen Dillen, DG AGRI	
(30 min)	Presentations	Martin Todd, LMC Gerald Mason, Tate & Lyle	
(45 min)	Open discussion	All participants	
<b>AGENDA DAY 2 - 23 OCTOBER 2015</b>			
<b>09:00</b>	Warm-up	Maciej Krzysztofowicz, DG AGRI	
<b>9:15 – 11:00</b>		<b>Milk and dairy markets</b>	
<b>Session 6</b>		<b>Chair: Kevin Bellamy (Rabobank)</b>	
(10 min)	The Commission's answer to the dairy crisis	Jens Schaps, DG AGRI	
(20 min)	EU agricultural outlook Uncertainties	Sophie H�elaine, DG AGRI Thomas Fellmann, JRC-IPTS	
(30 min)	Presentations	Benjam� G�ix�ns, Danone Leonardo Mirone, Barilla	
(45 min)	Open discussion	All participants	
<b>11:00 – 11:30</b>	<b>Coffee break</b>		
<b>11:30 – 13:00</b>		<b>Meat</b>	
<b>Session 7</b>		<b>Chair: Richard Brown (GIRA)</b>	
(20 min)	EU agricultural outlook Uncertainties	Benjamin Van Doorslaer, DG AGRI Martin Banse, AGMEMOD consortium	
(30 min)	Presentations	Erin Borrer, US Meat Export Federation Pascale Magdelaine, ITAVI	
(40 min)	Open discussion	All participants	
<b>13:00 – 13:30</b>	<b>Wrap-up and concluding remarks</b>		Pierluigi Londero, DG AGRI
<b>13:30 – 14:30</b>	<b>Networking lunch</b>		
<b>14:30 – 15:45</b>		<b>Panel discussion: China and world agricultural markets</b>	
<b>Session 8</b>		<b>Moderator: Jean-Marc Chaumet, Institut de l'�levage</b>	
(40 min)	Presentations	Marina Guajardo, DG AGRI Zachary Gidwitz, Smart Agriculture Analytics Joe Glauber, IFPRI Fabien Santini, JRC-IPTS	
(35 min)	Discussion	All participants	
<b>15:45 – 16:15</b>	<b>Coffee break</b>		
<b>16:15 – 17:30</b>		<b>Parallel sessions – Detailed discussions on EU prospects</b>	
16:15-17:15	<b>Milk and dairy</b> (Room A) Moderator: Christophe Lafoug�re, GIRA	<b>Crops</b> (Room B) Moderator: Ermis Panagiotopoulos, Fertilizers Europe	<b>Meat</b> (Room C) Moderator: Philippe Chotteau, Institut de l'�levage
<b>17:15-17:30</b>	<b>Wrap-up</b>		

## Acronyms

<b>CAP</b>	Common Agricultural Policy in the EU
<b>DG AGRI</b>	Directorate-General for Agriculture and Rural Development
<b>EFA</b>	Ecological focus area
<b>EC</b>	European Commission
<b>EIA</b>	Energy Information Administration
<b>EU</b>	European Union
<b>EU-N13</b>	The 13 newest EU Member States, which joined in 2004 or later
<b>EU-15</b>	The 15 Member States that have been part of the EU since before 2004
<b>EU-28</b>	The 28 EU Member States, after the 2013 enlargement
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FTA</b>	Free trade agreement
<b>GDP</b>	Gross domestic product
<b>GHG</b>	Greenhouse gas
<b>GMO</b>	Genetically modified organism
<b>IPTS</b>	Institute for Prospective Technological Studies
<b>JRC</b>	Joint Research Centre
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OPEC</b>	Organization of the Petroleum Exporting Countries
<b>RED</b>	Renewable Energy Directive
<b>SMP</b>	Skimmed milk powder
<b>TTIP</b>	Transatlantic Trade and Investment Partnership
<b>TTP</b>	Trans-Pacific Partnership
<b>UAA</b>	Utilised agricultural area
<b>USD</b>	US dollar
<b>USMEF</b>	US Meat Export Federation
<b>VCS</b>	Voluntary coupled support
<b>WMP</b>	Whole milk powder
<b>WTO</b>	World Trade Organization

## **1 Background of to the European Union outlook, presented by Tassos Haniotis (DG AGRI) and Giampiero Genovese (JRC-IPTS)**

As an introduction to the workshop, Tassos Haniotis (DG AGRI) commented on the major drivers that have determined the medium-term outlook for the European Union (EU) agricultural commodity market. These drivers can be classified into the following four categories: (i) the macroeconomic and trade environment; (ii) trends in population, diets and the food chain; (iii) trends in climate, energy and natural resources; and (iv) the EU food supply and demand interaction. All of these factors will eventually impact on EU agricultural price and income prospects.

Over the years, these factors have become more dynamic. For example, since Brazil entered into recession and China started experiencing an economic slowdown, market analysts have focused on food consumption patterns as drivers of agricultural markets instead of, for instance, population growth. Therefore, the evolution of the Chinese diet became a particularly important consideration for market forecasters. Although there is a dominant trend towards the Westernisation of diets among emerging countries, the Chinese diet could become more similar to the Japanese, Korean or Taiwanese diets, or could become more similar to diets typical of Europe or the USA, which are quite distinct. Via the global market, such changes will impact the agricultural supply and demand in Europe, as well as associated prices.

Recent developments in agricultural and food prices reinforce the opinion that associated prices are going to remain uncertain for the foreseeable future. Indeed, agricultural commodity prices have shown unprecedented volatility since 2007. On the other hand, given that energy and other commodity prices have stabilised at lower levels than expected in the last decade, agricultural commodity prices might also stabilise at levels well below those of the food price peaks of the last decade, but at levels significantly higher than the pre-2005 levels. For dairy, the recent crisis could be seen to contradict the bright outlook projected for this sector. However, this year again, prospects for the dairy sector are optimistic and prices are expected to recover.

Since 2008, the European Commission (EC) has annually published an outlook on the medium-term developments in agricultural markets and income in the EU. This outlook (or “baseline”) and its joint uncertainty analysis are the outcome of close scientific cooperation between DG AGRI and the Joint Research Centre - Institute for Prospective Technological Studies (JRC-IPTS), together with the consultation of a large panel of experts from the EC, international organisations and partners, academics, stakeholders, etc. The process of the baseline scenario construction is depicted in Figure 1. The starting point is the latest available agricultural outlook from the Organisation for Economic Co-operation and Development (OECD) and the Food and Agriculture Organization of the United Nations (FAO), published in July 2015<sup>2</sup> and adjusted in-house in accordance with the latest EU

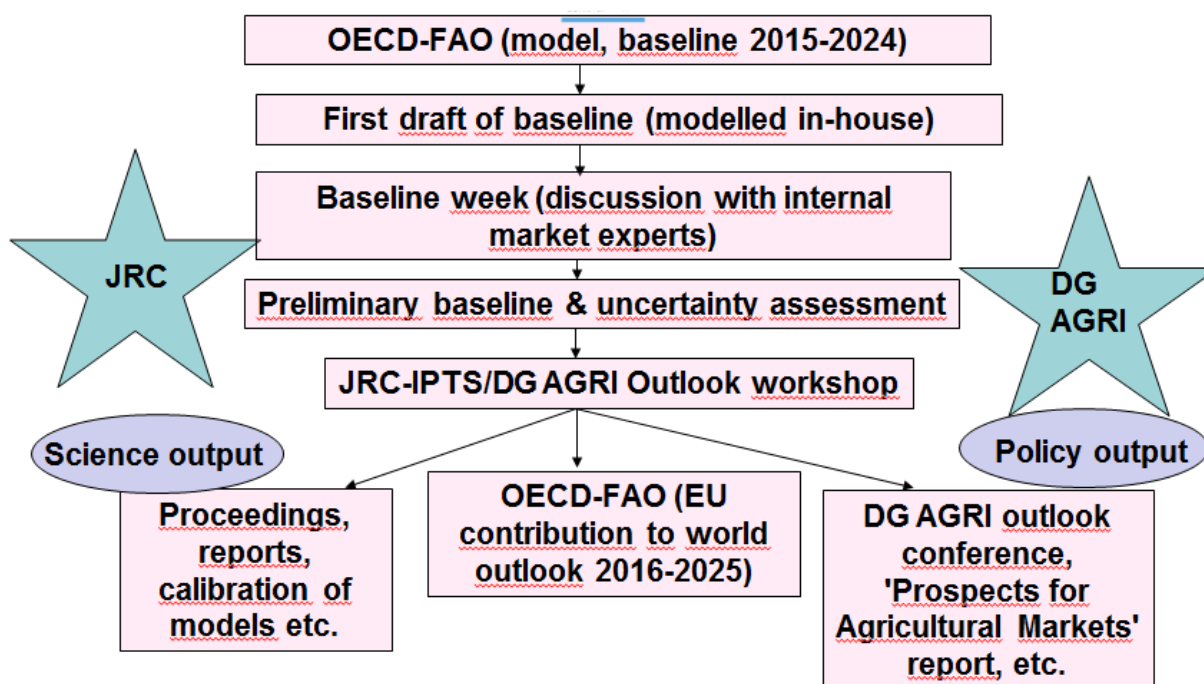
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<sup>2</sup> The OECD-FAO Agricultural Outlook 2015–2024 is available online (<http://www.agri-outlook.org/publication/>).

short-term outlook (autumn 2015 version<sup>3</sup>). During the second week of October 2015, the so-called “baseline week”, the resulting projections were discussed by modelling and market experts of the DG AGRI and the JRC-IPTS. After further adjustments, the preliminary baseline was presented at the workshop on the “Medium-term outlook for the EU agricultural commodity market”, co-organised by the JRC-IPTS and DG AGRI. In order to identify and quantify the potential variability of the market projections, the results of additional scenarios, with alternative assumptions, were also presented during the workshop. Suggestions and comments made during the workshop were taken into account to produce an improved final version of the outlook, which will be published in the report “Prospects for EU agricultural markets and income, 2015-2025” on 1 December 2015<sup>4</sup>.

The final version of the 2015 baseline scenario will be used by the OECD-FAO to restart their simulations at world level. It will also be discussed by commissioners, journalists and stakeholders at the “EU Agriculture Outlook Conference” on 1–2 December 2015, in order to feed both the political and the public debate.

**Figure 1: Overview of the EU baseline construction process**



Source: Presentation by Giampiero Genovese (JRC-IPTS).

<sup>3</sup> [http://ec.europa.eu/agriculture/markets-and-prices/short-term-outlook/index\\_en.htm](http://ec.europa.eu/agriculture/markets-and-prices/short-term-outlook/index_en.htm)

<sup>4</sup> For more detailed information on the general baseline construction process refer to iMAP modelling team (2011): Prospects for Agricultural Markets and Income in the EU. Background information on the baseline construction process and uncertainty analysis. JRC Scientific and Technical Reports, European Commission, Seville. Available at: <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=4879>

The core model used for the outlook projections is the EC's version of the AGLINK-COSIMO model, managed jointly by the OECD Secretariat and the FAO<sup>5</sup>; this is a recursive dynamic partial equilibrium model with a detailed representation of world agriculture and policy. Two complementary partial equilibrium models allow the analysis of the outlook trend in the EU at Member-State level and at regional level: the CAPRI and the AGMEMOD models. The CAPRI model simulations for dairy products are presented in section 6.3 and the AGMEMOD simulations for the pig meat market are presented in section 7.2.

The baseline scenario presented hereafter was elaborated on the basis of specific policy and macroeconomic assumptions, as described in section 2.1. For instance, simulations are performed under the assumption of normal weather conditions and the non-occurrence of safety and/or animal disease disruptions. Thus, it presents a consistent set of market and sector income prospects, but it cannot be considered a forecast. Rather, it is a description of what may happen under the set of assumptions considered.

To further analyse possible deviations from the baseline scenario (i.e. the reference scenario), the EU medium-term outlook is considered from the perspective of alternative scenarios and partial stochastic analyses. Alternative scenarios are used to change assumptions with regard to major drivers of the EU agricultural markets, by applying exogenous shocks to the model. This year three alternative scenarios were designed to assess the impact of:

- a depreciation of the euro; this scenario was designed in collaboration with IHS Global Insight in order to capture induced macroeconomic impacts (see section 2.2);
- a decrease in the production of animal products in China (see section 9.4);
- an increase in EU isoglucose production (see section 5.1).

Partial stochastic analyses were conducted for alternative macroeconomic environment and yield patterns, and on a subset of lower oil prices (see section 4.2).

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<sup>5</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.

## 2 Macroeconomic and energy context

In addition to policy assumptions, macroeconomic variables, such as economic growth rate, exchange rate, inflation and energy prices, are important elements of the assumptions underlying the baseline scenario. Among these assumptions, developments in energy markets, such as the recent decrease in oil prices, have a significant impact on future agricultural production and prices. In addition to these developments, geopolitical changes (e.g. the decline in the Russian economy) have to be taken into account in the analysis. As a result, this section starts by presenting the macroeconomic assumptions used.

### 2.1 Macroeconomic and policy assumptions, presented by Pierluigi Londero (DG AGRI)

Pierluigi Londero (DG AGRI) presented the most recent updates on trade agreement and policy-related indicators, oil prices, exchange rates and gross domestic product (GDP) growth.

With regard to trade assumptions, the EU medium-term outlook assumes that the Russian ban on the trade of agricultural products from the USA, Canada, the EU, Australia and Norway, introduced in August 2014, will end in December 2016. This assumption also applies to the Russian sanitary ban on pork products. This implies that there will be a partial recovery of European exports to Russia from 2017. A full recovery is not envisaged, first because it takes time for markets to re-establish and, second, because the economic crisis being experienced in Russia is likely to have weakened Russian purchasing power.

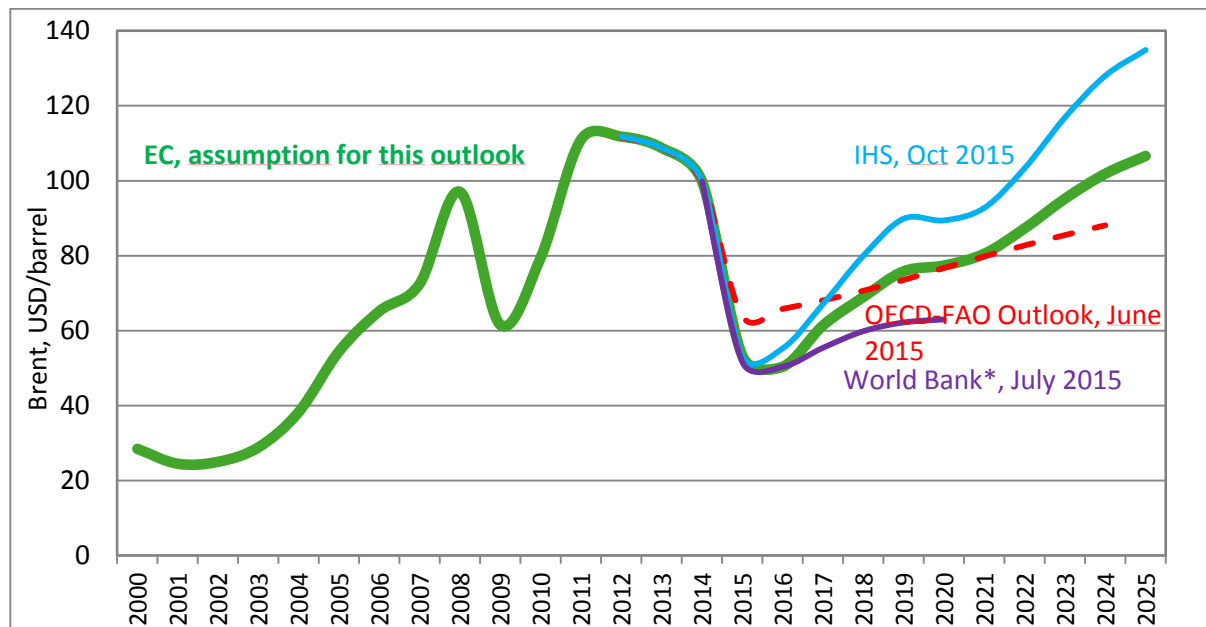
In addition, the Uruguay Round Agreement on Agriculture applies to the trade in agricultural products for the baseline scenario. Because of the high level of uncertainty surrounding the development of trade negotiations, only already ratified agreements were considered in the baseline scenario. Non-ratified agreements were not taken into account since their date of entry into force was not known. The Bali Package, agreed in December 2013, was assumed not to have an effect for the baseline scenario.

With regard to the new Common Agricultural Policy in the EU (CAP), agreed upon in June 2013, voluntary coupled support (VCS) is integrated on the basis of EU Member States' declarations. The integration of "greening" measures is more complex. Assessments show that local impacts (at farm level) on crop areas because of the crop diversification measure are likely to compensate for each other at the EU aggregated level. Thus, no change, related to this measure, is reflected in the baseline scenario. In contrast, the baseline scenario assumes a smaller than expected decrease in permanent grassland areas at the EU level (from 33 % in 2015 to 32.5 % in 2025), as well as a decrease in fallow land area (6.9 % in 2015 vs. 6.2 % in 2025). The ecological focus area (EFA) measure should be complied at aggregated level without an increase of fallow lands.

The EU medium-term outlook is cautious with regard to the development of crude oil price, assuming a faster rebound in price than other sources (see Figure 2); however, the EC-assumed price rebound is not as fast and optimistic as that of IHS. After 2020, it is

assumed that the oil price will increase again; this reflects the need for new oil sources of production, even with higher production costs.

**Figure 2. Assumptions on the development of crude oil price over the period 2015-2025 from four different sources**



\* Derived from the average oil price forecast

The baseline scenario also envisages an appreciation of the euro against the US dollar, stabilising at approximately USD 1.38 (the 2007–2012 level) by the end of the projection period. As for the USA, the EU GDP growth will stabilise at around 2 %, with better prospects for the 13 newest EU Member States, which joined in 2004 or later (EU-N13), than for the 15 Member States that have been part of the EU since before 2004 (EU-15). Based on IHS data, economic growth is also expected to recover soon in Brazil and Russia, after strong recessions, and to stabilise in China.

## 2.2 Impact of a devaluation of the euro, presented by Ignacio Pérez Domínguez (JRC-IPTS)

Ignacio Pérez Domínguez presented an alternative deterministic scenario in which the EUR/USD exchange rate would stabilise at the current level, instead of the euro progressively re-appreciating as in the baseline scenario. Methodologically speaking, this type of scenario analysis is out of the “comfort zone” of agricultural market models, since macroeconomic inter-relationships are not typically well depicted. For this reason, this scenario was designed in close collaboration with IHS, particularly to include endogenous macro-effects<sup>6</sup> in the AGLINK-COSIMO model (soft model linkage). Only energy price

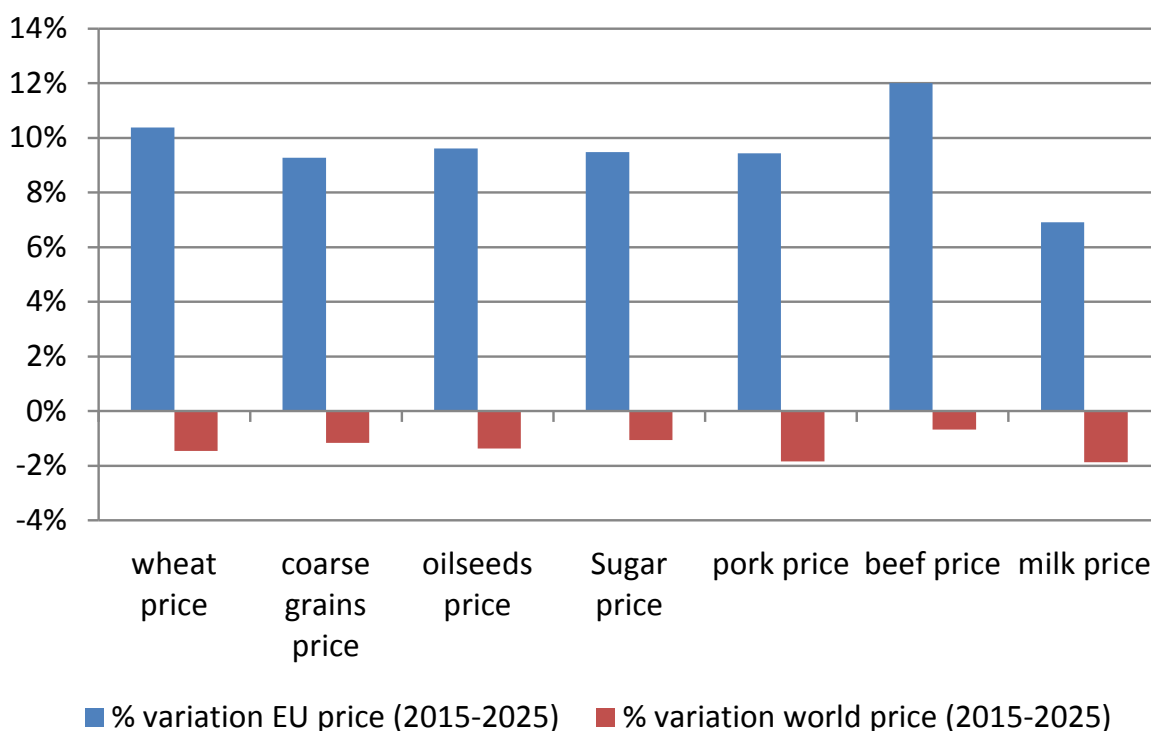
<sup>6</sup> Simulations with and without endogenous macroeconomic effects through the IHS model do not show strong differences, with slight GDP and consumer price index (CPI) increases in the short term in the EU. This result is also supported by other studies on the impact of a devaluation of the euro.



development could not be endogenised. An exogenous shock of a 5 % reduction in crude oil price was applied, as this was plausible in such a scenario.

As a result, it was foreseen that EU agricultural prices would be between 6 % and 12 % higher than in the baseline scenario (see Figure 3). Higher prices were expected to stimulate EU domestic production and exports, but changes relative to baseline are minor (e.g. increases in production would range from +0.1 % to 0.8 %). The demand for coarse grains and sugar would be the most affected agricultural commodities (+0.6 % and -1.1 %, respectively). Likewise, EU wheat exports would benefit the most from the devaluation of the euro, while coarse grain exports would be reduced.

**Figure 3. Changes in EU and world agricultural prices according to the “euro devaluation” scenario, compared with the baseline scenario**



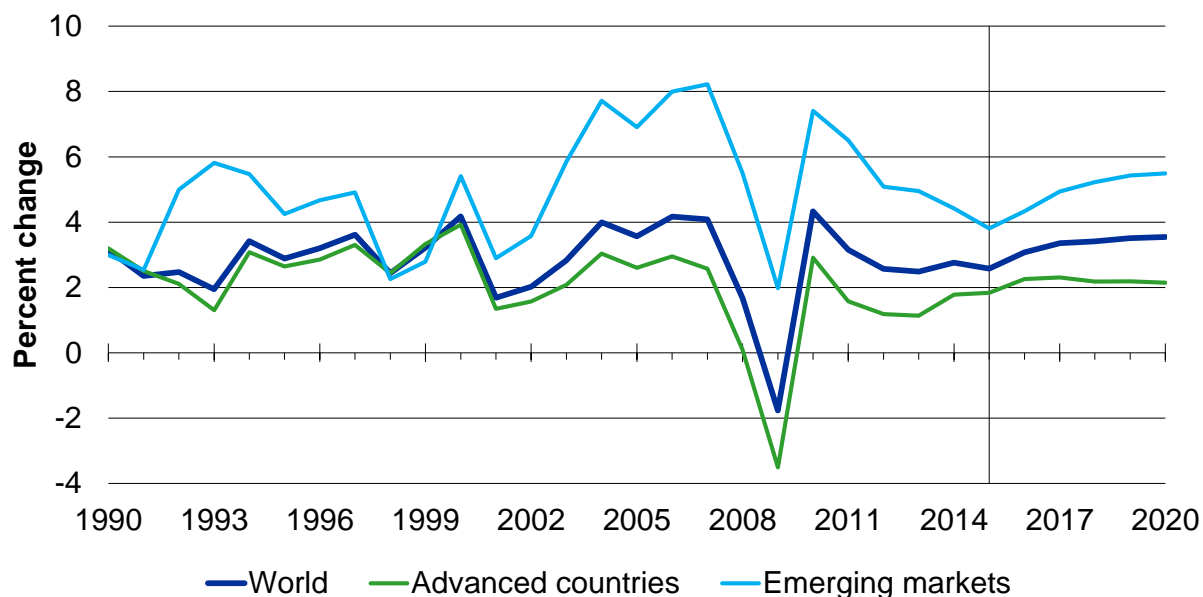
The effects on world agricultural markets are also relatively small, with price reductions below 2 % (see Figure 3). Consequently, the effects on global supply and demand would be marginal. This does not mean that exchange rate fluctuations do not influence global markets. A large macroeconomic shock on a country with a large market share is likely to trigger larger effects (e.g. the effects on soya exports as a result of a devaluation of the Brazilian real).

### 2.3 Outlook for the world economy and key risks, presented by Elisabeth Waelbroeck-Rocha (Global Insight)

Elisabeth Waelbroeck-Rocha (Global Insight) highlighted the first big change in the world economy: a couple of years ago, emerging countries were pushing world economic growth to the benefit of advanced economies; however, this dynamic has changed as a result of

the recent economic recessions in Russia and Brazil, and the economic slowdown in China. This confirms that the fast-evolving macroeconomic environment adds to the difficulties of projection exercises. The contribution of advanced economies to global economic growth has become more important. Nevertheless, emerging economies are expected to recover. The real GDP growth in the Asia-Pacific region (excluding Japan), which is expected to reach 6 % in 2020, will remain a strong engine of world growth.

**Figure 4. Real GDP growth for advanced economies, emerging markets and at the world level (1990–2020)**



Source: IHS.

A number of other factors will support a world GDP growth of around 3 % in the coming years (see Figure 4). First, consumption and investments in advanced economies (e.g. the USA and EU) should materialise once the economic situation stabilises, ending a long period of pent-up demand. Second, growth in the Eurozone and Japan will improve slightly, aided by a monetary stimulus and currency depreciation elsewhere. Third, lower oil prices will reduce production costs. Nevertheless, the third factor will be somewhat counteracted by the plunge in prices, which will restrain growth in the commodity-exporting countries of the Americas, Africa and the Asia-Pacific region.

With regard to crude oil price, pressures on the supply could lead to an increase in prices at the end of the period. On the one hand, the demand for crude oil will remain high, even considering China's reduced growth. On the other hand, current progress in oil exploration and the increasing costs of oil exploration cannot guarantee that future demand will be met without price increases. Also, in Elisabeth Waelbroeck-Rocha's opinion, despite the USA becoming a major oil producer, it will remain an oil importer. Contrary to preconceived ideas, its current account balance deficit will not vanish.

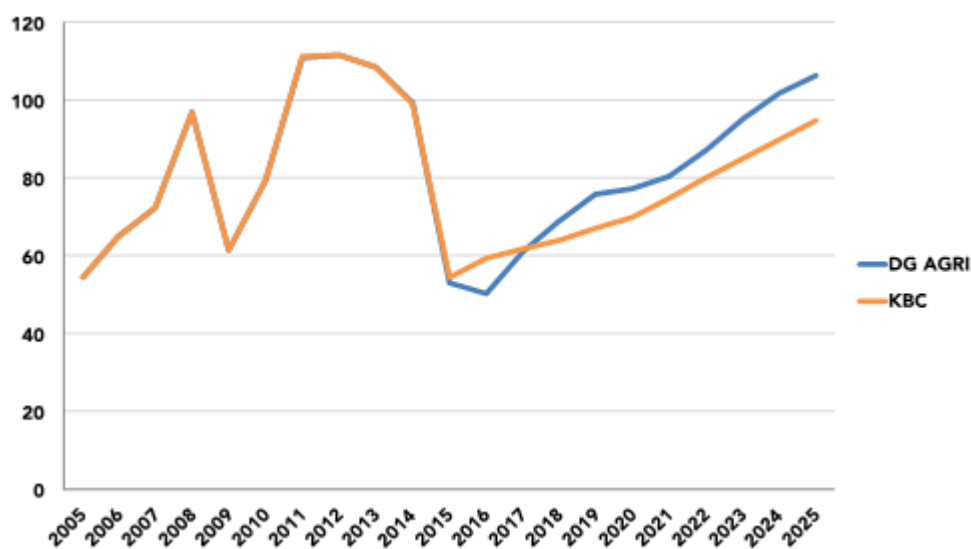
As regards exchange rates, IHS assumes that the euro will appreciate again against the US dollar. Nevertheless, if calculated in nominal effective terms, the appreciation of the euro will be minor. Finally, to echo the former presentation on the impact of a devaluated euro, Waelbroeck-Rocha proposed that a weaker euro would entail GDP growth in the short term, but the long-term effect would wane as inflation takes effect.

## 2.4 Oil market overview and price outlook, presented by Stephen George (KBC Advanced Technologies)

In line with the former presentation, Stephen George (KBC Advanced Technologies) foresees the maintenance of the oil price at a low level until 2017, but a progressive rebound in the medium term (see Figure 5).

Over the next two years, no change is foreseen in the Organization of the Petroleum Exporting Countries' (OPEC's) policy, which is currently partly responsible for the market oversupply of crude oil. Nevertheless, a Brent crude oil price in the range USD 50–65 per barrel is not sustainable in the medium term. Indeed, it is dampening production growth in non-OPEC countries and slowing the production rate in OPEC countries. Under these conditions, oil-producing countries will not be able to meet the growing energy demand and also depletion replacement needs. The production decline may be around 4 % to 6 % per annum, and price signals in the market are not sufficient to justify new exploration and production spending. This statement is also valid for big players, such as Iraq, that will need to borrow money for further investments in a context of low oil prices, which will indirectly push prices up.

**Figure 5. Brent crude oil price forecast to 2025, USD per barrel**



Geopolitics in the Middle East (Iraq, Iran, Saudi Arabia and Yemen) and carbon policies could also strengthen the upwards price trend. The impact of the 21st Conference of the Parties (COP21) on energy markets is hard to anticipate; however, in any case, carbon taxation is expected in major markets. It is likely to be complemented by other climate-related actions, considering that the current intended nationally determined contributions (INDCs) will not be sufficient to meet the 2 °C target.

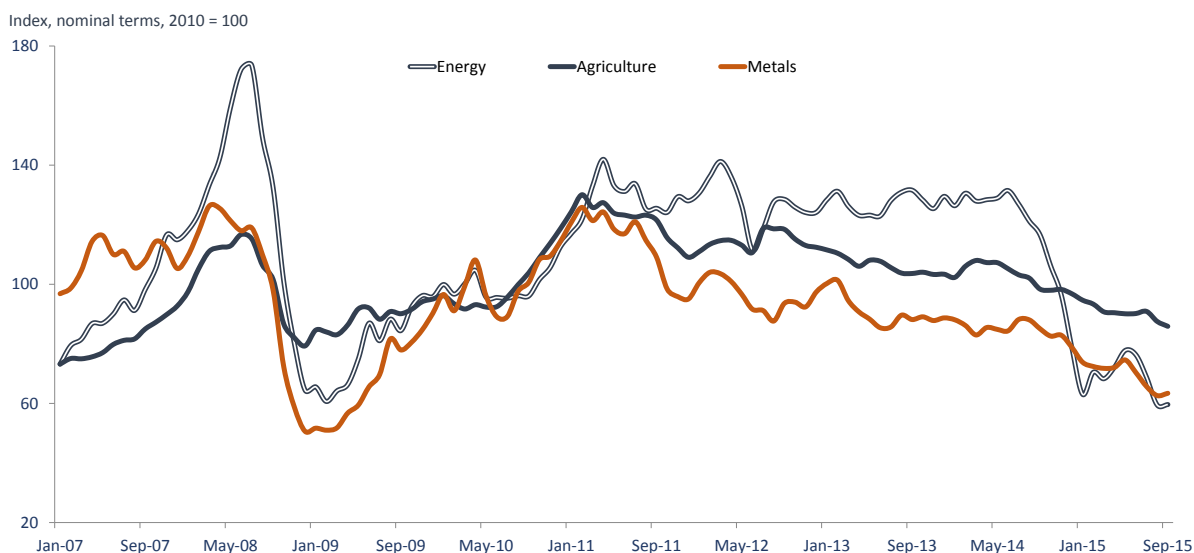
The natural gas market shows similar trends. Both the European and Asian markets are oversupplied, which has triggered a price harmonisation between the two regions. The EU gas demand is at a very low level (22 % lower than the 2010 peak), partly because of competition with the use of coal for power generation. In addition, new waves of liquid natural gas (LNG) exports from Australia and the USA are expected over the next three or four years. As a result, natural gas prices should remain at a low level in the coming years.

## 2.5 Commodity markets outlook 2015Q4, presented by John Baffes (World Bank)

After presenting the World Bank commodity markets outlook for the fourth quarter of 2015, John Baffes (World Bank) highlighted four main points, which are summarised below. First, it is striking that in all sectors (including the energy, metal and agriculture sectors) commodity prices show a negative trend for the period 2014–2016, with very significant drops for the period 2014–2015 (–20 % for metal prices and –15 % for food prices).

Second, it is all the more striking that all price forecasts made in July 2015 for the years 2015 and 2016 were revised downwards in the October 2015 edition of the World Bank outlook. Such forecasts have to be considered in the context of historical price developments. Over the last four years (2012–2015), the correlation between agriculture prices and energy prices has been surprisingly weaker than it was in the 2007–2011 period (see Figure 6). The question that must be addressed is not “Why did the crude oil price drop so much recently?”, but “Why did it stay so high between 2011 and 2015 when all other commodity prices were shrinking?” Looking at oil price development since 1965, the 2014–2015 oil price drop shows several similarities to the 1985–1986 oil price crisis. On both occasions, the OPEC abandoned price targeting. Furthermore, in 2014–2015, the oil market was oversupplied with unconventional fuels (i.e. shale gas and Canadian tar sands). In summary, in line with the conclusions of the previous presentations, the combination of well-supplied markets, a weak demand and a strong US dollar led to the 2014–2015 shrinkage.

**Figure 6. Development of energy, agriculture and metal price indices over the 2007–2015 period (2010=100)**



Note: The last observation included in this figure was made in August 2015.

Source: World Bank

The Iran Nuclear Deal is the third focus of the World Bank outlook. In accordance with the international agreement on Iran’s nuclear programme, reached in July 2015, sanctions on increases in crude oil production will be lifted in 2016 and terminated in 2023. In this context, with the world’s fourth largest proven oil reserves (9.3 % of the world total) and

the largest proven natural gas reserves (18.2 % of the world total), Iran could progressively become a game changer with regard to energy markets in the medium term. Indeed, it could reach pre-revolution and pre-Iran–Iraq war levels of crude oil production, provided it attracts foreign investment and technology.

The final element analysed by the World Bank outlook is the impact of El Niño on commodity markets. The current El Niño event is expected to be the strongest on record. Previous El Niño events quasi-systematically entailed reductions in agricultural commodity prices. Nevertheless, the market is currently better supplied and with higher stock levels than it was during the previous decade (2005-2015), suggesting that the effects on global market forecasts will be minor.

## **2.6 The fertiliser market**, presented by Christian Pallière (Fertilizers Europe)

Natural gas constitutes 60 % to 80 % of the costs of fertiliser production. Therefore, fertiliser prices tend to correlate with natural gas prices over the long term. However, the last Fertilizers Europe outlook, as presented by Christian Pallière (Fertilizers Europe), focused on the development of the demand for fertilisers and not on price development.

Following a bottom-up methodology, this outlook is based on the consultation of panels of experts with regard to the short- and long-term development of fertiliser demand, both at the crop level and at the country level. It combines three parameters: crop acreage, application rate and the level of demand over the last three years. These parameters are assessed in light of global trends, CAP environmental measures, as well as the evolution of technologies and agricultural practices.

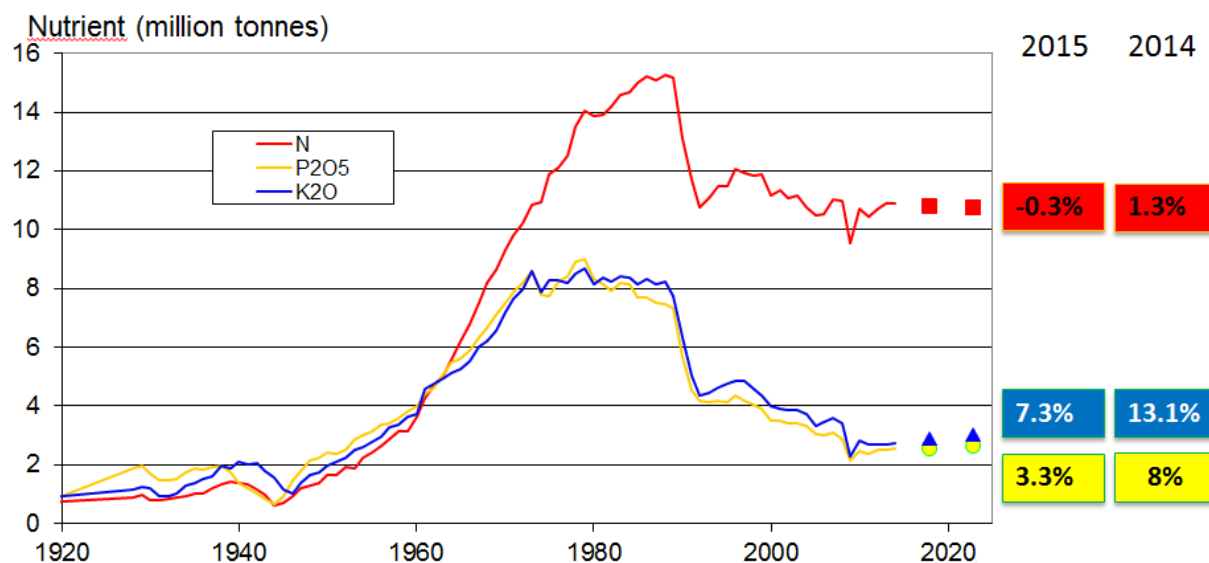
According to the 2015–2024 forecast, the EU consumption of fertilisers will continue on the current downwards trend (see Figure 7). However, this masks disparities at the regional level. Significant decreases in nitrogen consumption are foreseen in the Netherlands, Germany, France, Italy and Benelux, whereas overall increases in EU-12<sup>7</sup> are foreseen because of the expectation of more CAP funds. Romania and Bulgaria have the highest potential for growth in fertiliser demand. In particular, nitrogen applications are likely to drive yield growth in these countries.

The levelling off of the European demand for fertilisers translates to a deceleration of yield growth, especially with regard to wheat and sugar beet. Also, the lack of visibility of the EU biofuel policy over the next 10 years led to assumed reductions in grain maize and rapeseed acreages.

Christian Pallière stressed the high levels of uncertainty surrounding these forecasts in the global context, especially given the EC ambition to orient production systems towards a circular economy by making use of recycled nutrients.

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<sup>7</sup> The 12 newest EU Member States, which joined in 2004 or later, excepted Croatia the last EU accessing country

**Figure 7. Fertilizer nutrient consumption in EU-27\* (1920-2020)**

\*that is the EU before Croatia's accession to the EU

## 2.7 Discussion about macroeconomic indicators and the energy context

Several participants challenged the baseline **assumption of a strong euro against the US dollar**, considering that such a situation would not be stable. The USA, and possibly other countries, would tend to devalue its currency in response. Elisabeth Waelbroeck-Rocha deems a scenario of competitive devaluations not very likely because of the complexity of the factors at stake. IHS simulations of exchange rates show that the importance of competitiveness gains is usually reduced by counteracting forces. The impacts of devaluation depend on a country's capacity to export and the nature of its exports. Some countries are even cautious because a devaluation may lead to increased inflation and, consequently, eventual social tensions.

With regard to commodity **price levels**, it was clarified by John Baffes that the World Bank expects, based on previous large productive investments in agriculture (land expansion and machinery), fertilisers, raw materials, metals, etc., to reduce commodity price levels in the coming years, compared with the last five to six years. He also observed that **price volatility** started to increase in 2005–2006, before the financial crisis, which is in contrast to commonly held opinion. It now shows a declining trend, but there is no certainty with regard to whether or not this decline will be permanent.

As regards oil price development, Stephen George specified that there are still **oil resources** that could be developed at low cost by 2020 (in Iran, Iraq and the deep waters of Mexico, Brazil and Angola). Because of the time needed for production from other kinds of oil resource, he expects that oil prices will rise after 2020. To complement this, Elisabeth Waelbroeck-Rocha stressed that the financial sector will play a key role in exploration and investment with regard to the development of new resources.

Elisabeth Waelbroeck-Rocha also elaborated on the **relationship between interest rates and commodity prices**. Contrary to classic macroeconomic theory, increases in interest rates do not systematically translate into decreases in commodity prices. Interest rates are currently so low that any increase would probably not have a significant impact on markets. However, at the same time, potential financial profitability is also very low. Therefore, investors are very reactive with regard to re-allocating their capital. As a consequence, small changes in interest rates could trigger important capital movements. The global economy is becoming much more complex than the theory would suggest, with secondary reactions offsetting initial ones. Consequently, it is becoming more and more difficult to anticipate the effect of macroeconomic indicators.

### **3 A policy-driven EU biofuel market**

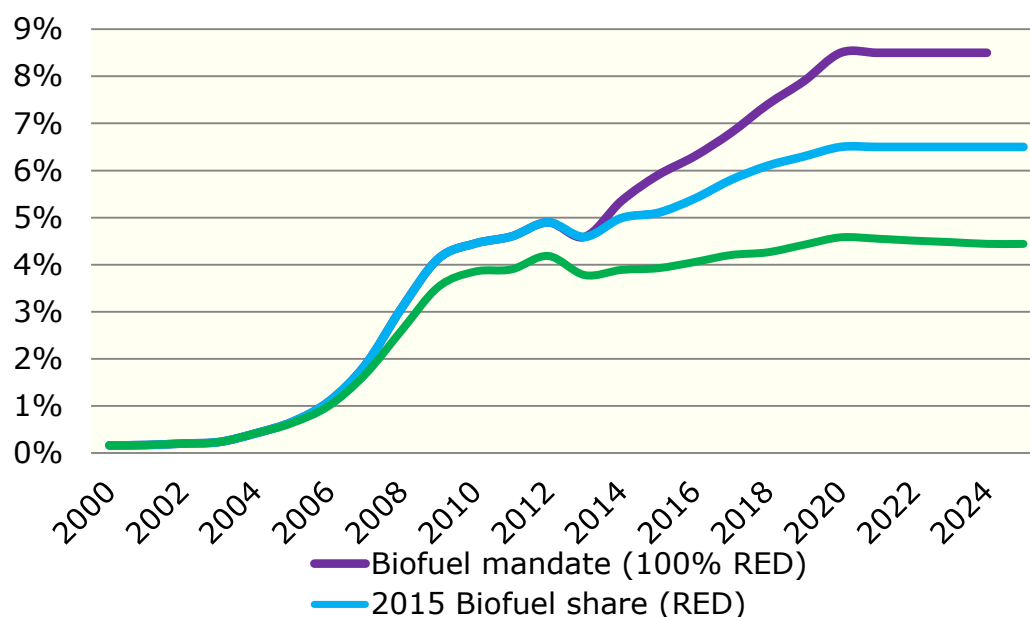
The development of the EU biofuel market is still relatively recent. It emerged in the early 2000s, in order to comply with biofuel consumption mandates defined by EU legislation. The mandates should remain a driving force of this market until 2020. The period post 2020 is more uncertain in the absence of clarity on future targets. The presentations of the baseline scenario and the two following discussants tried to disentangle the likely future impacts of policy context and market forces on the EU biofuel market by 2025.

#### **3.1 Medium-term prospects for the EU biofuel market, presented by Koen Dillen (DG AGRI)**

This year (2015), the prospects for the international biofuels market are characterised by a scaling down of traditional big players' consumption trends, compared with previous outlooks. This new dynamic can be attributed to the newly established Environmental Protection Agency (EPA) rules in the USA, and to the recent degradation of the Brazilian economic context. In contrast, Brazil, Indonesia and other Asian markets could achieve faster growth of biodiesel consumption than expected previously.

In the EU, the current rate of increase in biofuel consumption will not be sufficient to fulfil the mandate of the Renewable Energy Directive (RED) by 2020. Therefore, the baseline scenario assumes a rising consumption of biofuels in the next five years, capped at 6.5 % of the energy used in transport by 2020 (compared with a 7 % cap in the 2014 outlook and an 8.5 % cap in the 2013 outlook). Accordingly, the share of fuel attributed to first-generation biofuels will be limited to 4.6 %, compared with 5 % in the 2014 outlook, which is far below the threshold (7 %) recently established at EU level. After 2020, the total use of diesel and gasoline is expected to further decrease in the EU owing to legislation on CO<sub>2</sub> emissions. However, much is unknown about the biofuel policy context. Thus, the baseline scenario assumes that the European consumption of biofuels will remain at the same level, in terms of the share of total energy used for transport, during the 2020–2025 period (see Figure 8).

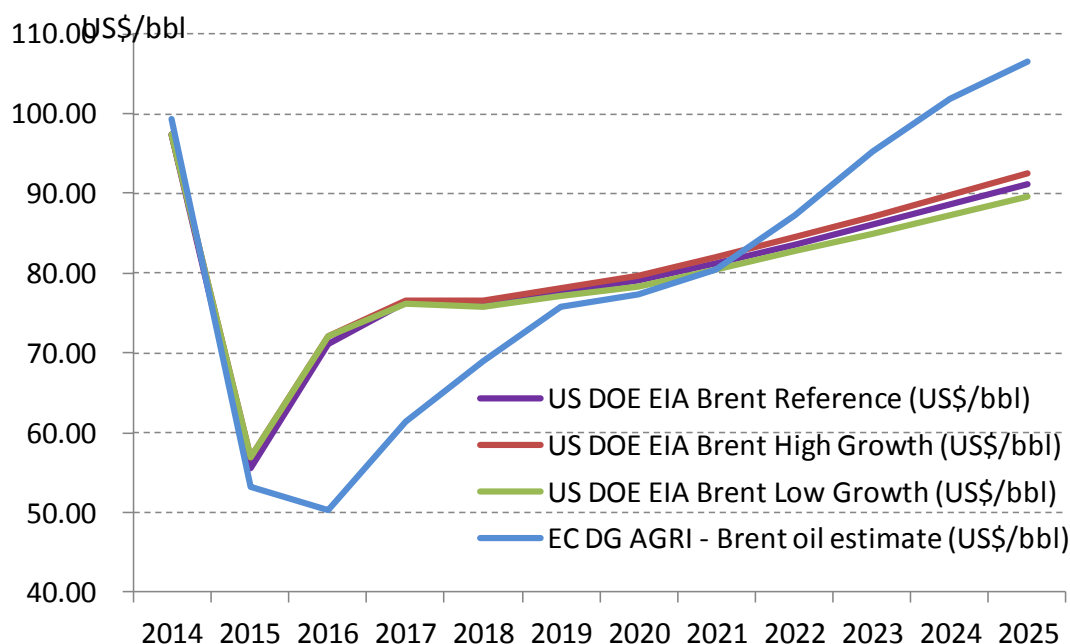


**Figure 8. Share of transport fuel attributed to biofuels (RED accounting)**

Consequently, over the 2015-2025 period, rising bioethanol consumption will translate into an intensified use of maize for biofuels and will drive increases in EU ethanol imports. The higher price of raw materials after the quota abolition is expected to trigger a decrease in the share of sugar beet used for bioethanol production. At the same time, the demand for biodiesel is likely to grow both globally and within the EU. Compared with other biofuel markets, the EU market remains dominated by biodiesels, especially from domestic rapeseed. The expected small increase in biodiesel consumption over the projection period will be principally sourced from non-agricultural feedstock (waste oils and second-generation biodiesels) and increased imports.

### 3.2 Feedback on the medium-term prospects for the EU biofuel market with a focus on ethanol, presented by Plinio Nastari (DATAGRO)

Plinio Nastari from DATAGRO considers that the EC's assumptions of a high Brent oil price seem more realistic in the short term than those of the Energy Information Administration (EIA) (see Figure 9). As a rising Brent oil price should favour the competitiveness of biofuels, Plinio Nastari has the feeling that the EC's assumptions on EU biofuel consumption and production are quite conservative, for both ethanol and biodiesel. Considering the high conversion efficiency of maize and sugar beet, EU ethanol production could benefit from more of a switch in the feedstock used, from wheat and other cereals to maize, than is assumed in the baseline scenario, and a lower decline in the use of sugar beet than that assumed in the baseline scenario.

**Figure 9. Projections of the crude oil Brent price from different sources (2014-2025)**

Sources: projections of the US Department of Energy (US DOE) EIA, Annual Energy Outlook 2015 (AEO2015), generated by the National Energy Modelling System; and DG AGRI baseline assumptions with regard to key macroeconomic variables, 2015–2025.

An indirect benefit of switch towards using maize and sugar beet for ethanol generation would be the potential to re-allocate wheat towards export and food uses, also releasing pressure on the biofuel versus food crop debate, related to constraints on land, in the EU. In addition, the extra production of maize-based distillers' dried grains with solubles (DDGS) would drive down the cost of animal feed. This could also boost EU sugar competitiveness. The substantial potential of biogas and biomethane production from agricultural residues and energy crops should also be taken into account.

Plinio Nastari also suggested that the EU could potentially consider adopting a biofuel policy inspired by the California Air Resources Board (CARB) mechanism, in which each biofuel receives a market premium related to its contribution to greenhouse gas (GHG) reduction targets, thus internalising environmental contributions in the market price.

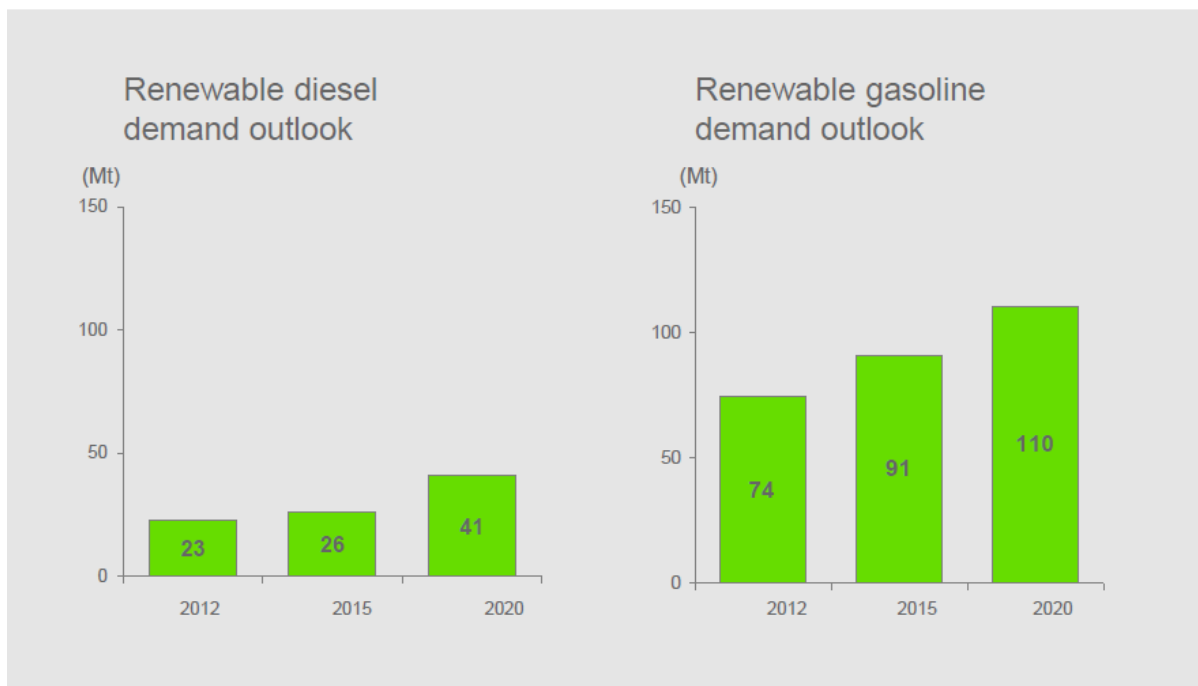
Finally, with regard to the other main markets, Plinio Nastari confirmed that ethanol consumption in Brazil is at its highest level to date, with ethanol meeting over 40 % of the fuel demand, while the demand in the USA remains limited by "blend walls". Therefore, the USA will play a major role in ethanol international trade.

### **3.3 Market outlook for renewable diesel**, presented by Ilmari Lastikka (Neste Oil)

The outlook assumptions on biofuel development within the EU were also considered conservative by Ilmari Lastikka. The EC policy objectives to develop a low-carbon economy in the long term are likely to favour renewable fuels, in particular biodiesels. After 2020, the transport sector is likely to remain a major emitter of GHGs and legislation could have a stronger impact on the development of biofuels than the previous mandate.

At world level, the global fuel market is still dominated by ethanol, but renewable diesel demand is growing and the production share from palm oil, soya oil and waste is gradually increasing (see Figure 10).

**Figure 10. Global demand outlook for renewable diesel and renewable gasoline by 2020 compared with 2012 and 2015**



Quoting projections made by Wood Mackenzie, Ilmari Lastikka foresees an orientation towards increased diesel use, at the expense of gasoline use, in the EU, which will probably translate into a growing demand for biodiesel in Europe (with the uncertainty of the concrete impact of the recent Volkswagen case). Nevertheless, the 7 % cap on food-based (first-generation) biofuel feedstock could prevent biodiesel supplies from meeting the demand, even more so in Member States in which the cap has been (or will be) fixed at a level lower than 7%. Increasing the use of waste and residues for biodiesel would be an alternative.

In addition, the demand for biofuel is likely to be influenced by the diversification of biofuel applications. Although initially used mainly for road transport, the current demand for biofuels also includes heating uses. Furthermore, demand is emerging in the aviation sector, and it could develop in the bio-based chemical industry over the projection period.

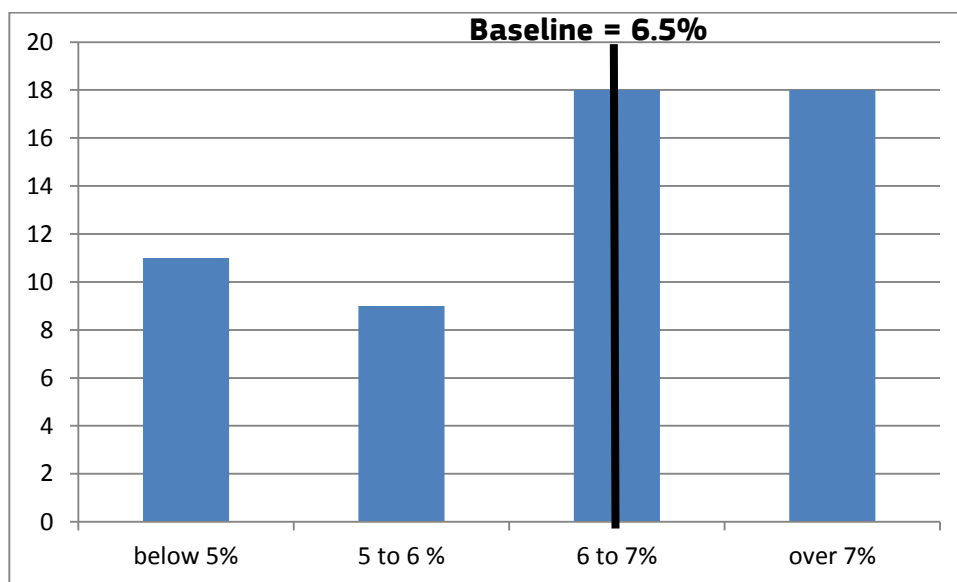
### **3.4 Discussion about the EU biofuel market: markets constraints and market forces**

Participants were asked to answer the following question: “Which share of total transport fuels will be biofuels (1<sup>st</sup> and 2<sup>nd</sup> generation) in 2025?” Fifty-six participants answered as follows (see also Figure 11):

- 11 participants (20 %) answered “below 5 %”;

- 9 participants (16 %) answered “between 5 and 6 %”;
- 18 participants (32 %) answered “between 6 and 7 % (which corresponds the EU projection)”;
- 18 participants (32 %) answered “Over 7 %”.

**Figure 11. Summary of participants’ answers to the question “What proportion of total transport fuels will be biofuels (first and second generation) in 2025?”**



This poll placed the baseline assumptions at an intermediate position within the range of options deemed possible.

The discussion focused on constraints and push/pull factors affecting the EU biofuel market.

The first debate focused on the impact of the reduced **carbon emission policies** that are increasingly being developed. Ilmari Lastikka expects that there will be a political mindset oriented towards decarbonised fuels in the future, with the first signals of this coming from the latest policy development in Germany. This political orientation should benefit the development of advanced biofuels, provided that they present a favourable life cycle analysis (LCA). In support of this view, a participant outlined the surprisingly high performance of German first-generation biofuels in terms of GHG savings. Ilmari Lastikka would, therefore, expect more development of these biofuels before the arrival, on the market, of second-generation biofuels in the medium term (after 2020). Nevertheless, high GHG emission-saving performances could offset the need for “renewable” fuels, resulting in a decrease in the volume of biofuels on the EU market. All in all, the impact of national legislations, which give a premium to GHG emission-saving biofuels, may result in higher intra-EU trade, a boost in domestic production and an increase in EU imports (of high-quality biofuels to premium markets). If future national legislations were to include economic penalties for not fulfilling targets, biofuel markets would react even more.

The **overcapacity of EU refineries** was also discussed as a potentially limiting factor with regard to the development of biofuels in the EU. Moreover, when interviewed last year (2014), producers seemed pessimistic about the development of production capacities for biofuels. On the other hand, some large players from the traditional fossil fuel refining industry are switching to renewable diesel production, suggesting that the better availability of raw materials could directly translate into the higher production of biofuels.

Another limiting factor discussed was **technological development**. Ilmari Lastikka agreed that the second generation of biofuels (i.e. algae and lignocellulosic biomass) is emerging very slowly. Speeding up the development of these biofuels is a challenge, mainly because the lack of competitiveness of biofuels hampers investment and innovation. Developing novel applications based on algae and lignocellulosic biomass could foster their attractiveness. A participant added that prospects for bio-based chemicals are good. Compared with first-generation biofuels, this sector will be based on a many different feedstocks and recipes, which also makes its development more complex. However, by generating high-value-added products, it should be more profitable. In addition, this market is likely to be supported by consumers.

The impact of the **abolition of sugar quotas** was also discussed. In particular, the assumption of a lower use of sugar beet for ethanol production in the future was challenged. This assumption relies on the expected convergence, after quota abolition, between the price of sugar under quota and out of quota, which would drive up the industrial sugar beet price. However, in general, declining sugar beet prices would probably result in competitiveness gains for sugar beet ethanol. In any case, capacities to produce ethanol from sugar beet are in place (with part of the investment controlled by sugar beet growers) and the industry is unlikely to work below capacity.

## **4 A new era of lower prices for the EU arable crop market over the 2015–2025 period?**

The relationship between the development of the arable crop market and livestock product markets, biofuel markets and processed product (i.e. vegetable oils and sugar) markets is complex. This year (2015), the presentation of the baseline outlook was complemented by a stochastic analysis of the impact of a lower crude oil price than foreseen in the baseline scenario. The session was completed by presentations given from seed producer and trader perspectives.

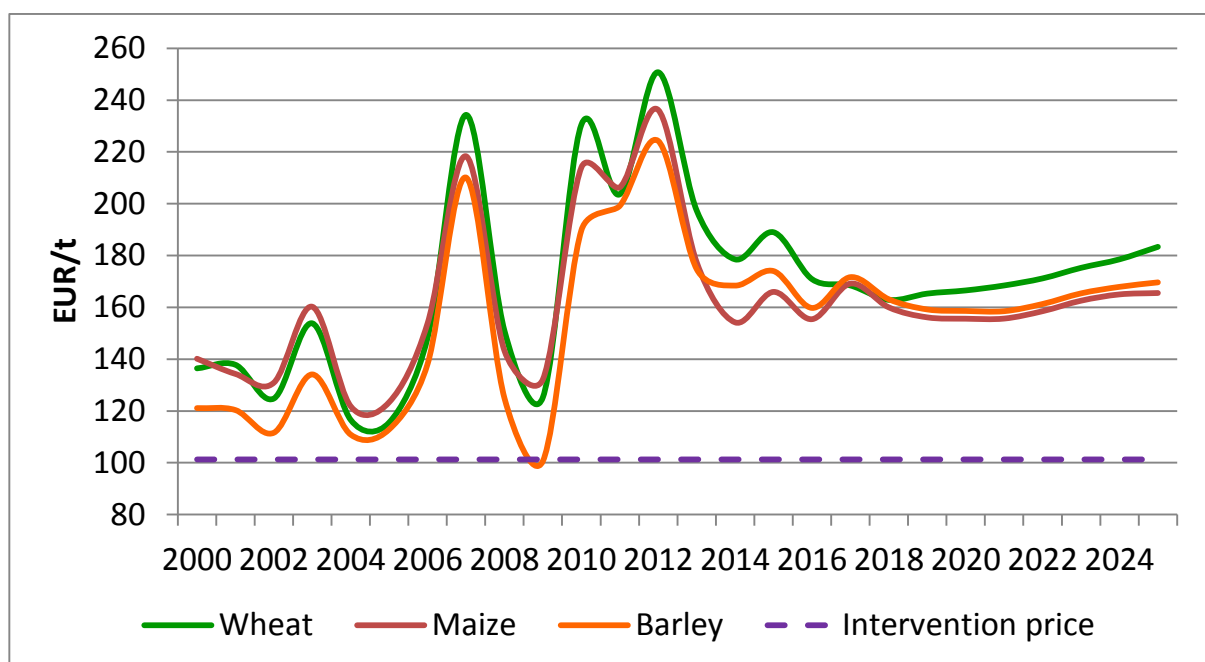
### **4.1 Medium-term prospects for the EU arable crops market, presented by Koen Mondelaers (DG AGRI)**

The utilised agricultural area (UAA) is expected to decrease over the projection period, although at a slower pace than in the previous decade (2005-2015). In total, 1.7 % of the total UAA will be lost by 2025 to afforestation and the expansion of urban areas, infrastructures and industries. Fallow land is expected to decrease the most (–1.2 % annually), followed by permanent grassland (–0.5 % annually). In spite of this general contraction of agricultural land, fodder crops will gain 0.9 million ha (+0.4 % annually).

In the last decade (2005-2015), there was strong overall yield growth for arable crops, in particular for sunflower. Boosted by the biofuel mandate, the rapeseed land area also expanded by 6 % annually. With two consecutive bumper cereal harvests in 2014 and 2015, cereal stocks built up to good levels (450 million tonnes worldwide), which pushed prices downwards.

Nevertheless, prospects for the next decade are more modest. Only minor changes are expected in arable crop yields and harvested areas. Maize is likely to show the highest annual yield gains (+0.8 %), notably driven by a catch-up by EU-N13. Harvested areas are likely to contract for all arable crops in EU-28, except for common wheat and soybean.

With regard to cereals, prices are expected to reach a new equilibrium, at a level significantly higher than the one that preceded last decade's price spikes (see Figure 12). Wheat prices are expected to recover faster than other cereal prices, owing to a higher competitiveness on world markets (and increased exports). Barley should also continue to benefit from better prices than maize, as from 2014, thanks to increased exports and demand.

**Figure 11. Development of selected cereal prices over the period 2000–2024**

Within the oilseed complex, the biofuel mandate will not significantly push vegetable oil production. Oil meals will become relatively more important, in order to keep pace with gains in livestock production and the intensification in China and worldwide. As a result, soybean imports are likely to rise. Also, considering that soybean has been granted VCS in the new CAP, and that soybean areas are eligible for EFA measures, a recovery of soybean areas is expected in the coming years at the expense of rapeseed. Oilseed prices are assumed to recover during the outlook period, driven by increasing costs. A difference of about EUR 100 is expected to be maintained between the domestic price of soybean and the import price, notably because of the development of a genetically modified organism (GMO)-free domestic market. Finally, the use of vegetable oils is assumed to contract after 2020 as a consequence of assumptions on biofuel markets (i.e. that the biofuel share of total transport fuels will be capped at 6.5 % from 2020). Protein crops are likely to benefit from a more dynamic demand for animal feed and from VCS granted in several Member States. Nevertheless, the total area for protein crops will remain lower (1.2 million ha).

#### **4.2 The impact of a lower oil price on the EU arable crops market, presented by Sergio René Araujo Enciso (JRC-IPTS)**

Because of the diversity of oil price forecasts released by different sources, Sergio René Araujo Enciso (JRC-IPTS) analysed a set of simulations in which the oil price develops between the 5th and 35th percentiles of 900 simulations for the period 2015–2025. This results, on average, in a Brent oil price that is 26 % below the baseline projection (USD 80, on average, in 2025).

Not surprisingly, a lower oil price translates into lower world prices for crop commodities than the baseline. Sugar prices are the most affected in this scenario, with a 2 % decrease relative to the baseline scenario. Indeed, the lower competitiveness of Brazilian bioethanol would probably trigger an excess of sugar supply, driving the world sugar price down.

The impact of an oil price that is lower than the baseline price is even stronger at the European level. In the EU, fertiliser costs (and, indirectly, oil costs) account for a higher proportion of structural crop production costs than in the rest of the world. In theory, lower commodity prices are a disincentive for farmers to produce. However, the concomitant reduction in input costs partly offsets this disincentive, finally resulting in only a slight reduction in supply compared with the baseline scenario. Interestingly, the transmission of price reductions is stronger for biofuel and biofuel feedstock (vegetable oils, oilseeds and sugar) than for other crop commodity. As a cascade effect, the EU-28 domestic demand is enhanced for biofuel feedstock (notably soybean and soybean meals) and biofuels (especially biodiesel).

In conclusion, compared with already low forecasts for the Brent oil price in the baseline scenario, an even lower price would not dramatically impact agricultural markets. A lower oil price would result in a slight decrease in agricultural commodity prices and input prices, offsetting the negative impact on farmers' incomes. Finally, higher impacts could be expected from alternative assumptions on other macroeconomic variables. For example, in this subset, an increased world wheat price is noted, because of an appreciation of the euro against the US dollar by 5 %, driving up both the export price of European wheat (expressed in USD) and the world price of wheat.

#### **4.3 Future trends on EU arable crop productivity**, presented by Thais Affonso (Syngenta)

Thais Affonso presented the outcome of prospective work that combined two evolutionary scenarios (rural–urban divergence vs. rural–urban convergence) and three innovation scenarios (low, medium and high levels of innovation).

The yield growths foreseen for the next decades are driven by very different factors in emerging countries, such as Russia, from those in Western Europe. In the former, existing technologies will still contribute significantly to reducing yield gaps, whereas in the latter, yields are already high and further increases will mainly be driven by novel technologies (for both cereals and oilseeds). As an example, in Russia, the main factor that limits maize productivity is disease control. This limitation has already been overcome in the EU, which now relies on new innovations to deal with resistance management. According to the Syngenta scenario, in spite of existing solutions, Russia and other emerging countries are unlikely to catch up with the EU, in terms of crop productivity levels, within the next 10 years. For advanced economies, scenarios also foresee yield growths for, for example, maize and wheat, and the differences in yields will remain important.

According to Thais Affonso, the next challenges to be addressed with regard to European agriculture are the optimisation of crop profitability (lowering costs of production) and the acceptance of GMOs. Overall, in the coming decade, the turnover of seed companies should increasingly rely upon field crops.



#### **4.4 EU agriculture from 2015 to 2025, presented by Oliver Balkhausen (ADM)**

Oliver Balkhausen's assessment of future market development in Europe converges with the EC's improved prospects for crop supply, compared with the levels attained in the previous years. He also deems the projections for protein crop production and the projected stagnation in the use of vegetable oils (even after taking into account the biodiesel mandate) to be realistic.

The global annual stock-to-use ratio has improved over the last decade, and reached a comfortable level of 21 % in 2014–2015. Nevertheless, this equilibrium might be disrupted, sooner or later, by the occurrence of bad weather events, which would cause price spikes. Through observation of the development of soybean, maize and crude oil prices over the 2005–2015 period, Oliver Balkhausen would tend to think that crop prices do not depend, to a large extent, on mineral oil prices. Weather events affecting crops are a much more important factor with regard to price changes than the crude oil price. The probability of non-occurrence of climate shocks in all world producing regions, as in the last two to three years, is relatively low.

A series of emerging factors could gain weight over the projected period, and help farmers to improve their bargaining capacity and limit the magnitude of potential price falls. First, farm storage capacity is on an upwards trend and this should allow farmers not to sell below certain thresholds. Second, the ongoing farm concentration will give relatively more power to each remaining farmer/farm household; this effect will be enhanced by the higher level of education and information expected among farmers in the next decade. Lastly, farmers have gained experience from the price volatility over the last decade and they have refined their selling strategy accordingly.

He also expected higher prospects for barley production, since it will be supported by attractive prices because of Chinese demand<sup>8</sup>, and because barley plays a significant role in crop rotations. A similar movement also exists for sorghum, to the benefit of growers in the USA.

The EU's outlook for soybean and soybean meal was also deemed too pessimistic. The share of soybean meals in European compound feed has been decreasing over recent years until it reached the minimum requirement level. Therefore, soybean meal uses are very likely to not decrease substantially over the next decade, particularly because protein feed alternatives and sources of lysine are very few.

Finally, he would expect the development of food uses for vegetable oils in Europe with an orientation towards high-quality vegetable oils (e.g. high oleic acid content for sunflower oil).

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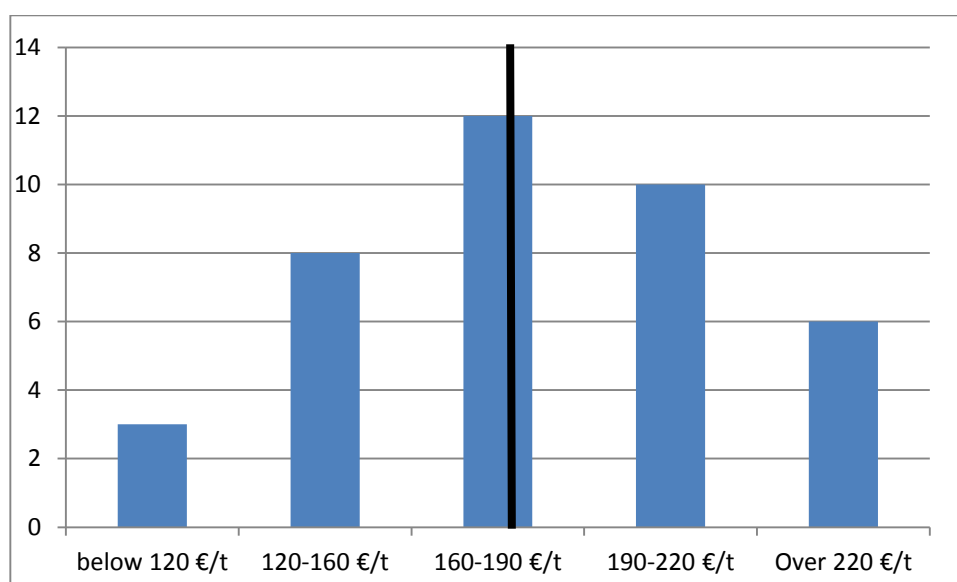
<sup>8</sup> This is a result of the high Chinese guarantee price for maize, which makes imported barley (and sorghum) a competitive alternative as a feed grain.

## 4.5 Discussion about the EU arable crop market

Participants were asked to answer the following question: “What will be the level of the EU domestic price of wheat in 2025?” Thirty-seven participants answered as follows (see also Figure 13):

- 3 participants (8 %) answered “below 120 €/t”;
- 8 participants (20 %) answered “120–160 €/t”;
- 12 participants (31 %) answered “160–190 €/t” (which corresponds the EU projection);
- 10 participants (26 %) answered “190–220 €/t”;
- 6 participants (15 %) answered “above 220 €/t”.

**Figure 12. Summary of participants’ answers to the question “What will be the level of the EU domestic price of wheat in 2025?”**



Participants mainly reacted on the baseline projections for area, yield and price, while some more specific questions on the stochastic analysis and the demand for GMO-free soybean closed the discussion.

The **reduction of the EU UAA**, assumed in the baseline scenario (i.e.  $-0.4\%$  annually over the projection period) gave rise to curiosity. Koen Mondelaers clarified that this rate has been decreased compared with last year’s outlook ( $-0.6\%$  annually) after an in-depth analysis of the land use changes in Member States. CAP greening measures will probably slow down the UAA decline, in particular for grassland areas. One participant wondered if greening measures and, in particular, EFAs contribute to this movement. It was clarified that the share of fallow land is not fixed by the greening measure, as farmers can choose among various combinations. This point may be further clarified after 15 December 2015, when Member States will report on the exact greening measures implementation by farmers. Thais Affonso argued that the rate of land sparing also depends on innovation trends: the more cropping systems are intensified, the less UAA is needed for the same level of production.

Another area of concern was the slowdown foreseen in **crop yield growth**. Thais Affonso gave two justifications for this predicted slowdown. First, European crop systems are reaching maturity and only radical innovation changes could cause high yield increases. Second, European yields have already reached high levels which means that every marginal yield gain, in tonnes per hectare, is represented by a smaller percentage of yield growth than in cases in which yields are relatively low. The development of biofuels, which has diverted investments, may be an additional factor. However, there is still a gap, for major crops, that leaves room for further yield growth in EU-N13. In terms of average production yields for the whole of Europe, the trend discussed masks disparities in local trends, including restructuration processes, effects of local weather events, etc.

With regard to the yield disparity between the EU and Russia/Ukraine, Thais Affonso was of the opinion that a catch-up of Russia and Ukraine would be possible only in a high-innovation scenario. These countries have great potential, but the availability of technologies is currently the main limiting factor. A participant suggested that climate warming could provide the opportunity for Russian farmers to adopt winter cereal varieties, as has been done in Europe, and, consequently, achieve higher yields; however, Thais Affonso stated that this option is not currently considered in Syngenta's scenarios. However, it is probable that technologies will help to deal with weather events, such as droughts, and will play a role in the development of yield trends.

Crop **price volatility** was also included in the debate. Some participants supported the view that supply disruptions (e.g. due to weather events) may have a stronger impact on price volatility than changes in energy/crude oil prices. It was acknowledged that crop price development will certainly not be as flat as it appears in the baseline projection over the next decade. The purpose of adding a stochastic analysis is to precisely estimate the magnitude of possible price fluctuations. Although cereal stocks are currently higher than in previous years, cereal supply is not much higher than demand. A quick turnover in the markets should, therefore, not be excluded (e.g. after one or two poor harvests, as might be the case for the next Australian harvest as a result of El Niño impacts).

Also, the impact of **energy prices** was discussed. Tassos Haniotis clarified that, so far, the oil price was a key driver, having an impact on both production costs and crop prices (through biofuels). Energy costs for EU agriculture comprise a mixture of different energy prices, partly substitutable for one another (e.g. oil and gas prices drive fertiliser costs). Price transmission is becoming more complex, with substantial differences among the EU, the USA and Brazil. Other variables, such as exchange rates enter into play to capture costs of production and linkages with feed markets.

A final point of the discussion was related to the trend in the **GMO-free soybean** supply. According to Oliver Balkhausen, the production of this commodity has been flat over previous years, mainly because of a lack of demand. According to Emilio Rodríguez Cerezo, who co-authored a study on the subject<sup>9</sup>, the market development of GMO-free soybean is mainly a matter of price. There is a demand for GMO-free soybean, but the high-price

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<sup>9</sup> Tillie, P., Rodríguez Cerezo, E. (2015). Markets for non-Genetically Modified, Identity Preserved soybean in the EU, JRC Scientific and Policy Report. Publications Office of the European Union, Luxembourg. Available at: <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/markets-non-genetically-modified-identity-preserved-soybean-eu>

premium of this commodity is currently prohibitive for buyers. The poultry industry is particularly interested.

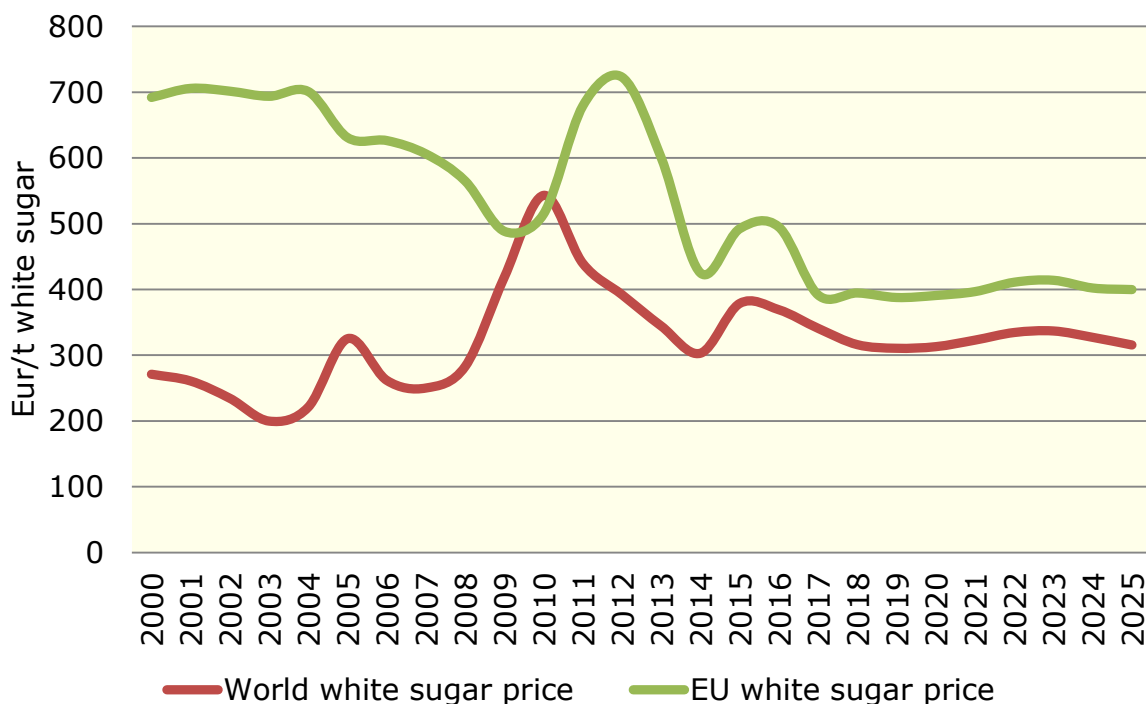
## 5 The EU sugar market over the 2015-2025 period

The EU sugar market, which is linked to the grain markets through biofuels and markets for other sweeteners, such as isoglucose, is entering an uncertain transition period because of the impending expiry of sugar quotas in 2017. The EC outlook presents one possible development, which is further discussed by industrial stakeholders. It also stimulated active debates with the audience on the specificities of the EU sugar market and the conceptual ways in which to assess its post-quota development.

### 5.1 Medium-term prospects for the EU sugar and sweetener markets, presented by Koen Dillen (DG AGRI)

The last two years were characterised by a shrinking world sugar price and an oversupply on the European market that led the European price for white sugar to dip from EUR 723/tonne (t) in 2012 to EUR 425/t in 2014. A short recovery is expected, with a domestic price approximating EUR 500/t in 2015 and 2016. After the sugar quota expires in 2017, the price is expected to shrink again to around EUR 400/t. There will, therefore, be an average wedge of about EUR 80/t compared with the world market price (see Figure 14). According to a partial stochastic analysis, the EU white sugar domestic price is likely to range, in 80 % of cases, between EUR 350/t and nearly EUR 500/t.

**Figure 13. Development of the world and European white sugar prices according to the EC outlook (2000-2025)**



After the concentration of sugar beet production to more productive areas between 1997 and 2014, harvested areas are expected to continue decreasing although they will be mitigated by the adoption of VCS in some Member States. A relatively important growth in

yield is expected for sugar beet compared with other crops. All in all, EU sugar production could increase slightly, by 9 %, by 2025, that is to a level that is within recent historical reference values. As a result, the EU is likely to reduce sugar imports and to slightly increase sugar exports. An increase in export capacities is consistent with a reduction in the EU domestic consumption of white sugar and with a shift in consumption to other sweeteners. In addition, the use of sugar beet to produce ethanol is projected to stabilise in quantity after quota abolition. In summary, the sugar self-sufficiency rate of Europe will increase, reaching 100 % just after the quota expiry and approximating 110 % at the end of the projection period.

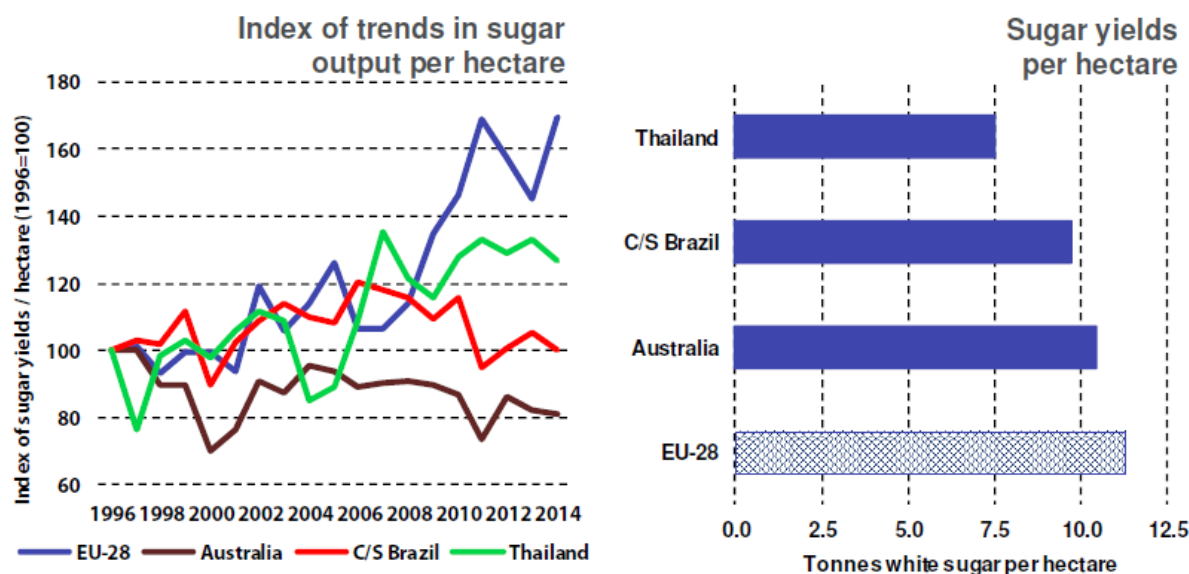
Isoglucose production should also benefit from the abolition of production quotas and is likely to reach unprecedented levels of consumption. According to the baseline scenario, it will represent 12 % of the sweeteners market. As this assumption can sometimes be seen as conservative, an alternative scenario, assuming an increase in isoglucose production of 50 %, has been simulated. In the alternative scenario, the surplus in domestic production would mainly be absorbed by EU domestic consumption, while 30 % would be directed towards exports. The share of isoglucose in the sweetener mix would also increase, leading to a reduction in white sugar consumption by 0.8 million tonnes by 2025, compared with the baseline scenario. Finally, such a development of isoglucose production would not significantly affect the domestic white sugar price.

## **5.2 Outlook for the EU sweetener market after the expiry of sugar quotas**, presented by Martin Todd (LMC International)

The outlook for the period after the expiry of sugar quotas is difficult to anticipate, but it will be key for the development of the sweetener sector until 2025. The baseline scenario assumes an increase in sugar beet production and white sugar production. This implies the ability of some sugar industries to expand, while some of the less productive producers will be maintained by VCS. Martin Todd deems it to be unrealistic that a price difference between the EU and the world markets would persist without entailing greater imports than those projected. The outlook projections on isoglucose also seem conservative given that some starch producers are likely to make investments in this product.

Martin Todd emphasised the high level of uncertainty surrounding the sweeteners market. Indeed, this market is based on three main commodities (sugar beet, isoglucose and imported sugar cane), each of which has a different cost structure. However, in the last two years, there has been a decrease in the price of the main cost component of these commodities. Another source of variability is the development of the Brazilian Real exchange rate, which is currently experiencing a strong depreciation; this has favoured sugar cane markets over beet sugar and isoglucose markets.

**Figure 14. EU sugar and sugar beet yields compared with those of the main world players**



In this uncertain context, it is helpful to look at the efficiency of production. On this basis, the EU sugar beet sector clearly benefits from strong yield growth, which results in a sugar yield ranking among the highest in the world (see Figure 15). The yield growth of sugar beet has also been stronger than for competing crops over recent years, which has strengthened a place for sugar beet in European crop rotation. The European sugar industry should be able to take advantage of its strong efficiency without significant further investments in processing, because several industries have surplus capacity that will be able to be used after the quota expiry.

In conclusion, the European sugar industry has the potential to expand after the removal of quotas, but it will have to adopt flexible business models in the face of volatility, especially for processors who carry high fixed costs.

### 5.3 Prospects for the sugar trade after 2017, presented by Gerald Mason (Tate & Lyle Sugar, ASR group)

The outlook projections with regard to the European sugar market are deemed, by Gerald Mason, to represent a generally fair reflection and to be globally realistic. After the expiry of the sugar quotas, the European sugar market will be more market driven and more volatile over the projection period. Given the trend of the previous years (see Figure 16), he foresees a rebasing of the world price of white sugar at a lower level, as well as a fall in the European price by a lower magnitude, because of the cost structure of European sugar production. His opinion also converges with that of the previous speakers in that the post-sugar quota expiry period will be particularly complex and uncertain.

**Figure 15. Development of the world and European raw sugar prices (2006-2014)**

More specifically, he discussed and challenged some aspects of the outlook. First, the high level of exports projected in the baseline scenario (2 million tonnes) is unlikely to occur if the price difference between the European sugar price and the world price is maintained. Therefore, the EU would probably not return to a dominant exporting position. Its position is more likely to depend on world sugar prices and net margins for sugar producers. This volatile environment will be challenging for the sector, since planting decisions have to be made two years before harvesting.

Second, the doubling of isoglucose production presented in the alternative scenario, combined with a low-price environment, would deeply affect the isoglucose environment. Finally, the rationale for a peak in sugar consumption in 2018, as shown in the baseline scenario, remains unclear.

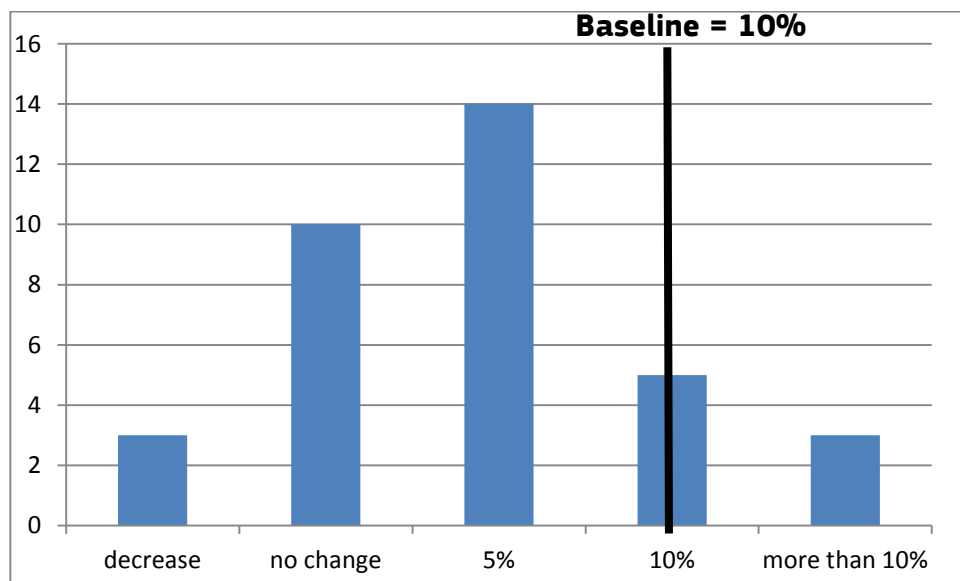
#### 5.4 Discussion about the EU sweetener market

Participants were asked to answer the following question: “Will EU sugar production increase at a price level of around 400 EUR/t?” Thirty-five participants answered as follows (see also Figure 17):

- 3 participants (9 %) answered “it will decrease”;
- 10 participants (28 %) answered “no change”;
- 14 participants (40 %) answered “+5 %”;
- 5 participants (14 %) answered “+10 %” (which corresponds the EU projection);
- 3 participants (9 %) answered “more than 10 %”.



**Figure 16. Summary of participants' answers to the question "Will EU sugar production increase at a price level of around 400 EUR/t?"**



Estimating **sugar market prospects after sugar quota expiry** is quite a complex task. A market analysis based on export parity would lead to question the high level of sugar exports projected in the baseline scenario, which would give rise to a EUR 8/t price difference between the European and the world prices and stable stocks. Gerald Mason estimated that, at such a low export price level ( $\approx$ EUR 19/t sugar beet), there may be no incentive to export given the high cost of sugar production. It is conceivable that the sugar industry would look to export at any price in a situation of domestic oversupply, but this might not be sustainable in the long term. Koen Dillen nuanced this statement by reminding participants that import tariffs would also maintain the sugar export price far below the import price. Another participant remarked that there is always a gap between theory and reality: a sugar price difference can be observed in almost every country of the world.

The abovementioned discussion linked with the debate on the **cost of production** versus export parity. In a context of higher price volatility, Martin Todd expects that sugar beet production would adjust to price fluctuations during the two-year lag of the sugar beet productive cycle. Efficiency gains could also emerge at both production and industry levels. However, the flexibility required by such a volatile context is a challenge for the sugar industry, characterised by high fixed costs of production and by a relative fragmentation.

Tassos Haniotis reminded participants that because of the **dominant role of Brazil** with regard to sugar exports, there are good reasons to believe that the world sugar market will continue to be influenced by macroeconomic parameters, such as exchange rates and gasoline prices. In particular, Plinio Nastari mentioned that cash constraints faced by Petrobras might result in an increase in the gasoline price in Brazil, inducing an increase in the price of ethanol and sugar. Productivity gains in Brazil are expected, which would allow an increase in ethanol production and, at the same time, an increase in Brazilian sugar exports.

Furthermore, another participant asked if **private storage** measures or other safety nets are taken into account by the model. According to Koen Dillen, the private storage measure

it is not integrated in the model because it is activated case by case in relation to producers' margins.

The last comment related to the sugar market was about the possibility of the European industry **investing in new sugar plants in Brazil**, taking advantage of the economic recession there. According to Martin Todd and Gerald Mason, this is an option but, so far, everywhere in the world sugar companies tend to supply their domestic market, with limited interactions with foreign markets.

Part of the discussion focused on the **isoglucose market**. One participant was surprised by the anticipated doubling of isoglucose production between 2016 and 2017. According to Koen Dillen, this is supported by a technical assessment of the potential for isoglucose integration into recipes used by the food and beverages industry. It is also compatible with the potential for isoglucose production in Hungary and Croatia. In general, central European countries are experiencing a domestic sugar deficit combined with an oversupply of maize starch. Therefore, the necessary conditions are in place for a significant surge in isoglucose production after quota expiry. On the other hand, an opposite pattern exists in other Member States, such as France.

In the same regard, another participant questioned the plausibility of the alternative scenario, which assumed a 50 % increase in isoglucose production in the EU, compared with the baseline scenario. Because of substantial transport costs, this participant estimated that it would be very unlikely for the EU to reach substantial levels of exports and thinks it would be more reasonable to assume that isoglucose consumption will remain close to areas of production. Koen Dillen agrees that transport costs are a limiting factor for export and clarified that this scenario tests the sensitivity of the model.

## **6 The EU milk and dairy markets over the 2015-2025 period**

Because of recent developments with regard to milk and dairy products, this session focussed on disaggregating the preliminary results of the EC outlook at Member-State level, while also taking the environmental issues relevant to dairy farming systems into account. It was complemented by the development of fresh dairy product markets and the industrial use of dairy products.

### **6.1 The European Commission's solution to the dairy crisis, presented by Jens Schaps (DG AGRI)**

As an introduction to the session on dairy products, Jens Schaps, Director for Common Market Organisations for Agricultural Products in DG AGRI commented on the recent dairy crisis. He reminded participants that the dairy sector is central to European agriculture, because it provides an important source of income for many Member States.

The expiry of the dairy quota was agreed a long time ago and an increase in milk production was expected. However, lower than expected prices in the past few months have led to the recent dairy crisis. The EU has a very high and stable consumption of dairy products. Thus, the export of any over-production to extra-EU countries seems the most evident option. Nevertheless, this might not be enough and, therefore, the EC has proven to help the sector with a series of proposals.

The EC reacted, in September 2015, with solidarity packages, granted for the dairy and pork sectors. These packages include several tools related to support in cash (at the discretion of Member States; they might vary from one country to another), private storage and interventions. Notably, a task force on agricultural markets, comprising different experts, will be instituted and should influence current discussions on the supply chain in the longer term. Promotion programmes are also in the pipeline. With regard to trade, an advisory committee has been established to screen the impact of non-tariff measures on market access. Free trade agreements (FTAs) are under discussion with trade partners, including Japan, the USA and Canada, raising expectations for the future of dairy products. A market observatory is also greatly assisting with the analysis of market evolution.

This series of elements should ease the way out of the crisis. Prices already increased in August and further rebound in dairy prices is expected; the EC is being slightly optimistic, but realistic, with regard to this matter.

### **6.2 Medium-term prospects for the EU milk and dairy markets, presented by Sophie H elaine (DG AGRI)**

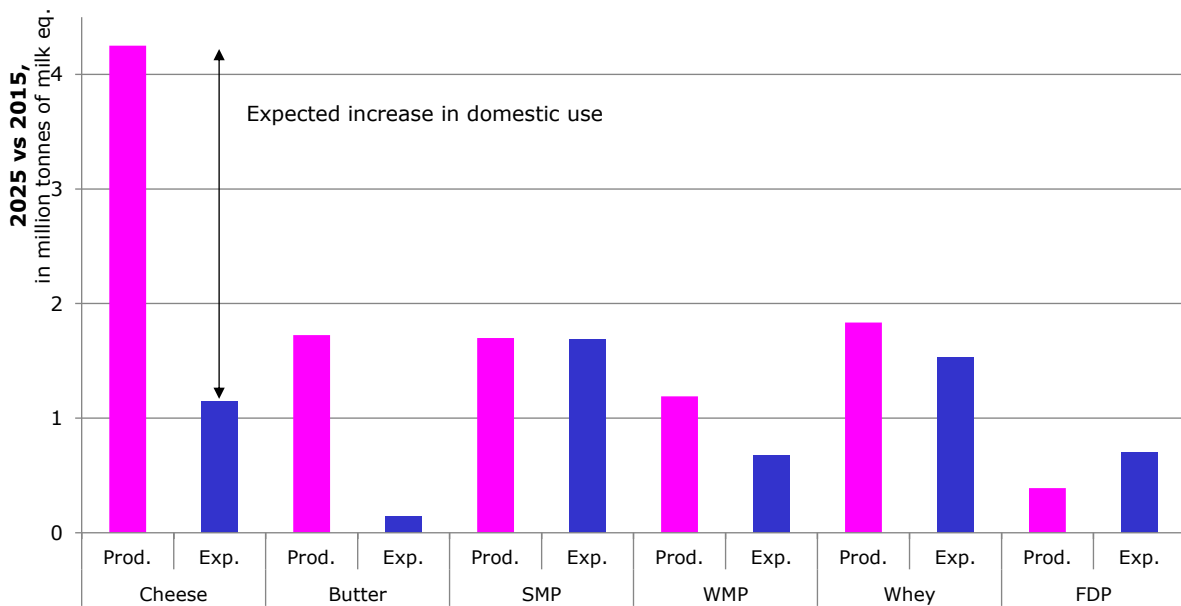
The global context is characterised by a steady growth in the world consumption and production of dairy products (+1.8 % per year in the OECD-FAO outlook for the next decade), which has resulted in an increase in world trade; however, the extra volume of traded products in the coming decade (approximately 14 million tonnes of milk equivalent)

will be less than it was in the last decade. The EU is likely to be the main beneficiary of new world trade opportunities, while New Zealand and the USA will get a lower share than they did in the previous decade.

In this context, EU production is expected to increase by 11 million tonnes in the next 10 years. The acceleration in milk production and deliveries in the last two years is not expected to continue at such a fast pace; it will slow down after the expiry of the milk quotas and because of growing environmental constraints. In addition, the production gains projected by the baseline scenario would result from the continued restructuring of the European dairy sector, which would result in the reduction of the dairy herd (including in EU-15), together with strong productivity improvements.

The additional EU production of milk foreseen will mainly result in the production of cheese, followed by butter, powders and whey. The extra production of fat (butter) and cheese (incorporated into processed food products, such as pizzas and sandwiches) will be mainly domestically consumed, while the steady world demand market will benefit from skimmed milk powder (SMP) and whole milk powder (WMP) (see Figure 18). By contrast, on the domestic market, a decrease in the consumption of fresh dairy products is expected.

**Figure 17. The extra volume of dairy products produced and exported in 2025 compared with 2015**



The levels of EU dairy products (such as SMP) and milk prices are currently low (after reaching unprecedentedly high levels in 2014, compared with the last decade); however, they should rebound and increase in the long term. Notably, the stochastic analysis simulation of dairy prices clearly suggests that the next decade will still be characterised by price volatility, with potentially important ups and downs, but, in 90 % of cases, prices will be well above intervention levels. The milk price is expected to rise faster than feed costs, which would result in a slight increase in the margin over feed costs. This will help producers to cover their other increasing costs.

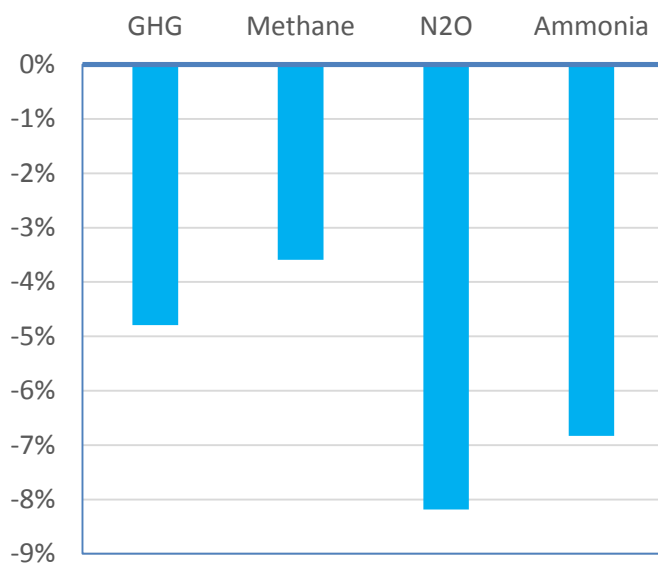
### **6.3 Milk production in the EU: some Member State results and environmental indicators**, presented by Thomas Fellmann (JRC-IPTS)

To complement the baseline projections, the presentation by Thomas Fellmann aimed to capture pathways of the dairy industry at EU Member-State level and to assess whether or not environmental constraints could undermine the overall good prospects for EU milk production. This was done using the CAPRI model, which allows a disaggregation of agricultural projections at Member-State level and Nomenclature of Territorial Units for Statistics level 2 (NUTS 2) level. For this exercise, the CAPRI model was calibrated to follow the trends of last year's EU outlook. Thomas Fellmann pointed out that the CAPRI database contains historical data up to 2013 (but sometimes up to only 2012), and is not updated with regard to short-term market developments. Therefore, the presented projections, at Member-State level, can be considered as only a first draft, and must be further revised.

A closer look at cow milk deliveries in Europe suggests that Germany and France will remain the main producers for the period 2013–2025. However, the highest relative changes are expected to occur in Ireland (+25 %) and Austria (+18 %). Considering that this projected growth in cow milk deliveries is largely based on growth that already occurred in 2013 and 2014, Thomas Fellmann highlighted that this first draft of projections are quite conservative for some Member States and that these preliminary results have to be further analysed and adjusted.

Dairy cow yields are expected to rise in all Member States, whereas the dairy herd is expected to decrease by 6 % at the EU level (with a high heterogeneity at Member-State level). These trends reflect the intensification of dairy systems, especially in EU-N13. The divergent trend in Ireland – where the rise in production is largely the result of an increase in dairy cows – reflects the relative prominence of grass-fed systems compared with other Member States.

Concerning environmental aspects, Thomas Fellmann compared regions with a nitrogen surplus/ha for the whole agriculture with the population of dairy (LU/ha) to show where in Europe the dairy sector is located in regions with a high N surplus (including mineral and organic nitrogen from all agricultural systems). The projection results show that, in 2025, further increases in the nitrogen surplus/ha in, for example, the Netherlands, northern Italy and Ireland, will be related to the intensification of the dairy sector. The intensification of dairy systems causes an increase in GHG emissions, especially methane emissions (+5.6 %), per head. However, this effect will be offset by the overall reduction of the EU dairy herd and improvements in manure management (see Figure 19), which will result in an overall decrease in GHG emissions related to the EU-28 dairy sector (cows, heifers and calves) of approximately 5 % by 2025, compared with 2013. On the other hand, some grassland may shift to arable land, which would have negative impacts on GHG emissions (indirect land-use effect not taken into account), soil organic carbon content and biodiversity.

**Figure 18. Change in total EU dairy emissions (cows, heifers and calves) from 2025 to 2013**

Note: GHG refers to greenhouse gas emissions measured in CO<sub>2</sub> equivalents

#### **6.4 An industry perspective of the outlook for dairy products, with a focus on fresh dairy products, presented by Benjamí Güixéns (Danone)**

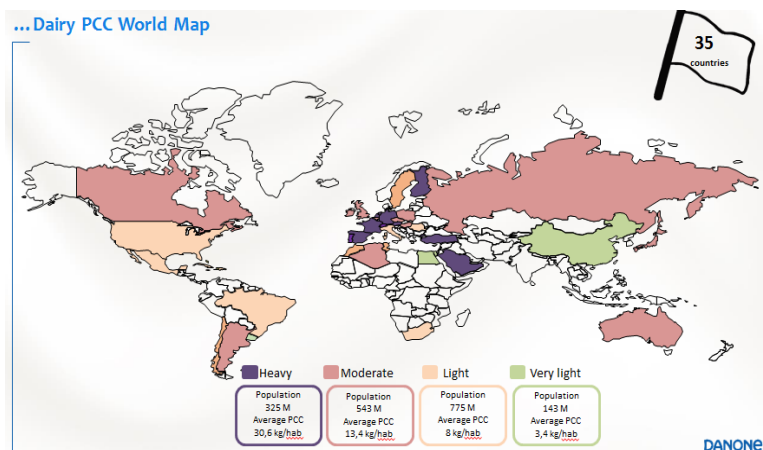
Compared with other sources and with developments over the last month (September 2015), the prospects for milk production seem poor, both in the short and medium terms. The last two very favourable years have artificially inflated the average trend of previous years, but Benjamí Güixéns would have expected more milk on stream after milk quota expiry. Benjamí Güixéns also considers that the continuing trend of dairy herd reduction in the baseline scenario is not fully convincing. Farmers are unlikely to reduce their herd by the level predicted for only environmental reasons. A better understanding of the impact of environmental regulations at the Member-State level is needed with regard to this matter.

EC milk price projections suggest that there will be a certain disconnection between milk and dairy commodity prices in 2016–2018. Analysts expect the milk price recovery will occur between the first and the third quarters of 2016; however, in Benjamí Güixéns' opinion, current stock levels and the fundamentals of the EU dairy sector could postpone the recovery to even later. In the longer term, an alarming loss of competitiveness for EU dairy products could be caused by the re-appreciation of the euro against the US dollar, as envisaged in the baseline scenario. The indirect impact of trade agreements in which the EU is not involved (e.g. the Trans-Pacific Partnership (TPP)) could also contribute to such a loss of competitiveness.

With regard to consumption, demographic trends present new opportunities for EU exports, especially to emerging countries. On the basis of the current level of per capita consumption of fresh dairy products estimated in 35 countries around the world, Benjamí Güixéns sees a strong potential for consumption growth. Indeed, in some countries, fresh dairy products are consumed less than twice a week on average. Even in the highest

consuming countries, per capita consumption is still below the threshold of one fresh dairy product per day, giving scope for growth (see Figure 20). Increasing consumption trends in emerging countries will tend to favour European exports. Accordingly, in his opinion, it is more realistic to assume that the EU will export the extra cheese it produces, rather than consume it domestically, as foreseen in the baseline scenario.

**Figure 19. Per capita consumption of fresh dairy products in 35 countries**



## 6.5 Feedback on the medium-term outlook for EU dairy products, presented by Leonardo Mirone (Barilla)

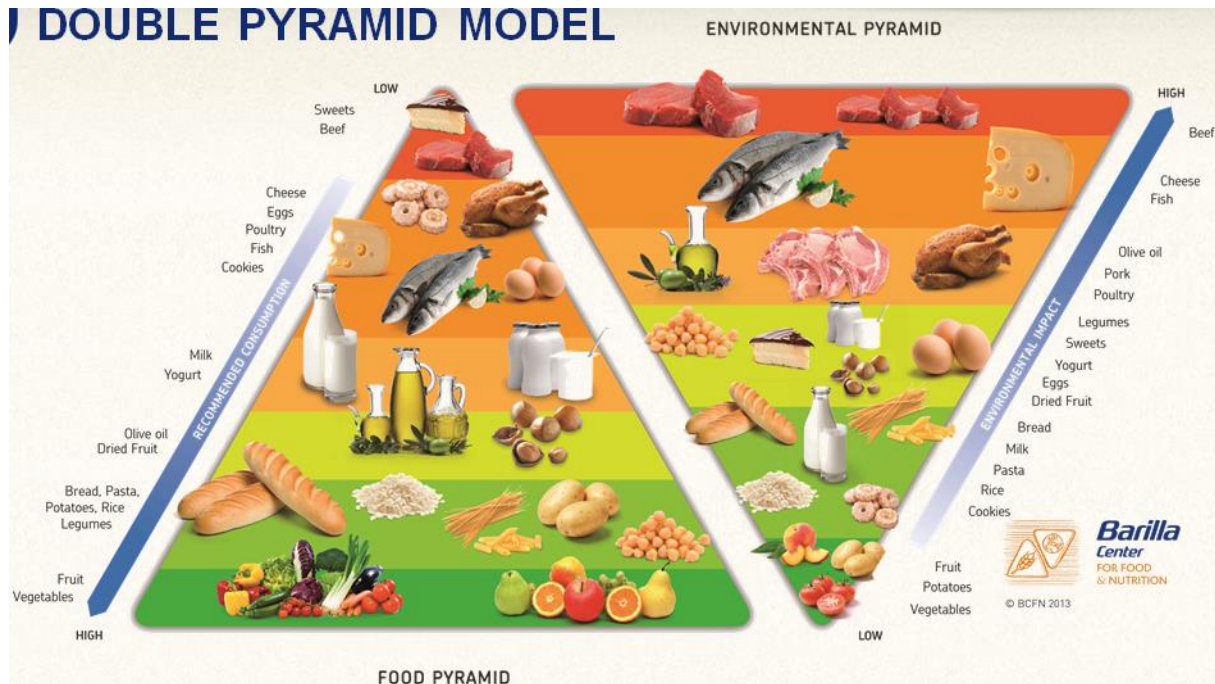
Like the previous speaker, Leonardo Mirone (Barilla) agreed with the steady growth of the global demand for milk and dairy products presented in the baseline scenario, which would translate into export opportunities for the EU. Although this would mechanically boost EU production, he stressed that trends can differ at Member-State level (milk deliveries have declined between April–July 2014 and April–July 2015 in Romania, Estonia, Greece, Croatia, Sweden, Italy and Austria).

The increase foreseen in the domestic consumption of cheese for processed food products seems to be realistic, as cheese, indeed, has a good image among consumers and it is being consumed more and more as a meat substitute. The increasing EU exports of SMP and WMP predicted in the baseline scenario support his assessment that milk powders are key products for the food industry.

As the future is, by nature, uncertain, Leonardo Mirone stressed that there are various counter-trends which could mitigate the demand for milk and dairy products. Barilla's food pyramid (see Figure 21) clearly summarises how demand could be affected by the increasing environmental and health concerns of consumers. Fresh milk has a very positive image as a healthy and environmentally friendly product. Conversely, cheese ranks very low in terms of nutritional recommendations, and very high in terms of environmental impact. In the medium term, this could impact the demand in Western countries. Also, the mandatory labelling of fats (palm oil) could drive manufacturers to favour the use of butter in some applications.

Finally, rising occurrences of lactose intolerance and cases of "milk-phobia" reflect a new trend, which could magnify in the future.

Figure 20. Barilla's double pyramid model

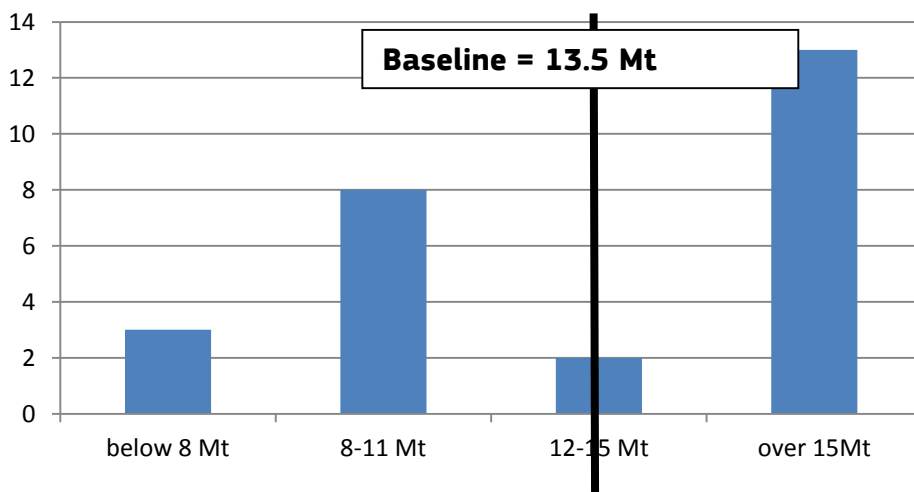


### 6.6 Discussion about the EU dairy market

Participants were asked to answer the following question: “What increase in deliveries in the EU in 2025 compared to 2015?” Twenty-six participants answered as follows:

- 3 participants (12 %) answered “less than 8 million tonnes”;
- 8 participants (31 %) answered “between 8 and 11 million tonnes”;
- 2 participants (8 %) answered “between 12 and 15 million tonnes” (which corresponds the EU projection);
- 13 participants (50 %) answered “even more”.

Figure 21. Summary of participants’ answers to the question “What increase in deliveries in the EU in 2025 compared to 2015?”





The steady **growth of EU domestic production** was discussed, in particular whether or not growth of EU domestic production could be absorbed by domestic consumption, which is already at a high level, was considered. Because the European dairy market will increasingly rely on exports, its link with the world market will increase. Tassos Haniotis stressed that he was confident about the EU's capacity to exploit the extra demand for dairy products on the world market, particularly because the EU's two main competitors are limited by land constraints (New Zealand) and rising domestic consumption (USA). The recent development of the demand for dairy fat on the global market is another positive factor. Nevertheless, by relying more and more on the world market, the EU dairy sector will also be more exposed to the effects of fluctuating exchange rates and other macroeconomic indicators (i.e. the increased price fluctuations in the dairy sector may become the new "normal").

With regard to the main importing countries, a recovery in the consumption of dairy products in **Russia** is foreseen, but it may be slower than before the Russian import ban. Indeed, since the introduction of the import ban, some of Russia's domestic consumption of cheese has been substituted by domestic cheese and cheese from other countries that were not affected by the import ban. This is reflected in the baseline assumption of EU exports to Russia, which are assumed to reach only half of the pre-ban level after the end of the ban in 2016. A participant pointed out that the Russian ban could extend beyond 2016 as a result of the next presidential elections in Russia, which would further subdue the export potential of the EU's dairy sector.

**Chinese dairy systems** cumulate high costs of production and low efficiency, which results in a low competitiveness. Consequently, they are not likely to have the capacity to meet China's growing domestic demand, thus presenting export opportunities for the EU, New Zealand and Argentina. Sophie Hélaine clarified that China indeed remains a major importer in the baseline scenario, but that it will contribute less to additional imports than in the previous decade.

Jens Schaps noted that there is good potential for developing the trade of dairy products with **trading partners other than Russia and China**, such as Iran, stressing that the EU is consolidating its trade relations with a series of third countries; for example, the FTA with Korea seems to be successful, and the one with Vietnam is well advanced and discussions are also in progress with regard to the Transatlantic Trade and Investment Partnership (TTIP). Other potential markets were also evoked, such as Brazil (after economic growth recovery).

Another set of questions related to the **model parameters** used for the AGLINK-COSIMO simulations. It was clarified that export refunds are not taken into account in the model. Similarly, environmental constraints are not included in the model, while livestock densities might become a limiting factor in some regions of the EU. To further explore this issue, a specific exercise was performed with another model, on which Thomas Fellmann presented preliminary results (see section 6.3 above). It was stressed again that the projection results, with regard to Member States, need to be further analysed and readjusted; in particular, issues such as the obviously too low milk yield growth simulated in Ireland need to be addressed.

Lastly, the increase in the **EU consumption of cheese**, projected by 2025 in the baseline scenario, provoked diverging opinions among workshop participants: some participants considered these projections to be too optimistic, while others foresee even better prospects for EU cheese consumption.

## **7 The EU meat markets over the 2015-2025 period**

The projections with regard to the development of the meat market consider the complex inter-relationship between different types of meat and feed markets. This year, a closer look was taken at both Member-State level (using the case of pig meat as an example) and the global level (with input from a USA market analyst). Finally, more insight was provided on the poultry meat sector, which is the most dynamic meat sector in the EU.

### **7.1 Medium-term prospects for EU meat markets, presented by Benjamin Van Doorslaer (DG AGRI)**

At the global level, meat consumption is expected to increase by 1.4 % per year over the next decade, with world imports growing even faster (+2.6 % per year). The sub-Saharan Africa and Middle East regions are expected to account for more than 50 % of the world import of poultry meat. China and Vietnam are expected to dominate the imports of pig meat and beef meat.

This growing world demand will be favourable for the EU if the domestic consumption of total meat stabilises (+0.1 % per year, with a reduction of per capita consumption of meat). The baseline scenario foresees a rise in poultry meat consumption in Europe (+0.2 % per year), but the domestic demand for pig meat and beef meat will contract (–0.3 % per year for both meats).

After the recovery in 2014 and 2015, pig meat production is expected to increase marginally over the projected period (+0.2% per year). The additional production is therefore destined for export, which will benefit from the end of the Russian ban foreseen in 2017.

The picture is different for the poultry meat market. Domestic consumption is expected to continue on an upwards trend. In the medium term, the same trend is expected for net production, imports and exports, despite the expected significant drop in prices over the next three years on both the world and domestic markets. On average, the European poultry price is expected to be at the same level as the price in 2010. However, the stochastic analysis indicates that prices could fluctuate within a wide range, that is between the low levels of 2005 and the high levels of 2013.

European beef consumption is expected to rebound in the next two years, signalling a recovery after the economic crisis and an increase in meat availability. However, in the medium term, the trend is likely to be firmly downwards. Dairy herd development is also likely to drive a decline in beef meat production.

After years of decline, sheep and goat production shows signs of stabilisation.

European meat prices will decline for all types of meat, except pig meat, over the next three years. Sheep and beef meat prices are then expected to recover until the end of the projection period, while poultry and pig meat prices are likely to stabilise.

### **7.2 Pork market development at Member-State level - application of**

## **AGMEMOD**, presented by Martin Banse (AGMEMOD consortium)

The purpose of Martin Banse's (Thünen Institute, for the AGMEMOD consortium) presentation was to depict pork sector dynamics at Member-State level, based on the use of the AGMEMOD model.

AGMEMOD<sup>10</sup> is a partial equilibrium model that simulates net trade within the EU (intra-EU trade included, although not represented bilaterally), backed up by partnerships with Member States and collaborations with policy makers, market experts and national data agencies.

At Member-State level, pig meat production is particularly dynamic in Spain and Poland. These two Member States account for 45 % of the production increase expected between 2015 and 2025 (+1 million tonnes). In contrast, environmental constraints are likely to limit production growth in Denmark and, potentially, in Germany and the Netherlands.

The average pig meat consumption in EU-N13 is expected to surpass EU-15 consumption by 2025. It will reach saturation level in both regions. At the EU level, the demand for pig meat is expected to contract by 1.2 % between 2015 and 2025 because of a decrease in per capita consumption; although, this is partly compensated by population growth.

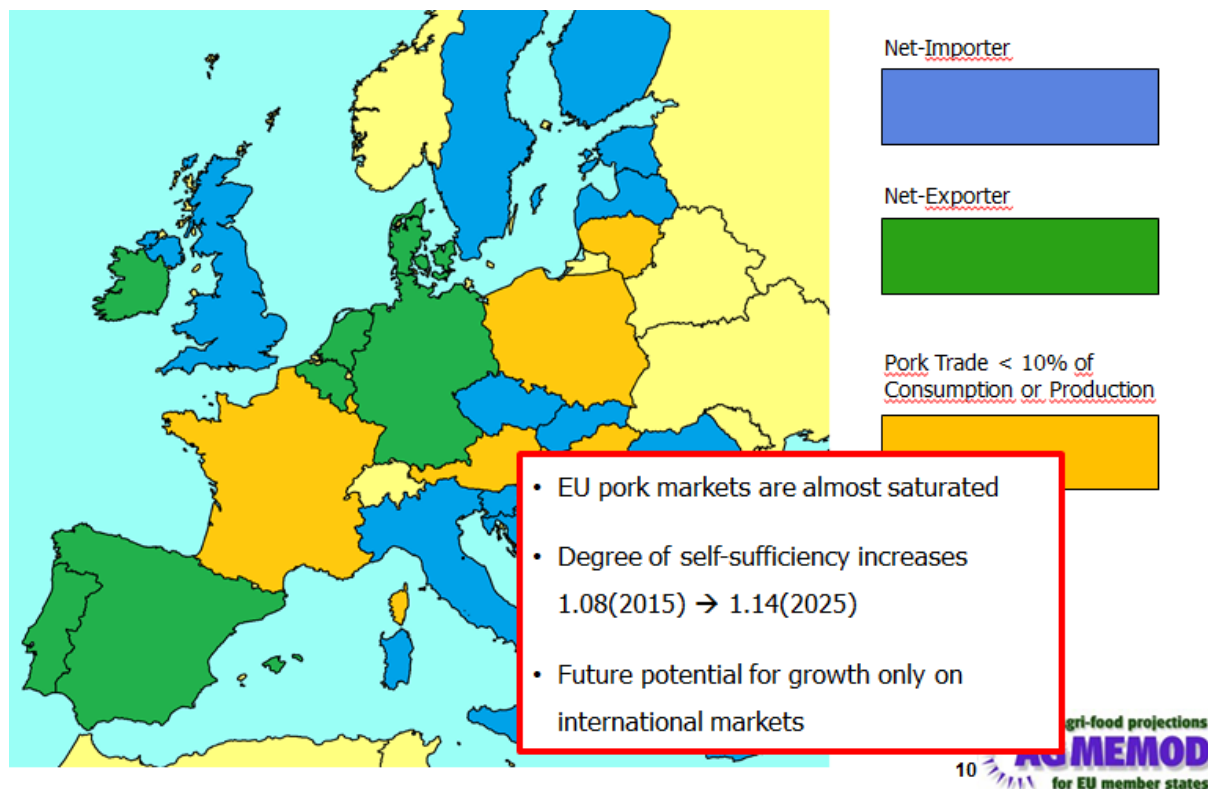
Within the EU, 88 % of the export of live animals is operated by Denmark and the Netherlands, which send piglets to Germany and Poland. This trend is strengthened by regulatory constraints on manure and animal welfare, which push Denmark and the Netherlands to limit their activities to piglet production. Low wages in Germany's slaughterhouses also favour the import of fattened live animals from the Netherlands.

Overall, by 2025, the main net exporters within the EU are expected to remain unchanged (i.e. Spain, Germany, the Netherlands and Denmark), while some Member States, such as Portugal, Poland and Lithuania, are expected to become net exporters (see Figure 23). Self-sufficiency for pig meat, within the EU, is expected to rise from 108 % to 114 %, and the pig meat market will reach saturation. The potential for future market growth will rely mainly on only international markets.

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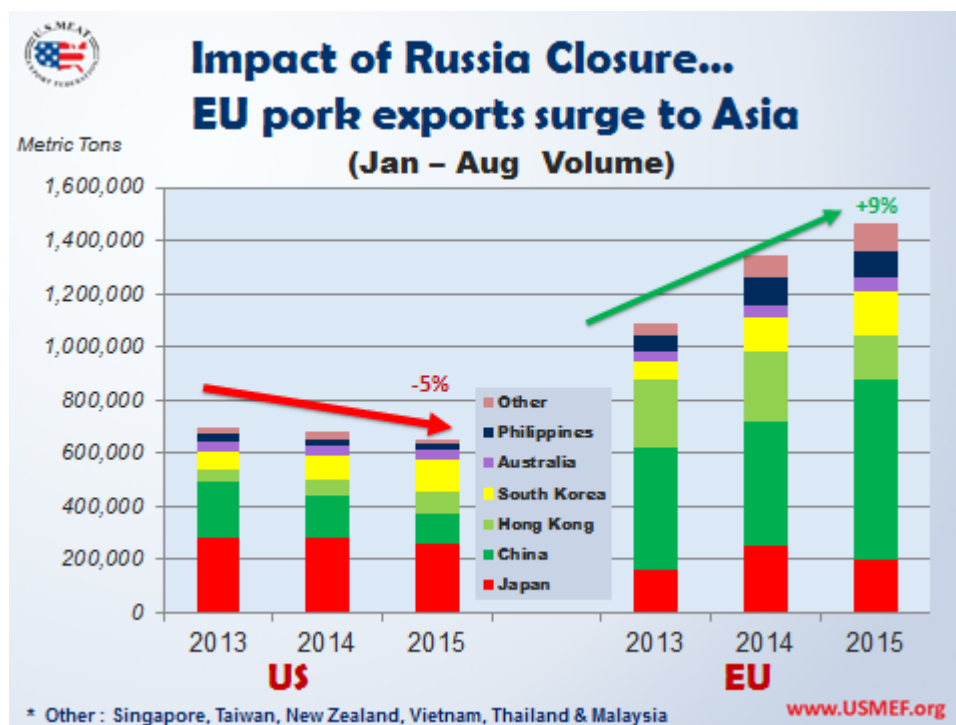
<sup>10</sup> AGMEMOD stands for AGricultural MEmber states MODelling.

**Figure 22. Trade of pig meat within the EU**

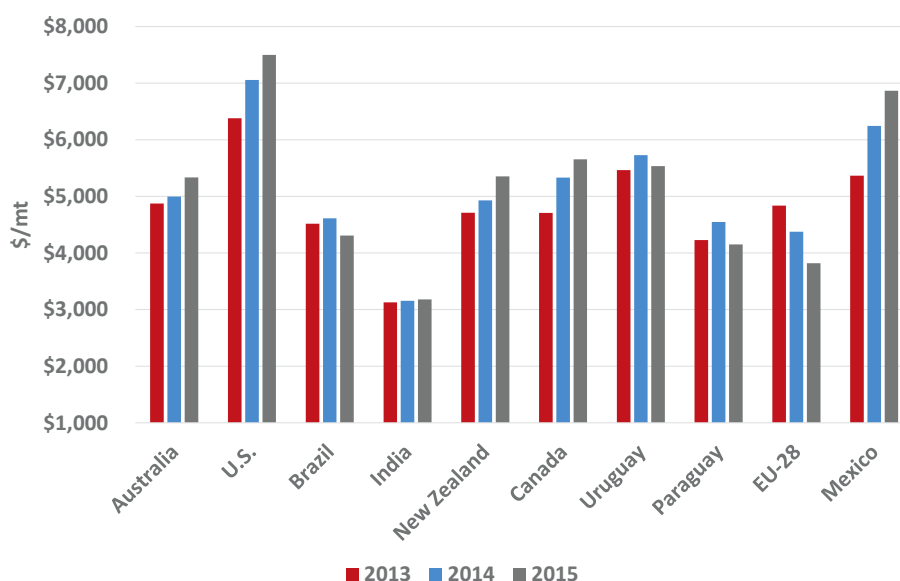


### 7.3 Red meat trade update, presented by Erin Borrer (US meat export federation)

Erin Borrer (US Meat Export Federation (USMEF)) considered the baseline scenario to be a bit conservative with regard to the growth of the EU export of pig meat. Both the USMEF and the US Department of Agriculture (USDA) forecasts suggest great potential for pig meat demand on the world market (in particular, in China, Mexico and Korea) which could benefit the three major global exporters, that is the EU, the USA and Brazil. She stressed the major role played by China, in which the strongest growth is expected in the next decade. Nevertheless, as already remarked during the dairy session, trading with China can be cumbersome. The USA are considering Mexico, Japan and Korea with regard to diversifying their exports. Erin Borrer noted that the EU managed very well to develop new export outlets in Asia during the Russian ban (see Figure 24; EU exports to Asia surged by 35 % between 2013 and 2015 (up 9 % year/year in 2015), while the USA exports reduced by 7 % (and down 5 % year/year).

**Figure 23. Development of the EU and USA's export between 2013 and 2015, during the Russian ban**

With regard to the beef meat market, Erin Borrer commented on price development over the last three years (see Figure 25). The EU export price has dropped to levels lower than in most other top exporters. Such a trend could provide new export opportunities for the EU, and could help to counteract the sluggish baseline trend of the EU beef sector. With regard to the new tariff rate quota established by the EU, she thinks it will be difficult for the US industry to compete with Brazil (which can even export out of quota and does not, at this point, have access to the duty-free high-quality beef quota), or Australia and Uruguay, which are continuously gaining share under the duty-free quota. US production costs are high, in particular for hormone-free meat. Brazil could, in general, gain market share in the near future. Owing to the economic recession, beef meat consumption by Brazilian consumers is declining, which leaves room for further export growth. Finally, according to Erin Borrer, China will remain the key partner for global beef exports in the next decade. The impact of trade agreements, currently under negotiation or ratification processes (e.g. the TPP, the TTIP and bilateral agreements among China, Japan, Australia, etc.), on the distribution of market shares remains uncertain. Finally, it is important to note the difference between per capita consumption or “disappearance” and demand. For example, although per capita beef disappearance has been declining in the USA, demand remains very strong, and this type of trend could favour high-quality segments of beef meat.

**Figure 24. Unit export value for top exporters**

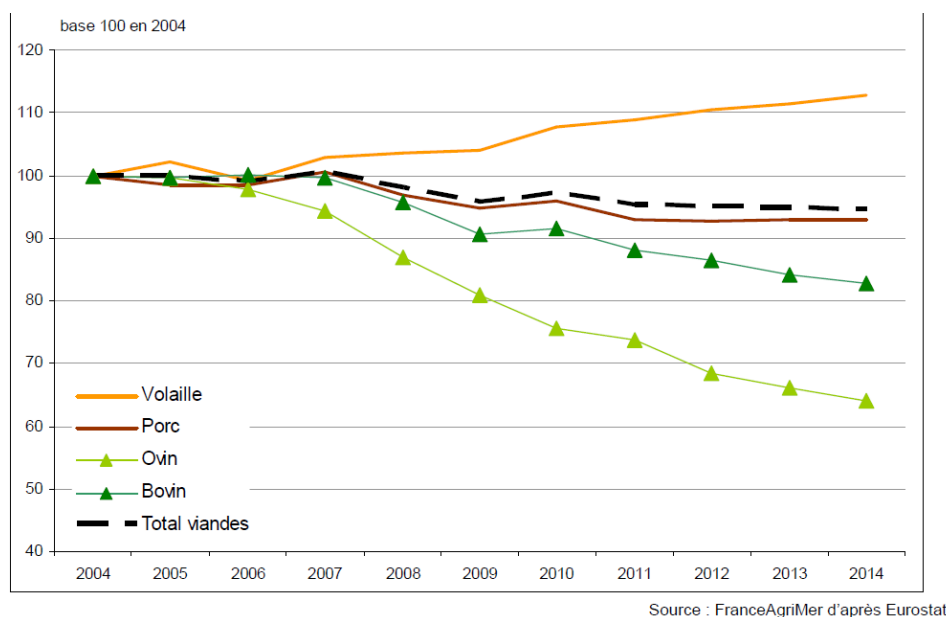
#### 7.4 Prospects for poultry meat 2015-2025, presented by Pascale Magdelaine, (ITAVI)

Pascale Magdelaine (ITAVI) first reminded participants that the global context is very favourable with regard to the poultry meat market. In addition to the strong consumption growth expected in developing countries, poultry meat has a high conversion ratio and good nutritional quality. Furthermore, it does not suffer from religion-related restrictions. These factors led to (overly) optimistic OECD-FAO projections in June 2015 with regard to the EU production, consumption and export of poultry meat. Pascale Magdelaine's analysis is more in line with the lower projections proposed by the EC at this workshop.

The EU has lost some of its market share of poultry exports over the last 20 years. In terms of quantity, the EU is a net exporter; however, it is a net importer in terms of value. However, the convergence between EU and world cereal prices, combined with the convergence of labour costs with third countries and the implementation of new regulations in emerging countries favour the future improvement of EU competitiveness. The competitive gap with Brazil seems to be narrowing. However, changes in currency parities could impact this trend.

On the EU domestic market, contrary to all other meats, there has been a positive per capita consumption growth of poultry meat (in particular chicken, but not turkey) over the last decade (see Figure 26). Over the next decade, Pascale Madgelaine, nevertheless, agrees with the decelerating trend projected by the baseline scenario, and expects an increase in the importance of processed products (35 % to 50 % of consumption in northern Europe). The poultry market could indirectly suffer from increasing health (e.g. related to antibiotics and obesity), welfare and environmental concerns within the EU, notably the development of vegetarianism and flexitarianism, and related meat substitute markets.

**Figure 25. Per capita meat consumption for different types of meat**

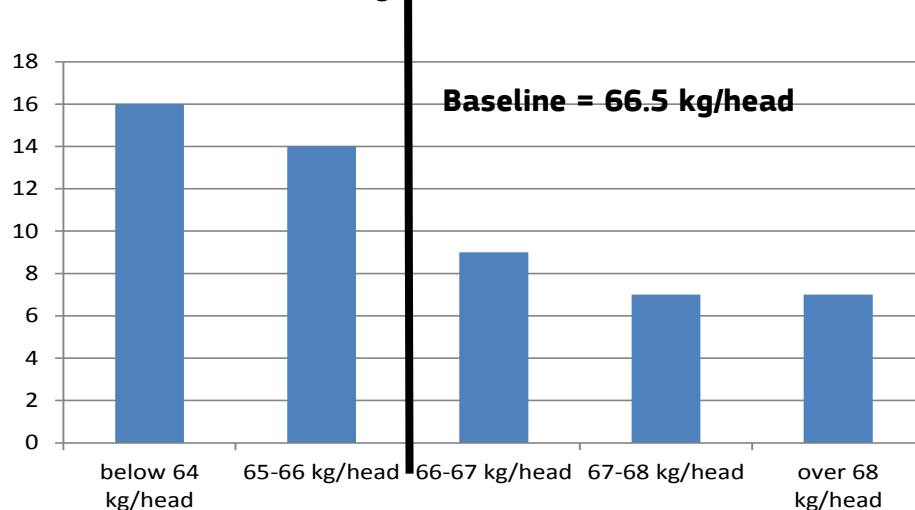


## 7.5 Discussion about the EU meat market

Participants were asked to answer the following question: “What will be the consumption per capita in the EU in 2025 (retail weight)?” The 53 participants answered as follows:

- 16 participants (30 %) answered “less than 64 kg/head”;
- 14 (26 %) answered “between 65 and 66 kg/head”;
- 9 participants (17 %) answered “between 66 and 67 kg/head” (which corresponds to the EU projection);
- 7 participants (13 %) answered “between 67 and 68 kg/head” (which corresponds to the current EU level);
- 7 participants (13 %) answered “over 68 kg/head” (which corresponds to the pre-economic crisis level of 2007).

**Figure 26. Summary of participants’ answers to the question “What will be the consumption per capita in the EU in 2025 (retail weight)?”**





The prospects for **EU beef production** gave rise to concerns among the participants. In particular, the downwards trend in price foreseen in the baseline scenario for the next four years seems to be particularly concerning for beef producers. In such a context, the VCS – granted by 26 out of 28 Member States – will help beef producers, in part, to maintain their herd until prices recover, which is expected to occur by around 2020 according to the baseline scenario. As a significant proportion of European beef meat comes from the dairy herd, its expected reduction could offer an opportunity for suckler cow producers. All in all, there is likely to be a shift in beef meat production from EU-15 to EU-N13.

The prospects for further **EU beef imports from Brazil** were discussed. Their volume will depend on the difference between the world price and the EU price. Although Brazil has been able to export to Europe at full duty in the recent past, it seems unlikely that this will happen again in the future. Erin Borrer added that the European market would probably not be the first choice for Brazilian exporters; Brazil is more probably considering export to growing Asian markets, particularly China.

The **pig meat production in Poland**, discussed by Martin Banse (see section 7.2), also gave rise to curiosity among the participants. It was clarified that the predicted large increase in pig production would probably be linked to a speeding up of structural change. Also, the Polish comparative advantage for fattening imported live animals is assumed to strengthen over the next decade. On the other hand, Poland could face, in the future, similar environmental limitations as Denmark and the Netherlands. Therefore, the optimistic productivity trend should be further analysed.

Finally, the assumption of a recovery in **pig meat exports to Russia** in 2016, after the assumed end of the ban, was judged to be too simplistic. In reality, trade with Russia faces other barriers, such as the sanitary ban related to African swine fever and other difficulties regarding access to this market.

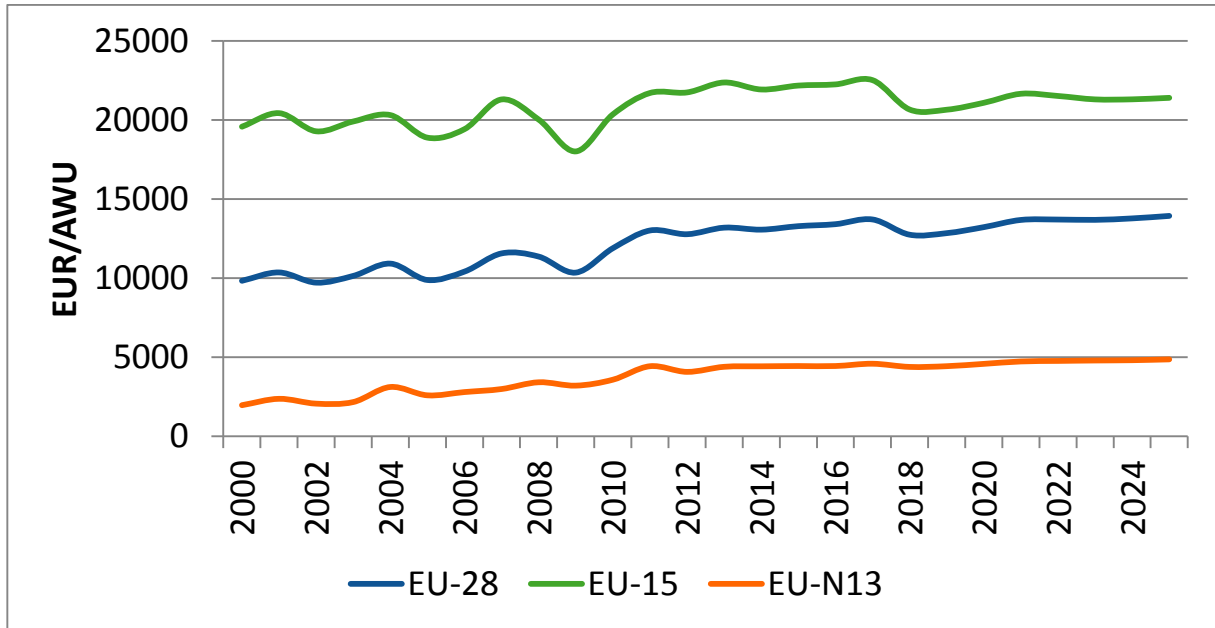
## **8 What does the medium-term outlook mean for the total agricultural income?** Presented by Pierluigi Londero and Koen Mondelaers (DG AGRI)

The EC's medium-term outlook focuses on selected agriculture commodity markets. In order to calculate the agricultural income, estimates are also elaborated for the development of other commodity markets, such as wine, olive oil, fruit and vegetables, etc.

With regard to the commodity sectors covered by the medium-term outlook, the prospects are, in general, good in terms of an increase production. Combined with relatively low prices and moderate costs, this would translate into stable income in real terms. The total agricultural income is expected to increase substantially in EU-N13 (+10 % over the projection period). In the same period, it is expected to slightly decrease in EU-15, which would narrow the gap slightly between EU-15 and EU-N13 (see Figure 28). The purchasing power parities are not taken into account in these results, but a closer look at average

agriculture wages shows a similar gap, with wages of EUR 5/hour and EUR 20/h in EU-N13 and EU-15, respectively.

**Figure 28. Real income per work unit in EU-28**



A slight decrease in the total agricultural income is also expected in 2018, as shown in Figure 28. This is because agriculture costs of production (oil price) will increase at a faster rate than agriculture commodity prices.

## 9 China and world agricultural markets

China's impact on the world agricultural market has gained momentum in recent years, particularly with regard to feed and livestock production markets; this is because the Chinese diet is evolving towards more animal-based food. Essentially, China can rely on three sources of foodstuff to meet its growing domestic food demand: (i) domestic production; (ii) food imports from the world market; and (iii) food imports from land acquired abroad. After discussion of these three options, this session ended with a focus on the impact of China's demand for animal products on world and European markets.

### 9.1 Feeding China: future challenges and the role of Africa in supporting Chinese food demand, presented by Marina Guajardo (DG AGRI)

Many uncertainties remain with regard to the future Chinese food demand. Contradictory trends are expected: the growing middle class is likely to consume more in general, and also more processed and animal-based foods in particular; however, the dramatically ageing population will tend to consume less food products. Furthermore, increasing consumer awareness could reduce the consumption of animal-based products by some of the high and middle classes. With regard to supply, the environmental impacts of intensive agriculture and rapid urbanisation will challenge China's capacity to meet its future domestic food demand. Since the World Trade Organization (WTO) accession, China has invested a lot in infrastructure and research in order to reach the 99 % self-sufficiency target; however, the food crisis has encouraged China to explore new options. The "going out" policy has led to the consideration of the development of aid funding, bilateral trade agreements and land acquisition overseas.

With regard to the application of this policy in the context of Africa, China allocated only 2.5 % of direct investments to the agribusiness sector in 2011. Instead, emphasis was placed on the development of aid programmes and the funding of Chinese companies to train African farmers in agricultural demonstration centres. Agricultural land acquisitions in Africa gave rise to criticism of China for operating "land grabbing"<sup>11</sup>.

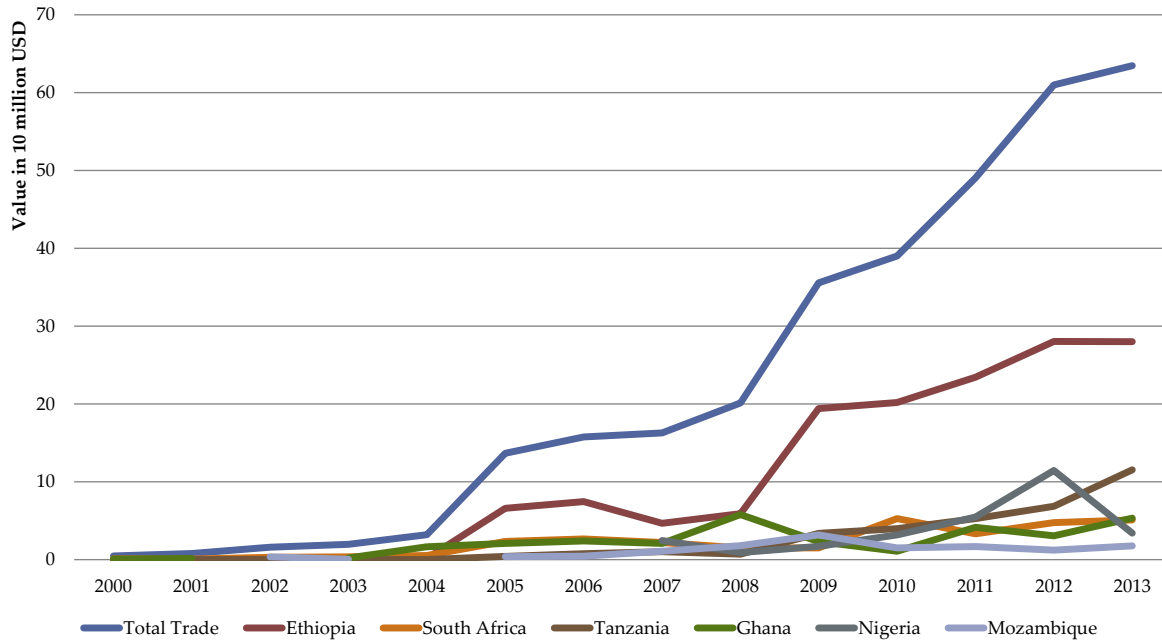
According to the Global Land Matrix and GRAIN databases, Chinese interests own agricultural land in 17 African countries, with the largest of these land areas in Senegal and Zimbabwe. In terms of value, Ethiopia has led the African export of agricultural commodities to China since 2005, and Ethiopian exports increased significantly after 2008 (see Figure 29). However, the main agricultural product exported by Ethiopia to China is sesame seed, which is not likely to support Chinese food self-sufficiency. Nonetheless, Marina Guajardo stressed that Chinese investments in agricultural holdings or other stages of the food-supply chain are likely to continue, as part of a government policy to strengthen

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<sup>11</sup> Land grabbing in this context is defined as "200 ha (or more) with the purpose of agricultural production of crops and non-food crops, timber extraction and carbon trading in low to middle-income countries."

outreach by Chinese companies, particularly through technology transfer and capacity building.

**Figure 29. African exports to China (per USD 10 million)**



## 9.2 China’s grain production growth and the outlook for its input markets, presented by Zachary Gidwitz (Smart Agriculture Analytics)

Since its accession to the WTO, China has apparently experienced an “11-year winning streak”, with a 41 % increase in grain production as a result of input incorporation, technology adoption and with a very low level of agricultural subsidies (3 % of per farmer annual income, according to Chinese sources). As a result, China is currently 90 % self-sufficient with regard to wheat. Self-sufficiency is a political and social matter for China. Over the last decade (2005-2015), the Chinese government has encouraged the agricultural workforce to progressively exit agriculture. However, with a very high share of households relying on agricultural income, China could not significantly substitute its domestic production with imports without risking social disruptions.

The picture is not all positive: the level of self-sufficiency for commodities other than wheat is less than 70 %, and the growth of grain production has been on a continuously downwards trend since 2011, with almost no growth in 2014. The total factor productivity of agriculture has benefited more and more from technology adoption over the past decade. However, according to Zachary Gidwitz, Chinese agriculture is now reaching an input overcapacity. Farmers tend to favour cheap fertilisers over the optimal use of more specialised products. The costs of production have also increased at a faster rate than the agriculture output value. Thus, the profit per unit of cultivated land has shrunk dramatically, from CNY 251/mu in 2011 to CNY 73/mu in 2013.

With the release of the “No 1 Central Document 2015” on agricultural development in China, China predicts future exports of agricultural technologies and fertilisers, while

tending to foster domestic food production. Under the banner “made in China 2025”, a 99 % self-sufficiency is sought with no growth in fertiliser or pesticide use after 2020. Training and technology adoption should be the main drivers of this policy. With regard to fostering fertiliser exports, the first signal of this was the reduction of export tariffs in 2015 (see Figure 30).

**Figure 30. China fertiliser export tariff policy adjustments**

Product	2014	2015
Urea	Peak season(Jan-Jun,Nov,Dec):15%+40RMB/ton	<b>80RMB/ton</b>
	Off-season(Jul-Oct):40RMB/ton	
Other Nitrogenous fertilizers	Peak season(Jan-Jun,Nov,Dec):15%+40RMB/ton	<b>5%</b>
	Off-season(Jul-Oct):40RMB/ton	
MAP	Peak season(Jan 1-May 15,Oct 16-Dec 31):15%+50RMB/ton	<b>100RMB/ton</b>
	Off-season(May 16-Oct 15):50RMB/ton	
DAP	Peak season(Jan 1-May 15,Oct 16-Dec 31):15%+50RMB/ton	<b>100RMB/ton</b>
	Off-season(May 16-Oct 15):50RMB/ton	
N-P Dual-component fertilizer	Peak season(Jan 1-May 15,Oct 16-Dec 31):15%+50RMB/ton	<b>5%</b>
	Off-season(May 16-Oct 15):50RMB/ton	
Other fertilizers	Peak season(Jan 1-May 15,Oct 16-Dec 31):15%+50RMB/ton	<b>5%</b>
	Off-season(May 16-Oct 15):50RMB/ton	

Source: Ministry of Finance, People’s Republic of China.

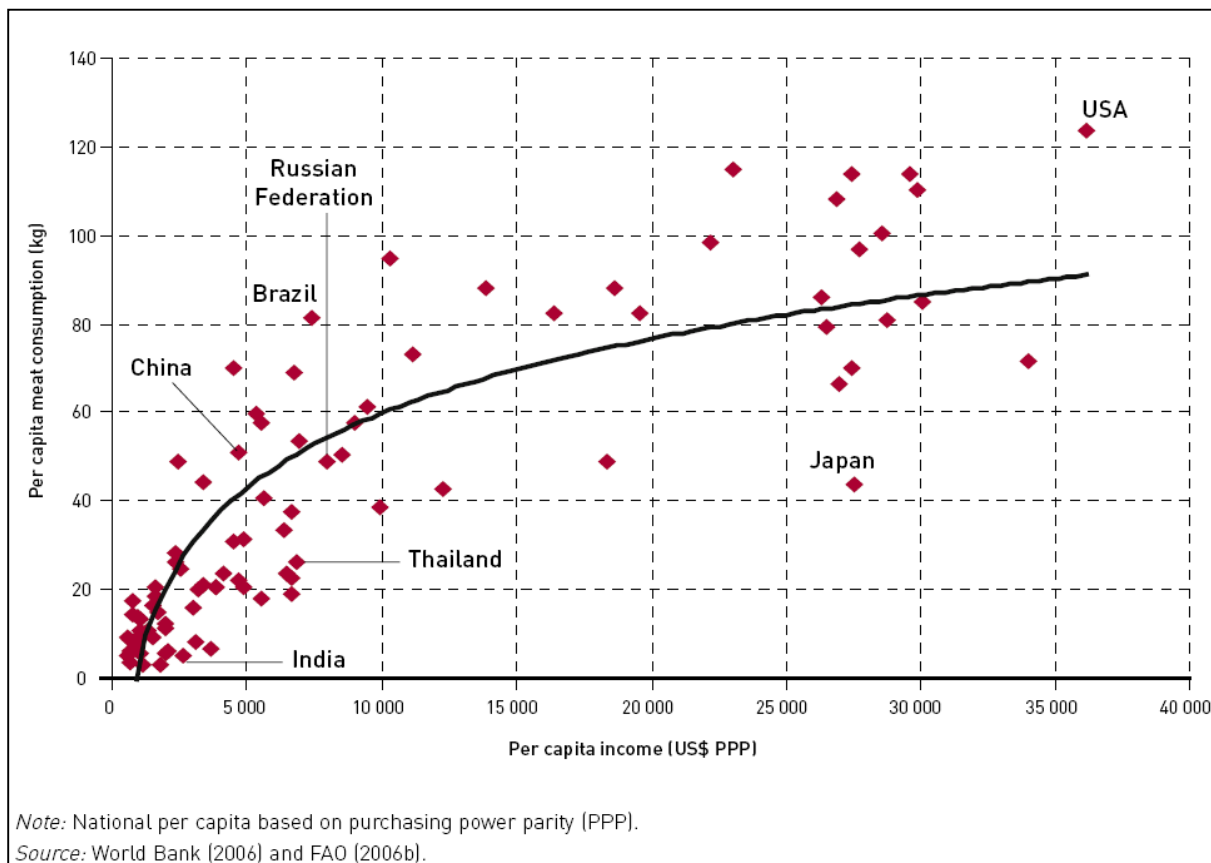
### 9.3 Trends in China: grain, oilseed and fibre supply and demand, presented by Joe Glauber (International Food Policy Research Institute)

The development of China’s population and GDP are two parameters that are expected to significantly influence the development of global food demand and the agricultural markets. The United Nation’s medium fertility scenario projects that China’s population will level off by 2025, and could even decrease after 2035. The recent unanticipated slowdown in China’s GDP is expected to have little impact on food demand, first because food expenditure is generally less sensitive to income changes than other expenditures, and second because China’s GDP growth is, nevertheless, still above 6 %. In terms of the share of world GDP, China is about to become the second largest economic power in the world and could even be the largest economic power by 2020.

GDP growth is usually associated with the growth of meat and dairy consumption (see Figure 31). Therefore, animal product consumption is very likely to surge over the projection period, although at a decelerating pace by the end of the period. This is likely to have a positive influence on global export markets of feed and meat. However, the question remains open as to whether China will opt to import feed grains and feed compounds for domestic livestock systems or whether it will opt to directly import more meat, poultry and dairy. Joe Glauber (IFPRI) is of the opinion that, in any case, feed grain imports are likely to increase along with the ongoing intensification of livestock systems. The import growth for oilseeds is expected to slow down, but it will still remain strong because self-sufficiency targets are not as strategic for feed products as they are for staple production (e.g. imports

of food grain account for only 2–3 % of consumption). This leaves room for a growing reliance on feed imports.

**Figure 31. Relationship between per capita meat consumption and per capita income in a selection of countries**



After metals, soybean imports from the USA, Brazil and Argentina are major imports of China. The market share of these three exporting countries could fluctuate in the future in relation to macroeconomic indicators (e.g. the devaluation of the Brazilian Real); however, the demand for soybean should remain high. In contrast, maize imports could suffer from GMO-related issues and could be displaced by other substitutes (e.g. sorghum and barley), as recently observed. The composition of the future mix of feed grains remains a domain of uncertainty in forecasts.

#### **9.4 Impact of a decrease of animal production in China, presented by Fabien Santini (JRC-IPTS)**

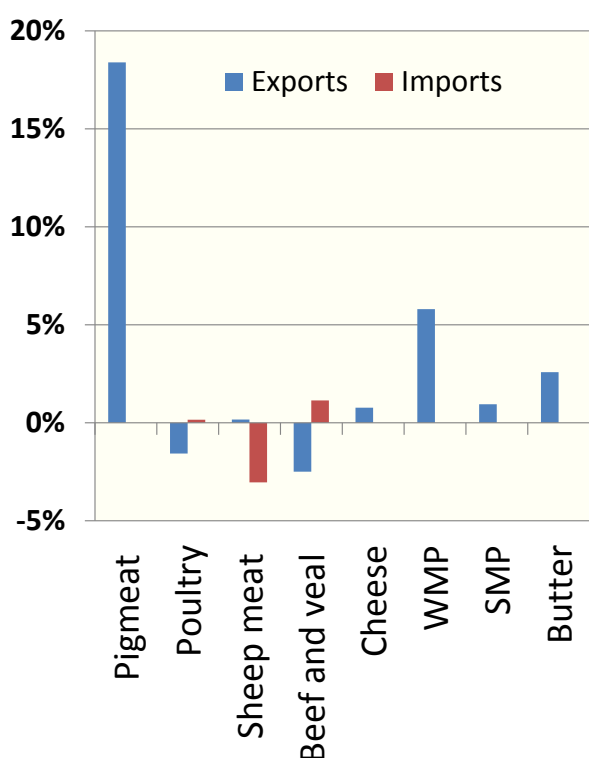
The deterministic scenario presented explores the potential impact of a decrease in animal production in China (and a consequent increase in imports), because of increasing constraints (e.g. environment-related or labour-related constraints), on world agricultural markets.

The scenario explores this option, applying an exogenous shock to the model corresponding to a 5 % reduction in meat and milk production in China by 2025. Supply and demand is further endogenously adjusted by the model in accordance with price levels.

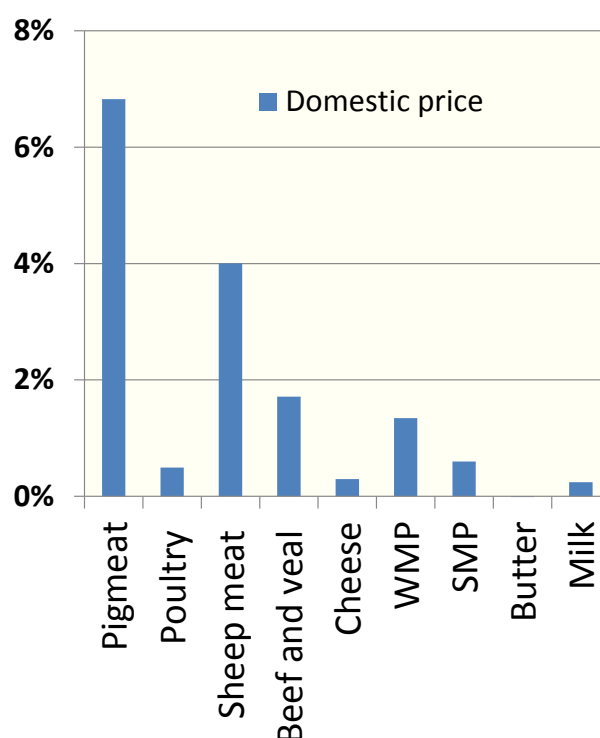
As a result, the shock applied would drive China’s domestic prices up, and would have impacts on Chinese meat and dairy consumption. Imports would compensate the shortfall in domestic production. Pig meat would be most affected and there would be a simultaneous drop in consumption and a sharp increase in imports (85 %).

The effect on world prices would be minimal, whereas it would be propitious for European exports and domestic prices of pig meat and WMP. The opposite situation would be observed for poultry and beef meat, for which the EU would import more according to this scenario, because of substitution effects between meats on the EU market and a lack of competitiveness (see Figure 32 and Figure 33).

**Figure 2. Impacts on EU trade compared with the baseline scenario**



**Figure 27. Impacts on EU domestic prices compared with the baseline scenario**



The reduction in Chinese livestock production would also translate into a lower Chinese demand for animal feed commodities. However, effects on the world prices of commodities used as feed are expected to be quite moderate (less than 0.7 % below the baseline prices). The world price of oilseeds would be the most affected (-0.6%), which would also impact on protein meal prices and feed costs in general.

## 9.5 Discussion about the influence of China on commodity markets

Participants discussed the common idea of **China’s dominating position for food imports**. Soybean imports on the world market will certainly remain significant, but China’s position on other agricultural commodity markets is expected to be less dominant. The soybean market is peculiar: China was a net exporter before 2007–2008, but became a net importer, from the USA, Brazil and Argentina, after this time because of the joint

development of feed and biofuel uses. Maize can also be used for both feed and biofuel, but China's importance in the global maize market is much lower than for soybean. China has been substituting maize imports with sorghum, barley and other commodities in the last two years while building up stocks, because of the price difference between the Chinese domestic price of maize and the world price imposed by policy measures. This is confirmed by the relatively modest impacts on world markets expected by the alternative scenario presented, although no other country in the world could have such an impact on agricultural world markets.

Participants also debated the **role of farming in Chinese society and the Chinese economy**. The younger generation of farmers suffers from a lack of knowledge transfer from former generations that were used to managed agricultural systems according to a strict distribution of tasks and without a comprehensive understanding of the whole farming system. The same loss of knowledge transfer potential occurred in Russia during the post-socialist transition, and both countries are currently looking for capacity building from European farmers. Young Chinese people are, in general, not attracted by agricultural occupations. In a context of low agricultural prices, participants fear that the lack of attractiveness of agricultural activities could be a further disincentive for next generations. However, this argument is counter-balanced by the ongoing restructuring of the agricultural sector. The number of agricultural workers has already significantly decreased since China's accession to the WTO. Affecting millions of people, restructuring will be a long process, but will have large effects. There is still big potential for productivity gains, and the Chinese government supports capacity building and technology adoption. If the objective is to catch-up with EU or US technologies over the next 10 or even 20 years, Chinese agriculture will change dramatically. Several participants stressed the lack of power among farmers and agricultural cooperatives relative to other sectors. Farmers are systematically badly represented or are not represented at all in agriculture-related delegations. On farms, communications with external advisors and private companies are operated by managers with no consultation of the farmers.

The last point of the debate was on **China's relationship with Africa**. Marina Guajardo observed that African partners seem to welcome the training programmes offered by China and, more generally, they welcome China's presence in Africa. In her opinion, China's main goal in Africa is not to allow the importation of food products, but to strengthen its position as a global player



## **Annex 1. Workshop Presentations**

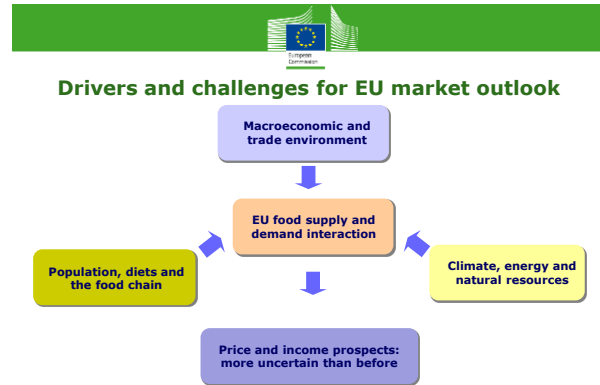
On (what else?) uncertainties

Tassos Haniotis (DG AGRI)

**On (what else?) uncertainties**

Workshop on the medium-term outlook  
Brussels, 21-22 October 2015

Tassos Haniotis  
Director  
Economic analysis, perspectives and evaluations; communication  
DG Agriculture and Rural Development  
European Commission



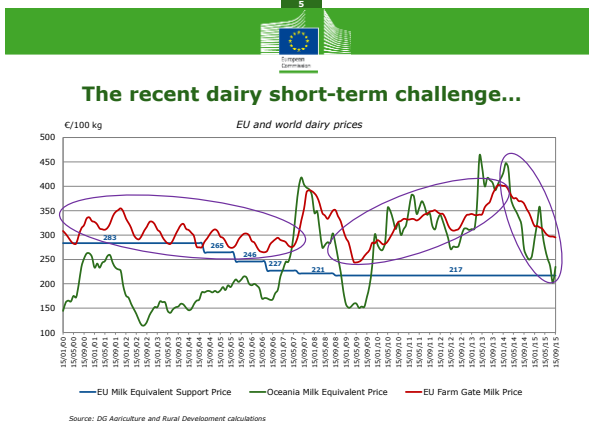
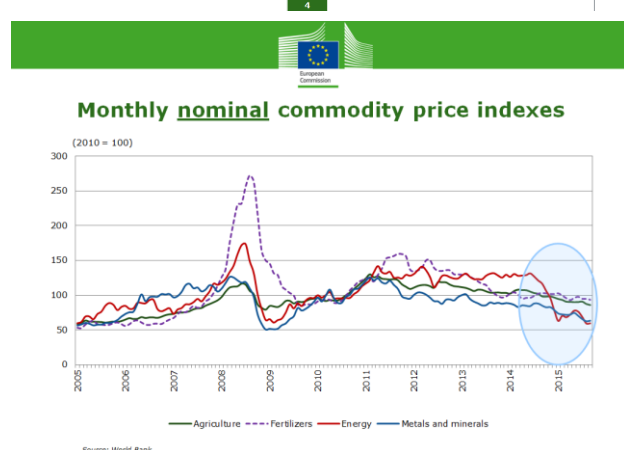
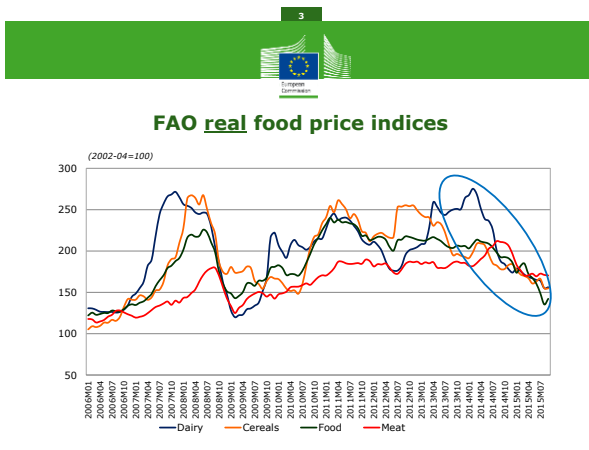
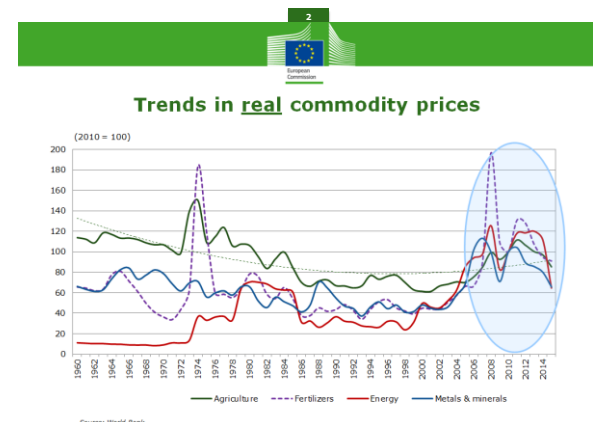
The uncertain "price context" - risk and concerns

Three parallel developments in agricultural prices

Price volatility (real or perceived) draws more attention...

...the future price level draws more questions...

...yet price co-movement may generate more impact on agricultural prices



Introduction

Giampiero Genovese (JRC-IPTS)



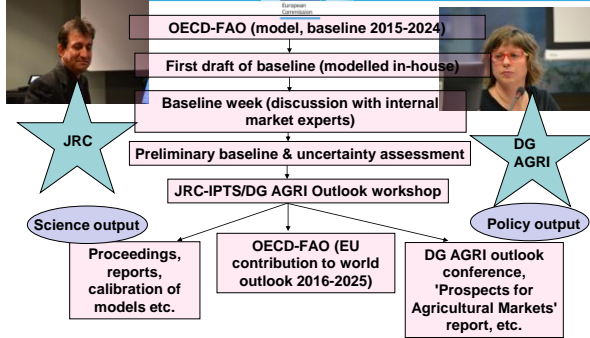
Prospects for Agricultural Markets and Income in the EU 2014-2024

Introduction

Workshop on 'Commodity Market Development in Europe – Outlook' Brussels, 22 and 23 October 2015

Giampiero Genovese (JRC)

European Commission  
DG Agriculture and Rural Development & Joint Research Centre



Agro-Economic Modelling Platform (iMAP)

hosted 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 (EU module of OECD-FAO model) in conjunction with
- CAPRI (highly disaggregated in regions and products)
- AGMEMOD (EU Member States)
- MAGNET or GLOBE (multi-regional, multi-sector CGE model)
- IFM-CAP (Farm model, based on FADN farms)



Rationale

- Baseline** macroeconomic environment, normal weather conditions, no safety /animal disease disruptions - only one solution
- Alternative deterministic scenarios** alternative macroeconomic environment and/or yield pattern - only one solution  
3 examples this year:
  - Depreciated Euro (with IHS-Global insight to capture induced macroeconomic impacts) for the Macroeconomic session
  - lower production of animal products in China (for the session on China)
  - sensitivity analysis on isoglucose (Sugar session)
- Partial Stochastic Analysis** alternative macroeconomic environment and yield pattern - many (1000) solutions - subset lower oil price (for the arable crops session)



Outlook Process

DG AGRI and JRC core outlook teams cooperate along the process

- setting the models, preparing the data
- preparing the baseline projections at EU level (and progressively more disaggregated level)
- running uncertainty analysis (deterministic scenarios, stochastic subsets)



**Workshop on "Medium-term outlook for the EU agricultural commodity markets" 22 & 23 OCTOBER 2015**  
Annually organised by JRC and DG AGRI 16-17 October 2015  
Strong representation of AGRI officials, JRC scientists, food industry and other stakeholders



**"EU AGRICULTURAL OUTLOOK CONFERENCE" Brussels, 1 and 2 December 2015**  
Second year - Presence of Commissioners, US secretary for Agriculture, journalists ...



Large efforts to disaggregate projection below EU-15 / EU-13 levels

CAPRI (highly disaggregated in regions and products) for the Dairy products session, including agri-environmental indicators (with the cooperation of JRC-IES)

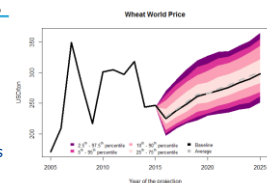


AGMEMOD (EU Member States) for the Meat products session (pigmeat)



Partial Stochastic Analysis

- Two types of analysis:
  - Uncertainty in general represented by the variation / interdecile range between (in general) 10th and 90th percentiles expressed in % of the baseline value
    - In price graphs
  - Subsets: isolation of solutions of the model where one or several variables are contained within determined boundaries



## Macroeconomic and Policy Assumptions

Pierluigi Londero (DG AGRI)



### Trade assumptions

- Russian import ban:
  - until end 2016 (inc. pork sanitary ban),
  - in 2017, partial recovery
  - longer term development, depends on change in domestic production
- Only ratified FTAs in: Ukraine (not Canada)
- No effects of Bali package

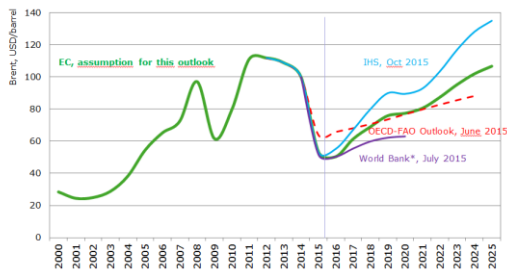
### Trade assumptions

- Russian import ban:
  - until end 2016 (inc. pork sanitary ban),
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  - longer term development, depends on change in domestic production
- Only ratified FTAs in: Ukraine (not Canada)
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### CAP assumptions

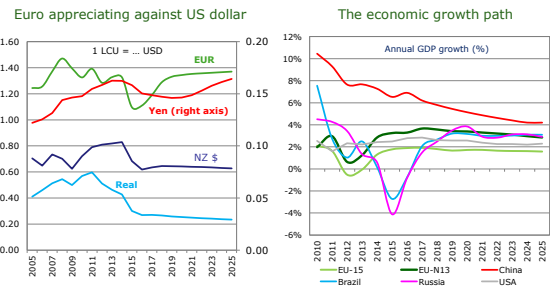
- Voluntary coupled support (VCS) envelopes
- Greening:
  - Crop diversification: no change in area allocation at EU aggregated level
  - Permanent grassland share in arable land decreases less than without greening measures:
    - From 33% in 2015 to 32.5% in 2025
  - EFA: 7% of arable crop area in 2025 mainly thanks to:
    - Catch crops
    - An increase in protein crops and soybeans area (also in link to VCS)
    - Despite slightly less fallow land (6.2% in 2025 vs 6.9% in 2015)

### Oil price assumption: a huge uncertainty



\* Derived from the average Oil price forecast.

### Macroeconomic assumptions



## The impact of a Devaluation of the Euro

Ignacio Perez Dominguez (JRC-IPTS)

**Prospects for Agricultural Markets and Income in the EU 2015-2025**

**Impact of a devaluation of the Euro**  
Preliminary baseline

Ignacio Pérez Domínguez, Fabien Santini, Sergio René Araujo Enciso (JRC-IPTS)

Workshop on 'Commodity Market Development in Europe – Outlook' Brussels, 22 October 2015

European Commission  
DG Agriculture and Rural Development & Joint Research Centre

### Introduction

- An Outlook contains a fair amount of assumptions that need to be challenged from time to time
- Here we try to depict a situation where an uncertain macroeconomic environment affects agricultural markets
- This type of scenario analysis is out of the "comfort zone" of agricultural market models, since macroeconomic relationships are not typically well depicted
- In order to solve this issue we work with IHS

### Scenario: shock on EU exchange rate

- Our preliminary baseline assumes a reappreciation of the Euro from 1.09 in 2015 to 1.37 \$/€ in 2025 (baseline = green line)
- We depict a situation where the Euro would remain at current levels over the medium-term instead of reappreciating (scenario = blue line)
- Through our collaboration with IHS we include endogenous macro effects in our agroeconomic model (soft model linkage)

### Scenario: coverage of indirect effect on energy markets

- We use the Brent oil price as our reference price for energy prices
- Since both the Aglink and IHS models have energy prices as exogenous, we assume a -5% shock on crude oil prices in both scenarios
- This is motivated through the cheaper energy costs in Euro and slightly lower global agricultural prices through some trade creation

### Scenario: endogenous macro adjustments (from the IHS Model)

- The lower exchange rate is transferred into higher competitiveness in Europe and, consequently, some inflationary adjustment is observed
- Changes in GDP growth are positive in the first 5 years and then almost negligible (adjustment process)

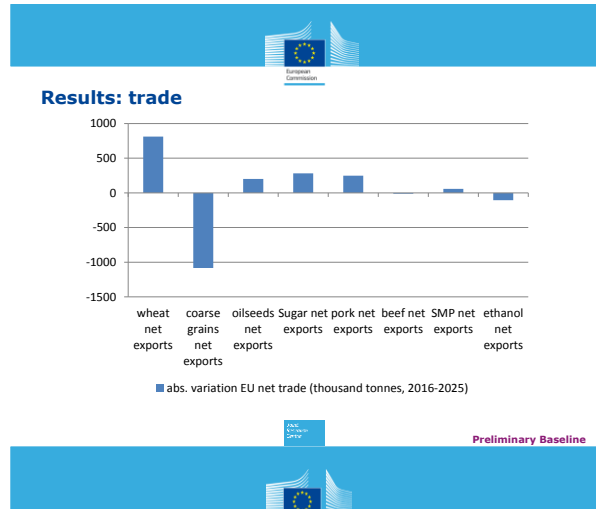
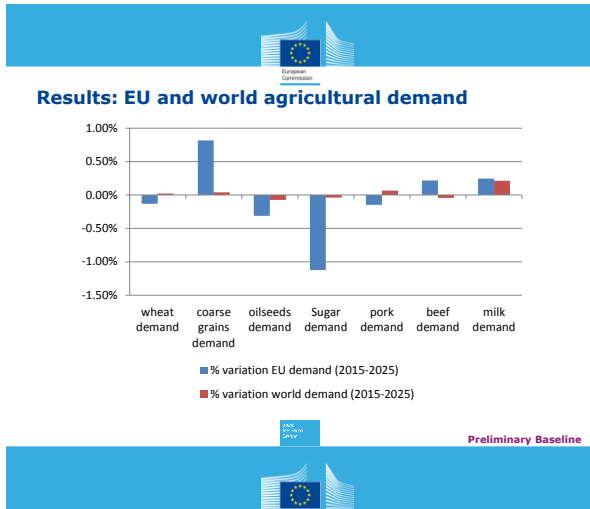
	2025
EU exchange rate	-14.6%
E15 consumer price index	1.1%
E15 inflation	1.1%
E15 GDP	0.6%
EU-N13 consumer price index	2.4%
EU-N13 inflation	2.4%
EU-N13 GDP	0.1%

*Note: changes in all other regions are below +1% (prices decreasing and GDP increasing)*

### Results: scenario differences with and without endogenous macro effects (example of EU cheese exports)

### Results: EU and world agricultural prices

### Results: EU and world agricultural supply



- Conclusions**
- A devaluation of the Euro versus the baseline has some consequences for EU ag. Markets but little on the global picture
  - No relevant differences are observed when including endogenous macroeconomic effects through the IHS model → this is in line with other studies
  - Different would be to perform a large macroeconomic shock on a country with a large market share (e.g. effects on soya exports from a devaluation of the Brazilian real)
  - As expected, the higher competitiveness triggers an increase in exports from the EU, especially wheat, pork and sugar (but minor)
  - Effects on production/land use in Europe are negligible

**Thank you for your attention**

Joint Research Centre  
Serving society  
Stimulating innovation  
Supporting legislation

## Outlook for the World Economy and Key Risks

Elisabeth Waelbroeck-Rocha (Global Insight)

### IHS ECONOMICS

#### Outlook for the world economy, and key risks

Workshop on the medium term outlook for agricultural markets  
Brussels, October 22, 2015

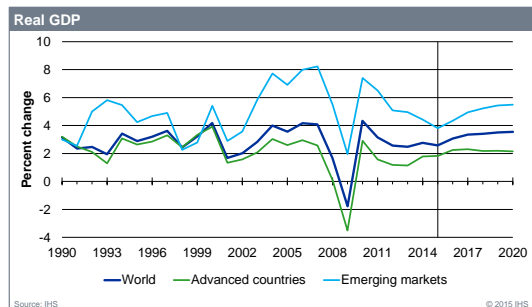
Elisabeth Waelbroeck-Rocha, Chief International Economy  
[Elisabeth.WaelbroeckRocha@ihs.com](mailto:Elisabeth.WaelbroeckRocha@ihs.com)

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Global Outlook/ September 2015

#### World real GDP growth is expected to hover around 3% in the coming years



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3

#### World growth is expected to hover around 3% in the coming years

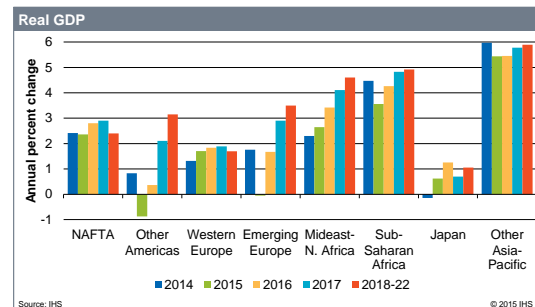
- World real GDP growth will pick up from 2.6% in 2015 to 3.0% in 2016.
- The plunge in materials prices is restraining growth in the commodity-exporting countries of the Americas, Africa, and Asia-Pacific.
- Growth in the Eurozone and Japan will improve slightly, aided by monetary stimulus, currency depreciation, and pent-up demand.
- China's economic growth is slowed by imbalances in credit, equity, housing, and industrial markets.
- Prospects for emerging markets depend on structural reforms that raise productivity and allocate capital more efficiently.



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2

#### Despite China's slowdown, the Asia-Pacific region (excl. Japan) will continue to lead real GDP growth rates



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**A number of factors support growth in the coming years**

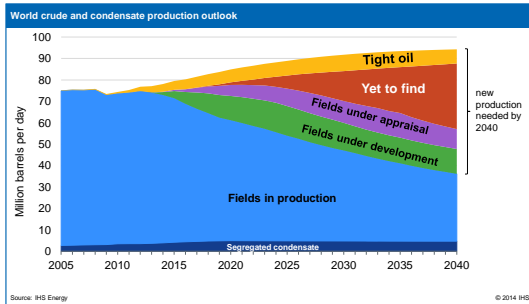
- Pent-up demand in the advanced economies
- US (and China) housing demand
- Consumer demand in Europe
- Accommodating monetary policy everywhere possible
- A more neutral fiscal policy stance
- Shifting trade patterns
- The impact on reforms in several (advanced) economies
- Low energy & commodity prices

**Oversupply has pushed oil prices lower**

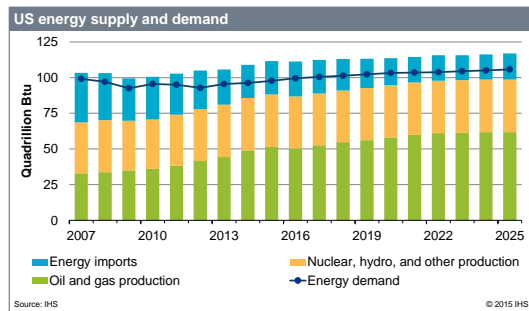
- Several forces have put (more) downward pressure on oil prices:
  - Excess supply
  - High inventories
  - China's economic slowdown
  - Anticipation of an increase in Iranian exports when sanctions are lifted.
- Low oil prices will not change OPEC's policy of unconstrained oil output; Saudi Arabia is unlikely to cut production.
- Any rebalancing in the short term will come from US shale oil.
- Lower production costs and increased productivity continue to push break-even prices lower, limiting upside price risks next year.

**Why would oil prices rise again?**

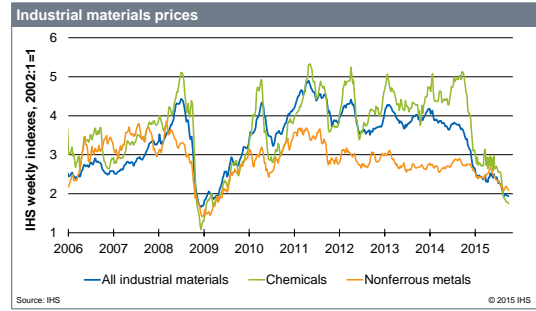
Most oil consumed in 2040 has yet to be developed or even discovered  
 Exploration and production costs for new fields are higher



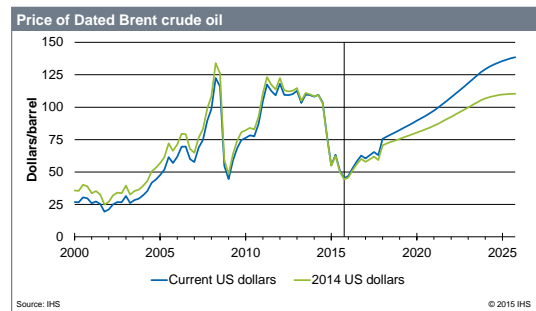
**Imports will supply only 17% of US energy requirements by 2025, down from 24% in 2015**



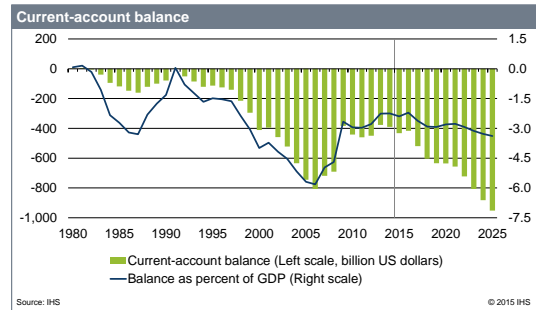
**Industrial materials prices are at six-year lows**



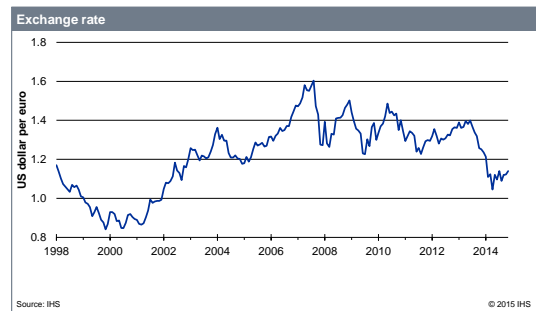
**Crude oil prices should gradually recover, but slower than in previous cycles**



**The US current account deficit will not vanish**



**Hence, after the Euro's sharp fall against the dollar in Q1-2105, ...**







# Oil Market Overview and Price Outlook

Stephen George (KBC Advanced Technologies)



## Key Global Market Developments

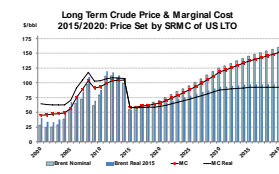
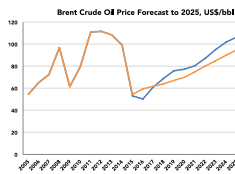
- "Lower for Longer" – crude oil prices likely to persist in \$50-65/bbl Brent range through 2017
  - Crude market oversupplied by 2 million bpd (around 1-1/2 years demand growth)
  - Part of this oversupply caused by OPEC pumping well above its target level
  - Upside price risk from ME geopolitics (Iraq, Iran, Saudi Arabia, Yemen)
  - Downside limited – overproduction could sink price, but current price at Brent ca. \$50 sufficient to dampen non-OPEC output (WTI \$45-48)
  - Longer-term a need for higher prices to spur production – not just for demand growth but also for depletion replacement
  - Producers will adjust to a lower price / lower cost world, with \$2020 real level around \$70 sustaining a market in balance
- Non-OPEC production growth slows or reverses in 2015Q4
  - OPEC output in September reported at 31.6 million bpd; call on OPEC 29.6 million bpd
  - Russian output strong; September a post-Communist record at 10.7 million bpd
  - US production 9.6 million (April peak) now around 9.2 million and falling

## Key Global Market Developments

- Demand and Refining Capacity Both Growing
  - Chinese economy slowing; India expected to grow but with some delay
  - Cheap oil driving demand, especially for gasoline (2:1 diesel)
  - Strong gasoline demand underpinning margins, especially reformate
  - Refining revenues cross-subsidising upstream for NOCs and IOCs
  - Capacity adds greater than refined product demand to 2018
  - Distillates surplus East of Suez, impacting West of Suez
  - A structural risk to refiners, especially in Europe
- A massive wave of US light hydrocarbon exports to come in 2016 & 2017
  - Export of ethane to Europe starts 2015Q4 and expands in 2016; later to Reliance in India
  - LPG exports to rise massively in 2016 and 2017; market pricing to clear in Singapore
  - Naphtha and stabilised condensate exports also rising
- COP21 will change the rules of the game
  - Carbon taxation expected in major markets
  - Current INDCs are not sufficient to meet 2°C target – more will be needed

## Brent Price Outlook

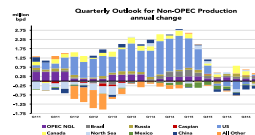
• KBC crude price outlook: 2016 \$59.50 2017 \$62.00 2020 \$70.00 2025 \$95.00



- Prices low to 2020 on supply glut, but longer term signal for higher production will spur a steeper price trajectory after 2020 and slightly steeper still after 2025 as easy LTO matures

## Non-OPEC Supply

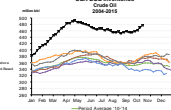
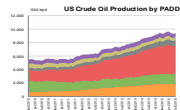
- OPEC effort to retain market share seems to be working as lower prices have dampened growth in non-OPEC supplies
- Net output from non-OPEC drops below zero year-on-year (in the aggregate it roughly holds level)
- North Sea – UK slowing down while Norway advancing major Johan Sverdrup project
- Canada – significantly slowing new projects, while expected to sustain existing / nearly complete activity
- Brazil – has recently cut around 500,000 bpd from 2025 outlook
- Mexico – likely flat to falling in near term
- Russia – likely to plateau and deli
- CIS – Kashagan in 2017(?)



A key point: We need more oil than just that required to meet demand growth – we also need to replace production decline that may run around 4-6 percent per annum. The combined effect needs "A new Saudi Arabia by 2020" and right now the price signals in the market are not sufficient to justify new E&P spending

## US Crude Oil Production

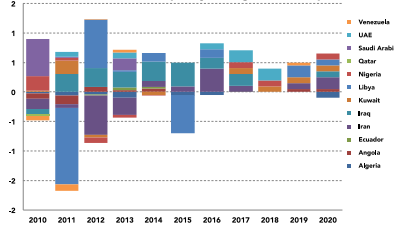
- US LTO production has plateaued and is falling back down; US crude oil output dropping – probably under 9 million bpd by 2016Q1
  - Decline in production will ease pressure on calls to lift export ban
  - Producers are expected largely to survive, though there will be some M&A activity and some independents may go to the wall
- Latest EIA drilling productivity figures show production falling further in spite of per-well efficiency gains – legacy and new production is falling off
- Despite slide in output, US commercial stocks report this week +8 million bbls at 477 mbbls



## OPEC Outlook

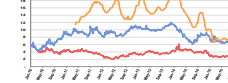
- OPEC objective to maintain market share as oil demand rises by 1.2 – 1.5 million bpd
- Low oil price will slow rate of OPEC growth as well as non-OPEC (Iraq, Iran, LatAM, WAF)
- After LTO in US and elsewhere, OPEC still holds the key to long-term supply
- OPEC capacity does not necessarily equate with OPEC supply; a changing definition of "swing producer"

OPEC Annual Capacity Change (million bpd)

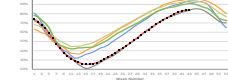


## European Gas: Supply Overhang Amid Weak Demand

Key Global Gas Markets



European Gas Storage Inventories



- EU gas demand down 11.5% in 2014 (417.5 bcm) – now 22% lower than 2010 peak of 534.5bcm
- Gas losing the battle against coal in power generation (UK carbon price floor a step to reverse this)
- Russian supply remains marginal in Europe during the winter if temperatures are seasonal or lower – importantly lower oil prices have dragged long-term contract prices down
- Europe remains the sink for the global LNG market due significant import capacity/liquid markets, oversupply in Asia has caused spot LNG prices to converge with Europe
- New wave of LNG supply hits the market over the next 3-4 years - 50 mtpa in the next 6 months predominately from Australia and the US
- Supply outpacing will put pressure on oil-linkage / limit European re-export opportunities to Asia
- Returning nuclear capacity in Japan will dampen Asian demand growth, concerns on China growth
- Short term risk of higher prices if winter is cold – Dutch supply from Groningen is restricted, and Ukrainian storage levels are low
- Right now, forward curve is very flat in \$6.50 - \$7.00 range through 2016 and beyond – no market perceptions of shortages

## The Fertilizer market

Christian Pallière (Fertilizers Europe)

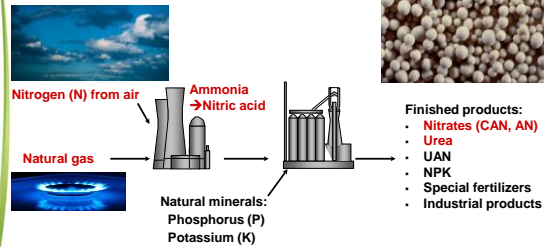
**Medium-term Outlook**  
*JRC-IPTS and DG Agri*

**The Fertilizer market**

Christian Pallière  
22<sup>nd</sup> October 2015

**fertilizers europe**

**Medium-term Outlook – Fertilizer market** **fertilizers europe**  
JRC-IPTS and DG Agri – 22<sup>nd</sup> October 2015  
*The Basis for Mineral Fertilizer: Ammonia and Natural Minerals*



**Medium-term Outlook – Fertilizer market** **fertilizers europe**  
JRC-IPTS and DG Agri – 22<sup>nd</sup> October 2015  
*Gas cost as the top production cost for nitrogen fertilizers*

Gas Price (\$/mmBtu) SEPTEMBER 2015	6.49
<b>Gas Price as % of Total Cash Cost of Production of:</b>	
AMMONIA	82%
NITRIC ACID	72%
AN	61%
UREA	59%

*Based on Fertilizers Europe Production Cost Survey*

**Medium-term Outlook – Fertilizer market** **fertilizers europe**  
JRC-IPTS and DG Agri – 22<sup>nd</sup> October 2015  
*Fertilizers and Energy links*

➤ Fertilizers, energy (gas) and commodities are all governed by supply demand dynamics, at global level (“price takers” in EU)

➤ Gas and fertilizers have a trend and tendency to correlate over the long term, not short term

**Medium-term Outlook – Fertilizer market** **fertilizers europe**  
JRC-IPTS and DG Agri – 22<sup>nd</sup> October 2015

### Fertilizers Europe Forecast,

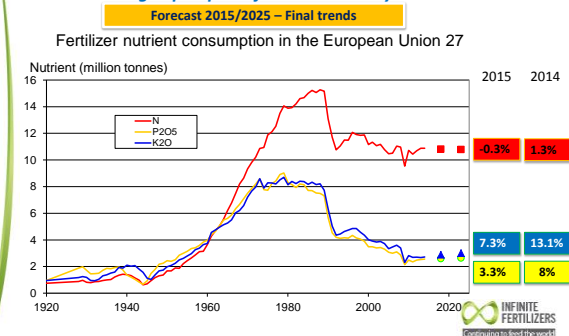
#### A crop based / expert based approach,

Objectives, principles and main steps  
of the Fertilizers Europe methodology

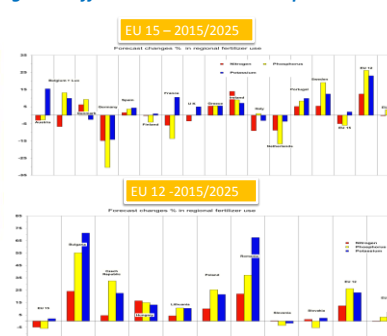
**Medium-term Outlook – Fertilizer market** **fertilizers europe**  
JRC-IPTS and DG Agri – 22<sup>nd</sup> October 2015  
*Fertilizers Europe Forecast: Objectives & principles*

- **Long term consumption forecast :**  
Parallel and convergent with sales forecast:  
« Full convergence » by campaign n-2/n-3.
- **An expert based approach**
- **A « bottom-up » procedure, step by step :**
  - Per country.
  - Crop acreage forecast, considering :
    - Global and European Agro-economic trends.
    - Agricultural policies.
  - Application rate forecast, considering :
    - Evolution of technologies and agricultural practices.
    - Environmental policies.
- **Short term to long term forecast :**
  - 5 Campaigns : n-2/n-1, n-1/n, n/n+1, n+4/n+5, n+9/n+10
- **Based on « scenarios for the future » :**
  - General agro-economic trends, global and European.
  - National projections.

**Medium-term Outlook – Fertilizer market** **fertilizers europe**  
JRC-IPTS and DG Agri – 22<sup>nd</sup> October 2015  
*Pessimistic nitrogen prospects for the next ten years*



**Medium-term Outlook – Fertilizer market** **fertilizers europe**  
JRC-IPTS and DG Agri – 22<sup>nd</sup> October 2015  
*Regional differences in N-P-K consumption*



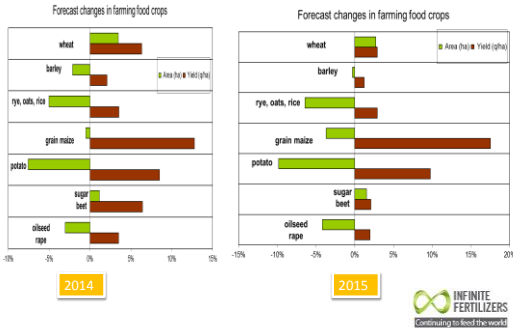
**FORECAST 2015**  
Significant decreases in nitrogen consumption are foreseen in the Netherlands, Germany, France, Italy and Ireland, etc.

Overall increases in EU 12 in expectation of more CAP funds.

Medium-term Outlook – Fertilizer market  
JRC-IPTS and DG Agri – 22<sup>nd</sup> October 2015



Evolution of the crop pattern



Thank you!

Christian.palliere@fertilizerseurope.com



www.fertilizerseurope.com

- www.facebook.com/fertilizerseuropeage
- www.twitter.com/FertilizersEuro
- http://www.youtube.com/user/FertilizersEurope
- Group Fertilizers Europe

Commodity Market Outlook 2015Q4

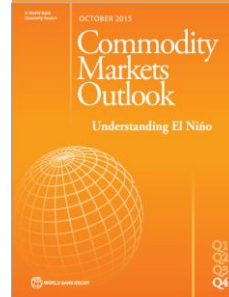
John Baffes (World Bank)

Commodity Markets Outlook  
2015Q4: October 20, 2015

JOHN BAFFES  
WORLD BANK

Workshop on the medium-term outlook for the  
EU agricultural commodity markets  
JRC-IPTS and DG AGRI, European Commission  
Brussels  
October 22-23, 2015

Developments in global commodity markets



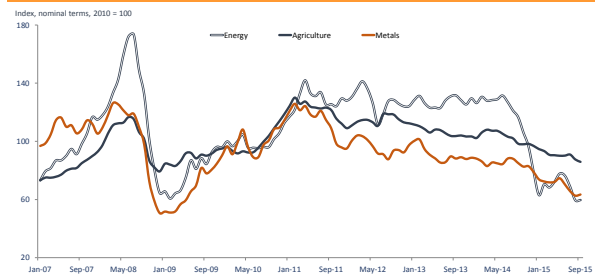
- Across-the-board weakening in commodity prices.
- Across-the-board downward adjustments to price forecasts.
- Anemic price recovery in 2016.
- Well-supplied markets, weak demand, and strong US\$.
- *El Niño*: Despite the likelihood of being the strongest on record, no impact on global markets, so far.
- *Iran Nuclear Deal*: Moderate impact in the short run, already priced in—perhaps a game changer in the long term.

Nominal price indices, actual and forecasts (2010 = 100)

	Price Indices (2010=100)						Change (%)		Revision <sup>1</sup>	
	2011	2012	2013	2014	2015F <sup>2</sup>	2016F <sup>3</sup>	2014-15	2015-16	2015F	2016F
Energy	129	128	127	118	67	66	-43.3	-1.7	-5.4	-11.0
Non-Energy <sup>3</sup>	120	110	102	97	83	84	-14.4	1.2	-2.2	-2.5
Metals	113	96	91	85	68	69	-19.2	1.1	-2.2	-3.7
Agriculture	122	114	106	103	89	91	-13.0	1.3	-2.3	-2.0
Food	123	124	116	107	91	92	-15.2	1.5	-3.2	-2.9
Cereals	138	141	128	104	89	91	-14.5	2.0	-5.3	-4.9
Oils and meals	121	126	116	109	86	88	-21.5	2.3	-3.7	-3.5
Other food	111	107	104	108	100	100	-7.5	0.2	-0.5	-0.5
Beverages	116	93	83	102	93	92	-8.7	-0.8	-0.5	-0.2
Raw Materials	122	101	95	92	84	85	-9.0	2.0	-0.9	-1.0
Fertilizers	143	138	114	100	95	95	-5.0	-0.5	0.0	0.0
Precious Metals <sup>3</sup>	136	138	115	101	92	91	-9.2	-1.1	0.2	0.1
<b>Memorandum items</b>										
Crude oil (\$/bbl)	104	105	104	96	52	51	-45.5	-2.1	-5.0	-9.8
Gold (\$/oz)	1,569	1,670	1,411	1,266	1,175	1,156	-7.2	-1.6	0.0	0.2

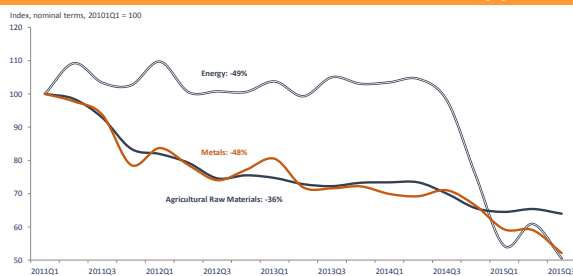
Source: World Bank.  
Notes: (1) "F" denotes forecast. (2) "Revision" denotes change to the forecast from the July report in percentage points. (3) The Non-Energy price index excludes precious metals. See Appendix C for definitions of prices and indices.

Weak prices, including energy (driven by oil)



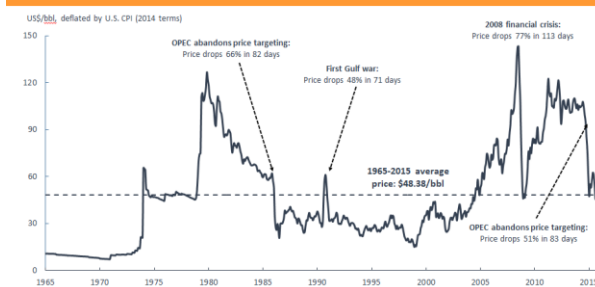
Source: World Bank  
Note: Last observation is August 2015

Similar declines of most industrial commodity prices



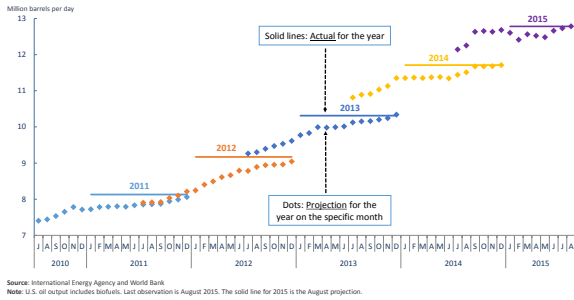
Source: World Bank  
Note: Last observation is August 2015. 2015Q1 is the average of Jul-Aug. Instead of Jul-Sep.

The 2014/15 oil price decline was the third largest in recent history

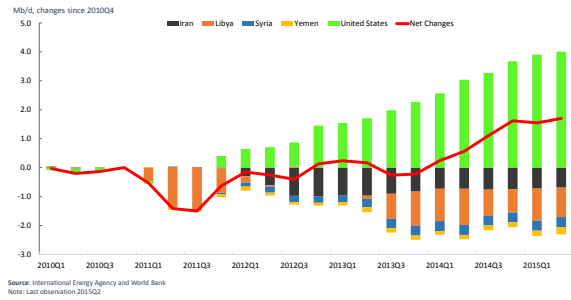


Source: World Bank  
Note: Last observation is August 2015

## U.S. Oil Production: Projected versus Actual



## Crude oil growth in the U.S. and disruption elsewhere

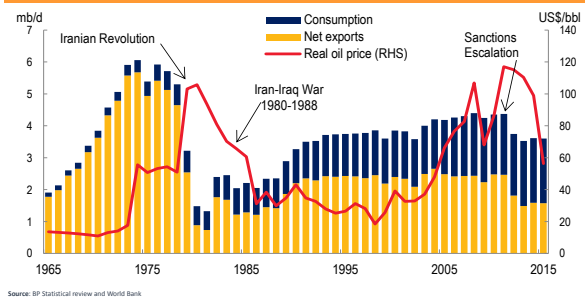


## Iran Nuclear Agreement

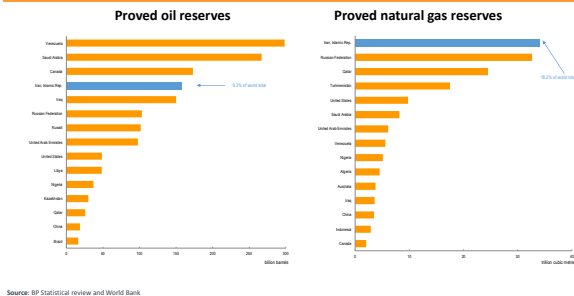
An international agreement on Iran's nuclear program was reached in July 2015 and is expected to be implemented in the first half of 2016. Sanctions will be suspended at that time and terminated in 2023.

- **Immediately:** Iran could immediately start exporting from its 40 million barrels of floating storage of oil, of which more than half is condensate.
- **Short term:** Within a few months of sanctions being lifted, Iran could increase crude oil production by 0.5-0.7 mb/d, potentially reaching a 2011 pre-sanctions level of 3.6 mb/d.
- **Medium term:** It could reach pre-revolution and Iran-Iraq war levels (~6 mb/d), only if it attracts foreign investment and technology.
- **Long term:** Iran has the world's fourth largest proved oil reserves (9.3% of world total) and the largest proved natural gas reserves (18.2% of world total).

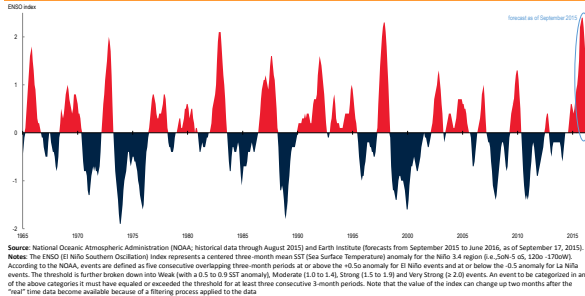
## Iran: Oil production



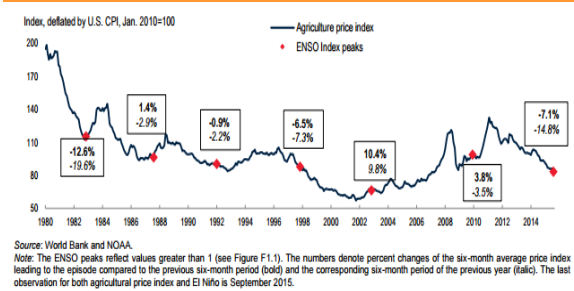
## Proved oil and natural gas reserves



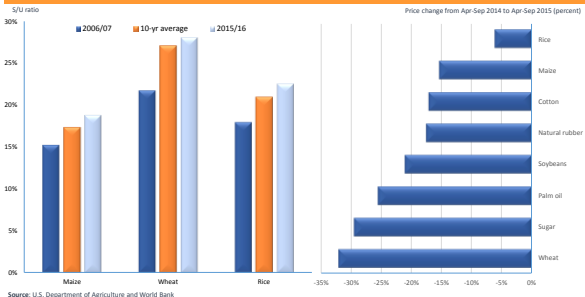
## El Niño

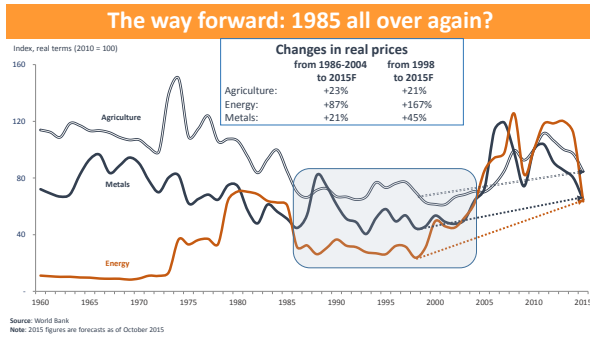


## Agricultural commodity prices and El Niño episodes



## Despite El Niño prices declined





## Thank you!

- The recent issue of the World Bank's *Commodity Markets Outlook* was published on October 20, 2015.
- The next issue will be published on January 20, 2016.
- Prices are updated on the third business day of the month.

[www.worldbank.org/commodities](http://www.worldbank.org/commodities)

## Medium-Term Prospects for the EU Biofuel Market

Koen Dillen (DG AGRI)

**Biofuels**  
Outlook WS  
22 October 2015  
PRELIMINARY BASELINE

Koen Dillen,  
Sergio Rene Araujo Enciso, Ignacio Perez Dominguez  
DG Agriculture and Rural Development  
European Commission

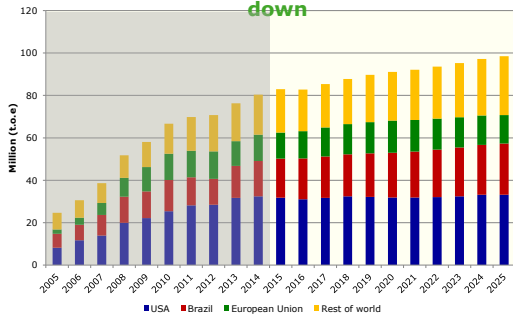


### Highlights

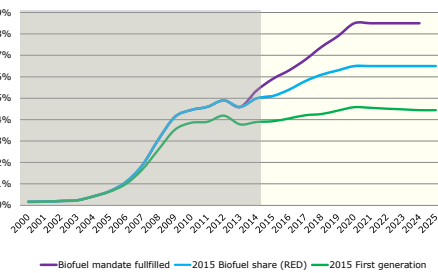
- The use of EU feedstock for biofuel production is rather stable, only maize use increases slightly
- Biodiesel production from non-agricultural sources increases in importance
- Further policy changes towards GHG reduction targets creates uncertainty in the EU biofuel markets and prospects



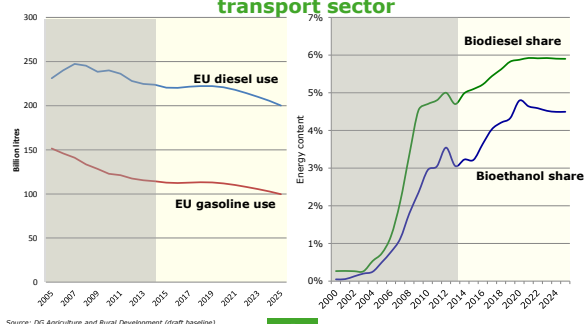
### Growth in world biofuel consumption slowing down



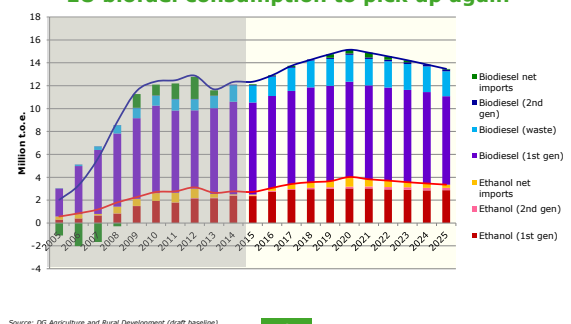
### EU biofuel consumption is mandate driven



### Biofuel consumption depends on energy use in transport sector

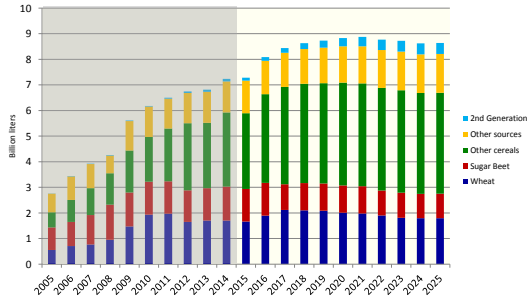


### EU biofuel consumption to pick up again





Maize use for ethanol only source of growth

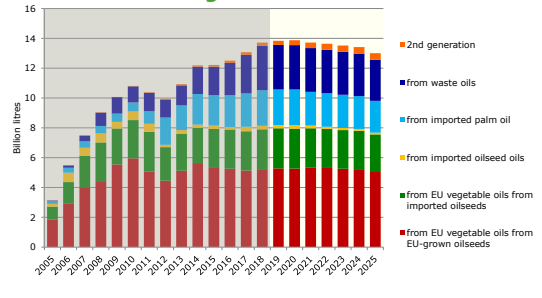


Source: DG Agriculture and Rural Development (draft baseline)

7



Increase in biodiesel production mainly from non-agricultural feedstock

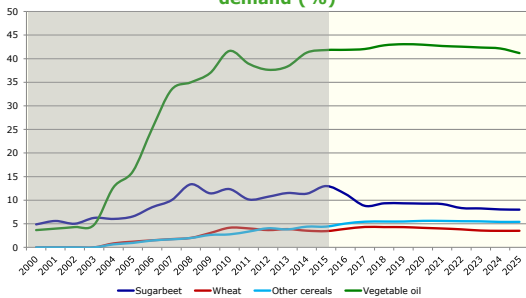


Source: DG Agriculture and Rural Development (draft baseline)

8



Share of biofuel feedstock demand in overall EU demand (%)



Source: DG Agriculture and Rural Development (draft baseline)

9



Highlights

- The use of EU feedstock for biofuel production is rather stable, only maize use increases slightly
- Biodiesel production from non-agricultural sources increases in importance
- Further policy changes towards GHG reduction targets creates uncertainty in the EU biofuel markets and prospects

10

Feedback on the Medium-Term Prospects for the EU Biofuel Market, With a Focus on Ethanol, Plinio Nastari, DATAGRO)



Workshop on the Medium-term Outlook for EU Agricultural Commodity Markets Biofuels – Session 3

Plinio Nastari  
DATAGRO

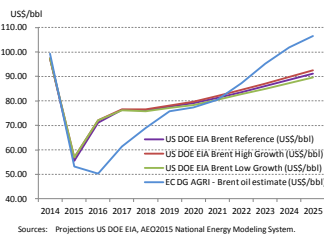
Organized by JRC-IPTS & DG AGRI

Brussels, 22-23 October 2015



Assumption on the price of Brent

- While it is difficult to judge, projection for the price of Brent oil considered in Baseline assumptions seem to be more realistic than the 3 scenarios considered by US DOE EIA AEO 2015 in the SR. In the longer run, we shall recall March 86.
- While oil prices affect gasoline & diesel prices and biofuels competitiveness, biofuels play an important role in complementing income from food agriculture systems and help their long-term sustainability.

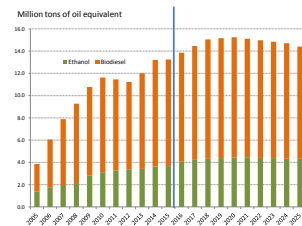


Sources: Projections US DOE EIA, AEO2015 National Energy Modeling System. DG AGRI Baseline assumptions on key macroeconomic variable: 2005-2025.

3

Projected Biofuels Production

- While some growth is projected for biodiesel production (from 9.6 to 10.8 mln toe in 2019 and 10.1 mln toe in 2025), for ethanol it falls well below existing potential in the EC, in particular from sugar beet and corn (from 3.7 to 4.5 mln toe in 2021, and 4.3 mln toe in 2025).
- Very little is considered as net trade (imports & exports), therefore consumption is very close to production.
- Projection did not consider biogas / biomethane from ag residues and energy agriculture. There is huge potential in this area, with capture of great efficiency for power and use in transportation.

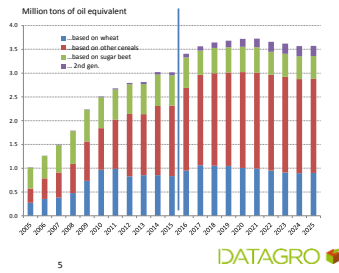


4



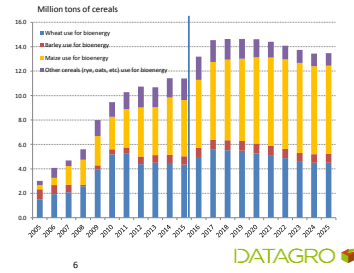
### Projected Ethanol Production

- EC is producing ethanol from wheat and other cereals such as barley, rye, & oats. It is projecting to increase use of maize, which is more efficient than other cereals (wheat and others).
- Cereals (except maize) conversion to ethanol is less efficient than maize and sugar beet. Cereals surplus should be exported i.o. converted to ethanol.
- Sugar beet ethanol would contribute to increase the competitiveness of EC sugar, and could enable beet acreage to increase.
- More corn ethanol would increase availability of DDGS that can be used effectively for cattle and poultry feed.



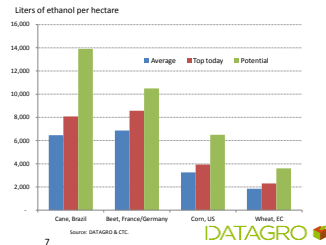
### Cereals for Ethanol Production

- Wheat, barley, oats and rye for ethanol is projected to rise from 6.8 to 8.1 mln tonnes by 2017, falling to 6.3 mln tonnes in 2025.
- Corn use to ethanol is projected to grow from 4.6 to 7.2 mln tonnes until 2025.
- Sugar beet converted to ethanol is projected to fall from 12.7 to 9.3 mln tonnes in 2025.



### Cane & Beet are better feedstocks than Cereals, including Corn

- Cane & beet rival in their efficiency to produce ethanol, measured in liters of ethanol per hectare.
- Cereals including corn, based on US efficiency levels, yield much less ethanol per hectare, and energy balance is lower.



### Energy Balance for ethanol production

- In terms of energy balance, sugar cane ethanol is ore efficient due to the use of cane bagasse as energy.
- Sugar beet is better than wheat and corn.

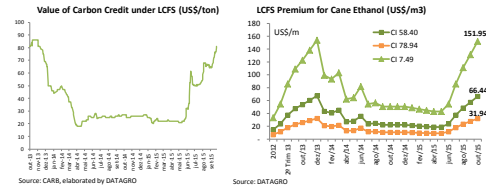
Raw Material	Energy Output / Energy Input
Wheat	1.2
Corn	1.3 – 1.8
Sugar Beet	1.9
Sugar Cane (under Brazilian production conditions)	9.3

Sources: Goldberg et al., and US Senate GAO.

### Biofuels

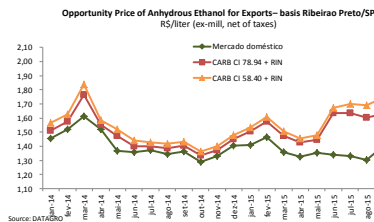
- Europe could consider as reference the mechanism implemented by CARB in California (LCFS), where the relative contribution that each biofuel brings to Carbon emission reduction targets generates a different premium defined by the market.
- The system internalizes into market prices the value of each fuel in achieving the emission reduction targets defined by the Regulator.
- The system allows the consideration of ILUC (Indirect Land Use Change).
- CARB's system may not be perfect, but is the regulation that enables the most transparent and market-driven determination of the relative value attributed to each fuel given its environmental attributes.

### Premium obtained for Cane Ethanol with different Carbon Intensity (CI) values has recently risen along with Value of Carbon



- CARB re-adopted LCFS, which projects 10% reduction in fossil fuel emissions until 2020. In response, the value of carbon has risen from US\$ 24 to US\$ 80-82/tonne CO2e. Cane ethanol with CI certificate of 58.40 gCO2/MJ, receives an average premium of US\$ 66.44/m3. 2G ethanol with CI 7.49 yields premium of US\$ 151.95/m3.

### Higher Carbon Value increases net price obtained for cane ethanol for exports



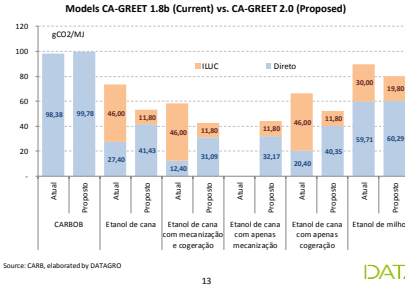
### CARB re-adopts LCFS – Average CI Targets until 2020

Year	Average Carbon Intensity (gCO2e/MJ)
2010	Reporting Only
2011	95.61
2012	95.37
2013	97.96
2014	97.96
2015	97.96
2016	96.50
2017	95.02
2018	93.55
2019	91.08
2020 and subsequent years	88.62

Frozen targets affected Value of Carbon

Shorter adaptation period to reduce emissions by 10% caused rise in Value of Carbon

New Carbon Intensity values have been approved



13



Projected Biofuels Demand for California under LCFS

Table 2-3: Illustrative California Reformulated Gasoline Blendstock for Oxygenate Blending Source Types through 2020

Fuel	Units	2014	2015	2016	2017	2018	2019	2020
Corn & Related Ethanol	mm gal	1,400	1,350	1,250	1,175	1,000	925	875
Cane and Sugar Ethanol	mm gal	1,418						
Cellulosic Ethanol	mm gal	0	0	5	15	50	75	100
Renewable Gasoline	mm gal	0	0	0	0	5	15	25
Hydrogen	mm gal GGE	0.03	0.4	1	2	4	5	7
Electricity for LDVs	mm gal GGE	9	14	19	24	31	40	51

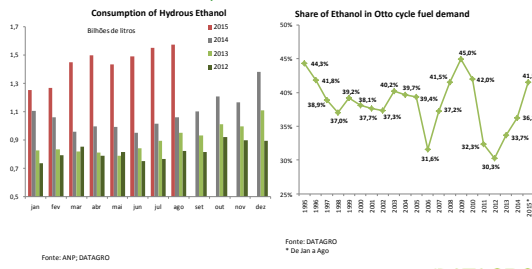
Notes: mm gal = million gallons. GGE = gasoline gallon equivalent

Source: CARB

14



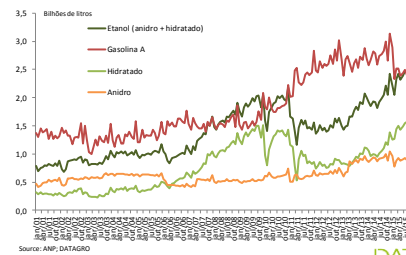
Ethanol consumption in Brazil hits record in 2015



15



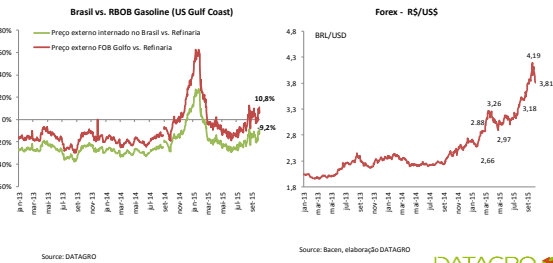
Consumption of Otto cycle Fuels Brazil



16



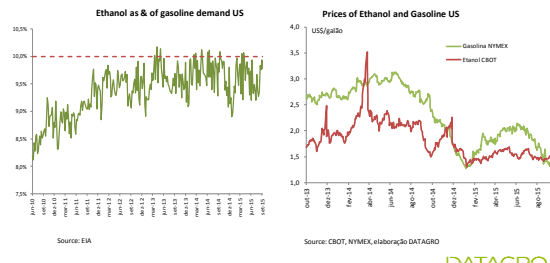
Gasoline price differential in Brazil



17



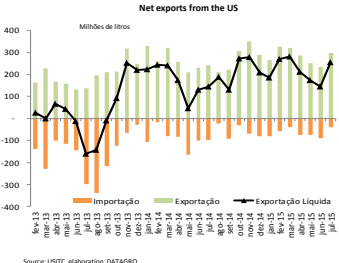
Ethanol in US still limited by blend wall



18



US will continue to dominate ethanol exports



19



Biofuels in Europe

- Europe's arable land has a high level of occupation, and for this reason it has been subject to the food vs. fuel debate. However, productivity can still grow in many crops and regions, and Europe can reap the benefits of integration between food and energy agriculture using surplus production to biofuels in a more efficient way.
- While the food vs. fuel debate is intense in Europe, it is the only place where wheat, barley, oats and rye are converted to ethanol in spite of their low efficiency compared with corn and sugar beets. Trade opportunities can be explored for the use of displaced cereals converted to ethanol.
- The EU can increase production of ethanol from corn and sugar beets, and reduce the cost of associated products such as animal feed (thru DDGS), beet sugar and indirectly cereal production, taking into account that sugar beets are produced in rotation to cereals.
- Biogas and biomethane (used as a substitute to diesel) from ag residues and energy agriculture must be considered in the targets.

20





**PLANTING DATA**  
HARVESTING SOLUTIONS

[www.datagro.com](http://www.datagro.com)  
[www.datagromarkets.com](http://www.datagromarkets.com)  
+55 11 4133 3944

**EVENTS CALENDAR**

10 July 2015  
4<sup>th</sup> Sugar & Ethanol Summit – Brazil Day  
Organized jointly by DATAGRO & Brazil's Ministry of Foreign Relations  
IoD – Institute of Directors, London

25 August 2015  
4<sup>th</sup> DATAGRO Caise Br Fenasuco Conference  
Sertãozinho, Brazil

21-22 September 2015 (Sao Paulo Sugar Dinner)  
15<sup>th</sup> DATAGRO International Conference on Sugar & Ethanol  
Grand Hyatt São Paulo, Brazil

18 May 2016 (New York Sugar Dinner)  
X ISO DATAGRO New York Sugar & Ethanol Conference  
Organized jointly by DATAGRO & the International Sugar Organization (ISO)  
The Waldorf-Astoria Hotel, New York

04-05 July 2016  
GLOBAL AGRIBUSINESS FORUM 2016  
Grand Hyatt São Paulo, Brazil

21



**PLANTING DATA**  
HARVESTING SOLUTIONS

**Market Outlook in Renewable Diesel**

Ilmari Lastikka (Neste Oil)



Market outlook in Renewable diesel

Ilmari Lastikka, Head of EU Affairs, Neste  
Brussels, 22 October 2015

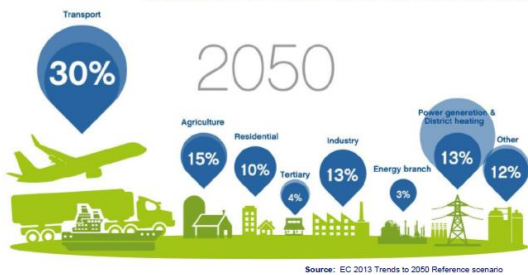
Content of the presentation:

1. Industry trends
2. Market outlook
3. Neste – Renewable diesel progress



Carbon reduction in transport is vital

Anticipated EU-28 shares of total GHG emissions 2050



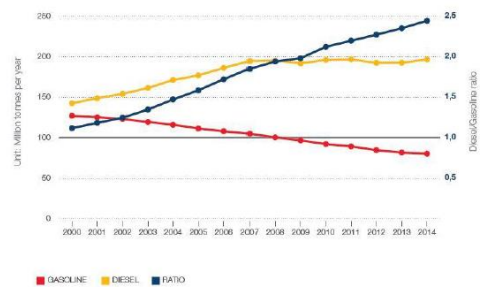
22.10.2015

3



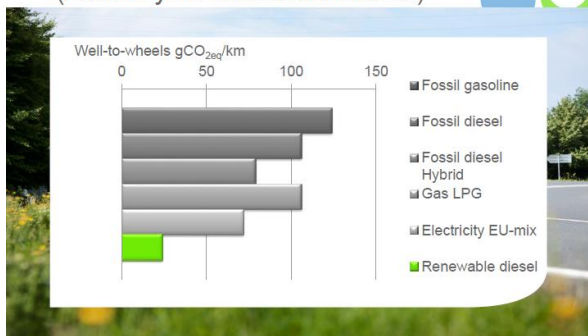
FIG.9 ROAD FUEL DEMAND IN THE EU

Source: Wood Mackenzie



5

GHG benefits of different alternative fuels  
(All life cycle emission included)



JRC: Well-to-wheel GHG emissions of future automotive fuels and powertrains in the European context

22.10.2015

6

Biofuels market and legislation overview



### Positive development in regulation

**US**

**Regulation up to 2017**

- EPA's proposal for biomass-based diesel 1.6 Bgal in 2014 with 0.1 Bgal annual growth until 2017
- Reintroduction of BTC uncertain

**Longer term outlook**

- RFS targets firmly in place until 2022
- State policies and incentives, especially in California, expected to have more significance

**EUROPE**

**Regulation up to 2020**

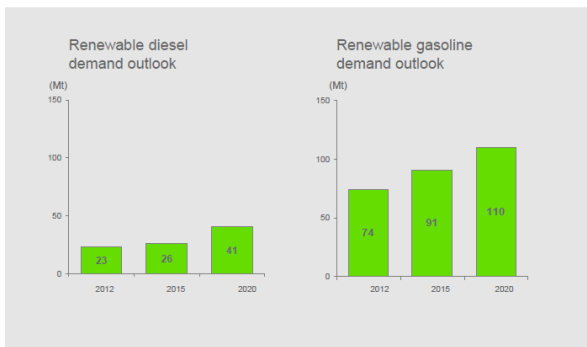
- 10% overall target firmly in place
- Final ILUC directive agreed in April 2015 – 7% cap for crop-based biofuels

**Longer term outlook**

- EU committed to 40% GHG reduction and renewable energy target of 27% by 2030

NESTE 22.10.2015 8

Global biofuels market still dominated by ethanol – but renewable diesel demand growing



NESTE 22.10.2015 10

### Neste - Developing renewable products

Capacity	170 000 tons	1 Million tons	2 Million tons	> 2 Million tons
Raw materials	30% Oil crops	30% Waste and residue	30% Oil crops	30% Waste and residue
Products	2007	2010	2014	2020+

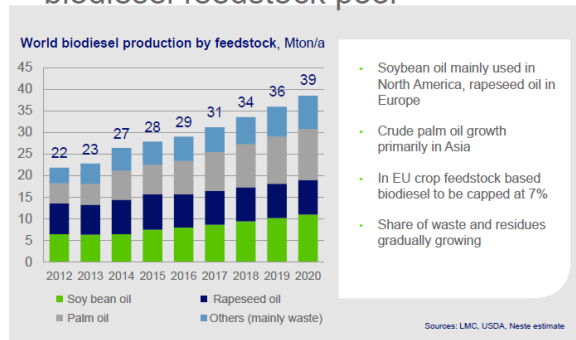
NESTE 22.10.2015 15

### Summary

- EU will need the contribution of biofuels to decrease the GHG emission of transport
- Recent EU legislation changes will ensure that the biofuels producers will increase the use of waste and residues
- The application for high quality biofuels will expand beyond road transport in the future

NESTE 22.10.2015 19

### Vegetable oils dominating global biodiesel feedstock pool



NESTE 22.10.2015 9

- Soybean oil mainly used in North America, rapeseed oil in Europe
- Crude palm oil growth primarily in Asia
- In EU crop feedstock based biodiesel to be capped at 7%
- Share of waste and residues gradually growing



### Neste- Developing renewable diesel

### NESTE Cooperation with leading brands

Public fleets in the city will switch to HVO

Google's shuttle busses in Silicon Valley are running on NEXBTL

Over thousand commercial and test flights with NEXBTL

UPS uses NEXBTL in its fleet operating in the USA

"By changing our fleet's fuel from petroleum to renewable diesel, we're taking action that is good for the global climate, and at the same time promotes environmental justice in our community by leading to cleaner, healthier air for some of our most vulnerable neighborhoods." Mayor Edwin M. Lee  
 "The airplane performed as designed with the green diesel blend, just as it does with conventional jet fuel. This is exactly what we want to see in flight tests with a new type of fuel." Captain Mike Carrier, Chief Pilot Boeing Product Development and 777X  
 "Advanced alternative fuels like renewable diesel are an important part of our strategy to reduce the carbon emissions impact of our fleet," Mark Wallace, UPS SVP, global engineering and sustainability

NESTE 22.10.2015 18

Thank you.



NESTE



## Medium-Term Prospects for the EU Arable Crops Market

Koen Mondelaers (DG AGRI)



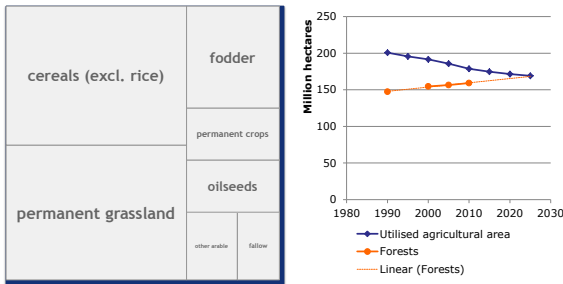
### Prospects for crops in the EU

- Agricultural area decrease slowing down
- Production and use of main cereal crops increase further driven mainly by feed use
- Meals more important in oilseed complex

2



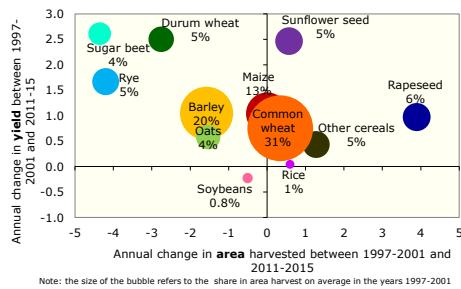
### Agricultural land disappearance slows down



3



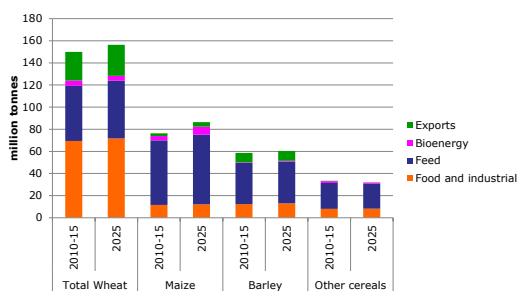
### In EU high yield growth and area changes in the past...



5

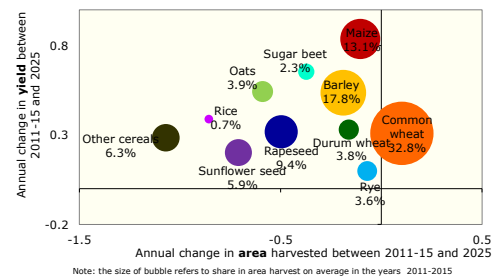


### Feed use dominates cereal use



7

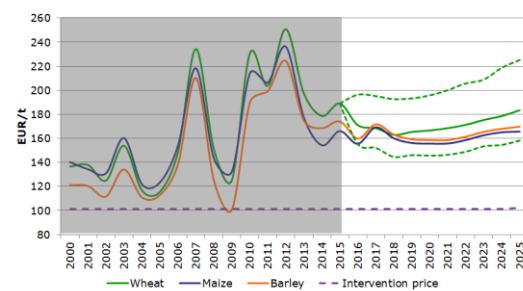
### ... versus low yield growth and area change in the EU towards 2025



6



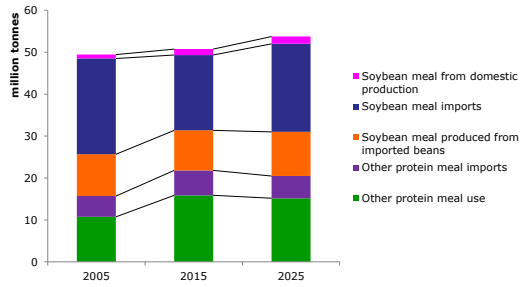
### Cereal prices on a new plateau



9



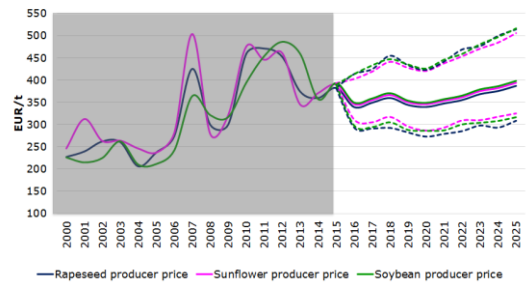
**Meals in EU relatively more important... soybean gains**



10



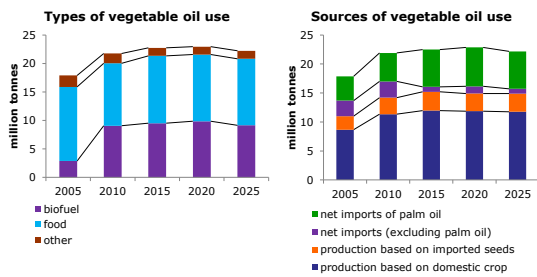
**Similar to cereals, new price plateau for oilseeds**



12



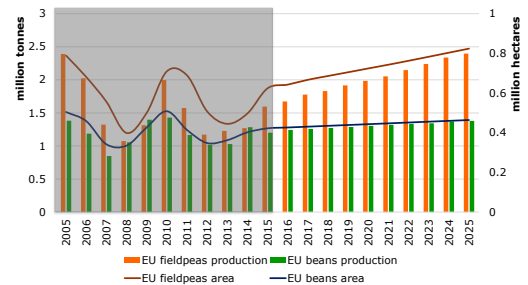
**EU vegetable oil use: imports of palm and soybean oil most dynamic**



15



**Protein crops recover**



16



**Prospects for crops in the EU**

- **Agricultural area decrease slowing down**
  - greening partially restrains decrease in permanent grassland
  - crop area decrease not as fast as UAA
  - soft wheat, soybeans, protein crops and fodder gain over other arable, fallow, permanent crops and pasture
- **Production and use of main cereal crops increase further**
  - production increase driven by soft wheat and maize,
  - maize feed use increase met by higher production and imports,
  - prices reasonably low to pick up again later on
- **Meals more important in oilseed complex**
  - favouring soybean and especially soymeal imports,
  - as well as domestic soybean production,
  - ending the steep growth of rapeseed production

17

## The impact of a Lower Oil Price on the EU Arable Crops Market

SergioRená Araujo Enciso (JRC-IPTS)



**Prospects for Agricultural Markets and Income in the EU 2015-2025**




**Low Oil Price**

Sergio Rene Araujo Enciso, Fabien Santini, Ignacio Perez Dominguez (JRC-IPTS)

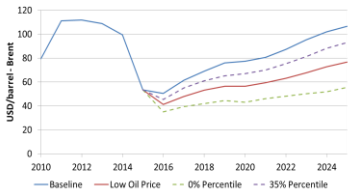
European Commission  
DG Agriculture and Rural Development & Joint Research Centre

Preliminary baseline




### Background

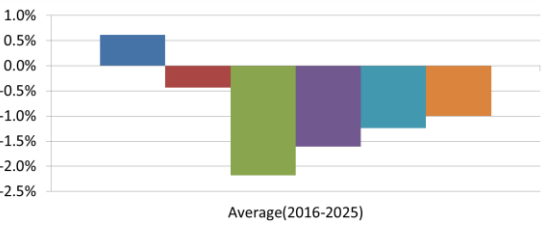
- In our projection we assume that oil price will go again to levels above 100 USD per barrel in the middle term, but... what if not
- Sub-sample of 315 out of 900 simulations between the 5-35<sup>th</sup> percentiles
- Lower oil price on average 26% below the projection



Preliminary Baseline




### World prices decrease



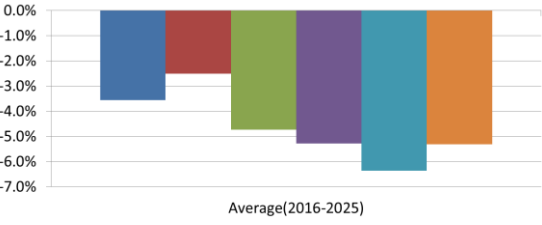
Average(2016-2025)

■ Wheat ■ Coarse Grains ■ Sugar ■ Oilseeds ■ Vegetable Oils ■ Protein Meals

Preliminary Baseline




### EU-28 Prices



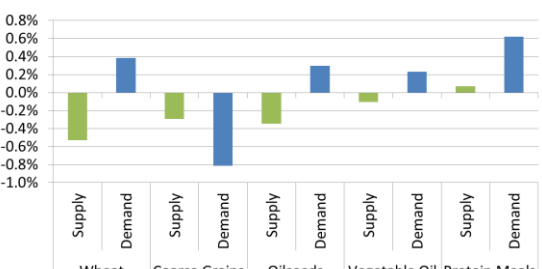
Average(2016-2025)

■ Wheat ■ Coarse Grains ■ Sugar ■ Oilseeds ■ Vegetable Oils ■ Protein Meals

Preliminary Baseline




### The EU Supply and Demand Balance



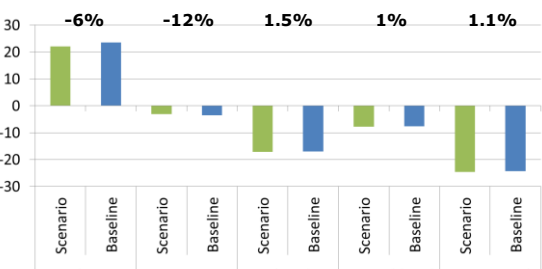
Supply Demand Supply Demand Supply Demand Supply Demand Supply Demand

Wheat Coarse Grains Oilseeds Vegetable Oil Protein Meals

Preliminary Baseline



### The EU Net Trade




-6% -12% 1.5% 1% 1.1%

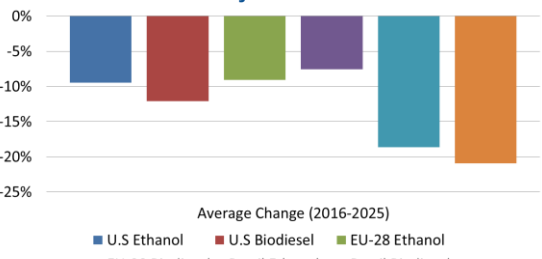
Scenario Baseline Scenario Baseline Scenario Baseline Scenario Baseline Scenario Baseline

Wheat Coarse Grains Oilseeds Vegetable Oil Protein Meals

Preliminary Baseline




### Prices in major Biofuel Markets



Average Change (2016-2025)

■ U.S Ethanol ■ U.S Biodiesel ■ EU-28 Ethanol  
■ EU-28 Biodiesel ■ Brazil Ethanol ■ Brazil Biodiesel

Preliminary Baseline



- Projected oil prices are low, going to a lower price do not add more benefits. Beyond a price consumers and producers will not react strongly
- The developments in the EU-28 crop markets in low oil price context are in part driven by improved competitiveness of biodiesel
- While producers will face lower prices, they will also face lower costs, thus there is a compensation effect
- The scenario does not account only low-oil price, there are other macroeconomic variables spill over effects (i.e. exchange rate)

Preliminary Baseline

## EU Agriculture From 2015 to 2025

Oliver Balkhausen (ADM)

**EU Agriculture from 2015 and 2025**



Oliver Balkhausen  
ADM Germany

Brussels  
October 22, 2015

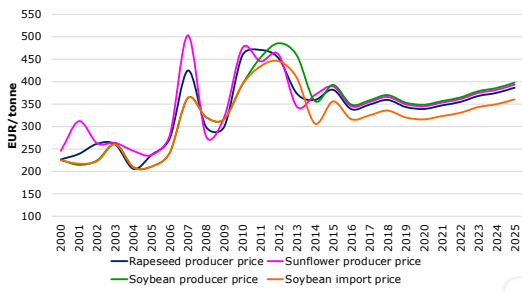
### Comments on Baseline Projections

- ✓ More comfortable supply situation than a few years ago
- ✓ Macroeconomic environment more bearish, too
- ✓ Vegetable oil use stagnating (including for Biodiesel)
- ✓ Higher protein crops output (though at low level only)

?? Per capita meat consumption stable (people turning away from meat vs higher population due to refugees)  
 ?? Is the increase in total protein use for feed due to higher livestock exports

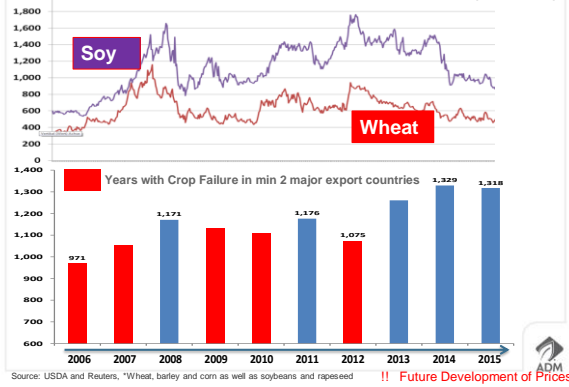
- !! Future development of prices (difficult for modelling)
- !! The role of barley (will not lose its importance)
- !! Protein feed use
- !! Higher value vegetable oils for food

### Koen's Graph on Oilseed Prices



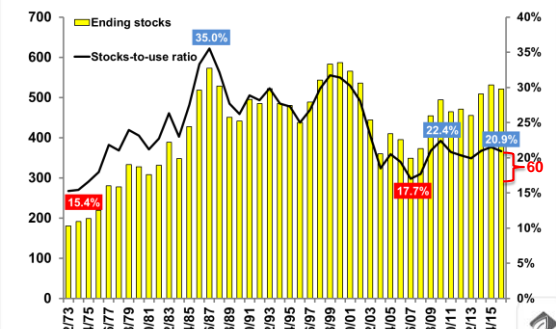
!! Future Development of Prices

### Major Countries Grains/Oilseed Crops\* (mln t) and Impact on CBOT Prices (UScent/bu)



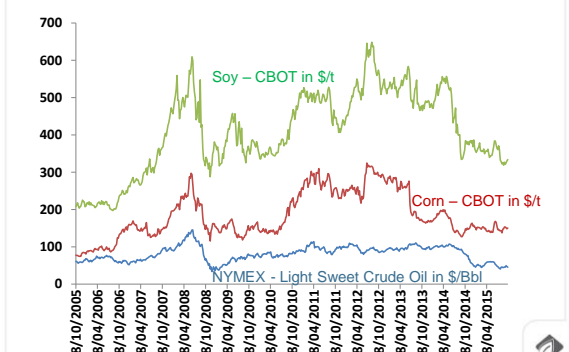
Source: USDA and Reuters. \*Wheat, barley and corn as well as soybeans and rapeseed

### Global Grain Ending Stocks [mln t]



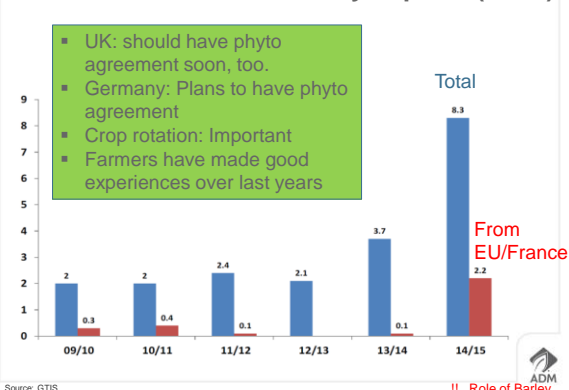
Source: USDA

### Ag Commodity Prices vs Crude Oil



Source: Reuters

### China: Barley imports (mln t)

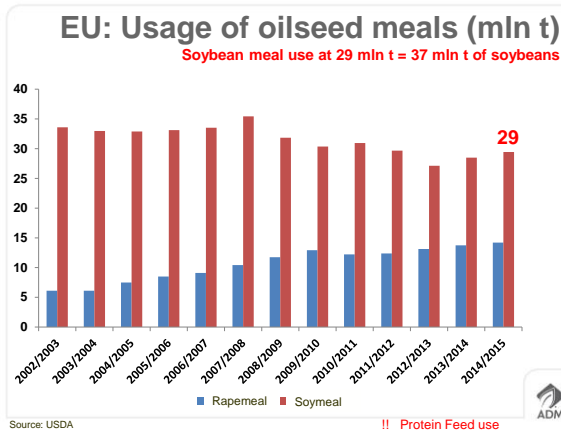


Source: GTIS

### Protein Feed Use

Soybean Meal Alternatives only with limited growing potential because

- 1) Soybean meal inclusion in feed rations is already close to its absolute minimum in terms of feed restrictions in modern livestock sector

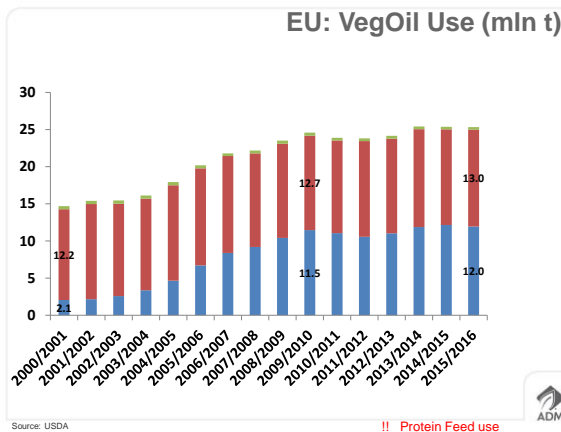


### Protein Feed Use

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- 1) Soybean meal inclusion in feed rations is already close to its absolute minimum in terms of feed restrictions in modern livestock sector
- 2) In the case of domestically grown oilseed alternatives (rapeseed/sunseed): No **attractive** outlet for vegetable oils in the EU

!! Protein Feed use



### Protein Feed Use

Soybean Meal Alternatives only with limited growing potential because

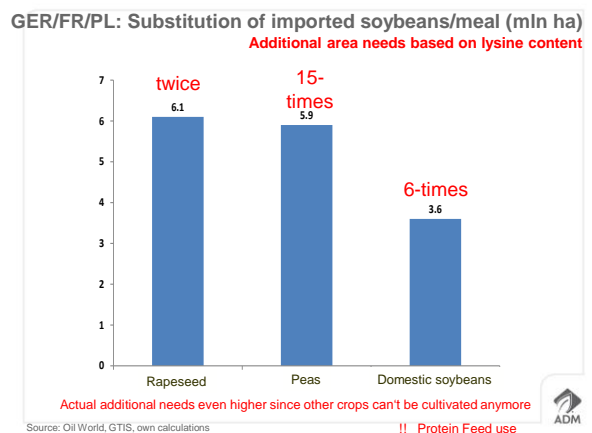
- 1) Soybean meal inclusion in feed rations is already close to its absolute minimum in terms of feed restrictions in modern livestock sector
- 2) In the case of domestically grown oilseed alternatives (rapeseed/sunseed): No **attractive** outlet for vegetable oils in the EU
- 3) Crop rotation reasons prevent from increase of rapeseed area in some key areas (e.g. Northern Germany, northern Poland)
- 4) There is not enough supply potential for soybean meal alternatives

!! Protein Feed use

### Feed, Protein, Lysine Use of EU livestock sector

Feedstuff	Protein	Lysine
Total (mln t)	252	43.6
thereof in %		
Grains	68	29
Soymeal	11	43
Rapemeal	5	14
Peas/Beans	1	2

Source: Oil World, GTIS, own calculations !! Protein Feed use

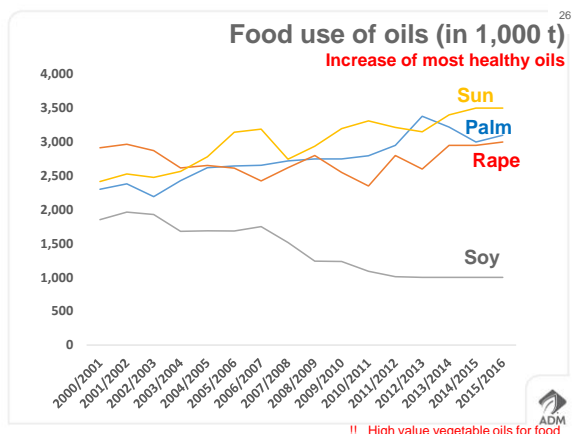


### Protein Feed Use

Soybean Meal Alternatives only with limited growing potential because

- 1) Soybean meal inclusion in feed rations is already close to its absolute minimum in terms of feed restrictions in modern livestock sector
- 2) In the case of domestically grown oilseed alternatives (rapeseed/sunseed): No **attractive** outlet for vegetable oils in the EU
- 3) Crop rotation reasons prevent from increase of rapeseed area in some key areas (e.g. Northern Germany, northern Poland)
- 4) There is not enough supply potential for soybean meal alternatives
- 5) EU risks losing its role as important exporter of quality grains

!! Protein Feed use



## Medium-Term Prospects for the EU Sugar and Sweetener Market

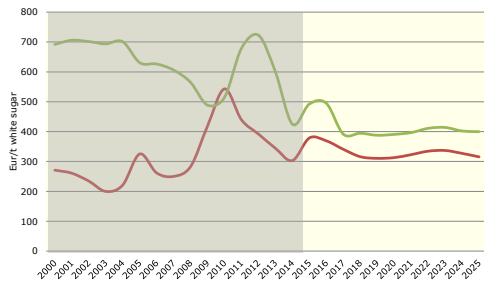
Koen Dillen (DG AGRI)



### Highlights

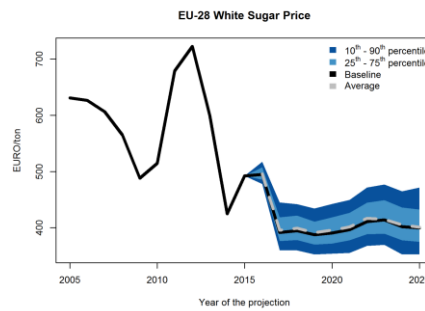
- White sugar prices expected to recover in the short-term but to drop again after quota expiry in 2017
- EU sugar production could increase slightly reducing EU sugar imports
- Isoglucose will become a substantial part of the sweetener complex

### Sugar prices: a bumpy road ahead

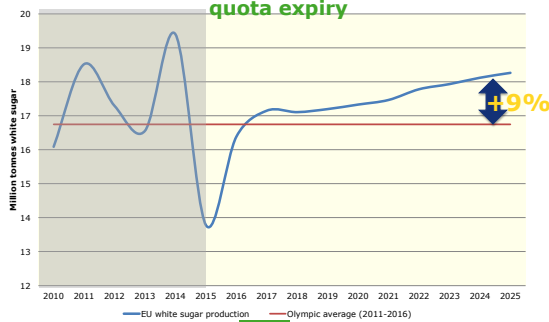


Source: DG Agriculture and Rural Development (draft baseline)

### Uncertainty around the EU price level

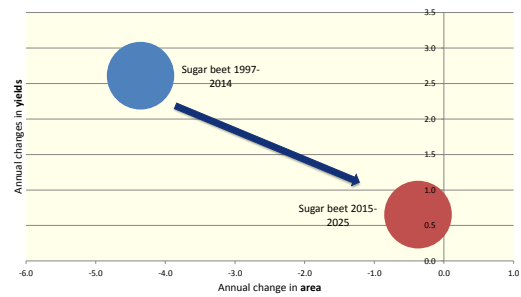


### EU white sugar production to increase after quota expiry



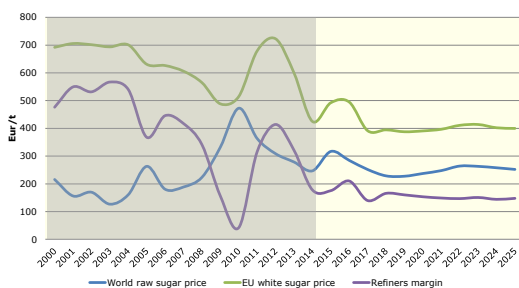
Source: DG Agriculture and Rural Development (draft baseline)

### Further improvement in sugar beet yields



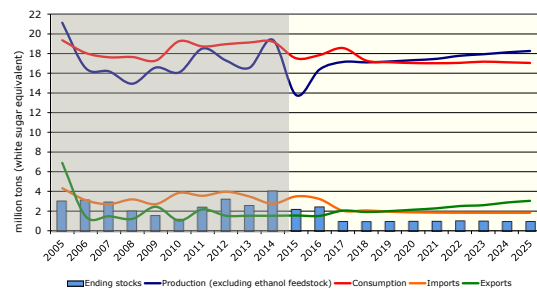
Source: DG Agriculture and Rural Development (draft baseline)

### Sugar imports from selected ACP/LDC countries



Source: DG Agriculture and Rural Development (draft baseline)

### EU exporting more white sugar

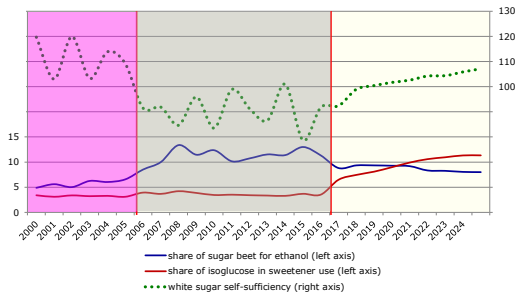


Source: DG Agriculture and Rural Development (draft baseline)





Sugar market indicators (%)

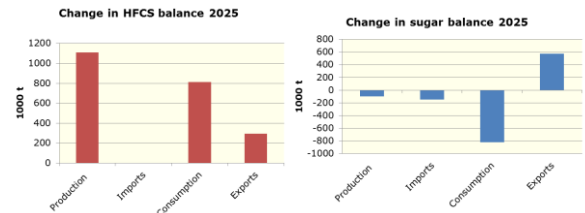


Source: DG Agriculture and Rural Development (draft baseline)

9



What if 50% more isoglucose would be produced?

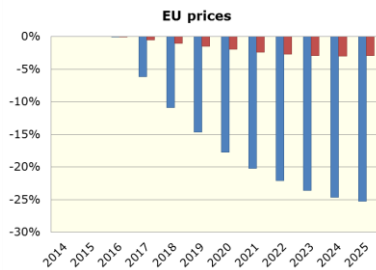


Source: DG Agriculture and Rural Development (draft baseline)

10



But sugar prices only affected slightly



Source: DG Agriculture and Rural Development (draft baseline)

11



Highlights

- White sugar prices expected to recover in first years but to drop again after quota expiry in 2017
- EU sugar production could increase slightly reducing EU sugar imports
- Isoglucose will become a substantial part of the sweetener complex

Outlook for the EU sweetener market after the expiry of sugar quotas  
Martin Todd (LMC International)

Outlook for the EU sweetener market after the end of quotas

European Commission Outlook Workshop  
Brussels, 22<sup>nd</sup> October 2015

Medium-term outlook for EU sugar balance.

- *Clearly reflects a less optimistic macro outlook.*

Transition period after 2017 will be key.

- *Will efficient producers rationalise to accommodate less efficient producers (Voluntary Coupled Support)?*

Assumed premium of the EU market price over world sugar price.

- *This should encourage greater imports (more FTAs).*

Isoglucose.

- *Perhaps a little light?*

14 April 2015 cLMC International, 2015 2

Cost competitiveness will ultimately determine the EU's sweetener supply base after quotas.

- *Each sweetener supply source has different "moving parts".*



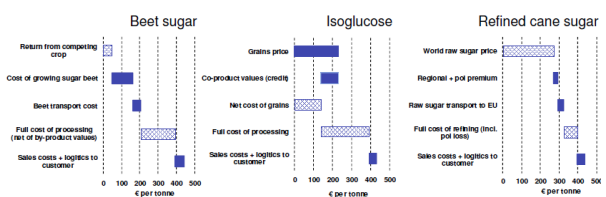
Supply source	Influences over competitiveness
Beet sugar	Alternative crop prices, energy prices
Isoglucose	Maize/wheat prices, energy prices
Imports	World sugar prices

Each of these elements plays a different weight in sweetener producers' costs.

- **Beet sugar** and **isoglucose**: cereal and process fuel prices & currencies.
- **Refiners**: world sugar prices.

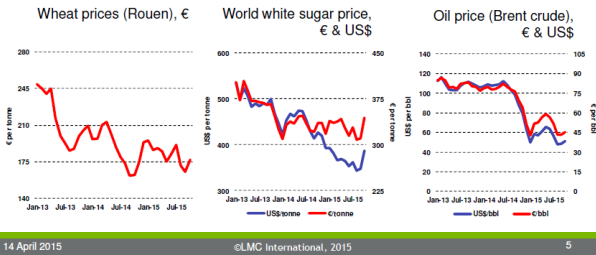


Key elements in sweetener producers' costs – indicative values



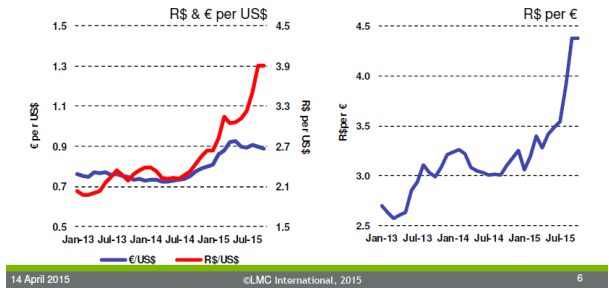
Each of these cost influences is changing quickly.

- Cereal prices and world sugar and have both been falling.
- World oil prices have more than halved.



Currency effects

- Given Brazil's prominence in the world sugar market, a weak Real against the Euro favour imports/refiners.



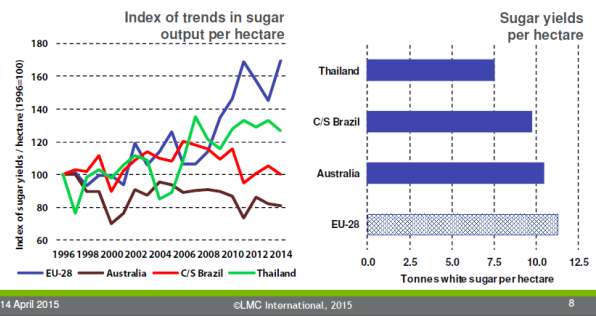
Trying to look beyond macro uncertainty

- Trends in production efficiency



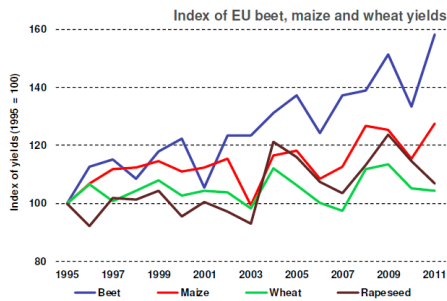
Beet is making strong gains in sugar yields.

The EU now outperforms major global cane-sugar producers.



Beet is also strengthening its place in crop rotations.

It is achieving faster yield growth than cereals and rapeseed.



Conclusions.

- Macro outlook versus efficiency trends: which will prevail?

- Fundamentals of beet are strong ... but macro weakness currently favours cane (mainly via Brazil and the Real).
- Uncertainty and volatility seems likely to continue.
- Adopting flexible business models will be key in the face of volatility, especially for processors who carry high fixed costs.

Thank You

[www.lmc.co.uk](http://www.lmc.co.uk)



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# Prospects for Sugar Trade After 2017

Gerald Mason (Tate & Lyle, ASR Group)



## Prospects for sugar trade post-2017

EC workshop on medium-term outlook for the EU agricultural commodity markets

**Gerald Mason**  
Senior Vice President

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Tel Brussels +32 (2)781 7680  
Tel Mobile +44 (0)7717 738 371  
Email gerald.mason@tateandlylesugars.com  
EU Transparency Register ID No: 50465925991-70



### Tate & Lyle Sugars

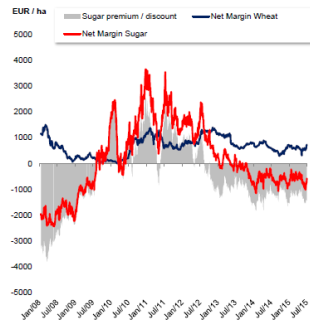
- Introduction

- Tate & Lyle Sugars is the largest raw cane sugar refiner in the EU
- 40% to 50% of all raw cane sugar imports
- Only major EU producer dedicated to cane
- Operate 3 dedicated cane sugar refineries in UK, Portugal & Italy
- Our objective in Brussels is to improve our access to duty free raw cane sugar

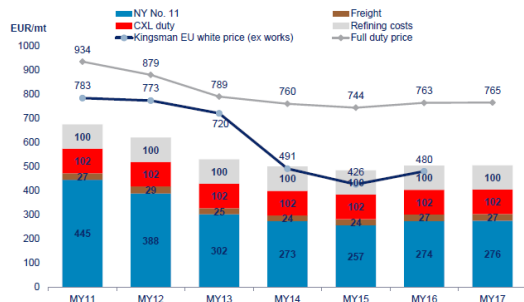


### Prospects for exports

- EU unlikely to return as dominant world market exporter
- Exports will be possible and profitable, but not all the time
- Headwinds include low world price & weak emerging market currencies
- Challenge will be making the grower/processor model more dynamic



### Prospects for imports – CXL import duty

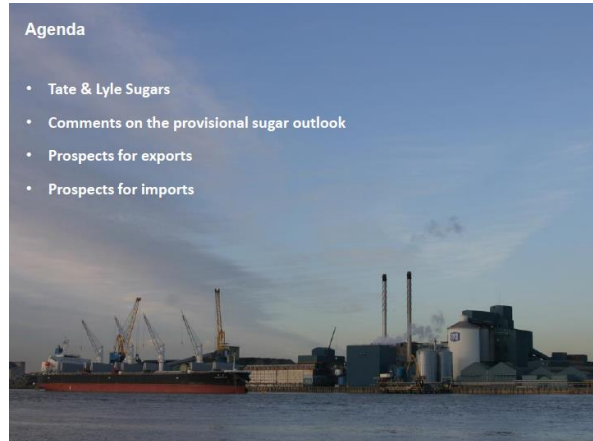


Notes:  
(1) Bars represent estimated cost of importing CXL raw sugar and transforming into white sugar based on average annual New York No. 11 values  
(2) Kingsman EU white price is based on average annual spot values  
(3) Full duty price calculated on same basis as CXL sugar but instead of CXL duty the full EU duty for raw sugar is used (EUR 339 + safeguard duty)



### Agenda

- Tate & Lyle Sugars
- Comments on the provisional sugar outlook
- Prospects for exports
- Prospects for imports



### Comments on the provisional sugar outlook



#### Sugar Balance

- Generally fair reflection of current outlook
- Market will increasingly determine the outlook
- Are 2M tonnes of exports viable at €310 to €340 world price?
- Will isoglucose double in a low price environment?
- Unclear why 2018 sugar consumption is so high

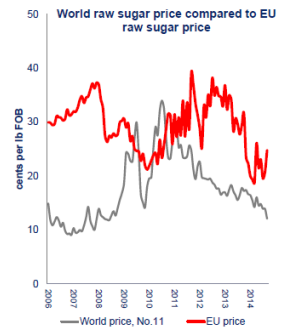
#### Sugar Pricing

- Agree with re-basing world prices lower
- Market will be much more volatile than outlook projections
- 2016 to 2018 transition period will be particularly complex
- Agree EU price will not fall by same magnitude as world price



### Prospects for imports

- 2 key variables in prospects for imports
- World price
  - Supply & Demand
  - Exchange rates
  - Freight rates
- EU legislative penalty over world price
  - Restricted to 5% of global supply
  - Higher cost producers
  - CXL import duty & others
  - legislative costs



### Prospects for sugar trade post-2017

- conclusions



- Outlook data looks OK
- Market will make reality much more volatile than the outlook
- Narrative that EU exports grow at current world prices looks dubious – market will determine
- EU imports also impacted by market – but also legislation
- Still significant legislative barriers on imports that will distort the market and the future of cane refiners



## Medium-Term Prospects for the EU Milk and Dairy Markets 2015-2025

Sophie H elaine (DG AGRI)



### Prospects for milk and dairy products in the EU

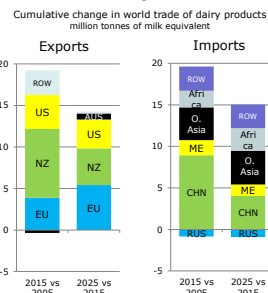
- EU production to increase by 11 Mt in 10 years
- Driven by growing internal and world demand
- Favourable prospects for the dairy fat market and growing powder exports

2



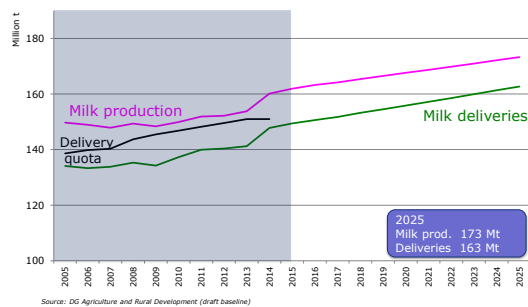
### Steady growth in world consumption

- +1.8% per year in world consumption and production
- +2.3% per year in world imports
- A lower increase in traded volumes compared to the last decade
- Extra demand to be supplied more by the EU than by NZ
- China to contribute less to the extra demand



Source: DG Agriculture and Rural Development (draft baseline), based on the OECD-FAO Outlook  
ME: Middle East, Africa excluding South Africa

### +13.5 Mt of milk collected in the EU in 10 years

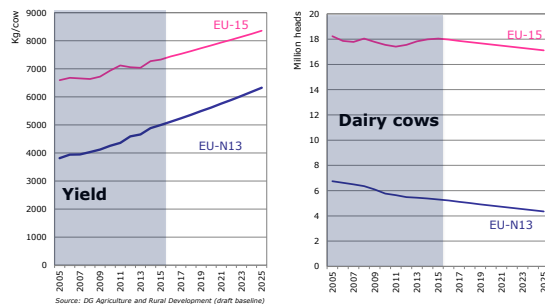


Source: DG Agriculture and Rural Development (draft baseline)

4

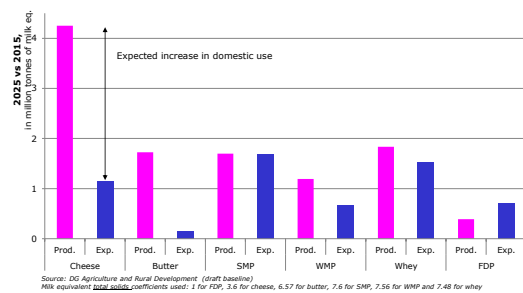


### Yield and cow inventory



Source: DG Agriculture and Rural Development (draft baseline)

### EU: Most of the extra milk channelled into cheese and exported powders

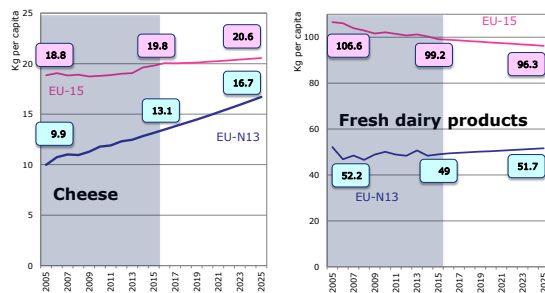


Source: DG Agriculture and Rural Development (draft baseline)  
Milk equivalent total milk coefficients used: 1 for FDP, 3.6 for cheese, 6.57 for butter, 7.6 for SMP, 7.56 for WMP and 7.48 for whey

6



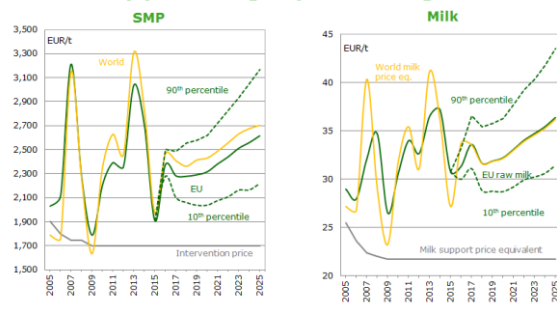
### Domestic consumption in the EU, ups and downs



Source: DG Agriculture and Rural Development (draft baseline)

7

### Dairy prices to go up in the long-term

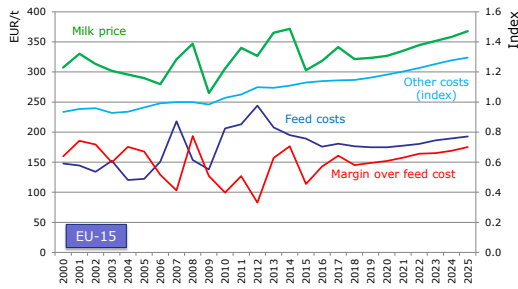


Source: DG Agriculture and Rural Development (draft baseline)

8



**A slightly increasing margin over feed costs**



9



**Prospects for milk and dairy products in the EU**

- **The EU to supply growing internal and world demand**
  - despite current market unbalance,
  - because world demand is steadily growing,
  - and the EU is well positioned to supply this extra-demand.
- **EU production to increase by 11 Mt in 10 years**
  - environmental constraints to play a major role,
  - productivity gains to be expected,
  - back to a decline of the dairy cow herd inc. in the EU-15.
- **More milk channelled into cheese and powders**
  - the industrial use of cheese to gain importance,
  - a positive outlook for the dairy fat,
  - more powders and cheese on the world market.

10

EU prospects report and data available in December at:  
[http://ec.europa.eu/agriculture/markets-and-prices/medium-term-outlook/index\\_en.htm](http://ec.europa.eu/agriculture/markets-and-prices/medium-term-outlook/index_en.htm)

OECD-FAO Outlook at:  
<http://www.agri-outlook.org/>

Short term outlook at:  
[http://ec.europa.eu/agriculture/markets-and-prices/short-term-outlook/index\\_en.htm](http://ec.europa.eu/agriculture/markets-and-prices/short-term-outlook/index_en.htm)

Milk Market Observatory:  
<http://ec.europa.eu/agriculture/milk-market-observatory/>

Thanks  
 sophie.helaine@ec.europa.eu

11

**Milk production in the EU: Some Member State results and environmental indicators, Thomas Fellmann (JRC-IPTS)**

**Prospects for Agricultural Markets and Income in the EU 2015-2025**

**Milk production in the EU: Some Member State results & environmental indicators**  
 - preliminary results -

Workshop on 'Commodity Market Development in Europe – Outlook' Brussels, 22 and 23 October 2015

Thomas Fellmann, Mihaly Himics (JRC-IPTS), Peter Witzke (EuroCARE), Jean-Michel Terres, Maria Bielza Diaz-Caneja, Adrian Leip (JRC-IES)

European Commission  
 DG Agriculture and Rural Development & Joint Research Centre

**Cow milk deliveries** Change between 2013 and 2025

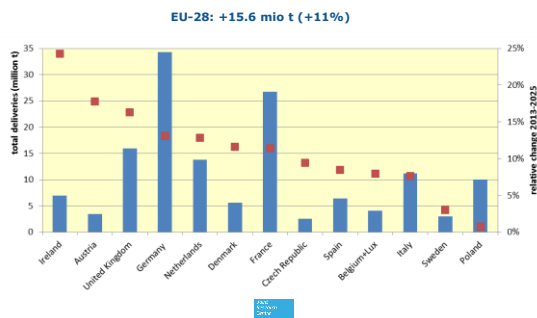


**EU milk supply increases at aggregated level**

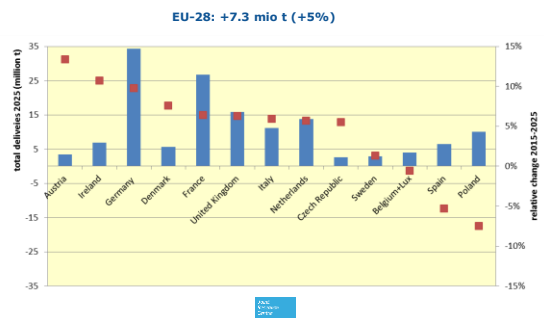
- Question 1: Development at MS level?
- Question 2: What about environmental constraints?
- Approach: CAPRI model
  - CAPRI follows the trends of last year's EU outlook.
  - The CAPRI database contains historical data until 2013 (sometimes 2012) and is not updated to short-term market developments.



**Cow milk deliveries 2025 and %-change 2013-2025**

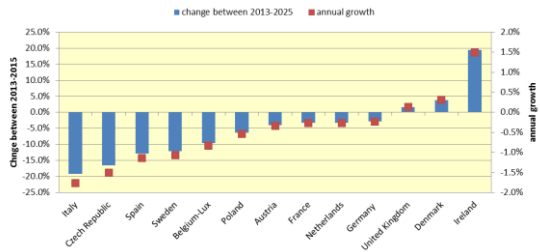


**Cow milk deliveries 2025 and %-change 2015-2025**



**Dairy cow numbers**  **Change between 2013 and 2025**

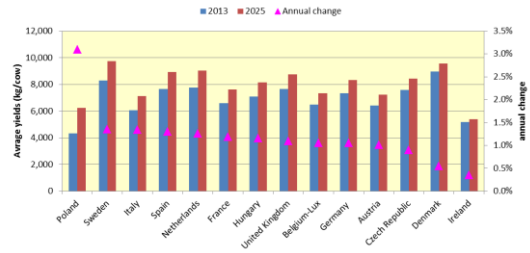
Dairy cow numbers expected to decrease in most MS



EU-28: -1.5 mio (-6%)

**Dairy cow yields (kg/cow)**  **Change between 2013 and 2025**

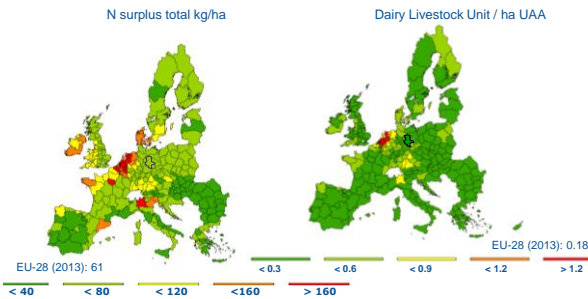
Dairy cow yields expected to improve significantly



EU-28: +1130 kg/head (+17%)

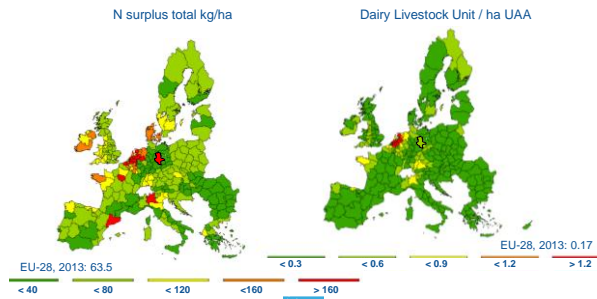
**N surplus/ha whole agriculture** 

N surplus regions and the dairy sector (2013)



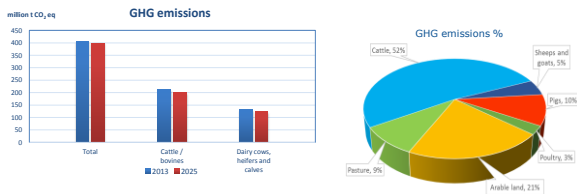
**N surplus/ha whole agriculture** 

N surplus regions and the dairy sector (2025)



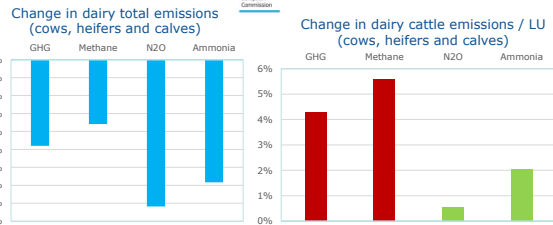
**GHG emissions** 

Contribution to GHG emissions: cattle and dairy activities



- Emissions from manure are assigned to cattle (not to pasture or arable land)
- Change GHG emissions between 2013 and 2025:
  - Total agriculture: -1.6%
  - Cattle/bovine: -5.3%
  - Dairy (cows, heifers and calves): -4.8%

**GHG & ammonia emissions**  **% change 2025-2013 EU28**



Intensification of the milk production – Increased productivity per cow

- Dairy sector (cows, heifers and calves): -4.8%; mainly due to lower animal numbers, but also technology change for manure management.
- Per head: Higher GHG; especially CH<sub>4</sub> (+5.6%). N<sub>2</sub>O and ammonia emissions increase (less due to change of manure management technologies (liquid system))
- However some grassland will shift to arable land with negative impacts on GHG emissions (indirect land-use effect not accounted for) on soil organic carbon and on biodiversity

# An Industry Perspective of the Outlook for Dairy Products, with a Focus on Fresh Dairy Products

Benjamí Güixéns (Danone)



### Feedback from Medium-Term Outlook

- Milk Production Outlook**
  - Short term trend:**
    - FY 2015 probably underestimated at 1,06%
  - Long Term outlook:**
    - Probably underestimated as well from last 5 Year Avg.
    - Coupled with quotas termination → Should bring more milk on stream.
    - Continuous decreasing trend on cow numbers could be changed?
  - Watch outs:**
    - New limiting factor for EU → Environmental regulations? Others?
    - Weather → un-favorable weather → less milk production

### Feedback from Medium-Term Outlook

- Milk & Commodity Prices**
  - Milk Price:**
    - Flat trend in 2016 (313 €/ton) vs 2015 (308 €/ton) while Dairy Commodity prices show significant recoveries in 2016
    - Disconnect between milk price and Dairy Commodity prices in 2017 and 2018.
    - Certainty that Dairy Commodities will remain volatile from tight balance between world supply and demand
  - Market Turn-around:**
    - The big question mark on the market. Analysis show market potential recovery from Q1 to Q3 2016. Fundamental analysis could indicate a potential longer time before recovery materializes

### Feedback from Medium-Term Outlook

- Exports**
  - Extra milk**
    - Needs to go into Cheese and Milk Powders
    - Extra Cheese will need to look for additional exports
  - Watch outs:**
    - Trade Agreements leading to keeping a level playing field vs other exporting regions (TPP)
    - EXR → Re-appreciation of the € vs US\$



### Milk demand - steadily growing at 2,2% yoy WW,

Source: Euromonitor, Analysis by Danifrade

- Volume consumption steadily growing around +2,3% in CAGR over the past 6 years
- China currently representing 1/3 of the global consumption growth
- Other Asia represents an additional 1/3 of the global consumption growth
- Europe and US showing flat to slight YOY growth trend

### Milk demand - Short term trends from stronger growing regions

- Deceleration from Demand growth in China and Asia Pacific
- Acceleration trend in Middle East & Africa and Latin America

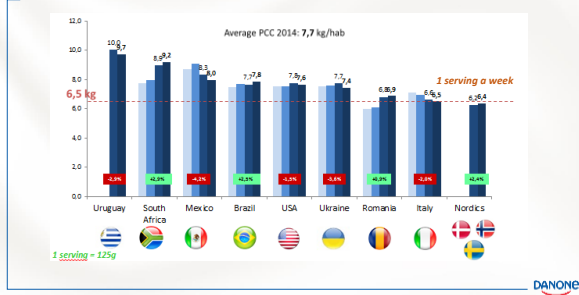
### Milk demand - Different growth rates per Dairy Products Category

- Dairy Consumption growing steadily at 2,3% CAGR over the last 6 years
- FDP segment over-performing vs. other categories

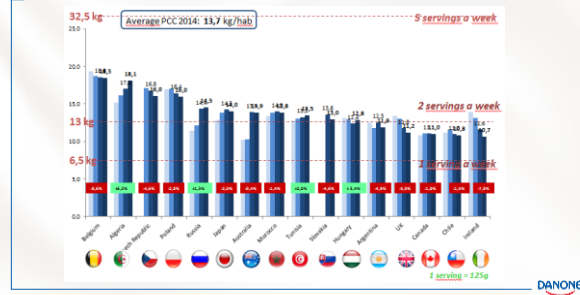




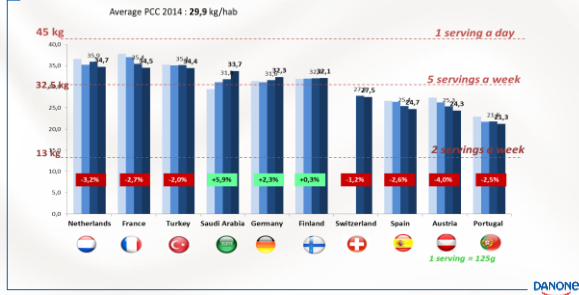
PCC - light 5-10 kg/pers./yr



PCC - moderate 10-20 kg/pers./yr.



PCC - heavy > 20 kg/pers./yr. Still growth potential to reach 1 Serving / day



Bring health through food to as many people as possible

DANONE

Health through Food is more relevant than ever



Thank you

DANONE

# Feedback on the Medium-Term Outlook for the EU Dairy products Market

Leonardo Mirone (Barilla)

**WORKSHOP ON THE MEDIUM-TERM OUTLOOK FOR THE EU AGRICULTURAL COMMODITY MARKETS**

**LEONARDO MIRONE**  
PURCHASING DIRECTOR

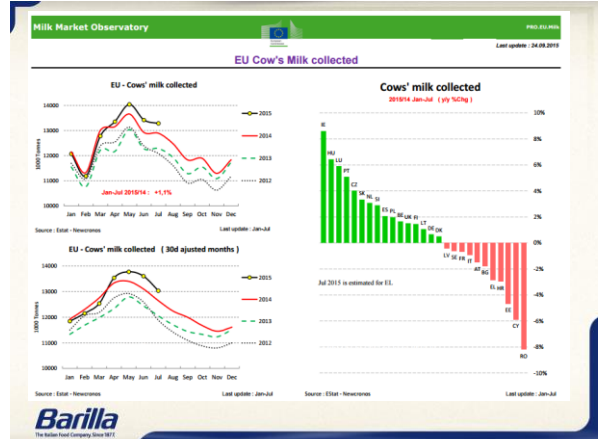
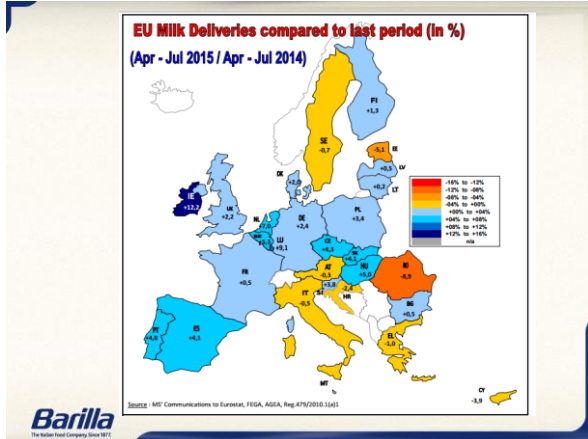
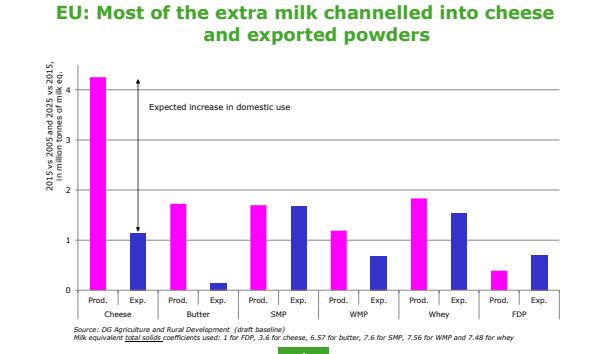
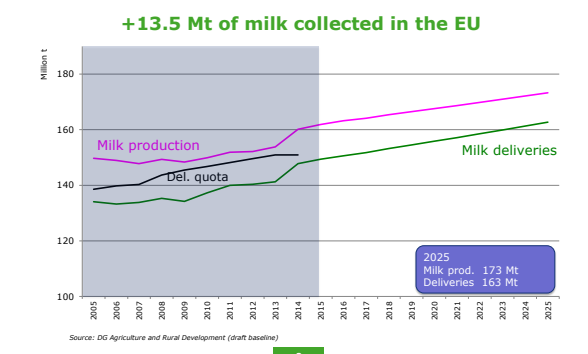
**BRUSSELS**  
23 OCTOBER 2015

### Steady growth in world consumption

Cumulative change in world trade of dairy products million tonnes of milk equivalent

- +1.8% per year in world cons. and prod.
- +2.3% per year in world imports
- A lower increase in traded volumes compared to the last decade
- Extra demand to be supplied more by the EU than by NZ
- China to contribute less to the extra demand

Source: DG Agriculture and Rural Development (draft baseline)



**BARILLA AND DAIRY INGREDIENTES**

**BARILLA GROUP: 138 YEARS OF HISTORY**

**1877**  
The Barilla story begins with Pietro Barilla Senior in a bread and pasta shop in Parma.

**1910-1946**  
Gualtiero & Riccardo Barilla, sons of Pietro, at the helm of the Company. First pasta factory and first trademark between the two World Wars.

**1947-1971**  
Pietro & Gianni Barilla take the reins of the Company, developing modern production, marketing and management systems. In 1971 the Company is divested to the U.S. multinational Grace.

**1971-1979**  
Engineer Manfredo Manfredi leads the Company with the same management team during the economic crisis. In 1975 the Mulino Bianco bakery product line is launched.

**1979-1993**  
Pietro Barilla returns to the helm of the Barilla Group. Industrial strategy and leadership in Italy.



**GUIDO, LUCA and PAOLO BARILLA since 1993**



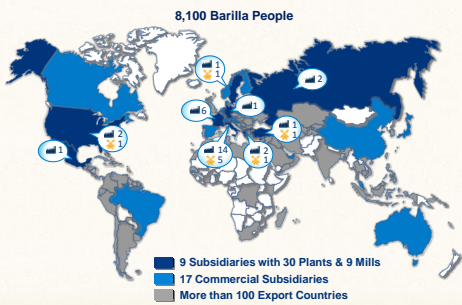
**1993**  
Guido, Luca and Paolo Barilla take the reins of the Company; until then more than 90% of the business turnover was in Italy.

The international expansion begins, starting from France, Germany, Greece, Scandinavia, Turkey and the United States.



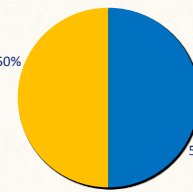
**BARILLA GROUP TODAY**

Barilla is leader in the Pasta market worldwide, Pasta Sauces in Continental Europe, Bakery products in Italy, Soft Bread in France and Crispbreads in Northern Europe

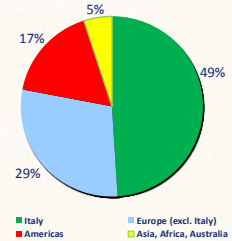


**BARILLA GROUP TURNOVER BY:**

**BUSINESS AREAS**



**GEOGRAPHICAL AREAS**



2014 Turnover: 3.2 billion euro



**OUR BRANDS, OUR PRODUCTS**

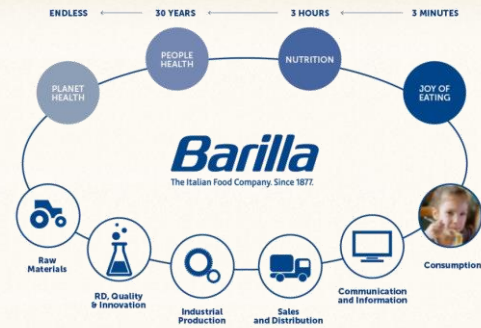
Barilla holds 13 brands...



... and sells more than 1.8 million tons of products per year



**FROM FIELD TO PEOPLE**



**GOOD FOR YOU, GOOD FOR THE PLANET**



What the world calls «sustainability» for Barilla is a unique and distinctive way of doing business:

Good for You, Good for the Planet.

This is a strong identity that expresses the Company's contribution to the sustainable development of Communities and the planet, an expression of scrupulous attention to the quality of products and processes that are carried out every day at Barilla.



**DOUBLE PYRAMID MODEL**



Dairy products are used in a wide range of bakery products



**Barilla**  
The Italian Food Company Since 1877

Also in a wide range of Barilla sauces



**Barilla**  
The Italian Food Company Since 1877

Impact of milk on pack and communication vs People



**Barilla**  
The Italian Food Company Since 1877

**TRENDS**

- Butter**
- ❑ The mandatory labelling of fats (palm oil), can drive the manufacturer to prefer butter in some applications.
- Milk (fresh)**
- ❑ Healthy ingredients.
- Milk (powders)**
- ❑ Key for some technologies (chocolate).
- Cheese**
- ❑ Key substitute of meat, enjoyed by many consumers.

**LIMITS**

- ❑ Environmental Impact.
- ❑ New trend on Milk-fobia: "milk is good only for babies".
- ❑ Increasing demand of lactose free products.

**Barilla**  
The Italian Food Company Since 1877



**Barilla**  
The Italian Food Company Since 1877

FRESH MILK VS SKIMMED MILK POWDER / WHOLE MILK POWDER

- ❑ Fresh Milk is considered by consumers as nutritious and healthy ingredient both for children and adults.
- ❑ Milk powders are key ingredients for the manufacturing of our products thanks to the low level of fat (in part. SMP).
- ❑ As fresh milk cannot be used in all products due to its water content, powders are highly appreciated. Powders are also better commercially manageable for buyers.
- ❑ Quite no concerns on these ingredients a part lactose intolerance and some single of milk-fobia.

**Barilla**  
The Italian Food Company Since 1877

**BUTTER\***

- ❑ The use of butter is important for certain national markets with cultural habits where its taste is highly appreciated (ex.: Croissants in F, Biscuits in Italy).
- ❑ However, nutritional concerns of consumers drive the use of vegetable fats with no cholesterol, not hydrogenated, with low levels of SAFA (mainly rape, sun oils).

**CHEESE\***

- ❑ The use of cheese is key for some products for the highly appreciated taste and as a substitute for meat.
- ❑ Some nutritional concerns of consumers limits the use of cheese.

\* Cheese and Butter have a relevant env. impact, mainly due to CO2 footprint.

**Barilla**  
The Italian Food Company Since 1877

**So...**

**There is a stable trend of increasing consumption due to increasing demand in developing countries and a stable/increasing demand in western countries,**

**But**

**Environmental and some new healthy trend can limit the growth.**

**Barilla**  
The Italian Food Company Since 1877

## Medium-Term Prospects for EU meat markets 2015-2025

Benjamin Van Doorslaer (DG AGRI)



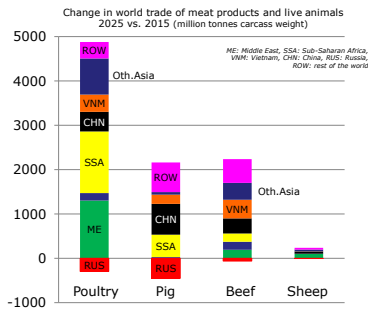
### Highlights for meat production in the EU

- Stabilising EU demand but growing world demand
- Minor increase in EU meat production, less than 1 million t by 2025
- Lower world prices will put pressure on EU exports and prices

2

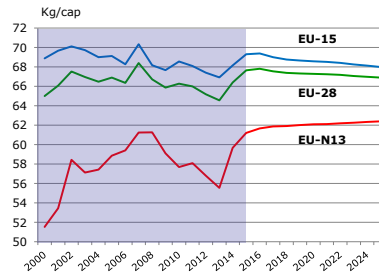
### Steady growth in world consumption

- +1.4% per year in world consumption and production
- +2.6% per year in world imports
- Growth mainly in existing EU trade partners



Source: DG Agriculture and Rural Development (draft baseline)

### Slowly declining EU meat consumption



- Consumption per capita: -0.1% / year
- Total consumption: +0.1% / year

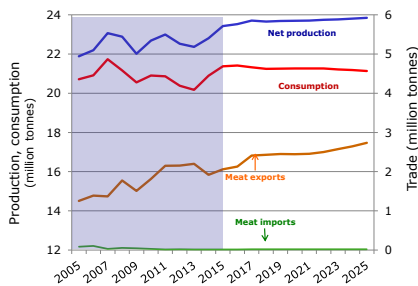
#### BUT

- Different patterns by meat product

Source: DG Agriculture and Rural Development (draft baseline)

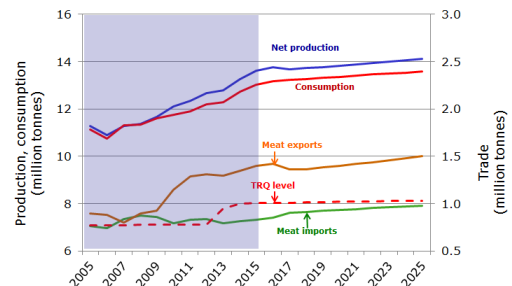
4

### Increasing EU pig meat production goes to exports



Source: DG Agriculture and Rural Development (draft baseline)

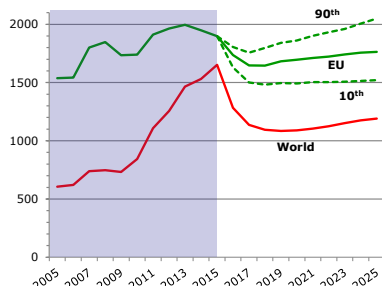
### EU poultry meat continues its growing path



Source: DG Agriculture and Rural Development (draft baseline)

6

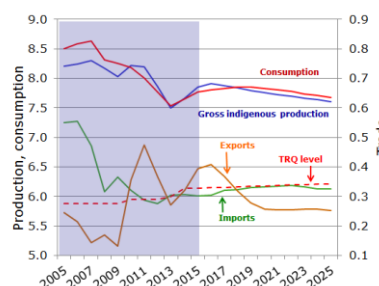
### EU poultry price follows world price (EUR/t)



- Slowing growth in world demand
- Weak Brazilian real and appreciation of euro
- Lower feed and input costs
- US back on the market
- Uncertainty: production and consumption in China ?

Source: DG Agriculture and Rural Development (draft baseline)

### Decline in beef slowing down (million tonnes)



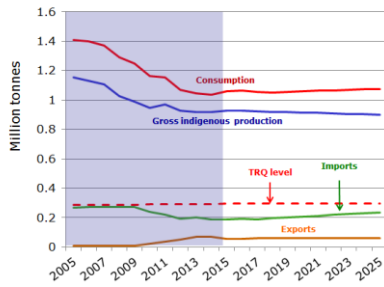
- EU suckler cow herd: around 12.2 million heads
- Changes in production are following dairy herd development

Source: DG Agriculture and Rural Development (draft baseline)

8



**Halt on decline of sheep and goat meat production and consumption in EU**



Source: Eurostat and DG Agriculture and Rural Development (draft baseline)

9



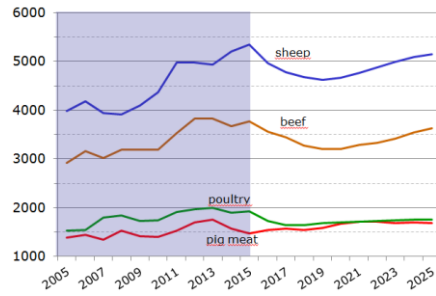
**Prospects for meat production in the EU**

- **Stabilising EU demand but growing world demand**
  - World import demand is slowly growing, faster for poultry and beef than pig meat
  - Total EU meat consumption stabilises
  - EU per capita consumption on declining trend
- **Minor increase in EU meat production, less than 1 million t by 2025**
  - EU pig and poultry meat production increase slowly despite local environmental constraints
  - Beef herd stabilises but main source of meat production is still milk herd
  - After years of decline, sheep and goat production show signs of stabilisation
- **Lower world prices will put pressure on EU exports**
  - Competition on international markets drives prices to lower level but recover by 2025
  - EU has a divers portfolio of products and export destinations
  - EU net trade position of meat products improves to almost 3 million t

11



**EU meat producer prices (EUR/t)**



Source: DG Agriculture and Rural Development (draft baseline)

10



EU prospects report and data available in December at:  
[http://ec.europa.eu/agriculture/markets-and-prices/medium-term-outlook/index\\_en.htm](http://ec.europa.eu/agriculture/markets-and-prices/medium-term-outlook/index_en.htm)

OECD-FAO Outlook at:  
<http://www.agri-outlook.org/>

Short term outlook at:  
[http://ec.europa.eu/agriculture/markets-and-prices/short-term-outlook/index\\_en.htm](http://ec.europa.eu/agriculture/markets-and-prices/short-term-outlook/index_en.htm)

Thanks

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**Pork Market Development at member-State level - Application of AGMEMOD**  
 Martin Banse (AGMEMOD consortium)

**Pork Markets**  
**Development at MS-level**  
 Application of AGMEMOD

**Highlights: Pork Markets until 2025**

- **Production**
  - Most dynamic development: Spain and Poland
  - Expansion in DE, NL, DK limited by environmental constraints
- **Consumption**
  - Per capita consumption in EU-13 > EU-15
  - In EU-15 and EU-13 consumption reaches saturation level
- **Trade**
  - In live animals: four dominant countries
    - Exporters: The Netherlands and Denmark
    - Importers: Germany and Poland
  - In pork meat:
    - EU strengthens the position as net-exporter
    - Poland becomes a net-exporter

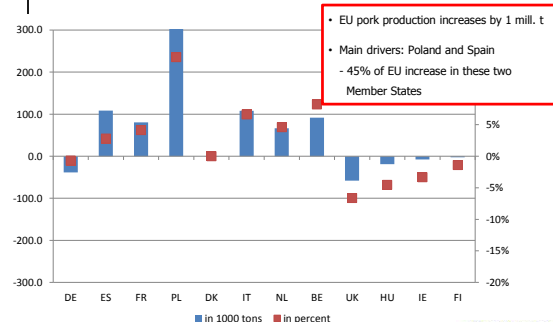


**Features of AGMEMOD**

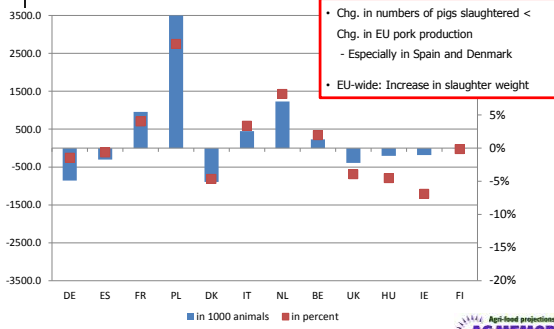
- **AGMEMOD (AGricultural MEMber states MODelling)**
  - Partial equilibrium, net-trade model
  - Econometrically estimated behavioral equations
  - Focus on EU Member States and candidate countries
  - **Strengths:**
    - Strong partnership at Member State level
    - Often applied within Member States
    - Intensive feedback and dialogue
      - between policy makers and AGMEMOD team
      - between market experts and AGMEMOD team
      - between national (data) agencies and AGMEMOD team



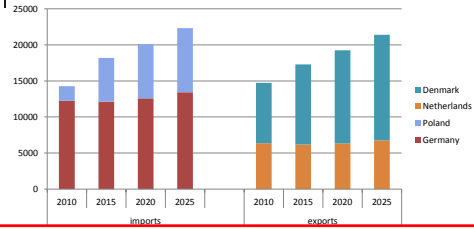
**Production of Pork Meat, 2015 - 2025**



Pigs slaughtered, 2015 - 2025

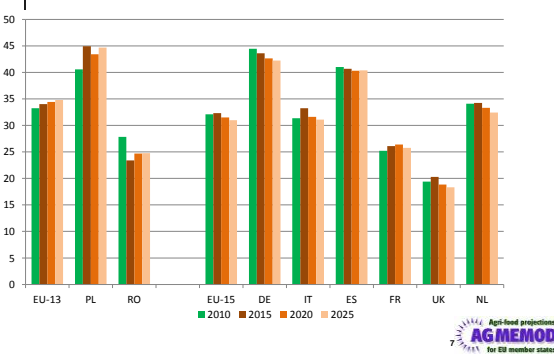


Trade in live animals (x1000)

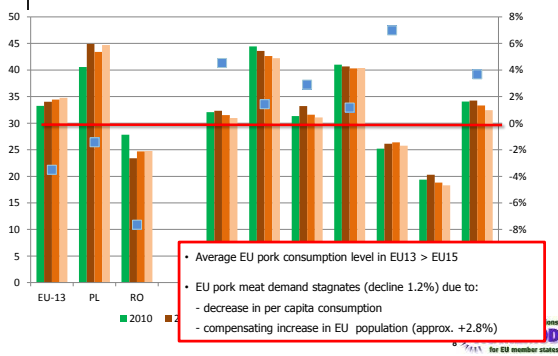


- Trade in live animals is concentrated in Northern EU-region
  - Demand in DE and PL roughly matches supply in DK and NL
  - DK and NL got "incubator"-role (piglets) due to regulatory constraints (manure, welfare)
  - Live trade in fattened pigs is related to slaughterhouse allocation (Germany had low wage-advantage)
- Agri-food projections  
**AGMEMOD**  
 for EU member states

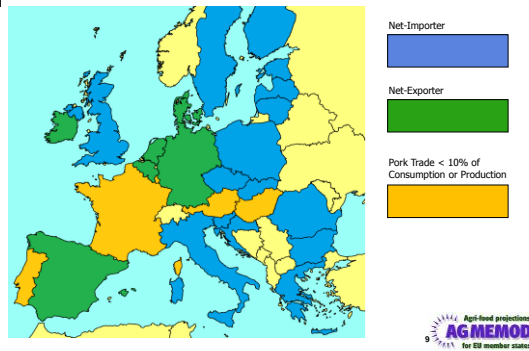
Consumption per capita, 2015-2025



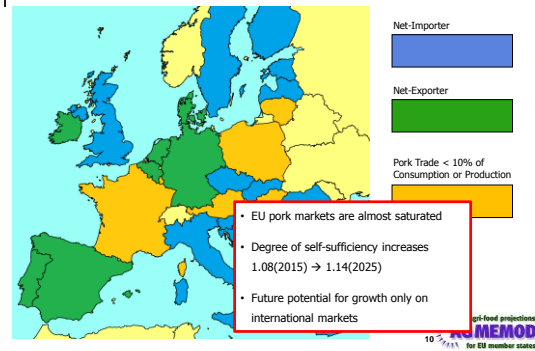
Consumption per capita, 2015-2025



Trade: Pork, 2015



Trade: Pork, 2025



## Red Meat Trade Update

Erin Borrer (US meat export federation)



### Red Meat Trade Update

Erin Borrer  
Economist, USMEF  
Brussels, October 23, 2015

Workshop on the Medium-Term Outlook for the EU Agricultural Commodity Markets

[www.USMEF.org](http://www.USMEF.org)




### Topics for today

- Thoughts on the EU Outlook
- USMEF forecasts
- The role of China
- Prospects for beef exports to the EU – focusing on the U.S. & Brazil



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### Comments on the EU Outlook

**Beef**

- Decrease in EU beef production, consumption & flat imports
  - Decrease in EU-N13 per capita beef consumption
  - Decrease in dairy cows despite elimination of quotas
- Implied assumptions about EU production competitiveness, limited access to imports (remaining just below the level of TRQs)/ greater demand prospects outside the EU given relatively tight global supplies—keeps EU prices high & consumption relatively low

**Pork**

- Would the pork production & consumption outlook change if assume a scenario where the EU eliminates tariffs on U.S. pork through TTIP?
  - Given your assumption that EU prices are increasingly higher than U.S. prices over the outlook period
- If EU pork production & export growth slows, what are the prospects for global consumption—and who will meet the demand?

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### Comparative Advantage?

Factors	U.S.	Australia	Brazil	EU	Canada
Land/water	****	****	****	**	*****
Grain	*****	**	*****	**	****
Labor	**	*	****	**	**
Disease Status	*****	*****	**	****	****
Trade Agreement	****	*****	*	***	****
Operating environment	****	****	****	**	****
Domestic Balance	*****	**	****	*****	**

**Where is China investing...**


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### A note on USMEF forecasts

- Include variety meats & in product weight
- USDA/FAS PS&D & USDA baseline
- OECD/FAO, European Commission, ABARE, Euromonitor, KREI, ALIC, Boyar
- GTIS trade data
- Continuous effort to reconcile the data
- USMEF international director analysis
- U.S. industry perspectives
- Policy & market access assumptions

[www.USMEF.org](http://www.USMEF.org)




### Top Pork Importers & Room for Growth

**Composition of the Pork Market for Top Importers**

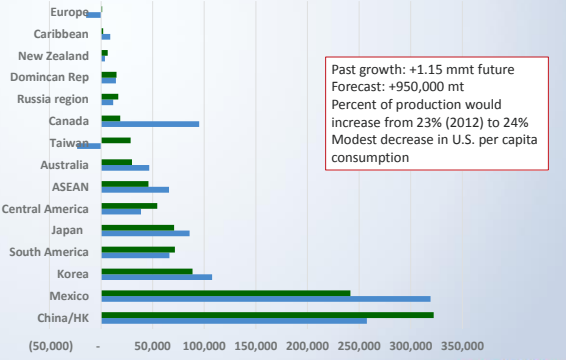
Country	U.S. Share of Total Market (%)	Domestic (Thousand metric tons)	Competitor Imports (Thousand metric tons)	U.S. (Thousand metric tons)	U.S. Growth Forecast (Thousand metric tons)
Singapore	9%	16	96	11	5
Taiwan	3%	590	70	103	10
Russia	0%	1,894	166	10	10
Philippines	2%	1,029	193	31	6
Central Am*	35%	86	7	49	22
Colombia	16%	222	15	44	29
Australia	13%	245	102	50	18
Korea	11%	853	310	152	41
Canada	24%	454	16	153	10
China/HK	2%	40,497	2,011	237	185
Japan	22%	867	607	411	55
Mexico	43%	835	118	716	116

Thousand metric tons; U.S. growth forecast is change in exports 2020-2015

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### Past Actual & Forecast 10 Year Change in U.S. Pork Exports




Past growth: +1.15 mmt future  
Forecast: +950,000 mt  
Percent of production would increase from 23% (2012) to 24%  
Modest decrease in U.S. per capita consumption


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### Currency impact?

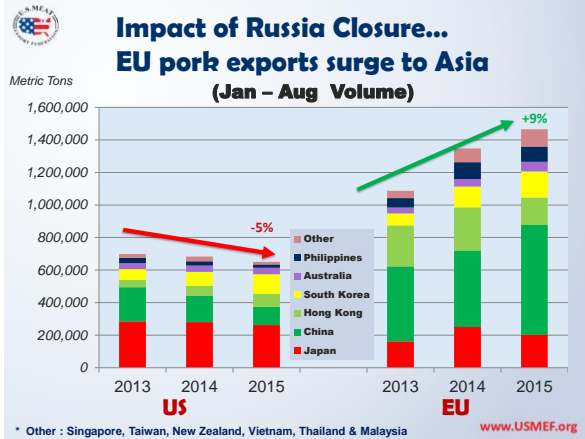
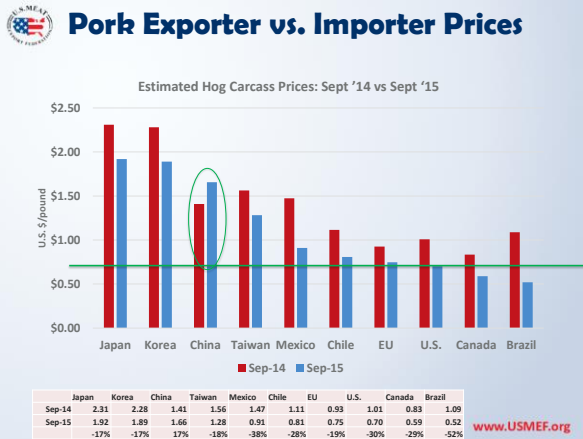


**U.S. Pork Exports to Mexico & FX Rate**



[www.USMEF.org](http://www.USMEF.org)

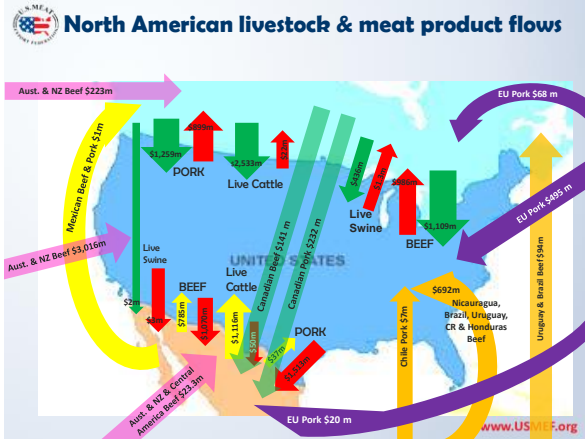
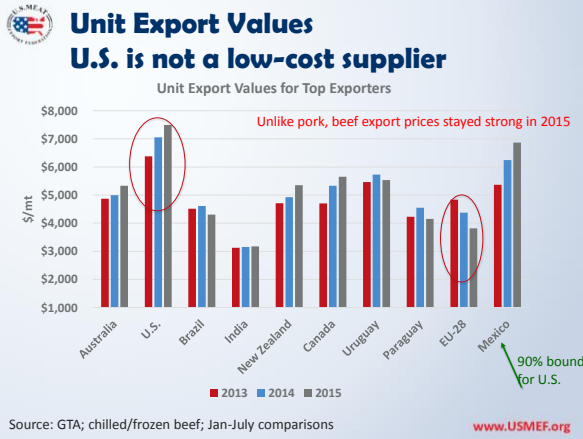
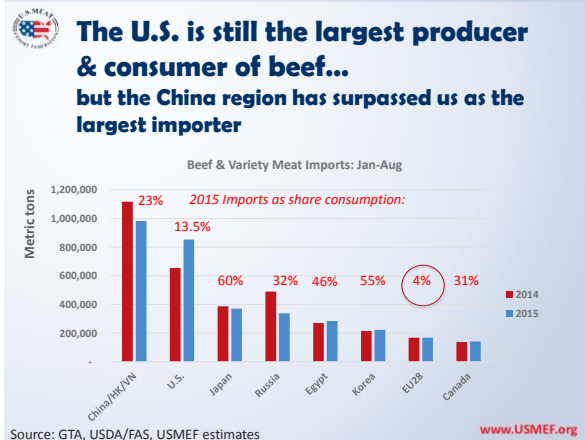
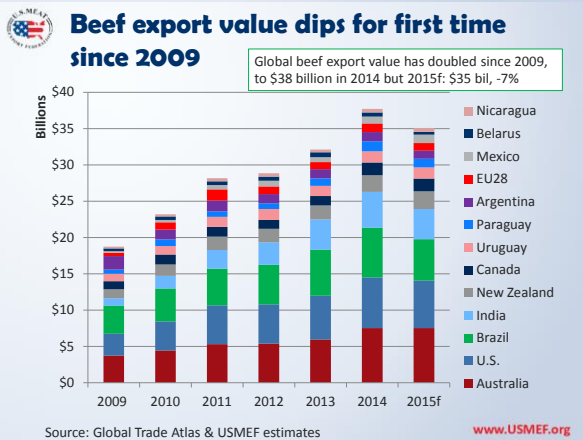
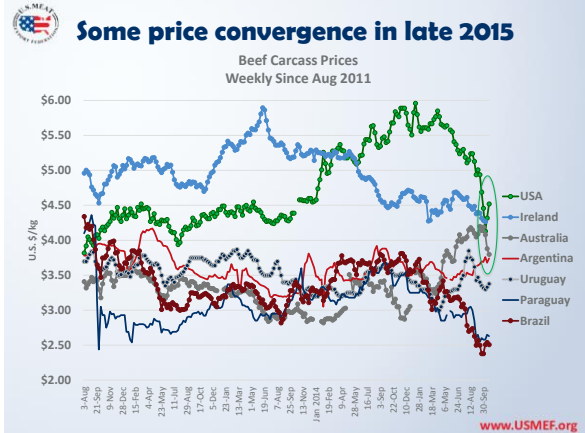




### A Break in the Bull Market

- After 5 record-breaking value years, U.S. beef exports have slowed
  - Dollar at multi-year highs
  - Lack of access to China
  - West Coast port backlog in Q1
- Brazil's exports also slowed
  - Smaller production; weak demand in markets hit by low oil prices/plummeting currencies
  - Resumed access to China this summer & weak real
- Australia's exports had kept record pace
  - Drought-induced large production continued through first half but has now slowed, along with exports
  - Growth has been primarily to U.S., but also Korea, China, Canada & grain-fed to the EU

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### Market access variables

#### Near-term & current

- U.S. MCOOL
- U.S. access to China
- Australia-Japan EPA; Australia-China FTA
- EU duty-free beef quota utilization & future
- 

#### Future

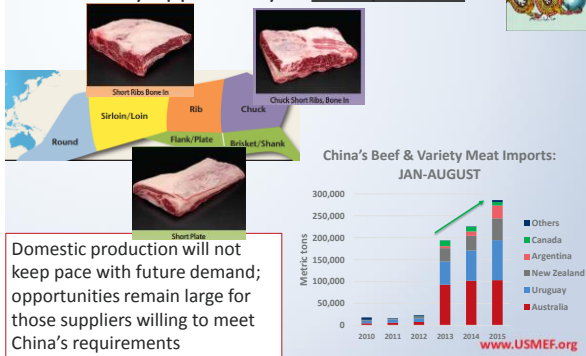
- TPP (and Japan-EU EPA)
- TTIP
- Indonesia WTO case
- Russia access & embargo

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### China continues to frustrate

U.S. industry opportunity: > \$100 per head



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### Prospects for larger exports to the EU? Factors to consider

- As shown previously, total imports account for less than 5% of EU beef consumption
- Lower-cost, grass-fed beef from South America accounts for 70% of imports
- Brazil able to ship chilled beef at full duty
- Argentina relying more on China & less on EU
- Paraguay has recently gained access
- Australia & Uruguay taking US share of duty-free quota
- U.S. disadvantages: higher production costs, full-chain complexity of providing NHTC, strong dollar, and most importantly limited opportunity under the duty-free quota with an uncertain future
- U.S. advantages: unique high-quality product

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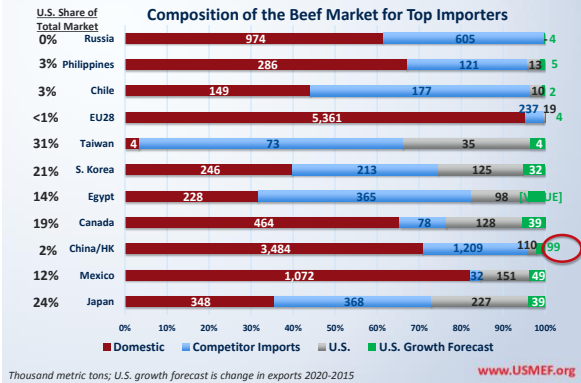
### Thoughts on Brazil's potential

- Production growth has stalled—high prices haven't yet translated into further investment in cow/calf sector
- Currently a challenging year for exports, despite the weak real—HK, Russia, EU, Venezuela, Chile
- Brazil's recession has also hit consumption
- Feedlots often used for "EU cattle"
  - Associated challenges in grain-feeding
- Genetic and production/efficiency differences
  - U.S. cattle inventory 90 mil & beef production 10.86 mmt
  - Brazil cattle inventory 213 mil & beef production 9.4 mmt
- U.S. & Brazilian beef basically do not compete today

www.USMEF.org



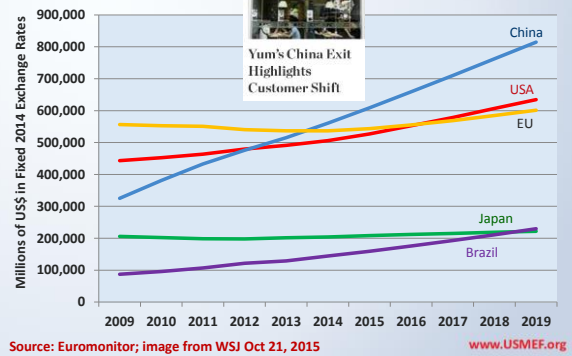
### China holds the largest growth potential



www.USMEF.org



### China's foodservice market will be main future driver

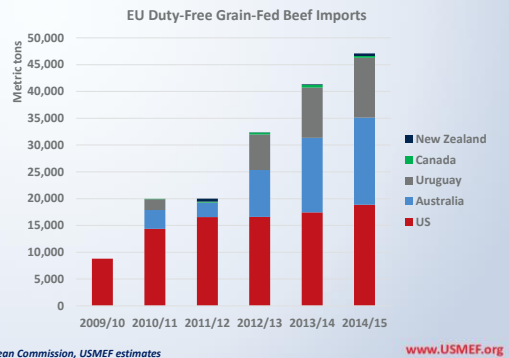


Source: Euromonitor; image from WSJ Oct 21, 2015

www.USMEF.org



### U.S. has a declining share of the EU's duty-free imports

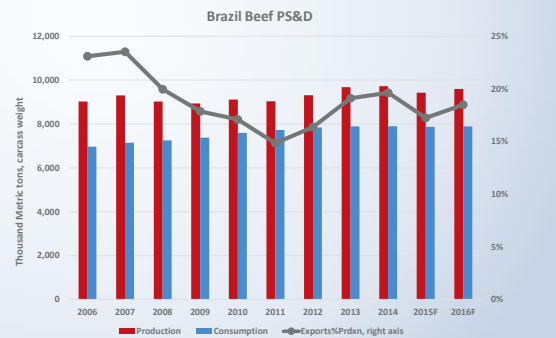


Source: European Commission, USMEF estimates

www.USMEF.org



### Brazil's beef production & consumption growth has stalled



Source: USDA/FAS Oct 2015 estimates

www.USMEF.org



### Nelore cattle are difficult to fatten & not always conducive to feedlots

Factors impacting feedlot outlook:

- Abundant corn and expensive transit to export markets
- Degraded pasturelands
- Brazil's forest code (35% or 80%)
- Competition from crops for grazing land use
- Dry season but challenge of pulling cattle when pasture is available
- Lack of premiums for grain-finished beef
- Packer's need for captive supplies
- Producer mentality
- State-level taxes & other costs
- Domestic demand for higher-quality beef, including British breed influence



### Summary

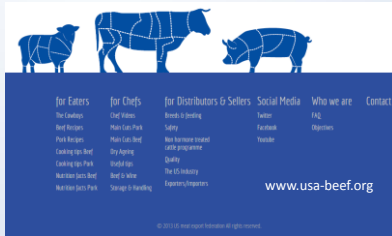
- Relatively tight global supplies and stable demand should support trade & prices in 2016
- Several market access variables to watch
- China remains key to growth in global beef exports
- U.S. maintains a competitive advantage in grain-fed, high quality beef production but is not a low-cost supplier
- With herd rebuilding well underway, U.S. is in a position to be a growth industry, and buy back market share
- Especially as Australia's herd hits 2-decade low
- Expect only modest increase in Brazil's production, but domestic demand will be lackluster & thus greater reliance on exports



### Thank You!

For more information:

- [www.usmef.org](http://www.usmef.org) and [www.usa-beef.org](http://www.usa-beef.org)
- [eborror@usmef.org](mailto:eborror@usmef.org)



## Prospects for poultry meat 2015-2025

Pascale Magdelaine (ITAVI)



### Future prospects for poultry meat 2015-2025

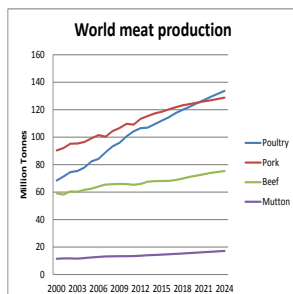
Workshop on the Medium-term outlook for the EU agricultural commodity market  
Brussels, 22-23 October 2015



### INTERNATIONAL BACKGROUND



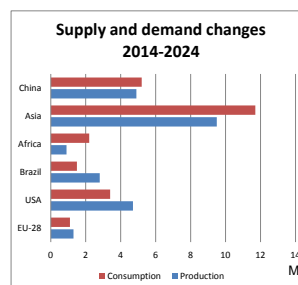
#### Poultry, first meat consumed worldwide in 2020



#### Main drivers

1. Good feed conversion ratio (very important in a context of higher raw material prices)
2. No religious restrictions
3. Lower environmental impact than other meats
4. High nutritional quality (lean meat)

#### Balance between supply and demand at local scale



#### By 2024

- Strong consumption growth expected in developing countries
  - + 18.2 MT in developing countries
  - vs + 6.1 MT in developed countries
- The growth of production will not match the growth of demand in Asia and Africa...
- ... leading to higher development of imports



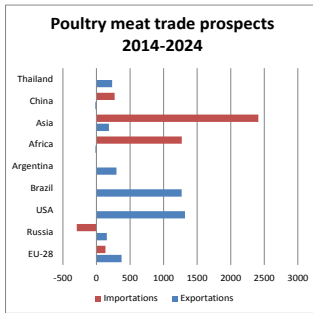
ITAVI from OECD-FAO



ITAVI from OECD-FAO



Poultry meat trade prospects



Poultry meat has been the first meat traded in the world since 1996  
13 MT traded in 2014 (12% of the world production), twice more than in 2000

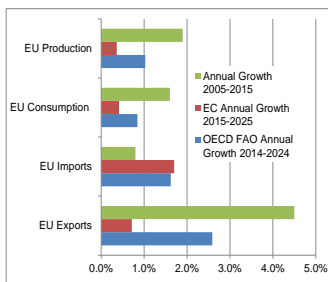
But a slowdown is expected for the next decade (+2.8%/year) with:

- Strong import development in Asia and Africa
- Brazil and US consolidating their leading position on the world market
- Russia becoming net exporter
- EU-28 slightly improving its trade balance

WILL EU POULTRY SECTOR BENEFIT FROM GLOBAL GROWTH?

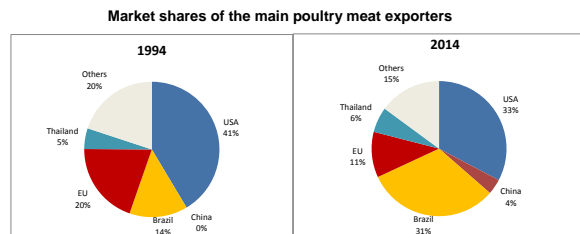
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Comparison of EC and OECD-FAO prospects

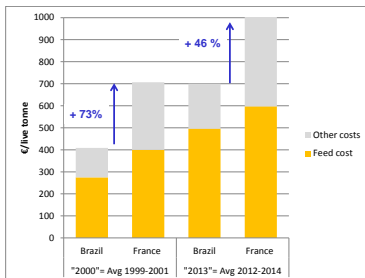


- EC less optimistic (more realistic) on production and consumption prospects
- Both expect a stronger increase in the EU imports around 1.6 % per year (but impacts of new free trade agreements are not taken into account)
- EC forecasts are also more cautious on EU exports development (+0.7% vs +4.5%)

For the last 20 years EU share declining in a growing world market



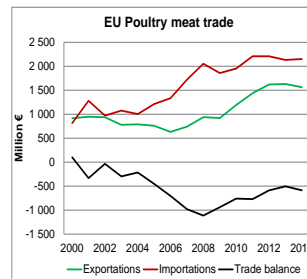
Competitive gap between EU and main competitors remaining, but decreasing



- Cereals prices convergence between EU and world market
- Labour costs convergence
- Implementation of new regulation in emerging countries

*This trend is expected to go on... but strong impact of the currency parities: since 2013 BRL has been depreciated by 20% compared to the €*

EU net exporter in volume, net importer in value



EU poultry meat trade balance 2014

- + 505 000 T cwe
- - 586 million €

Main suppliers of the EU market

- Brazil 497 KT (2.09 €/kg)
- Thailand 250 KT (3.50 €/kg)

Main destinations of EU exports

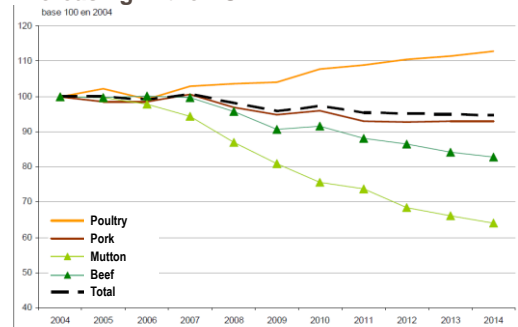
- Sub-Saharan Africa 495 KT (1.01 €/kg) ↓
- Asia 198 KT (0.97 €/kg) ↑
- Middle East 192 KT (1.39 €/kg) ↓
- CIS 182 KT (0.53 €/kg) ↓

EU should remain net importer in value. Africa & Asia less remunerative markets but outlets for dark meats.

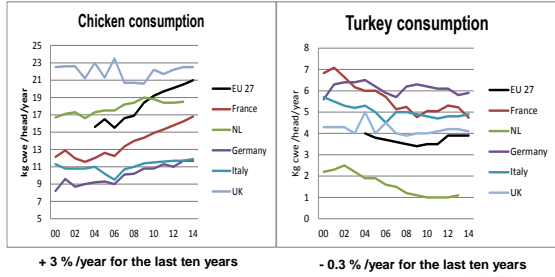
FUTURE PROSPECTS ON THE EUROPEAN DOMESTIC MARKET

11

Individual poultry consumption keeps increasing in the EU



**Broiler consumption more dynamic than turkey's**



Itavi from MEG and SSP

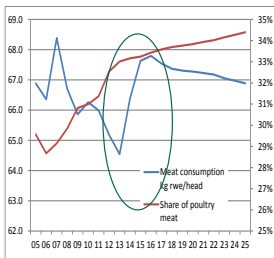


**Segmentation trends on the EU poultry market**

1. Growing share of further processed products (35-50% of chicken consumption)
2. Segmentation around quality programs implemented by industry or retailers in answer to the social demand (animal welfare, environmental preservation and reduction of antibiotics) with NGO's involved in the process
  - Product differentiation (Label rouge, free range or the star system Better Level in the NL)
  - OR Rise in the average standard (Kip van Morgen, Initiative Tierwohl)



**Towards 2025, EU individual poultry consumption should increase very slightly**



**Annual individual poultry consumption growth (EC forecasts)**  
+ 1.3 % 2005-2015; + 0.2 % 2015-2025



**Decrease in global meat consumption**

1. **Public health concerns**
    - Overweight and obesity linked to ultra processed products consumption
    - Antimicrobial resistance
  2. **Animal welfare & environmental concerns**
    - Rejection of industrial livestock production (gigantism, confinement of animals, animal feed suspicions)
  3. **Development of veganism (2-10 % of EU population) or flexitarianism (31% according to Datamonitor international)**
- But the share of poultry in global meat consumption expected to rise to 34%**

**Innovation in meat substitutes could emphasised the decline in meat consumption**

**In the Netherlands**

**Beyond Meat (US)**

**Just Mayo – Hampton Creeks (US)**

**Waitrose (UK)**



**Opportunities and threats for EU poultry industry**

Opportunities	Threats
<ul style="list-style-type: none"> <li>• High worldwide demand for animal protein</li> <li>• Feed costs and social costs convergence between EU and third countries</li> <li>• EU industry consolidation from a local to a regional pan European scale                             <ul style="list-style-type: none"> <li>• Higher market power</li> <li>• Economies of scale</li> </ul> </li> <li>• Strong demand for local products</li> </ul>	<ul style="list-style-type: none"> <li>• New free trade agreements (TTIP, Mercosur..) and further opening of the EU market</li> <li>• New EU regulations increasing EU production costs</li> <li>• Price-driven EU consumption (but poultry meat resilient in economic crisis period)</li> <li>• Development of veganism and substitute products</li> </ul>

**Uncertainties**

- Animal diseases outbreaks
- Currency parities changes



Thank you for your attention  
[magdelaine@itavi.asso.fr](mailto:magdelaine@itavi.asso.fr)



# What does the medium-term outlook mean for the total agricultural income?

Pierluigi Londero (DG AGRI)

**Prospects for EU agricultural markets and income 2015-2025**

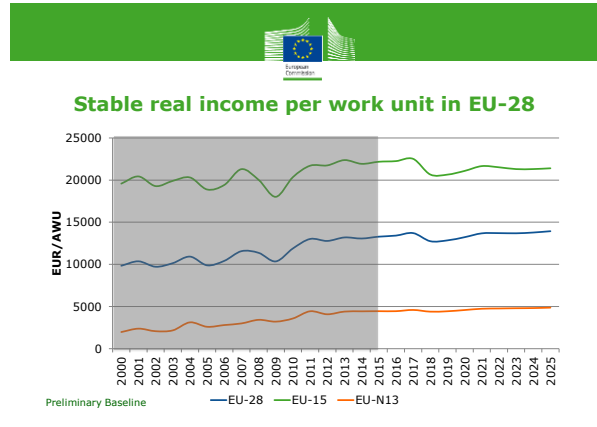
**Income**

23 October 2015

**PRELIMINARY BASELINE**

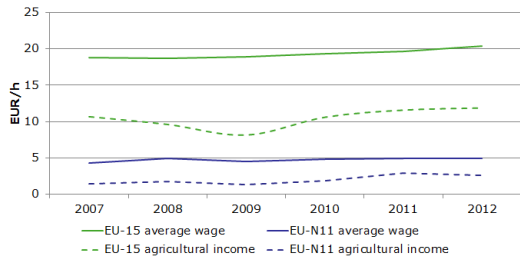
Pierluigi Londero  
Koen Mondelaers  
Sophie Hélaïne

Agricultural modelling and outlook  
DG Agriculture and Rural Development  
European Commission



2

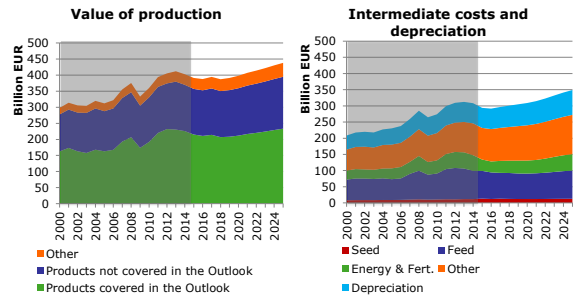
## Average wage per hour versus agricultural income per hour



Note: EU-N11 without Malta and Croatia  
Source: based on Common context indicators for rural development programs (2014-2020) - C26

3

## Costs recover faster than value of production



4

**Feeding China: Future challenges and the role of Africa in supporting Chinese food demand**, Marina Guajardo (DG AGRI)

# Feeding China

Future challenges and the role of Africa in supporting Chinese food demand  
 Marina Guajardo  
 October 2015

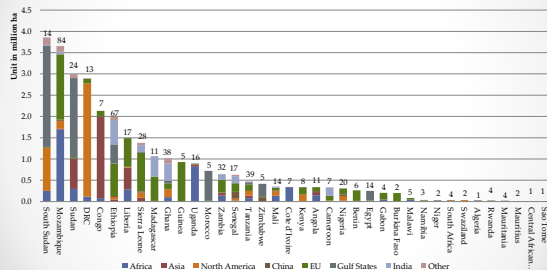
## Going Out

- Market liberalization following WTO accession
- Roles of MOFCOM and Ministry of Foreign Affairs
- Financial instruments supporting Chinese overseas expansion:
  - China Export-Import Bank
  - China Development Bank
    - China-Africa Development Fund
- 130 Bilateral Investment/Trade Treaties signed

## The issue of 'land grabbing'

- Defined as "200 ha (or more) with the purpose of agricultural production of crops and non-food crops, timber extraction and carbon trading in low to middle-income countries."
- Estimated 35-80 million hectares under foreign ownership in the world
  - Over half the surface is located in Africa
- Environmental and human costs
- Policy support for land investment expansion
- Illegal exports

## Land grabbing in Africa



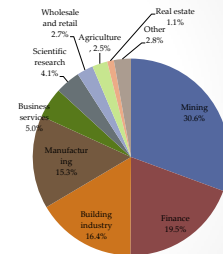
Amount of hectares under foreign ownership and number of registered land deals per country

## Challenges

- Uncertainty in changing consumption patterns of growing middle class
- Ageing population
- Environmental impact of intensive agriculture
- Environmental impact of rapid urbanization
- Retracting on 'self-sufficiency'

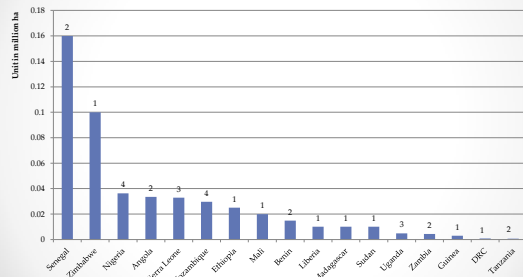
## Going to Africa

- Success of Going Out limited in agri-business
- Africa perceived to have great potential
- South-South Cooperation
- Development aid
  - Agricultural demonstration centers



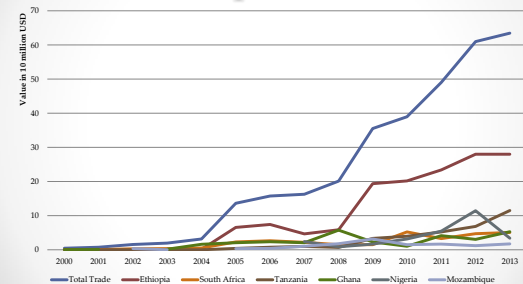
Distribution of China's Direct Investment in Africa (by the end of 2011)

## China in Africa

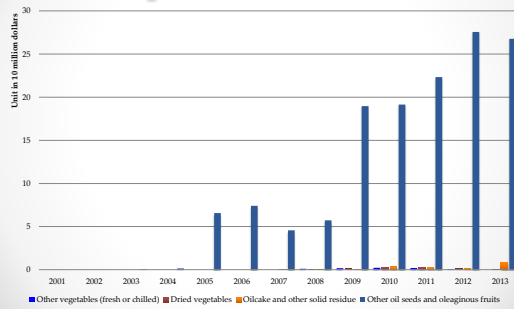


Amount of hectares under Chinese ownership and number of registered land deals per country

## African exports to China



## Ethiopia: driving Africa's exports to China



## Conclusions

- Government policies to ensure food security
  - However, no evidence of support for 'land-grabbing'
- Government support on expanding outreach of Chinese companies internationally
  - Expansion likely to continue through purchase of holdings or investments throughout the supply chain.
- SSC: Focus on sharing techniques and capacity building

## China's grain production growth and the outlook for its input markets

Zachary Gidwitz (Smart Agriculture Analytics)



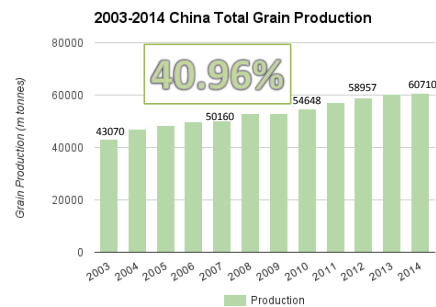
October 23<sup>rd</sup>, 2015, Brussels

### China's grain production growth and the outlook for its input markets

Zachary Gidwitz  
[zachary@agvali.com](mailto:zachary@agvali.com)  
 Smart Agriculture Analytics, Inc.  
 China | USA | Brazil



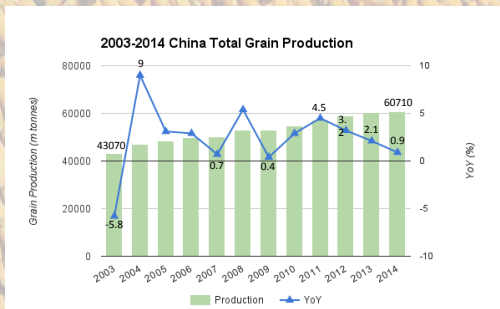
### China's Grain Production



Source: National Bureau of Statistics, P.R. China



### Decreasing growth rate



Source: National Bureau of Statistics, P.R. China

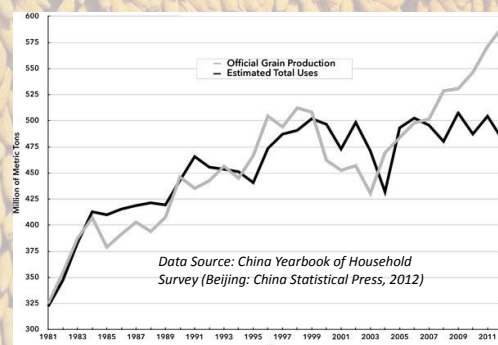


### What's the meaning behind 11-year winning streak?

### Gain or Lost ?



### Continued growth: fact or fiction

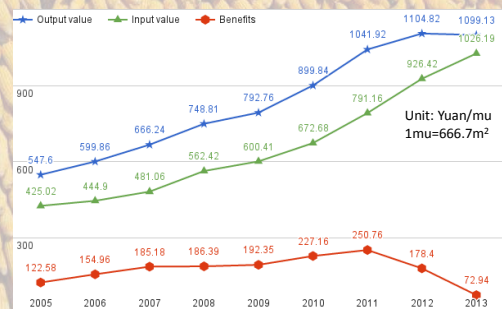


Data Source: China Yearbook of Household Survey (Beijing: China Statistical Press, 2012)

Chart Source: China's Grain Production: A Decade of Consecutive Growth or Stagnation? By Zhun Xu, Wei Zhang, Mingqi Li

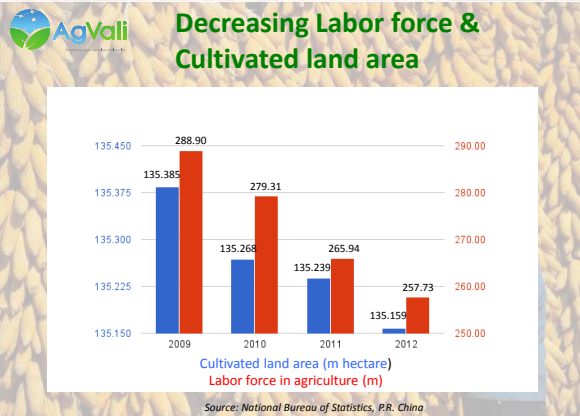
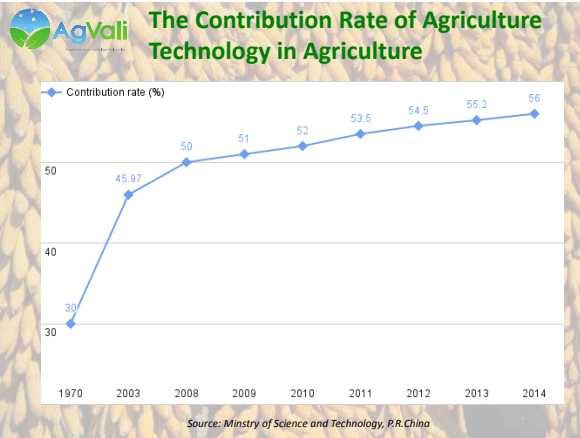


### China's Grain output, input, and profit per mu



Source: National Bureau of Statistics, P.R. China





- ### Encouraging export policy
- No.1 Central Document 2015  
---Direction of China agriculture development
  - Policies for supporting international agricultural trade
  - Policies supporting export of agtech
  - Training internationally competitive Chinese companies
  - 《Made in China 2025》
  - No increase in fertilizer or pesticides use after 2020

### Encouraging export policy

- Example: standardization and relaxation of export tariffs for fertilizers

China Fertilizer Export Tariff Policy Adjustments		
Product	2014	2015
Urea	Peak season(Jan-Jun,Nov,Dec): 15%+40RMB/ton	80RMB/ton
	Off-season(Jul-Oct):40RMB/ton	
Other Nitrogenous fertilizers	Peak season(Jan-Jun,Nov,Dec): 15%+40RMB/ton	5%
	Off-season(Jul-Oct):40RMB/ton	
MAP	Peak season(Jan 1-May 15,Oct 16-Dec 31):15%+50RMB/ton	100RMB/ton
	Off-season(May 16-Oct 15):50RMB/ton	
DAP	Peak season(Jan 1-May 15,Oct 16-Dec 31):15%+50RMB/ton	100RMB/ton
	Off-season(May 16-Oct 15):50RMB/ton	
N-P Dual-component fertilizer	Peak season(Jan 1-May 15,Oct 16-Dec 31):15%+50RMB/ton	5%
	Off-season(May 16-Oct 15):50RMB/ton	
Other fertilizers	Peak season(Jan 1-May 15,Oct 16-Dec 31):15%+50RMB/ton	5%
	Off-season(May 16-Oct 15):50RMB/ton	

Source: Ministry of Finance, P.R. China

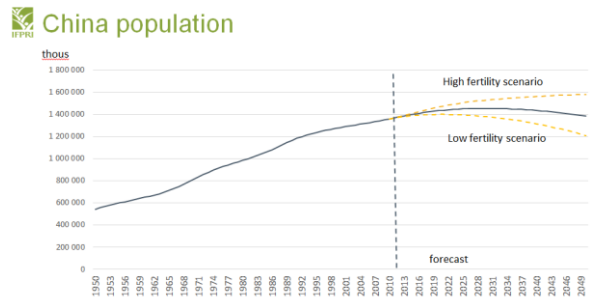


**Trends in China: Grain, Oilseed and Fibre Supply and Demand**

Joe Glauber (IFPRI)

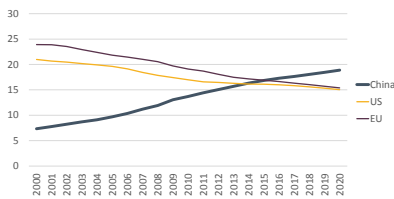
**IFPRI** Trends in China Grains, Oilseeds and Fibers S&D

Joe Glauber, IFPRI  
26 October 2015



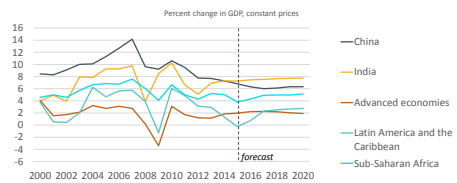
Source: United Nations, *World Population Prospects: The 2012 Revisions*

**IFPRI** Percent of world GDP



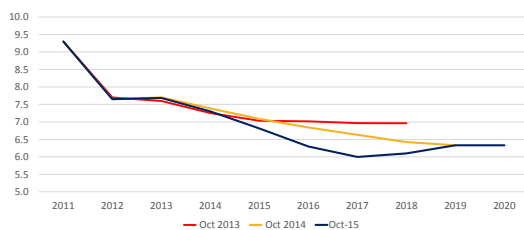
Source: IMF

**IFPRI** World Output



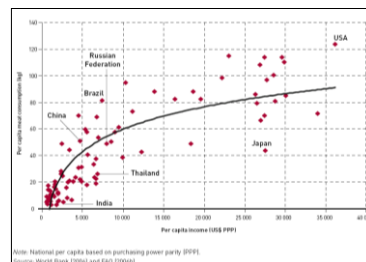
Source: IMF, WEO

**IFPRI** Projected growth rates for China



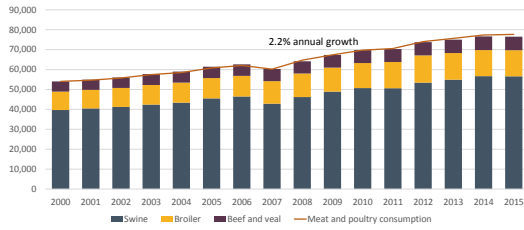
Source: IMF WEO

**IFPRI** Per capita meat consumption



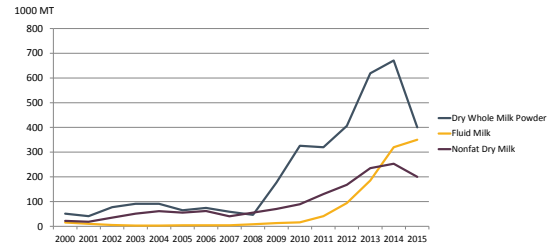
Note: National per capita based on purchasing power parity (PPP).  
Source: World Bank (2008 and Fall 2009).

China meat and broiler production

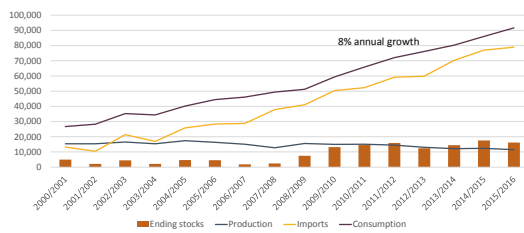


Source: USDA, PSD

China dairy imports

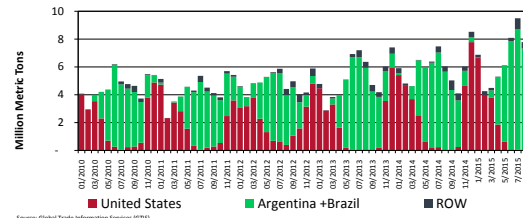


China soybeans



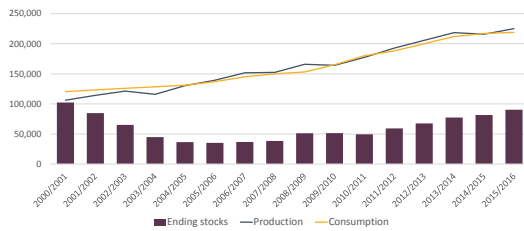
Source: USDA, PSD

Monthly Chinese soybean imports by origin



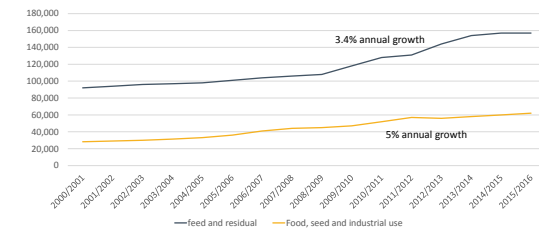
Source: Global Trade Information Services (GTIS)

China corn

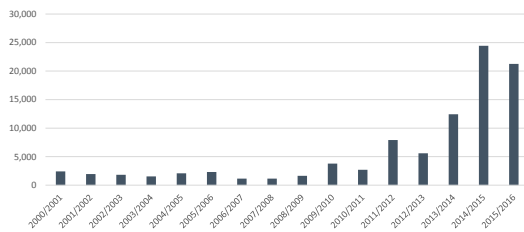


Source: USDA, PSD

China corn use

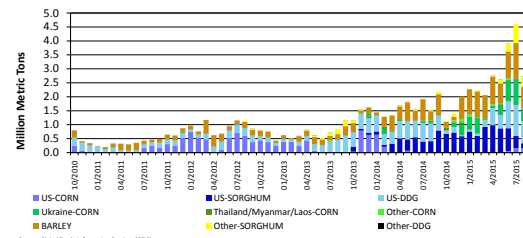


China feed grain imports



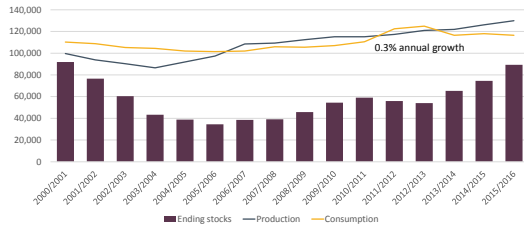
Source: USDA, PSD does not include DDGs

Monthly China corn, barley and sorghum imports by origin

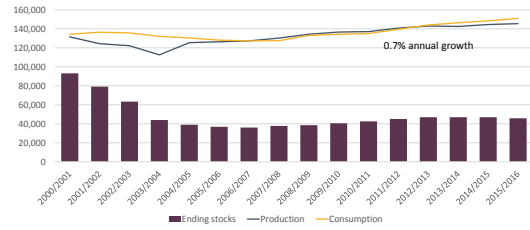


Source: Global Trade Information Services (GTIS)

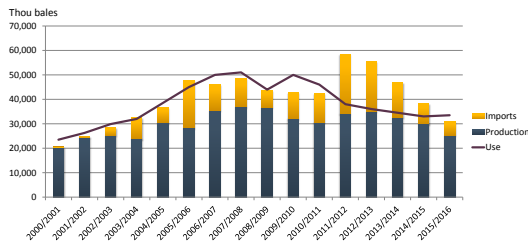
**China wheat consumption flat**



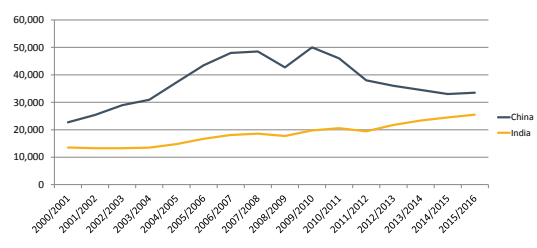
**China rice**



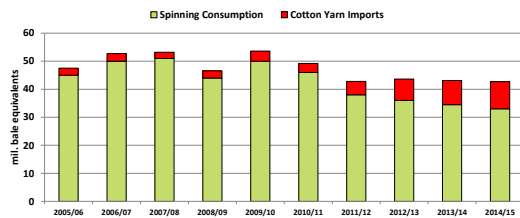
**China cotton use falls by 33 percent since 2009/10**



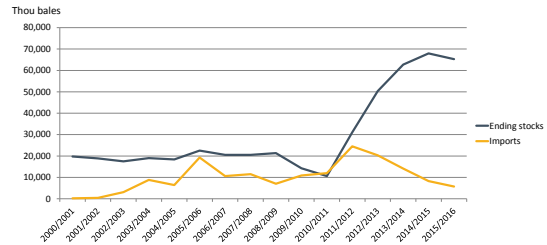
**China cotton use falls, India rises**



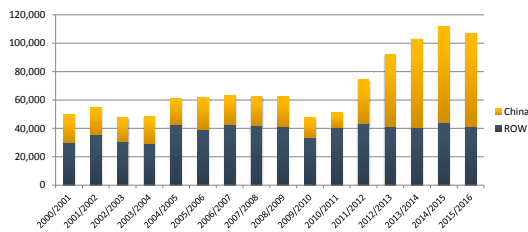
**China's Cotton Spinning and Cotton Yarn Imports 2005/06 through 2014/15**



**Cotton stocks rise, imports fall**



**China cotton stocks**



**Outlook**

- Short run, slower growth for China unlikely to have much affect on food consumption
- Over longer term, slowing population growth and slowing growth in meat and dairy demand => import growth for oilseeds will slow but still remain strong
- Feed grain imports are likely to increase
- Food grain production likely to remain at self-sufficient levels at least over next 10 years—imports accounting for a small share (2-3%) of consumption
- Will China import more meat, poultry and dairy or more feed grains and oilseeds?
- Cotton demand: competition from India

# Impact of a decrease of animal production in China

Fabien Santini (JRC-IPTS)



### Context

#### Different levels of China's presence on the agricultural markets

- China's production of pigmeat and sheep meat very important, trade also represents large shares of the world trade
- China's dairy production more modest with the exception of WMP; trade is significant
- China's major oilseed producer and major protein meal producer

#### Share of China in world production and imports (2025)

### Scenario setting

#### Decrease of animal production in China

- Rationale: need to reduce livestock because of increased environmental constraints
- Initial shock targeted : around -5% progressively over 10 years on meat production and, for beef meat and milk, cow inventory
- Consumption and trade are not shocked and adjust endogenously through price transmission

### Impact on livestock products markets

#### Shock is overall uniform across sectors, but poultry less affected and processed dairy products more

### Impact on livestock products markets

#### Increased imports and reduced consumption in China

### Impact on livestock products markets

#### World prices are affected in relation to the weight of China on international markets

### Impact on livestock products markets

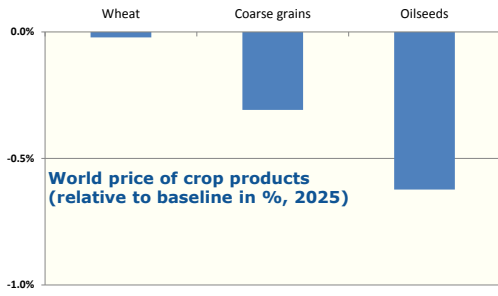
#### In the EU, the impact is significant for meat : more exports / less imports for pig & sheep meat, opposite direction for beef & poultry

### Impact on crops markets

#### In China, the demand for feed decreases and this affects their imports

Impact on crops markets

The impact on world markets for crops remains moderate



Conclusions

- A decrease of animal production in China results in
  - increased domestic prices affecting slightly consumption
  - increased imports in compensation

Induced effect on world markets, particularly for sectors where China represents a significant part of the world production and/or trade (pigmeat, sheep meat, WMP)

For the EU, the increase of exports and price of pigmeat results in a higher consumption of beef and poultry. The impact on dairy products is moderate.

The induced impact on crops markets is relatively small, although stronger for oilseeds (with consequences for protein meals and feed cost throughout the world).

Thank you for your attention

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Workshop on the Medium-Term Outlook for the EU Agricultural Commodity Market

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