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Sustainability Research

In collaboration with:
 - Crédit Agricole's Industrial Research

AGRO-COMMODITIES CHALLENGE

Enough to feed everyone's greed?

■ Global demand is outstripping supply

The recent inversion of the curves for world agro-commodity production and consumption poses a twofold question as to the sustainability of this trend and its effects on the industrial players concerned.

■ Global food needs can be met...

The resulting scissors effect led to a net production shortage of 3-5% in 2007 (despite a record world harvest for corn) and lasting upward pressure on prices of grain (especially wheat) and oilseed plants. These prices are expected to continue to rise until 2010, at which date the rationalisation of agricultural and political models will be able, in our view, to increase overall supply.

■ ...provided no priority is given to energy-driven demand

Increasing doubts over the emergence of substantial second-generation agrofuel production before 2013-2015 raises the question of the disruption to feedstock supply caused by current US and EU targets. The recent EC 'biofuels' proposals support the interest of farmers with regard to sustaining energy demand, while the new sustainability criteria barely tackle environmental and food vs. fuel tensions, and the EU will, in our view, find it hard to resist the growing controversy on these issues.

■ Uncertain business environment for European agrofuels

The EU's incorporation target has resulted in insufficient visibility, as it does not prevent reducing regulatory support and the opening up of markets to global competition. Given our view on steady agro-commodities prices, we remain negative on most European-based businesses, which face a challenging business environment.

■ Impact on food sectors offset by pricing power

The risk for the food sector of higher feedstock prices has not yet materialised, as they use a different pricing model in D&E markets and as strong demand has enabled companies to use their pricing power to implement substantial price hikes. We believe that an additional impact from a slowdown in sales due to higher prices and accelerating cost inflation is either priced in or unlikely.

■ Soft pressure on retail and catering sectors

The large-scale retail sector's pricing power on private label brands, albeit limited, was merely impacted by a lasting increase in prices. The main challenge for the catering sector remains its ability to pass higher costs on to clients.

■ Opportunities from increased farm revenues

Subsidies are likely to continue, in addition to increased revenues in the mid-term after almost a decade of declining revenues. This new context provides increased visibility for crop and agro equipment players.

Executive summary

Strong fundamentals

The 2007 consensus forecast calling for an end to the raw materials cycle, thus resulting in stable or even declining prices, is unlikely to apply to agricultural products. The fundamentals are just too strong. By 2050, the world population will increase by a further three billion, mostly in developing countries. In the meantime, world food demand will double as economic growth and rising incomes allow consumers in developing countries to eat more, and maybe better, shifting their habits to higher value-added food products, while climate change and competition for land are increasingly a reality.

Short-term momentum also strong

Adjusted for inflation, most agro-commodities are trading at well below their all-time highs. Despite the more supportive fundamentals across the major crops, the question is whether these fundamentals have been priced in. Looking towards 2008, we anticipate steady demand and prices throughout the year and until 2009, especially for grain and oilseeds. However, a downturn could occur in the coming months (particularly for wheat) due to profit-taking by speculators who took advantage of the recent rise. Conversely, the beverage and sugar markets look weaker, with supply continuing to exceed demand.

Medium-term mitigation factors

We are in the process of shifting from supply-driven agriculture to demand-driven agriculture. After the recent rise, the price signal constitutes a restructuring factor. The anticipated end of Malthusian measures (40% of the EU budget) represents an additional uncertainty whose effects (e.g. volatility) are difficult to measure. Together with substantial increases in acreage and yield improvement globally, shifts in policies should nevertheless start to impact supply in 2010 and limit the rise in prices.

Implied inflation manageable for all food-related industries

As food represents about 15% of overall household spending, we do not believe that the increase in agro-commodity (or energy) prices is a real threat to consumption via a negative impact on purchasing power. In the overall equation of demand-driven economic growth, the impact is minor on an aggregate European level. Food producers, retailers such as **Tesco**, **Sainsbury**, **Carrefour** and catering services groups like **Sodexo** and **Compass** are certainly confronted with a wide range of agro-commodity price hikes, but the impact has been relatively modest and overpriced by the market. We remain confident in the continued pricing power of players such as **CSM**, **Danone**, **Nestlé**, and **Unilever** in both developed and D&E markets where margins are not expected to decline.

Agrofuels: a source of tension at stake

The price rise in 2007 is a strong warning signal and an early regulating factor for the development of the agrofuel segment worldwide. The fundamental interest for farmers in sustaining energy driven demand to offset upcoming changes in agricultural policies faces increasing controversy over the environmental risks of first-generation agrofuels and competition with world food demand. This threat will likely culminate in 2008 in proposals for a moratorium on agrofuels and for integrating food vs. fuel mechanisms to further discriminate European crop usage. While second-generation agrofuels will not represent an alternative before 2012-2015, the EC's 10% target proposal does not provide the visibility it claims, at this stage, as it implies opening up Europe to competitive imports and does not necessarily prevent further tightening of member state subsidies. This all-challenging environment confirms our cautious stance on ethanol players such as **Crop Energy** and agro diesel groups such as **Biopetrol**. US corn and South American sugar cane-based ethanol should prevail, providing visibility for **Abengoa's** businesses in both regions. The trend in oil or feedstock prices could, however, significantly affect our views.

Agro-chemicals and agro-suppliers: farm revenues set to drive growth

The production and yield challenge, together with the increase in farmers' revenues, will benefit **Syngenta** in the fertiliser and crop sectors, and agricultural equipment players such as **Manitou** and **Exel Industries**.

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Recent Cheuvreux reports on related issues



I— Sources of tension

The world agricultural sector is going through a period of turbulence. Corn inventories are at a 30-year low and wheat inventories at an 11-year low. The prices of these two cereals are at ten-year highs. The oils and oilseeds markets have also entered a period of high and volatile prices that will last as long as demand outstrips supply. The market is anticipating a further reduction in global stocks and prices of oilseeds have reached at least a 20-year high, reflecting both the tense situation with respect to resources and stocks, and speculation on energy use. Palm oil is at the forefront in this situation.

While we expect a possible temporary decline in the short term, we agree on the prospect of high prices for several years to come, as we analyse in depth in the Appendix to this report: "Outlook for selected feedstock prices".

In this first section we focus on the major drivers for the rise in agro-commodities prices, analysing how, despite the record harvest (due to corn mainly), low inventories and strong demand combined with further more fundamental factors such as changes in consumption, climate change, urbanisation and agro-fuel developments are sustaining a stretched environment.

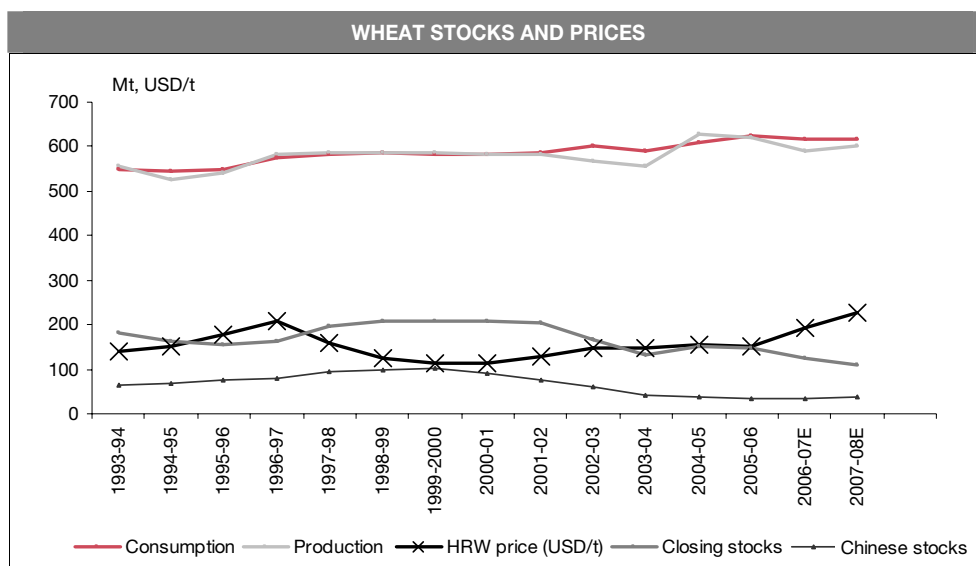
Short and medium-term sources of tension

■ Inventories

Inventories at a historical low

At the global level, closing inventories of most commodities in 2007-08 are expected to fall to an historically low level, especially in the major exporting countries. The main question is whether they will decline again in 2008-09. Given that inventories cannot drop much further, any shortfall would lead directly to state of critical tension and very high domestic prices.

Wheat is critical



The virtually continuous decline in inventories since 2001 actually resulted in a sharp rise in wheat prices only in the spring of 2007, while the substantial shortfall in 2006 production, which had a decisive impact on inventories, admittedly resulted in a rise in prices, but to a more moderate extent. Intervention inventories, i.e., grain held back from the market, shrunk to around 1m tonnes in September 2007 from 14 million tonnes at the beginning of the 2006-07 marketing season. Inventories in Europe mainly consist of corn held in Hungary, according to the EU.

A fundamental shift in global demand

According to USDA estimates, one-third of wheat inventories in 2008 will be in China, along with 27% of corn inventories. Just 30% of wheat inventories is located in the major export countries. Chinese stocks, used continuously from 2002 to 2005 to absorb the shortage in local production without importing, evidently served as a cushion, which explains the market's limited reaction to a shortage that was also global – unless the statistics (notably those involving China) are less reliable than assumed.

Oilseeds: Palm oil inventories are expected to decline in 2007-08 to a low percentage of total consumption (6% of all oils). In addition, the volume of soybean oil produced in 2007-08 is expected to increase although soybean production is forecast down sharply (impact of competition from corn for cropland in the US, due to the development of ethanol fuel), hence a decline in soybean inventories (to 23% of production), in addition to the drop in oil inventories.

■ Demand

A major change in the global agricultural model is that of a shift from supply-driven agriculture to demand-driven agriculture. Strong economic growth in OECD and non-OECD countries has boosted demand, while reducing exports.

World consumption is also widely spread across the globe; wheat (along with rice) is the staple food for most of the world's population. Consumption has increased more quickly on average (0.9% p.a.) than production (0.7%) over the past 15 years.

Livestock feed demand is a driver

The increase in demand for secondary grain on international markets corresponds essentially to demand for livestock feed in developing countries, where there is rapid expansion in livestock raising (China, India and Argentina). But as corn prices are rising faster than those of oilseeds, soybean meal and other by-products are likely to continue to replace corn as livestock feed.

This is also the case in Europe, where wheat is widely used as animal feed, as corn is usually more expensive. Brazilian corn and sorghum were thus imported in France in 2007. With regard to food for human consumption, the substitution phenomenon is too diffuse to be appreciated, as countries often prefer to use taxes to regulate wheat prices. A ceiling on wheat consumption is expected in 2007-08.

Livestock producers will have more spent grain, a by-product of ethanol production, at their disposal. This represents around one-third of the tonnage of corn used, but cannot automatically be substituted for corn in animal feed; it is more an alternative to soybean meal. At current corn and spent grain prices (the latter are also rising), ethanol is still viable in the US, given the level of tax incentives, which makes it a particularly competitive way to use corn.

In all, current consumption projections are less ambitious than those of a few months ago, due to high prices.

■ Energy demand

Energy-driven demand for agro-commodities jumped 15% in 2007 and this demand will continue to increase in order to meet political targets; as long as agrofuels remain the only practical technology for replacing oil-based fuels.

The impact of growing demand for energy sources (based on grain, sugar, oilseeds and vegetable oils) could however be limited and vary widely by geographic region.

Regulation is key: The IISD Earth Track report estimates that total support to agrofuels in OECD countries amounted to at least USD11bn in 2006, most of which provided by the US and the EU.

Energy driven demand had still a limited impact ...so far

Global agrofuel policies drive energy demand

Europe

The EC's Fuel Quality Directive and Renewable Energy Directives are both seeking 2020 incorporation targets that would require about 35 million toe, i.e. half of the current arable land in the EU would have to be used for biofuel crops. The impact assessment carried out by the EU thus demonstrates that such incorporation targets can be met by increasing imports.

QUANTITY OF BIOFUEL NEEDED TO COMPLY WITH THE EU TARGET

	Quantity to replace 5.75% of EU fuel transport consumption (mt)	Quantity to replace 10% of EU fuel transport consumption (mt)
Ethanol	10.2	21.5
Agrodiesel	12.9	25.3

Source: Cheuvreux

QUANTITY OF ARABLE LAND NEEDED TO PRODUCE THESE AGROFUELS IN EUROPE

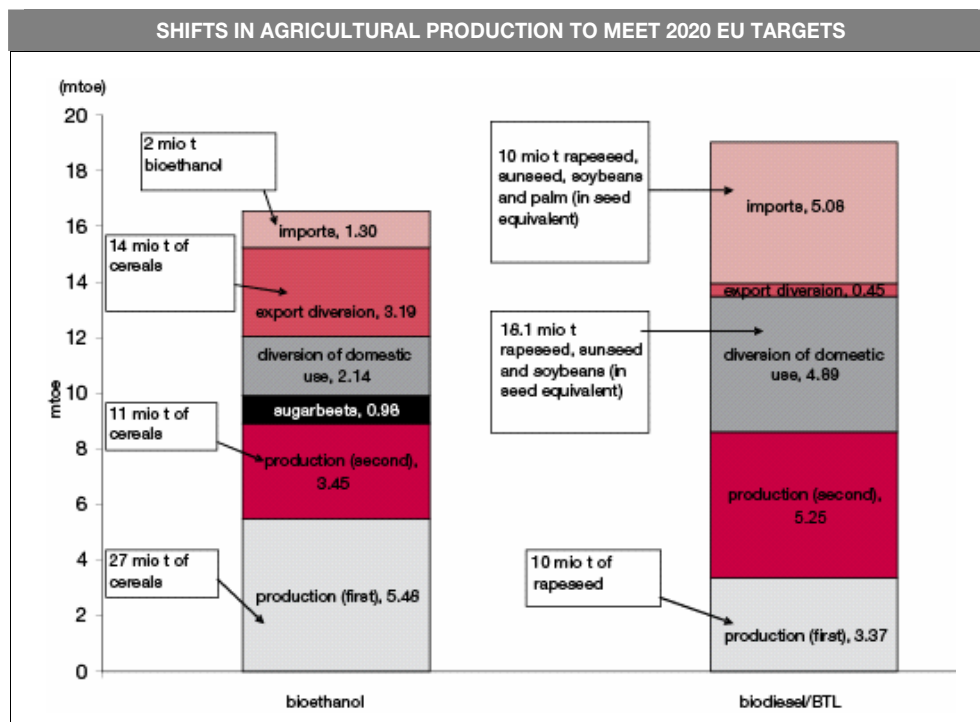
	Biofuel yield/ha (tonnes)	Total arable land needed by 2010 (m ha)	Total arable land needed by 2020 (m ha)
Wheat	2.55	4.0	8.4
Rapeseed oil	1.37	9.4	18.5
% of total arable land		12.9%	25.9%

Source: Cheuvreux

EU targets are ambitious, looking solely at the amount of the surface area available to grow biofuel crops in Europe. Therefore, in keeping with what is claimed by the EC, **“it is both likely and desirable that these needs would in fact be met through a combination of domestic production and imports”**.

For EU member states to meet the EC's target of 10% incorporation by 2020, there would have to be a two-fold increase in rapeseed surface area, and imports of soybean and palm oil (the latter freezes at 16°C and cannot therefore be used in EMHV).

Looking forward, meeting EU targets through soybean and rapeseed agrodiesel production growth seems likely (see details of the Regulation in Section II). This will have a strong impact on markets for oil-bearing plants, a direct result of the demand for oil but also indirectly because of the correlation with corn, given the competition for land that arises for these crops and the substitution for animal feed.



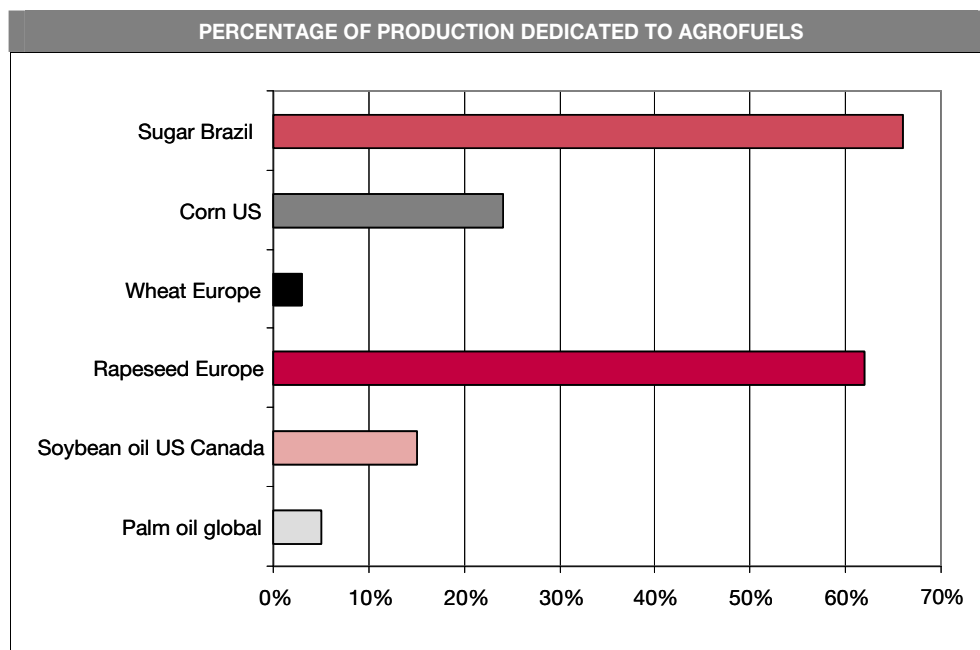
Already a substantial driver for some agro-commodities

The latest 2007 EC Agrofuels impact analyses were conducted with market price projections for soft wheat at USD175/t (fob Rotterdam), barley at USD130/t (fob Canada) and corn at USD180/t (cif Western Europe) by 2020. We are entering 2008 with prices already 30% up from this levels.

For corn, projections of increased consumption for 2007-08 vs. 2006-07 (an additional 42m tonnes) correspond mainly to increased consumption for ethanol, estimated at around 30m tonnes in the US (an additional 35m tonnes for all industrial uses, according to the International Grains Council). This figure was revised down due to high prices.

While corn in the US, rapeseed in Europe, and Brazilian sugar are largely used to make agrofuels, only 3% of wheat production is used for ethanol, while this cereal has seen the sharpest increase over the past two years. After expanding to a certain degree, agrofuels are likely to use a large proportion of harvests, with production for agrofuels increasing from 50% of sugar cane production in Brazil and 17% of corn in the US in 2006, to 70% and 28%, respectively, in 2010. However, their share in total fuel consumption remains very low for countries that consume substantial quantities of fossil fuels: an estimated 2.5% of petrol in the US in 2008.

Mainly corn and oilseeds



Source: OECD, FAO

Sugar under the influence of ethanol

Sugar - Ethanol

The sugar market can no longer be examined independently from the ethanol and oil markets, with arbitrage carried out in Brazil, which is the world's leading producer of ethanol along with the US, and for which around 50% of sugar cane production is now devoted to ethanol. Other sugar-producing countries such as Thailand will do the same. Sugar cane crop projections based on surface area under cultivation and yields are thus not enough to determine the amount of sugar production, as choices can be made over time with regard to the proportion used to produce sugar or ethanol — however, there is no precise information about the amount of leeway, as it depends on available capacity and its under-utilisation cost with regard to sugar and ethanol, respectively.

US: Ethanol production and corresponding corn consumption in the US are expected to increase by 50% in 2007, then twofold by 2016. This growth assumption (from the FAO) far exceeds the requirements of the Renewable Fuel Standard (RFS). It would mean that the proportion of corn used for energy purposes is likely to increase from 20% of production at present (55 million tonnes) to 33% (110 million tonnes) in 2016. Seventy-eight ethanol distilleries are currently under construction in the US.

As in Europe, pending political developments can be game-changing. We believe many producers have not cancelled their construction projects, as they are waiting for further clarity on the renewable fuels mandate. If a meaningful increase in the RFS is passed on as part of the pending CLEAN Energy Act, the fear of overcapacity and meaningfully lower ethanol prices currently in the market should be alleviated.

Canada: With a target of 5% integration in 2010, ethanol production, mainly based on corn (and to a slight extent wheat) is likely to have grown a further 150% in 2007 to reach nearly 1.9bn litres in 2009, compared with 550 million litres in 2006.

China: Fuel ethanol production in China, mainly from corn (although the use of other raw materials is also under consideration) is set to rise from 3.5 million tonnes in 2006 to 9 million tonnes in 2016. The growth assumption for the remainder of the forecast period is low given the increased use of petrol.

Agro-diesel demand is a concern

Agrodiesel

The prevailing structural deficit in diesel has stimulated the use of oilseeds for agro-diesel. The reality in terms of volume and the potential demand, according to various surveys, is massive. Up to now, production of this fuel has been concentrated in Europe and based on rapeseed oil (palm oil can only be used for agro-diesel at very low doses in countries with a cold climate, due to the high temperature at which it solidifies).

Many agro-diesel plant projects are being launched in Southeast Asia (5 million tonnes and 6 million tonnes, respectively, targeted for Malaysia and Indonesia). However, rapeseed oil is increasingly oriented towards agro-diesel use in Europe. This fuel already represents (and to a large extent effectively uses) 40% of oils from European crops.

However, as palm oil's environmental benefits are still contested and its use limited for the aforementioned technical reasons, the use of rapeseed and soybean as agrodiesel is order to make up the need for diesel (cumulated with soybean to corn arbitrage) should continue to tighten vegetable oil markets globally until 2012 at least.

Longer-term sources of tension

■ Consumer behaviour rather than demographic trends

The link between demography and consumption is not that obvious: in recent decades, growth in grain production has merely matched global human consumption despite the fact that the global grain harvest has nearly tripled, while the world's population has only doubled over this period.

Cereal input to feed one person varies dramatically by region: from 1,230kg per year in the US, most of which is fed to livestock, to 325kg in China and just 90kg in Zimbabwe.

The various cereal crops are linked by substitution trends for human food (albeit with strong cultural trends) and animal feed (corn/wheat/barley and other).

Uses vary:

- Wheat: in 2006, 70% of wheat was used for human consumption, around 20% for animals (primarily in Europe), and the remaining 10% for seed and various industrial uses — virtually no agrofuels (3% in Europe) at this stage.
- Corn, on the other hand, is two-thirds used for animal feed and 20% as food for human beings. Out of the remaining 15%, 8% corresponds to ethanol production, essentially in the US: a total of 60 Mt in 2006-07, vs. some 45 Mt in 2005-06.

Rice is almost solely used for human consumption.

Shift in consumer behaviour

World cereal production, which stands at around 2 billion tonnes per year is in principle enough to meet the food needs of 10 billion Indians or just 2.5 billion people in the US. This difference is due to the high conversion rate in the west and especially in the US of cereals as foodstuff for livestock and poultry.

Hence, as observed by ecologist E.O. Wilson, "the aptitude of India, China, and other developing countries to climb the trophic chain is a problem".

Most of the increase in the harvest in 2007-08 comes from a jump in coarse grain production, 60% of it being devoted to a relatively inefficient use: animal feed.

D&E consumers are climbing the trophic chain fast ...

On average, humans obtain about 48% of their calories from grain, a share that has declined only slightly, from 50%, over the past four decades. However, the growing consumption of meat worldwide, besides the impact on public health and on the environment (waste), leads to pressure on land, water and crop resources. Populations around the world have changed their diets to include more meat. Over the past decade, per capita consumption of beef, pork and chicken has doubled in the world's poorest nations — although it is still just one-third the level in industrialised nations.

Cattle prices have increased more than 50% since 2002 and are set to rise further as emerging countries move towards diets richer in protein. Their principal crops include wheat, corn, soybean and sunflower. Asian demand for soybeans remains high because soy protein is central to human and livestock diets.

MEAT CONSUMPTION VS. GRAIN CONSUMPTION

Each kilogram of meat represents several kilograms of grains that could be consumed directly by humans

→ 7kg of grain are required to produce a kilogram of beef

→ 4kg of grain are required to produce a kilogram of pork

→ 2kg of grain are required to produce a kilogram of poultry

Source: Brian Halveil

With or without meat, volumes will also increase: the Chinese population eats 13kg of dairy products per capita each year, compared to a world average of 100kg, leaving room for the dairy products market to grow, as living standards improve and diets change.

■ Climate change

Agriculture and climate change are tightly interwoven. As a reminder, agriculture:

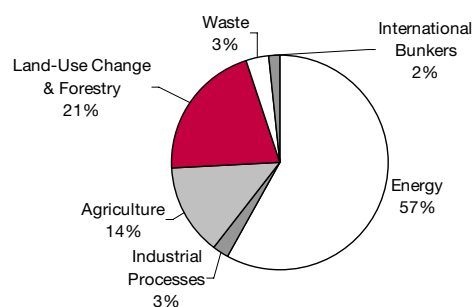
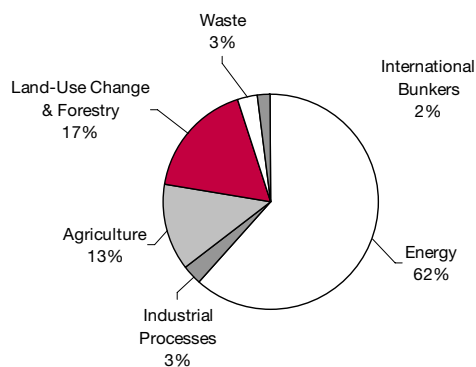
- Contributes substantially to climate change (17% of GHG emissions);
- Bears the brunt of climate change (droughts, etc.);
- Is a solution to the problem via the supply of renewable energy.

Impact on climate change

Agriculture accounts for 13% of global GHG emissions, a proportion that varies significantly from countries (9% in UK to 18% in the US). Estimates for China vary from 6% to 15%.

2006 likely to become a standard year?

AGRICULTURAL IMPACT ON CLIMATE CHANGE



Source: Cheuvreux

Several consequences on production

Statistics show that while agriculture's total emissions have decreased in percentage terms in recent decades, they have increased significantly in volume terms (+500 million tonnes per decade), partially due to the strong growth in livestock raising during the period.

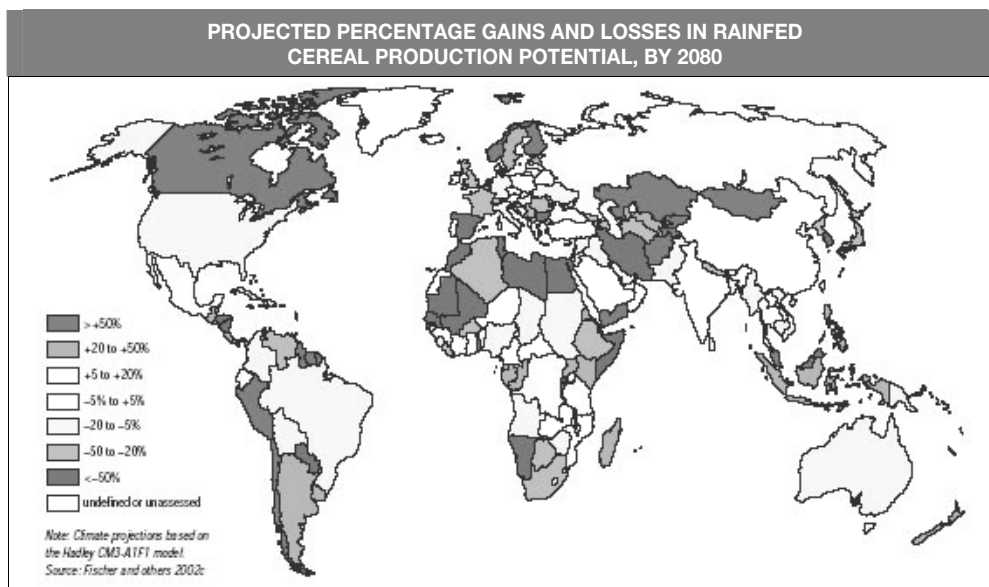
The challenge in the agriculture sector with regard to curbing GHG emissions involves reducing methane sources of emissions, as well as improving yield without increasing the carbon intensity per tonne of crop produced.

Climate change impact

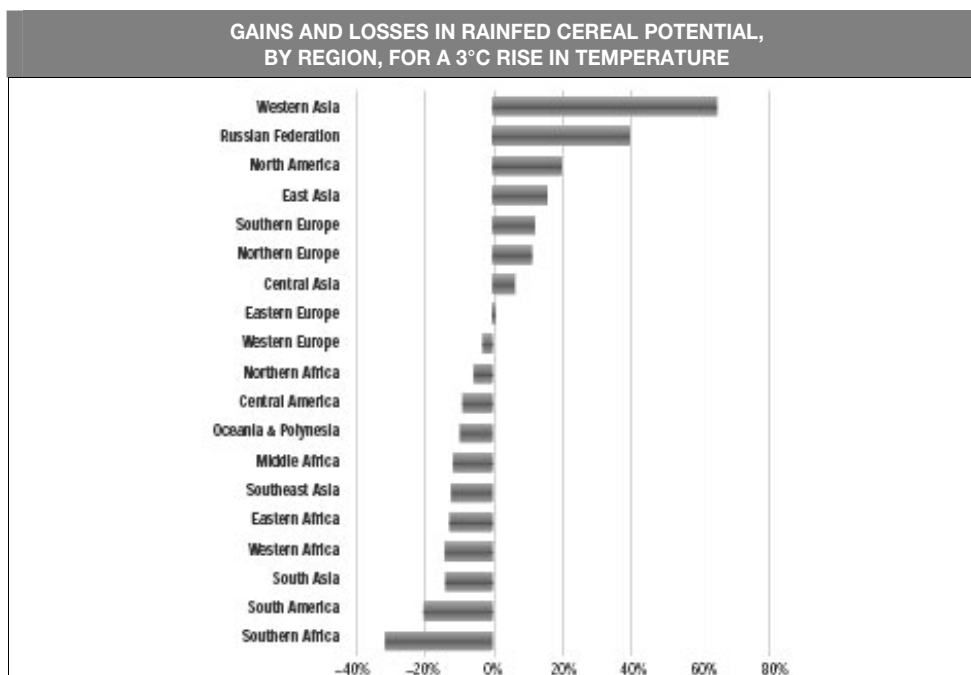
According to the 2007 UN IPCC report: "The agriculture sector highlights perhaps more clearly than any other the extent and severity of potential impacts of climate change on food production, food security [etc.]".

Determining the impact of climate change on global agricultural capacity is extremely complex. Nevertheless, a number of surveys, such as FAO, IPCC, IIASA and Swiss Re reports, commonly agree that a rise in temperatures will influence crop yields by:

- Shifting optimal crop growing zones;
- Changing precipitation patterns (quantity and variability);
- Reducing winter storage of moisture in snow and glacier areas;
- Changing the habitats of crop pests and diseases;
- Affecting crop yields through the effects of carbon dioxide and temperature;
- Reducing cropland through increases in sea levels and vulnerability to flooding.
- Increasing the risks posed by insects, diseases and weeds.



Source: Fischer et al. 2002



Source: Fischer et al. 2002

Weather conditions have resulted in declines in production in the US, the EU, Canada, Russia, Ukraine and especially Australia, where harvest levels plunged by more than 50% in 2006.

Australia and Argentina, hit by drought, had to cut their supply while Indian demand came to 795,000 tonnes of wheat, vs. 530,000 initially projected.

Conversely, the 2006-07 harvest benefited from almost perfect weather conditions in major growing areas: volatility is therefore the key issue.

The International Institute for Applied Systems Analysis (IIASA) looked at the effect of a 3°C rise in temperature on agriculture. The study found that with rainfall levels unchanged, there would be a very small global gain of one percent in land suitable for growing rainfed wheat, rice or maize. Increased rainfall levels (expected due to global warming) would raise this to a 4-5% gain. However, the great majority of the potential cropland increases lie in sparsely populated areas of Canada and Russia and would depend on the cultivation of northerly lands that at present lie uncultivated.

Modern farming is vulnerable to adverse weather conditions and water supply. A full two-thirds of all water used on the planet is used for irrigation purposes. Climate change and increasing pressure on the global water supply will only make it more difficult to expand the food supply to meet a growing population's needs.

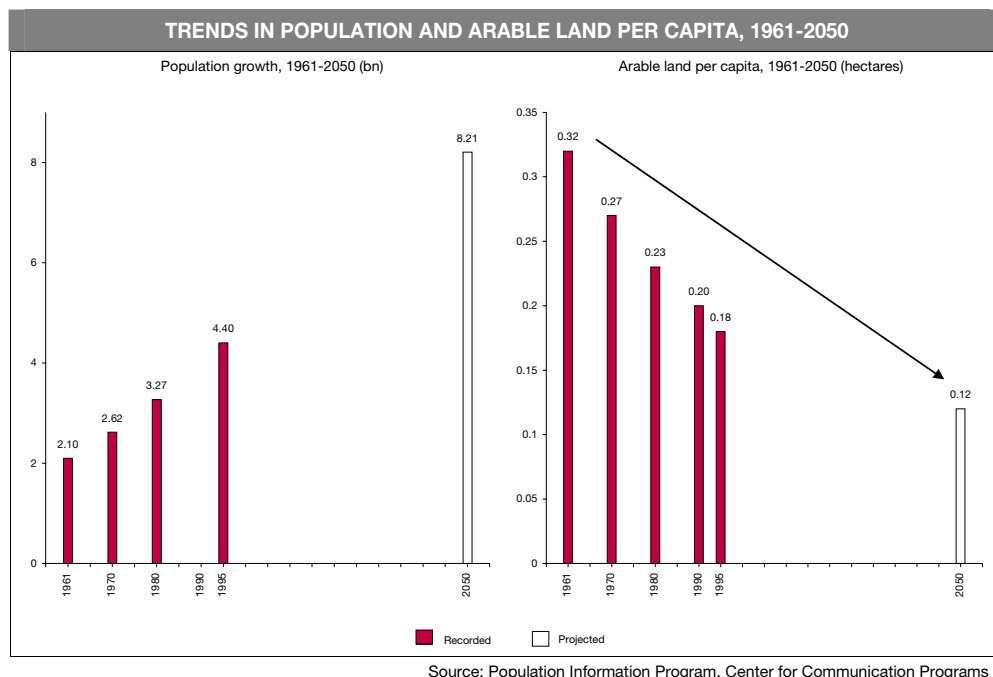
■ Pressure on land resources

Land that can actually be cultivated represents 22% (or about 3bn ha) of land above water level worldwide. Five to seven million hectares of arable land worldwide disappears each year; this loss is caused by the deterioration in soil (erosion, salination, etc.) and rapid urbanisation, according to the OECD. Increased urbanisation results in a loss of 5,000 ha p.a. in arable land.

China now loses around 3 million hectares of arable land every year, compared with 1.5 million ha per year earlier this decade, an increase in the loss rate growth that puts strong pressure on production.

Land availability is at stake

According to the ISRIC (International Soil Reference and Information Center), land surface area equivalent to that of the UK (200 million ha) is deteriorated every year worldwide. Water erosion is the main factor after the deterioration in soil due to intensive agriculture. The intensity of the impoverishment increases by one tonne per hectare per year.



The main conclusions of a report by the US University School of Public Health are that during the next three decades:

- the loss of global cropland is likely to be within the range 30–60 million ha;
- the reserve land utilised will be about 100–200 million ha;
- the reserve land still in use after 30 years, about 50–100 million ha.

■ Speculation

Speculation: a further driver of volatility

One final factor in the abrupt and late increase in agro-commodity prices is the growing demand for commodity investments. Almost all major institutional investors around the world now have a large and growing commodity department, thus driving a huge amount of liquidity into the sector; USD70bn in commodities assets, threefold the amount in 2004. The agricultural production/demand corner environment and the hype surrounding the expected rise in agro-fuels has focused a substantial portion of these assets on grain and oilseed markets. Outstanding futures positions in the US now represent only at least ten times production capacities.

Surveys further demonstrate that futures and options listed commodities, thus most easily accessible to speculative money – trade at a premium to those that are only traded in physical markets (no speculation available).

The role played by financial investors is in our view clearly decisive, if not as a trigger factor then at least in the magnitude and speed at which it has occurred.

The current situation, and expected developments maybe even more so (notably for oil at the world level), are fuelling interest in agricultural products.

Private investors and other main stream asset class investors are also gaining access to these commodities through long-only funds, ETFs and structured products. For example more than 50 ETF agro commodity securities have been launched tracking either indices such as the Dow Jones-AIG Commodity Index or various single commodities performances.

Depletion is not a risk

The price rise is a strong warning signal and an early regulating factor

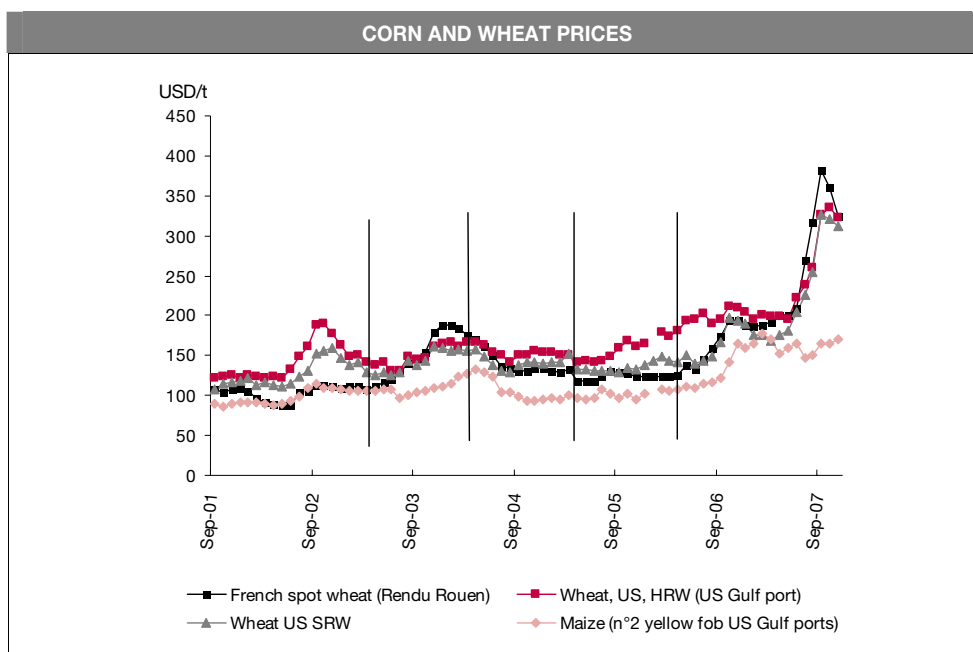
II – Balance factors

We have seen that supply and demand have so far failed to respond to higher prices. We nevertheless believe that a number of balance factors will, in the medium term, partially mitigate the production challenge. The good fundamental news is simply that, at the end of the day, agro-commodities, unlike raw commodities, are renewable resources.

■ Price signals

The support of high commodities prices, if it continues, is logically likely to give new impetus to the development of production capacity in high-potential regions. It is also likely to facilitate an end to protectionist policies and create the conditions for increased flexibility in supply.

Hence, farmers are likely to increasingly decide which crop they plan to harvest in the next season, as a result of price trends and an increased capacity to hedge their production on forward markets. As a result, this trend could theoretically lead to large gaps in production and variations in prices from one year to the other, potentially generating fresh shortages in some crops. Future markets hopefully could provide further visibility but also further discrimination between farmers, which have or do not have access to these mechanisms. The question as to whether this trend would stabilise or conversely increase feedstock volatility is a difficult one to answer.



Source: CISA EIS

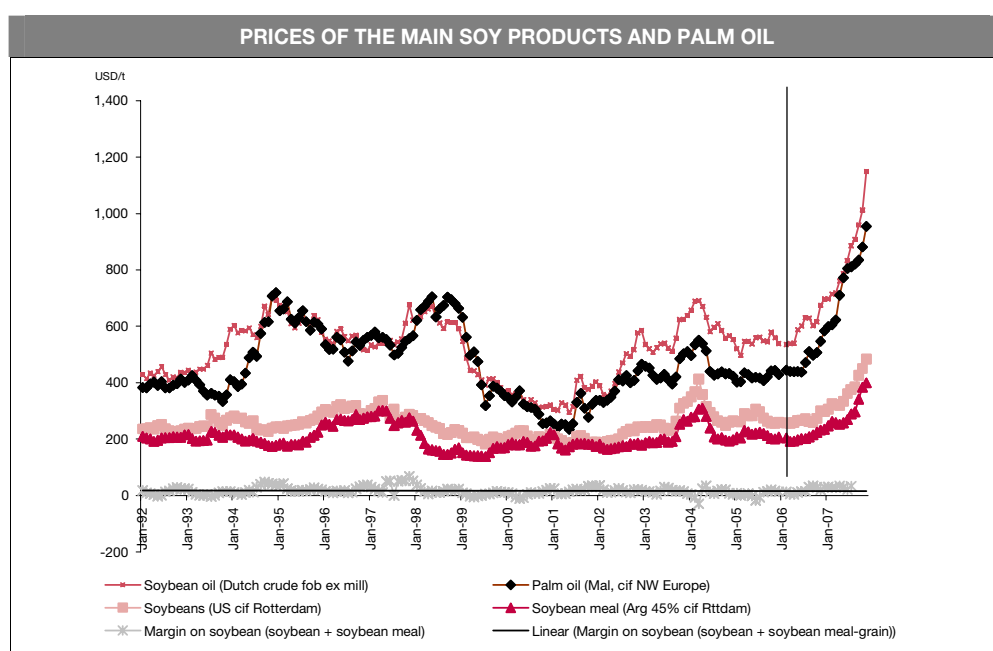
As the outlook for the grain market in 2007-08 was gradually revised towards a growing global shortage, prices soared in mid-2007, especially for wheat. Prices have also fluctuated at a high level for corn, for which a balanced market is expected.

The price signal for corn is fairly efficient

The 2006-07 shortage led to an increase in prices; in 2007, the substantial increase in production in the US (obtained at the expense of soybean land under cultivation) restored the balance and prices stabilised at a high level in 2007, albeit lower than the peak of February 2007.

However, forward prices are higher in the short term on all maturities out to July: the highest is USD181/t for July 2009. If they then fall for the December 2008 maturity, such prices are likely to drive significantly higher corn acres again in 2008. According to various surveys, corn planted surface areas could increase by 5-8% in the US, mainly to the detriment of soybean (down 5%), while rotation between both crops remains stable.

At current price levels, all surveys show that corn plantation generates the highest return for US farmers.



Source: World Bank

At present, oil prices, which are very volatile, favour soybean oil. The market currently favours the whole industry with high prices, as well as high crushing margins for soybeans (price of oil + price of meal – price of soybean).

■ Redeployment of global supply

The surge in world production (along with that of consumption) is mainly expected from developing countries and transition economies. World agricultural markets, with the exception of wheat and secondary grains, are characterised by:

- Expanding trade between countries in the south (increased competition for OECD export countries);
- Strengthening of the presence of developing countries on export markets, which is proving to be a decisive fact, including:
 - South America, notably Argentina (grains and oilseeds) and Brazil (sugar and oilseeds);
 - Eastern Europe (Russia and Ukraine on the grain market);
 - Southeast Asia (notably Indonesia) on vegetable oils.

Agriculture is still a fairly flexible production business

TOTAL (OVEN-DRY) BIOMASS AND BIOFUEL POTENTIAL (EJ/yr IN 2050)

	Potential from additional land	Crop residues potential	Forest residues potential	Animal and organic waste	Total biomass potential primary energy	Total biofuel potential after conversion
	(1)	(2)	(3)	(4) ^a	(5)=(1)+(2)+(3)+(4)	(6)=(5)x0.5x0.35 ^b
North America	0.7	5	14.3	0.5	20.5	3.6
South & Central America	62	4.3	16.8	0.9	84	14.7
Europe and Russia	10.1	5.8	16.8	0.9	84	14.7
Africa	43.8	6.3	18.2	1.4	69.7	12.2
Asia	-18.6	12.8	20.6	6	20.8	3.6
Oceania	11.2	0.6	3.8	0.1	15.7	2.7
World total	109.2	34.8	90.6	10	244.6	42.8

a. As a regional distribution is not available the regional distribution is for practical reasons assumed to be proportional to population figures.

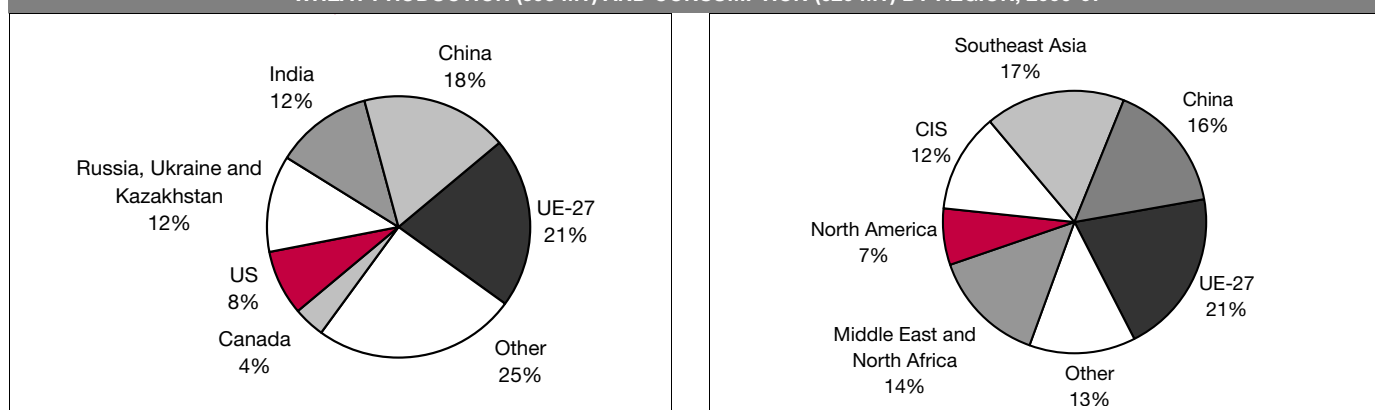
b. Assuming half the biomass is used for agrofuels production and a conversion efficiency of 35% as explained in the text.

Source: SG/SD/RT(2007)³

According to the FAO's 2007 report, global trade over the next five to eight years is likely to increase 20% for grains, 50% for meat and whole milk powder and 70% for vegetable oils.

The case of wheat

WHEAT PRODUCTION (593 MT) AND CONSUMPTION (620 MT) BY REGION, 2006-07



Source: CA EIS

With regard to wheat, the EU, China and India ensure 50% of production. The breakdown of output fluctuates:

- The EU has experienced strong weather-related volatility since 2003.
- China, India, and the US account for almost 50% of world grain production.
- China let its production decline sharply, prior to increasing it again, beginning in 2003; surface area declined continually but stabilised in 2003. The average yield has been growing continuously and will soon reach the level in Europe, which is the best in the world. It currently stands at 4.5 t/ha vs. an average of 5 t/ha harvested in Europe.
- Production in Russia, Ukraine and Kazakhstan is increasing (especially Russia), as well as in India (thanks to growing surface area).
- US production is fluctuating, but more on a downtrend owing to the decline in surface area; this is the same case in Canada and Australia.

Argentina, Australia, Canada, the European Union (EU), and the United States account for 80% of wheat exports, while just three nations — Argentina, the EU and the United States — account for 80% of corn exports., according to OECD reports.

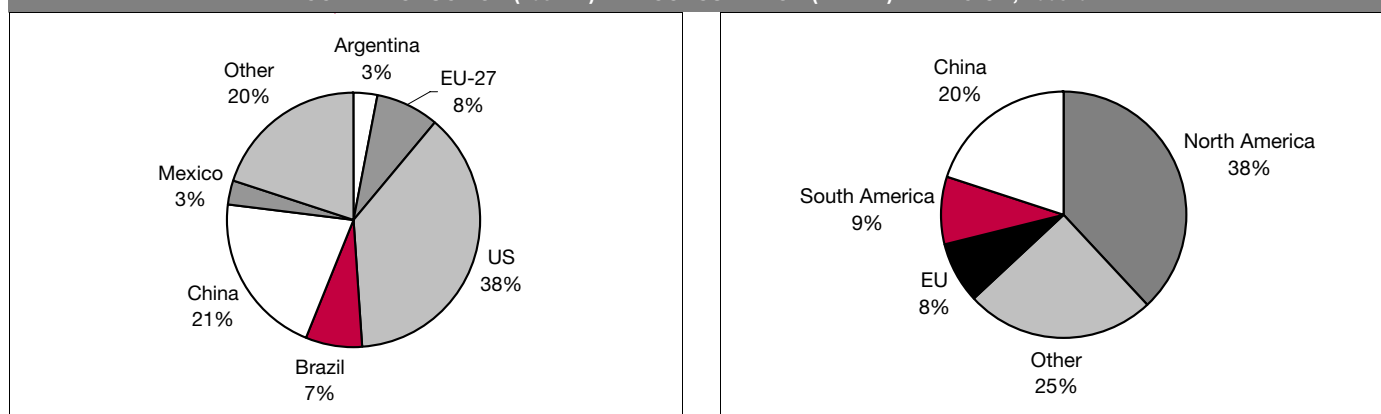
Additional Eastern European capacity is key for Europe

The recent period has seen the growing role played by so-called Black Sea wheat (Russia, Ukraine and Kazakhstan), which represented a minimal share of the world wheat market in 2000 and has since strongly fluctuated to reach 20% of world exports over the past three years. US production also fluctuates, as does that of Canada, while EU production is declining (due to the reform of the EU's Common Agricultural Policy). In all, we note a highly fluctuating breakdown of exports, which are strongly affected by weather conditions and currency trends.

All in all, a combination of an increase in wheat surface area worldwide combined with production conditions considered as normal and consumption that is contained by high prices should enable world wheat inventories to rise again (by 30-40m tonnes?). Prices are likely to remain high, but not at the current peak.

The case of corn

CORN PRODUCTION (703 MT) AND CONSUMPTION (722 MT) BY REGION, 2006-07



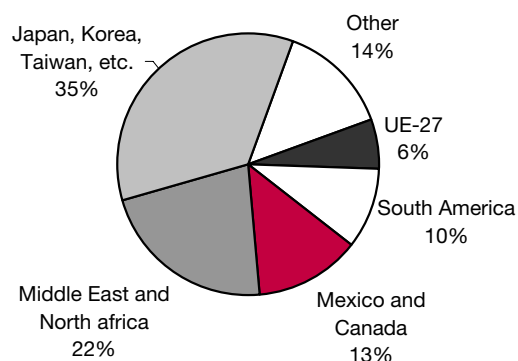
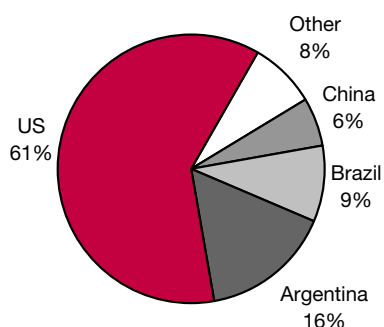
Source: CA EIS

Corn production is very concentrated, with the US and China soon to account for two-thirds of the total. China is constantly increasing its corn surface area, and the US has increased its yield (2% p.a. over 15 years, but flat in recent years), and sharply expanded surface area in 2007 (by 20%, to a record level) to meet demand from distilleries. Brazil is gradually increasing its role (surface area and yields on the rise). Europe, on the other hand, is on a downtrend.

The breakdown of world consumption is very similar to that of production. On average it has increased slightly more than production (2.7% p.a.) over the past 15 years.

Importing regions are those that produce little or no wheat, in particular Africa and the Middle East, and Asia excluding China and India. China, which plays a major role on many commodities markets, has thus far had little impact on the international grain market. It exports a small amount of corn but is neutral for other grains, as it relies on its substantial stocks rather than seeking to develop imports of wheat or corn. It boosted production after its stocks declined significantly (220 million tonnes of wheat and corn in 1999, 75 million tonnes in 2005).

CORN IMPORTS (87 MT) AND EXPORTS (87 MT) IN 2006-07



Source: CA EIS

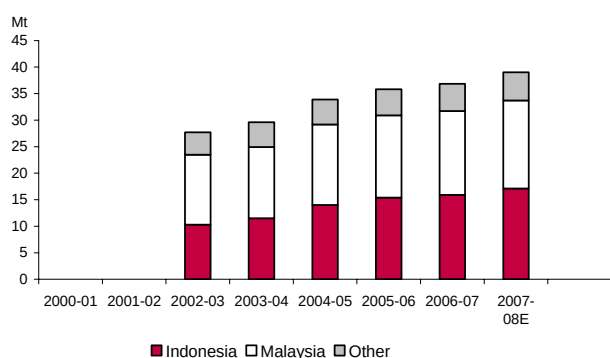
The US is the dominant corn exporter. Its volumes have been increasing in the past few years, as have those of Brazil and Argentina. The corn market is therefore significantly affected by the size of the US and its decision to develop ethanol production on a massive scale.

The case of oilseeds

The use of oil seeds for agro-diesel, fuelled by an increasing deficit in diesel production, is a substantial reality in terms of volume for rapeseed and soybeans. Demand could increase massively. *The Sage*, a pro bio-diesel industries report aiming at evaluating the potential global agro-diesel upper-limit capacities from expanded vegetable oil production through agricultural land and yield increases, found worldwide volume potential of 51 billion litres from 119 countries; 47 billion of which could be produced profitably at today's prices.

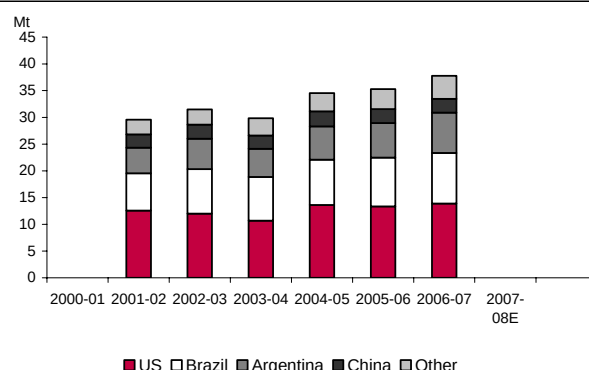
Current world production of palm oil is extremely concentrated: more than 85% of the production is located in Indonesia and Malaysia, with the former now taking the lead.

PALM OIL PRODUCTION, BY COUNTRY



Source: USDA

SOYBEAN OIL PRODUCTION, BY COUNTRY OF SOYBEAN ORIGIN



No data for 2007-08E

Source: USDA

Soybean oil production is split between the US and South America (Brazil and Argentina), while rapeseed oil and sunflower oil is produced mainly in Europe and China.

World production of palm oil has increased by 8% p.a. on average over the past few years, and soybean oil by 4.5%. Vegetable fats are probably the foodstuff that is experiencing the strongest growth.

Some room for extension

The main vegetable oils are derived from annual crops (soybean, rapeseed, sunflower, etc.). The oil palm is a perennial and new plantations take several years before beginning production. The surface area planted, while increasing rapidly, especially in Indonesia, is not known precisely (this is due notably to the conditions under which these plantations are created). This hinders medium term forecasts. The palm oil yield does not change significantly (slightly more than four tonnes of oil per ha.).

African countries only account for 1.5m tonnes of production, half of which in Nigeria, followed by Côte d'Ivoire, Cameroon and Ghana. This output rises by around 2% p.a.

In China, vegetable oil production capacity is increasing but this is offset by increased demand on the domestic and Indian markets.

■ Surface area

The increase in surface area is another expected factor, especially for wheat, given a 2007 price that is a major incentive to grow corn and wheat. In 1996-97, the hike in prices led to a 5% increase in surface area in most countries, and in 2007, land for corn production increased by 8% while land for wheat production also increased by 3%. These corrections occurred against a backdrop of an underlying decline in wheat surface area. Once again, there is room for manoeuvre.

All in all, a rebound in world surface area for wheat can clearly be expected going forward. The International Grains Council estimates the increase in surface area in 2008 at 4%.

For corn, the considerable increase in surface area in 2007 has been at the expense of soybean production, and thus contributed to the sharp increase in soybean prices, stocks of which are also expected to reach fairly low levels. Beyond 2008, the increase in ethanol production is likely to require new surface area, although the size of this increase is uncertain; probably less than in 2007-08. However, the switch from soybean to corn is not guaranteed to continue: at current soybean prices, this crop offers producers more attractive profitability than corn.

The land area for corn increased considerably in the US in 2007 (by 20%), which leads to the stable or virtually stable prices expected for the 2007-08 crop. This land use choice essentially involved a reduction in land area for soybean or cotton. The development of ethanol, notably in the US, is reflected in the reduction in land area devoted to oil-bearing plants in favour of corn.

Regions such as Argentina, and above all Ukraine, come out well in this new global situation. Hit by drought in 2007, Ukraine also intends to develop its capacity for use in agro-fuels. Traditionally Europe's breadbasket in the broadest sense of the term, Ukraine offers strong agricultural potential thanks to its humus-rich farmland and to the extent that there are still many fields that are not fully exploited. Many foreign investors are entering the Ukrainian market with the perspective of improving yields by more than 50% due to the dilapidated state of farms since the Soviet era.

China also implements selective incentives to return land to cultivation, which has already contributed to the recent recovery in wheat growing surface area.

Meeting political targets would require arbitrage

Land demand for agrofuels

The increasing demand for first and second generation agrofuels impacts land use in different ways. Biofuel demand adds another outlet for agricultural food and feed production. The development of relative prices between these market outlets is a major determining factor for the decision of farmers regarding land use, i.e., between individual crops but also choice between types of agricultural production. However, EC agricultural experts appear optimistic with regard to the impact of the new agrofuels legislation on land use: only an additional 5m to 7m hectares or so would be used, depending on the contribution of second-generation fuels. Moreover, the extension to eastern Europe and a more even distribution of production capacities over the EU member states seems to mitigate concentrated competition in some regions.

LAND USE UNDER 10% MINIMUM INCORPORATION IN THE EU-27 IN 2020

(m ha)	2006*		2020	
	1.2%	% of total area	10%	% of total area
Bioethanol area	1.0	1%	12.9	11%
Biodiesel area	2.1	2%	4.6	4%
Total biofuel area	3.1	3%	17.5	15%
Cereal area	59	52%	62.5	55%
o/w Bioethanol (1st gen.)	0.9	1%	7.1	6%
o/w Bioethanol (2st gen.)	N/A		5.2	5%
Oilseed area	8.8	8%	8.5	8%
o/w Biodiesel (1st gen.)	2.1	2%	2.9	3%
BTL	N/A		1.7	1%
Sugar beet	1.9	2%	1.43	1%
o/w Bioethanol	0.1	0%	0.6	1%
Idle arable area (idle + non used mandatory set aside)	7.2	6%	4.7	4%
Other	36.9	32%	36.6	32%
Total arable land	113.8	100%	113.8	100%

* Including Bulgaria and Romania, which joined the EU during the year 2006-07 harvest year

Source: EC 2007 Report

Set-aside expectations are probably too high

Reduce set-aside

The reduction of set-aside land is only a partial response to the problem. Reducing the land set-aside completely would lose the benefit of a policy aimed at protecting the environment that was difficult to implement, even though a land set-aside rate of zero would not oblige farmers to cultivate all their land. They could continue voluntary set-aside and apply environmental schemes.

The EU recently decided to reduce the percentage of mandatory set-aside from 10% to 0%. However, given that energy crops use more than 20% of land set-aside, areas of special environmental interest that have to be maintained and uncertainties about the viability of the measure and the margin to be expected, only a portion of the 3.8 million hectares concerned are likely to be returned to arable land, i.e., a potential 10m tonnes of grain according to the European Commission (if wheat alone is involved, 1.7% of world production in 2007).

In the US, vast areas of land are also included in a programme of environmental set-aside. These coincide in particular with wheat-growing land (3-4m ha versus 20m ha under wheat in the US). However, this surface area is under contract, and overall, contracts totalling 1.2m ha expire in 2007 (all regions combined). At this stage, we have no recent analyses that enable us to estimate the rebound in surface area.

The key feature for driving supply

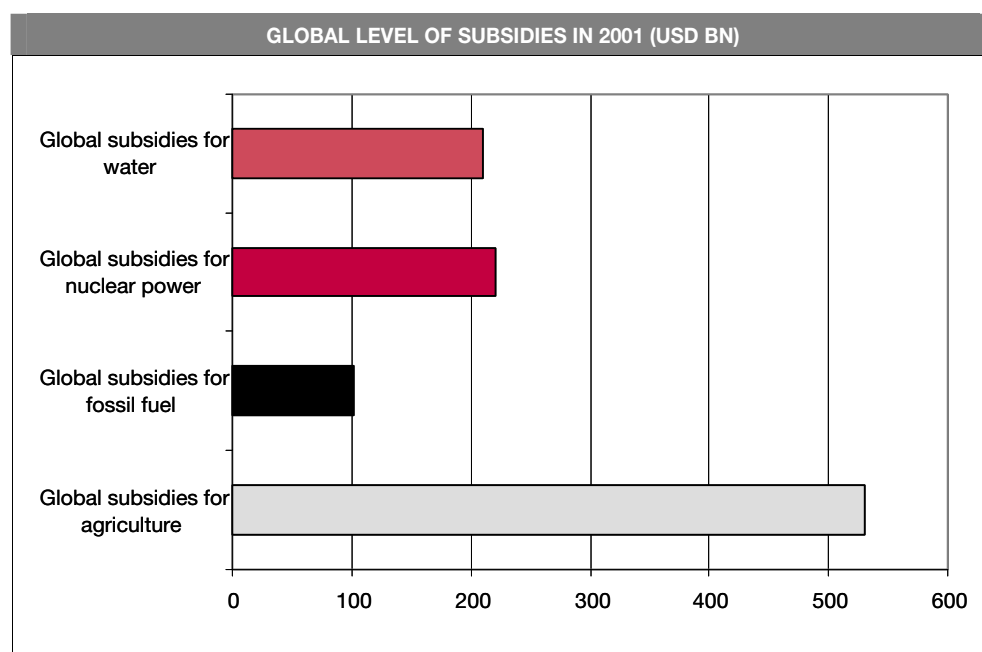
Pressure on natural areas still playing a major role

While reclaiming unused, fallow or already long deforested land is often put forward as a way to obtain new agricultural resources, the fact is that for a number of reasons (low quality, exhaustion of a large part of unused land areas, the opportunity to get cash first if felling a forest...) new land is still very frequently obtained from natural areas. The two most active "pioneer fronts" for the agribusiness are south and east of the Amazon, and in Indonesia. (See below details under – Demand for agro-energy at stake?).

■ Regulations

The upcoming shift in regulations and subsidies will dramatically affect supply and demand for agro-commodities. The prominent level of subsidies (more than EUR50bn in Europe in 2008, representing 40% of total European subsidies) in agricultural policies were originally aimed at managing surplus production and supporting the income of crop farmers. Therefore, in the new demand and price environment they are fundamentally called into question. Also, agricultural policies, instituted with objectives and issues that are local, must now consider the more global picture.

In practical terms, price liberalisation carries significant risks for all agro-commodity-related activities, starting with farming activities. The main question is whether it will stabilise prices in the long run or, on the contrary, reinforce price volatility, and whether or not income and input cost volatility could be hedged or compensated in one form or another (derivatives, insurance, income protection, etc.)



Source: Oxford University – Norman Myers

We see major changes going forward, facilitated by the steady feedstock prices. Any shift in these policies becomes a critical factor in adjusting supply and demand; it can also damage economies and the environment, rather than benefiting society as demonstrated in the above-mentioned Oxford University report, an issue that is becoming a new consideration for regulators. We outline here-below some of the major policy turns:

Fundamental shift in agricultural policies expected

The **World Trade Organisation (WTO)** aims to guarantee a more open and controlled international trade system. The result expected from the agricultural agreement entered into as part of the Doha Programme assumes that the policies will remain valid until 2016, bearing in mind that world trade will continue to be subordinated to rules negotiated as part of NAFTA, the European CAP, the Mercosur set up by Argentina, Brazil, Paraguay and Uruguay, and the free-trade agreement signed between Australia and the US.

The essential challenges are the following:

- A gradual decrease in price support.
- Reduction in subsidised exports (for example intra-community in Europe);
- Lower customs duties on imports and increased market access for outside zones.

US: the current redefinition of the law in force (the FSRI or Farm Bill), which dates from 2002, may cut farm subsidies partially and change how things are currently done. Some provisions to the bill (being proposed at the time of writing) limit the amount of subsidies non-farmers and individual farms receive from the government, and it seems that these have a good amount of support given the price increases in agricultural products.

EU: apart from the integration of agrofuels objectives (see below) the reform of the 2003 CAP that is being launched aims to reinforce the competitiveness of European agriculture by introducing greater flexibility, dissuading single crops and introducing environmental criteria. The major shift of the "2000 Agenda" is to envisage a switch from price support to revenue support via direct payments.

Modification of the cereal intervention system: the decision to phase out corn intervention by 2009-10 would significantly increase the competitiveness of cereals (mainly corn) in biofuel use. According to an EC survey, it would accelerate market fluidity, which without the reform would only materialise over the medium to long run.

By way of example: sugar is one of the most regulated agro-commodities, as most countries, with the exception of Brazil, support national production through domestic prices that are higher than world prices and protect their domestic market from imports by high customs duties. International pressure has led the European Union to reform its sugar regime as of 2006-07, with notably a significant reduction in domestic prices. The reform is likely to result in a virtual end to exports, and volumes produced declining in accordance with this constraint. In principle, most of the least competitive countries (decline in quotas) are likely to halt production, with the others directing their output more to domestic market than to exports.

In addition, the reduction of sugar subsidies is expected to lower sugar beet production, thereby releasing land currently used for sugar beet but where yields are poor. In high yield areas, however, some land is still expected to be used for sugar production if there is a market for ethanol.

■ Demand for agro-energy at stake?

The production of ethanol and agrodiesel is not economically viable without regulatory support in most countries in temperate regions. Public action to support agrofuel via tax relief and integration targets thus has a decisive impact on demand and volumes.

The best example of how subsidies can drive unpredicted and potential unsustainable supply is the US tax support for so-called "splash and dash" operations, whereby agrodiesel from Argentina or Asia transits via the US in order to add 1% diesel and thus benefit from the premium of USD1 per gallon (USD299 per m tonnes) paid by the US government before supplying the German market in B99. This windfall gain drives substantial volume in south American soybean oil production and results in a direct threat to forestland and biodiversity through land extension processes.

Regulation support is facing strong opposition

**Overall
negative momentum
for agrofuels...**

Strong controversial momentum on environmental issues

A series of surveys published over the past two years have sounded the alarm with respect to the environmental impact of agrofuels. According to these reports, the strong expansion poses significant threats in terms of:

- Underground water reserves (the production of a litre of bioethanol consumes between three and six litres of water. Thus millions of cu. metres of water need to be extracted in regions that are already vulnerable);
- The ecosystems of the temperate prairies;
- The strengthened danger of returning to fertiliser and pesticide pollution inputs. Corn (particularly when irrigated) and rapeseed pose problems that wheat does not;
- Deforestation: the domino effect of soybean and particularly palm oil imports very often result in the felling of equatorial forests (in Brazil and particularly Southeast Asia). Greenpeace has launched an action concerning soybean in the Amazon. This process also involves massive fires, which are regularly in the news (Indonesia). The gain in CO₂ emissions due to agrodiesel is negligible compared to the destruction of the biodiversity and the release of large quantities of CO₂;
- Social impact, specifically in southern hemisphere countries where agrofuels are usually based on large-scale industrial crops (cane and palm), which in addition to ecological problems, engender competition for land with family crops.

The EU to introduce sustainability criteria

The review of the 2003/30/EC Directive reaffirmed in January 2008 the target of biofuels representing 10% of total fuel transport consumption in 2020. Due to growing environmental concerns though, the directive introduces binding sustainability criteria under which only agrofuels that meet minimum requirements would count towards the target:

- Land with high carbon stocks (forests, areas designed for nature protection purposes) should not be converted for biofuel production;
- Land with high biodiversity (forests, wetlands, permanent grassland) should not be converted for biofuel production;
- The EC has so far proposed that agrofuels should achieve a minimum level of greenhouse gas savings.

**... that is starting to be
reflected in EU policy**

Fuel suppliers will need to provide proof that these criteria are respected through a detailed certification process and independent auditing. For imported, for which the pathways are not well known, the EC details the methodology of CO₂ calculation and states that it will have to accredit the schemes before allowing the biofuels in question to count in the target. Overall imports will thus be slowed down initially, so as to put the certification in place. Moreover, due to the absence of a direct impact from sugar cane on the Brazilian forest, ethanol from Brazil, as opposed to biodiesel imports from South America or Asia, will be favoured.

Growing environmental concern in the US

While the new US Energy Bill is set to boost agro-fuel production (from 7.5bn gallons in 2007 to 36bn in 2022, of which 18bn gallons from cellulosic ethanol), critics in the US focus on the issues of scarce water use and the negatives of increased use of fertilizers, rather than GHG emissions benefits. What resonates most is the impact on food prices: opponents are stoking the food-vs.-fuel debate much more aggressively than they are the environmental implications. Ethanol clearly does not appeal anymore as the "green fuel" its advocates pretended it to be and they are now more focused on portraying it as a way to reduce our reliance on expensive foreign oil and increase our energy independence

**But distinction
between the various
type of agrofuels
is key**

Long-expected certification processes

At this stage, no agro-fuel has a label indicating the quality of its mode of cultivation. The sustainability criteria may define the main framework of a certification process.

For palm oil there have been efforts to introduce a certification process in order to cope with the controversial issues of producing palm oil on deforested areas. At end November 2007, the Round Table on Sustainable Palm Oil, an industry-led initiative, launched a certification process to enable palm oil producers meeting stringent environment standards to label their products as eco-friendly. The first "sustainable palm oil" should be available on the market in the first quarter of 2008.

However, this, in our opinion, far from solves the main problem, as the more virtuous users may require certified oil, while the new volumes from deforested areas go to less demanding customers (possibly China). Also this certification process would now have to fit the EC methodology and integrate CO₂ balance and biodiversity to mitigate continued reluctance from some NGOs that require a moratorium on palm oil development.

While these new restrictive criteria are aiming are aimed at making users less reluctant to use agrofuels, controversial momentum in the EC, especially from NGOs, is still high and we believe that sustainability criteria could evolve further. Moreover, in countries such as the UK and in France, moratoriums on agrofuels have been proposed.

Furthermore, the overall question about fuel versus food remains much on the agenda and certain EU parliamentary parties are keen to introduce flexible mechanisms, in order to curb a negative impact on food prices. This could lead to a reduction in the 10% target.

With regard to palm oil, for example, the situation is fairly dramatic: with prices at such high levels (nearly EUR700/t compared to EUR412/t one year ago), the profit margins of biodiesel plants have turned negative from a positive return of USD60 to USD100 a tonne when it was priced at c. EUR295/t. Moreover, as Malaysia and Indonesia are the main providers of vegetable oil for Asia and Europe (a net importer), the price trend is adding pressure to the food segment, and placing a good part of the population in distress.

A few days after the certification agreement, Neste Oil announced that it would spend EUR550m to build the world's largest agrodiesel plant in Singapore to meet growing demand for agrofuels. The plant is to have a capacity of 20,000 barrels/day, supporting Neste Oil's strategic goal of becoming the world's leading renewable diesel producer despite sharp opposition from NGOs because it mainly uses palm oil.

In addition to these unresolved environmental concerns, the question currently raised is on price and the strong competitiveness it creates with food purposes.

For more detailed information on the environmental balance of agrofuels, see our Biofuel Challenges report of January 2007.

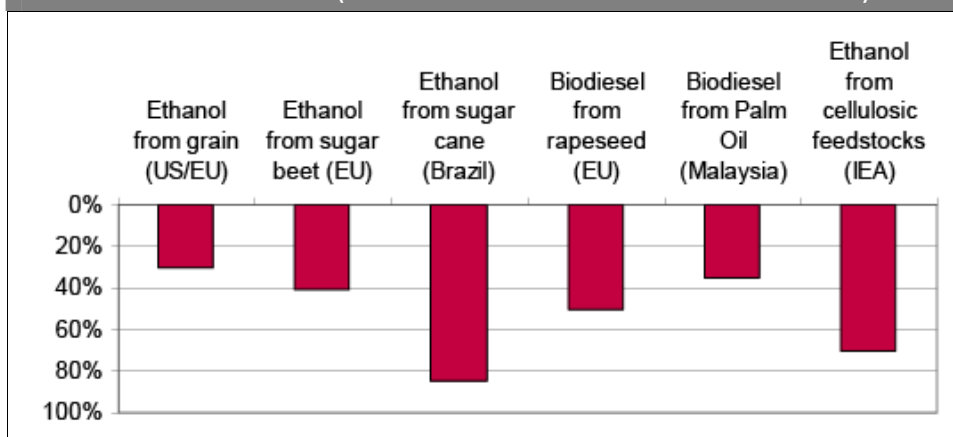
The carbon balance: a decisive factor

Greenhouse reduction criteria, which has been integrated in 2008 in the EC Renewable Directive proposal and its Fuel Quality Directive revision process, is to become a new variable and key element of the European agrofuels regulation.

The calculation is complex and, as demonstrated in the IES Concawe report, must assess a wide range of variables. Regulation will then entirely depend on the choices of criteria and methodology. For example, when the reduction in GHG emissions is directly related to energy efficiency, it barely exceeds 25% for grain-based ethanol, whilst it reaches 50% for rapeseed-based agrodiesel. While, on 23 January, the EC proposed a 35% binding cut-off for agrofuels accreditation, establishing a 50% GHG cut-off criteria for incorporation targets would only barely make agrodiesel from rapeseed acceptable in European production and would negatively discriminate against European wheat, corn, and sugar beet production.

**GHG reduction is an
objective criteria,
although not the most
critical one**

RANGE OF ESTIMATED GHG REDUCTIONS FROM AGROFUELS COMPARED WITH PETROL AND MINERAL DIESEL (EXCLUDING DEFORESTATION-RELATED EMISSIONS)



IEA, 2005 and EMPA (agrodiesel from Palm oil). Note: Reduction in well-to-wheels CO₂-equivalent GHG emissions per kilometre.

Source: Concawe report

But positive balance on direct pollution emissions

Apart from CO₂ emissions, the role of agrofuels is slightly positive. Ethanol fuel plays a positive role in gasoline due to its high octane index. In terms of local pollution, its effect is mixed. It limits emissions of sulphur and carbon dioxide, but can also increase that of volatile organic compounds. Agrodiesel has certain qualities. It improves the cetane index and reduces the emissions of most local pollutants. Nevertheless, its qualities as a fuel depend on the oil used.

And the cost of agrofuels subsidies remains a hindrance

The above-mentioned ISSD report further estimates that 2006 subsidies per tonne of CO₂-equivalent offset totalled between EUR575 and EUR800 for ethanol made from sugar beets, far higher than that for grain-based ethanol and over EUR600 for agrodiesel made from rapeseed.

EU subsidies to agrofuels are therefore poor in terms of cost effectiveness. Supporting EU agrofuels is an expensive policy, which explains the discontinuation of tax breaks at the pump in Germany and the 50% cut in the tax support in Poland, with devastating consequences for the agrofuel businesses of these countries.

Second-generation agrofuels

The good news from second generation feedstock is it significantly increases the energy yield per hectare, which would increase by 30-40% for cereals if the straw and the grain is used. One of the highest yielding energy crops is corn if the whole plant is used. Thus less area is needed to produce the same equivalent of energy. Moreover, biomass yield increases could be significantly higher than for cereals.

We are therefore entering 2008 with very little objection to the view that the only practicable way to replace fossil fuels is with the second generation of agrofuels, based on cellulose or on biogas processed into liquid form.

The EU 2020 incorporation targets assume a share of biofuel stemming from second generation fuels of between of 20% and 30% by 2020. Biofuel production would reach about one-third of domestic biofuel production largely by incorporating the straw and wood-based cellulosic material into production.

Cost of agrofuels policies is an issue

Substantial room for improvement

There are sustainable solutions...

Availability of second generation BTL (biomass to liquid) technology or second generation bioethanol technologies on an industrial scale is likely to become a reality from 2014 onwards. However, meeting these political targets implies major logistic issues are resolved on the ground, such the pathway and cost of transportation.

The current industry and experts' estimates of costs show that second generation feedstock is 30% (second generation bioethanol) to 70% (BTL) more expensive than the respective production of first generation fuels.

Despite these significant unknowns, the EC, and more recently the US, seem confident enough to rely on a substantial contribution (30% on average) of second generation techs to meet their 2020 commitments.

■ Yield improvement

A steady improvement in agricultural yields has been achieved in recent decades and we expect this trend to continue. The UN admits that "improvements in crop varieties, and in crop, soil and water management techniques, will continue to increase yields and more than compensate for the depressing effects of global warming".

The overall wheat yield has been increasing 1% p.a. over the past 20 years or so. In all, production has increased 0.7% p.a. over the past 15 years, marked by major fluctuations since 2004, and a yield that has stagnated in recent years.

The average world corn yield, up 1.7 % p.a. over 15 years, has levelled off since 2004-05, but the increase in surface area ensures the rise in production. All in all, production has increased 2.6% p.a. over the past 15 years with, as is the case for wheat, significant fluctuations since 2004. In 2007, an estimated 5 percent jump in world fertiliser use helped farmers increase yields.

Yield improvement for agro-energy

Assessment of the agrofuels impact usually considers that long-term productivity growth rates for cereals are at about 1%, close to 2% for rapeseed and slightly higher than 2% for sugar beets. The EC foresees yield increases of about 1% per year, which would lead to 38m tonnes more cereal produced in 2020.

Gross production of agrofuels per hectare is variable: 1.6 to 1.8 toe/ha for grains, 2.8 toe/ha for sugar cane, 0.5 toe/ha for soya, 1.3 for rapeseed, and nearly 4 for palm oil.

With yield improvement through GMs and enhanced germplasm (from 150 bushels/acre to 175 bushels/acre), corn could provide enough starch to produce at least 13bn gallons of bioethanol (vs. 7bn in 2007E). Bioethanol will therefore account for some 30% of corn usage.

Overall acreage is expected to stay stable at between 90 and 100 million acres.

Drivers for overall yield improvement:

- Better crop yields, through biotechnology (drought-resistance will in our view be the next blockbuster) and enhanced germplasm.
- Better refining technologies. Significant progress is being made towards developing better refining processes, including fractional separation of corn residues. The leading technology player in our view is Broin.
- New products/technologies. Butanol is being developed as a biofuel by BP and DuPont. The first plant is about to come on stream in the UK. Butanol can be made from various sources (sugar beet, sugar cane, corn, wheat, etc.). In the agrodiesel field, esters from animal fats are being considered, although we do not believe this solution would significantly reduce pressure on surfaces.

... while others still
require various
degrees of
precaution...

... which also
depends on final use

■ The use of broader biomass. This is key for going from 15% to 30%, as demonstrated in the new US DoE objectives. It is beyond the scope of this report to go into detail as to how biomass can be used. In our view, the major developments will be around corn stover. Technological feasibility has been demonstrated, as have the economics of the issue.

The biomass potential for agrofuels is tremendous, but many challenges remain aside from the high cost of feedstock: biomass pre-treatment and cellulose enzymes, as well as the inability of current fermentation strains to convert all biomass sugars.

The above-mentioned Sage report argues that significant production gains are possible through increasing agricultural yields – a 12-fold increase over existing potential, primarily hinging on better management of tropical oilseed varieties.

Biotech mitigation

Meeting the food requirements of a growing global population in a sustainable way creates challenges, for example in terms of the use of scarce resources (water and land), depletion of fish stocks and the production of manure. The solutions to these challenges will include a variety of measures, but many public institutions, academics and companies believe that biotechnology has an important role to play. Biotechnology has several applications when it comes to nutrition in a broader context (see our Sustainable Chemicals report).

■ Genetically engineered crops can contribute to improvements in global food supply by improving the yields of crops, making them less susceptible to diseases, insects or herbicides, or by delaying post-harvest ripening.

■ Genetic modification can also be applied to enhance the nutritional value of food. An example is "Golden Rice", rice genetically enhanced to contain carotenoids, a source of Vitamin A (beta-carotene), an essential element that is lacking in the diet of millions of people.

■ Transgenic and cloning technologies can produce animals that carry genes associated with resistance to certain diseases, or with reduced fat. Salmon has been genetically engineered so as to reach maturity sooner, allowing for more frequent harvests.

■ Biotechnology is used as a process technology (fermentation) to produce a range of food and feed ingredients including vitamins C, B2, and B12, citric acid, starter cultures and probiotics (micro-organisms with a health benefit on the digestive system). Other ingredients produced by micro-organisms include amino acids, fatty acids and peptides.

■ (Genetically enhanced) enzymes, produced through fermentation, are used in the production of foods such as bread, cheese, beer, wine and fruit drinks. The enzymes improve the texture, appearance and nutritional value of food. Enzymes also play an important role in animal feed. For example, the feed enzyme phytase improves the nutritional value of feed and reduces the phosphorous content of manure.

From a sustainability standpoint, applications that improve soft materials are the most controversial. The introduction of genetically engineered crops or animals into the food chain continues to be challenged either for basic ethical reasons ('no muddling with the natural genetics pool') or for fear of disturbing the ecological balance. By contrast, the use of genetically modified strains of bacteria, yeasts, or fungi in the processing of ingredients or enzymes appears to spark less debate.

A new approach is
required...

III – Macro impact: a new paradigm

■ Traditional impact models have shown their limits

From a macro point of view, 2007 was characterised by an overall increase in raw materials prices. Indices of the main listed raw materials recorded historical highs but, contrary to the past, this jump in prices did not have the anticipated effect on economic growth. Most econometric models, by definition calibrated to past periods, have shown their limits. The case of oil prices is certainly the most blatant example. Such reasoning as 'a USD10/bbl increase in the oil price will have an impact of 10% in one year' has fallen apart.

Endogenous vs. exogenous variables

The reason is quite simple. One needs to understand that these variables have changed status. Sharp rises in raw materials prices used to represent an exogenous shock to the economy, a threat. They are now endogenous, i.e., linked to the cycle. In more simple and brief terms, the main reason for the rise in prices is not linked to a problem of supply, but rather of demand. The sharp rise in demand is what impacted prices, while supply takes time to adjust. This is a rare phenomenon from a historical point of view. While players on these markets have always used clear interventionist policies to manage surplus supply and avoid supply crises (OPEC, the CAP in Europe, the Gold Agreement, etc.), in this cycle raw materials have suffered a shock of demand.

An evaluation of the impact on the economic cycle is thus very difficult, as the causality link between variables – raw materials and the economic cycle – is virtually totally reversed.

Europe

The case of the European economy is even more complex. Theoretically, inflation is cyclical. It is difficult to validate this argument for Europe, however. Unless a delay effect is factored in (too long to be pertinent), the fact is that inflation in Europe has been very stable over the past 10 years (see chart below). On a y-o-y basis, the peak was reached in summer 2001, while the low point was hit in 1999, in the middle of the economic boom. During the slump in 2002-2003, inflation was at 2-2.5%, i.e. higher than the ECB's definition of price stability.

ECONOMIC CYCLE AND THE CONSUMER PRICE INDEX IN THE EURO ZONE



Source: Cheuvreux, Bloomberg

...although inflation is
clearly a reality

Still a substantial contributor to inflation

Valuing the economic impact of the rise in energy and food prices in Europe has become difficult due to the diversity of the consumer profiles of the countries. The table on the following page presents the weight of the main components of the CPI by country. We note the large differences. The weight of agro-commodities as a percentage of overall household spending varies from 11% in Germany to 21% in Spain. Energy (excluding transport) represents 4.2% in Spain vs. 7% in Germany.

For our analysis of the euro zone as a whole, we consider that food represents 14.6% of overall household spending, and energy 9.6%. In December 2007, the consumer price sub-index for food was up 4.3% y-o-y, and that for energy up 9.7%, while all other sub-indices rose 1.9%.

COMPOSITION OF THE CPI BY COUNTRY IN EUROPE

	European Union (27 countries)	Euro area	Germany	Spain	France	Italy	Netherlands
All items	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0
Food	139.4	142.9	100.8	207.0	149.5	161.0	120.8
Bread and cereals	25.1	25.4	19.3	33.4	22.5	32.8	24.8
Meat	36.1	37.5	25.5	55.0	44.1	40.3	26.2
Fish and seafood	9.7	11.7	3.6	30.6	13.2	12.2	4.7
Milk, cheese and eggs	21.2	21.5	15.5	30.0	23.0	23.7	17.4
Oils and fats	5.4	5.6	2.9	8.5	4.2	9.0	2.0
Fruit	11.3	11.7	9.8	19.0	10.9	11.5	9.9
Vegetables	15.8	15.4	11.4	19.3	15.0	19.1	12.9
Sugar, jam, honey, chocolate and confectionery	10.6	9.8	8.6	7.2	10.5	11.9	10.7
Food products n.e.c.	4.2	4.3	4.2	4.0	6.1	0.5	12.4
Non-alcoholic beverages	13.6	12.9	13.9	12.5	13.7	11.9	10.5
Coffee, tea and cocoa	4.1	3.8	4.7	3.5	4.6	2.4	3.4
Mineral waters, soft drinks, fruit and vegetable juices	9.5	9.0	9.2	9.0	9.1	9.5	7.1
Alcoholic beverages, tobacco and narcotics	43.8	39.9	52.0	28.3	36.3	32.0	37.2
Alcoholic beverages	18.3	15.1	18.7	8.4	17.1	9.6	15.1
Tobacco	25.5	24.8	33.3	19.9	19.2	22.4	22.1
Clothing and footwear	66.2	69.3	55.8	90.6	56.4	94.3	66.1
Housing, water, electricity, gas and other fuels	151.7	154.7	226.6	105.2	148.3	103.3	174.3
Electricity, gas and other fuels	56.2	52.4	69.5	41.7	46.2	46.2	56.5
Furnishings, household equipment and routine maintenance of the house	69.8	72.7	72.0	60.7	65.5	91.5	76.3
Health	37.8	40.6	46.0	28.4	42.5	36.0	26.0
Transport	152.2	158.0	155.3	141.9	177.2	159.8	139.2
Communications	31.1	30.8	23.5	35.0	32.1	29.7	54.5
Recreation and culture	103.0	94.4	111.4	72.4	98.3	72.1	114.7
Education	11.4	9.6	8.0	16.0	5.6	9.9	6.8
Restaurants and hotels	95.5	91.8	54.5	143.8	71.3	114.3	63.4
Miscellaneous goods and services	84.6	82.6	80.2	58.3	103.4	84.2	110.3

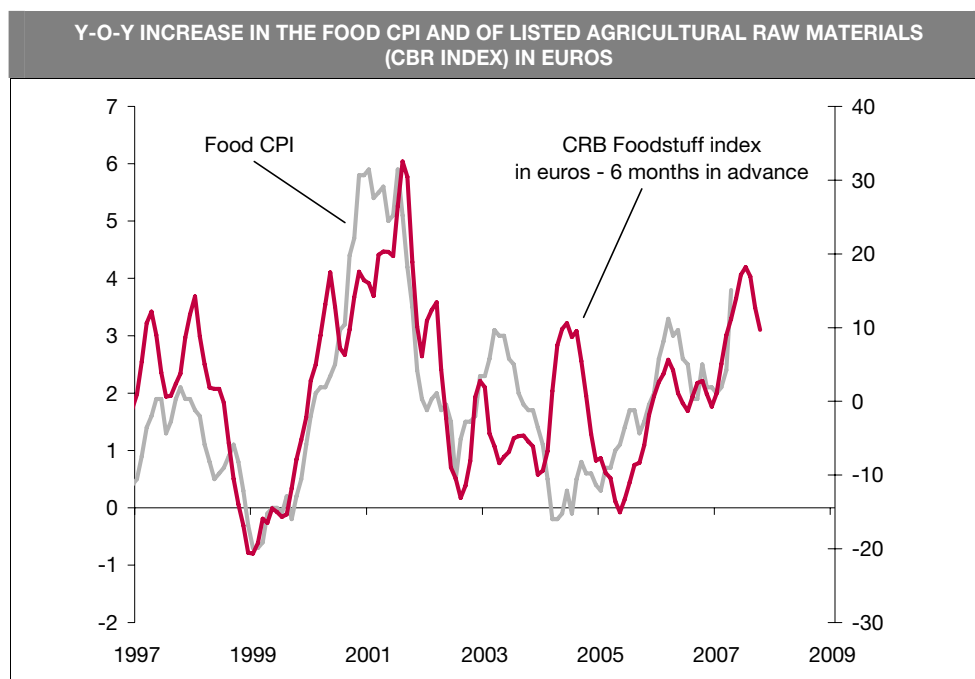
Source: Eurostat

Up to now, few elements seem to show that inflation has spread to all sectors. Excluding food and energy, the index remains below 2%.

Minor impact overall

■ The price impact is not obvious

Due to its weight, the impact of the rise in agricultural commodities on overall prices is nevertheless obvious. With a delay effect of around six months, we note a fairly strong correlation between the two series (see chart below). However, it is important to underline that the elasticity between the two variables is very weak. Over the past ten years, the structural rise is 1.65% p.a., with an elasticity of just 8%. In other words, a 10% rise in prices on markets for listed agricultural raw materials would lead to a 2.45% rise of the food consumer price sub-index in the euro zone six months later.



Source: Cheuvreux, Bloomberg

Our 2008 economic scenario for Europe obviously takes account of these variables. However, in the overall equation that economic growth represents, the impact – on an aggregate European level – is minor.

Cassandra warnings...

Some economists consider the increase in raw and soft commodity prices to be a real threat to consumption via a negative impact on purchasing power. We do not give much weight to this argument. European economic growth dynamics are based on other very strong fundamentals, i.e., a buoyant employment market, which is set to ensure relatively strong growth in spending, as well as a corporate sector that continues to be supported by record profitability levels and financial conditions that, despite everything, remain accommodating.

An increase in the consumer price index over the coming months is inevitable, if only due to very unfavourable bases of comparison. Following this period, the trend should nevertheless be manageable for the economy. **Our forecasts assume a slight drop in the saving rate will be enough to offset the negative effects of the general rise in prices.**

Which confirms our scenario for the sector exposed

**A media issue
rather than a
margin issue**

**Interestingly, no risk in
D&E markets**

IV— Impact on food players

■ Impact on food producers

Whereas food producers are exposed to a very broad range of agro-commodities, brewers are typically confronted with one specific agro-commodity – barley/malt. While food producers have witnessed higher input prices for some time now, the impact on brewers has been relatively modest, also due to relatively long hedges. Pricing and mix improvements have also been reasonable for brewers. However, y-o-y comparisons in FY-08 may become slightly tougher for brewers than for food producers, while higher commodity prices have almost become business as usual for the latter.

We remain confident in the medium term on the sector's ability to offset additional costs and to pass price increases on to end-customers without hurting volume growth. Many price hikes have been implemented in all major markets and there has been no major volume slowdown so far. This backs the scenario of limited impact of agro-commodities price hikes on margins.

Note, however, that food product inflation varies according to the country: for example, it is twice as high in the UK as in France due to negotiations with retailers and attempts by French public authorities to limit price increases.

In any case, the impact of the rise in raw materials prices, while real, should be placed into perspective. While the price of wheat represents 60-70% of the cost of flour, it only represents 5% of the typical "French baguette".

Pricing power not at stake in developed and emerging markets

Pricing power among large cap food producers is not necessarily weaker in emerging countries than in western Europe or North America, quite the contrary. Depending upon the specific food segment, these producers could hold more dominant market shares in emerging countries than in more mature food markets. A larger share gives more power. Additionally, given higher volume growth in emerging markets, operating leverage is another useful tool to offset higher input costs other than raising prices. Another frequently used tool to fight higher input costs is flexibility in terms of packaging formats and sizes. Like other consumer goods producers, European players such as Unilever do not use the conventional cost + margin = price model so much as a so-called reverse engineering model, where an affordable unit price is taken as the starting point. What can people afford to spend on, for instance, a bottle of shampoo or a chocolate bar? Subtracting a margin from this affordable unit price results in a target cost level. The latter is not a fixed amount but varies as packaging formats can be changed.

CSM

Feedstock exposure	Type: Sugar, 18% of COGS or 10% of sales Type: Grains, 9% of COGS or 5% of sales Type: Oil & oilseeds, 9% of COGS or 5% of sales
Impact	Higher input costs had a net impact of EUR13m in FY-06 (55bp of sales) and EUR7m in H1-07 (60bp of sales), excluding higher energy costs. Higher input costs had a negative impact of 8-9% on normalised operating profit. Going forward, this gross impact will increase, particularly in the bakery business. The bakery division's COGS will rise EUR190m from a total of EUR1bn in FY-06 during FY-07 and FY-08 i.e. a nearly 20% increase. CSM expects to offset this by EUR10m in savings in both FY-07 and FY-08 and price increases by 10-20% in the bakery business to offset the remainder. CSM expects EBIT to be hit by an additional EUR5m in H2 in bakery, bringing the FY-07 total to EUR12m including Purac, i.e. 50bp of total sales. With the aforementioned price increases and savings, CSM expects to fully offset higher raw materials costs by FY-08.
Hedge	CSM has hedging policies in place. Normally, it would take 6-12 months to pass on higher input costs.
Pricing power	So far, CSM has hardly used the pricing element. In fact there has been pricing pressure in Purac due to competition, although this seems to be stabilising lately. In the bakery business, most growth up to now has been volume growth. As said, CSM is increasing prices by 10-20% in the bakery division to offset the anticipated EUR190m in additional COGS. CSM does not rule out negative volume effects, but all in all, it believes that acceptance in the industry to absorb and pass on higher input costs is rising. Price increases are relatively large, creating some uncertainty concerning the impact on volumes.

GROLSCH

Feedstock exposure	Type: Barley / malt, 11-12% of (raw) materials and consumables, 4-5% of sales (excluding duties)
Impact	In H1-07, higher input costs had an estimated EUR1m impact on EBIT, representing 8-9% of EBIT and 60-70bp of sales. With a reported price hike of 3%, we estimate that Grolsch has thus far been able to compensate for these cost increases. However, the gross impact will be higher in FY-08. Malt costs will be higher by some EUR5m-10m, or 2.3-2.5% of FY-08 sales (excluding excise duties) and 23-25% of FY-08 EBIT. Grolsch already guided for price increases offsetting higher input costs. A 3% price increase, similar to H1-07, would be needed, according to our estimates.
Hedge	The company is fully hedged for FY-07, but will face higher input costs in FY-08, as contracts for FY-08 are currently being closed.
Pricing power	Similar to other brewers, Grolsch's pricing power has been in good shape recently. The price effect was about 3% in H1-07, and a similar rate would be needed to offset higher input costs.

HEINEKEN

Feedstock exposure	Type: Raw materials, 6.6% of sales, of which barley / malt, 5% of sales
Impact	Raw materials costs amounted to EUR780m, or 6.6% of sales, in FY-06. Raw materials consist predominantly of barley/malt. In FY-06, raw materials costs rose by 4% organically, below the nearly 7% volume growth Heineken reported. The impact will be higher this year, however, as in H1-07, raw materials increased by 17% organically, 9% higher than the 8% organic volume increase. Raw materials represented 7.1% of H1-07 sales, up 50bp versus H1-06. The 2007 impact is similar. Heineken guided for an 8% increase in raw materials and packaging costs combined, on top of organic volume growth. Note that packaging costs are nearly twice the size of raw materials. Combined raw materials and packaging costs will rise some EUR170m organically, which is close to 135bp of estimated FY-07 sales. This impact will at least double to some EUR360m in FY-08, according to our estimates.
Hedge	Heineken already fully hedged its raw materials requirements for FY-07. As said, it expects raw materials and packaging costs to rise 8% per hectolitre organically, thus 8% on top of organic volume growth. The company closed purchasing contracts for FY-08 in H2-07.
Pricing power	The positive impact of pricing and mix improvements was 2.8% in FY-06 and 2.6% in H1-07, clearly outpacing the negative impact of higher input costs. Input costs will likely have a larger impact in FY-08, as said at least EUR360m organically. Heineken's pricing power, which is relatively high, will have to increase further. In addition there are still EUR180m-200m in gross savings left from its restructuring programme. Thus, pricing and savings should be able to offset higher input costs, but there will be less room for margin improvement in FY-08 than in FY-07, in our view.

CARLSBERG

Feedstock exposure	Type: Barley / malt single largest agro-commodity Raw materials, 6-7% of sales
Impact	Carlsberg does not disclose details concerning the absolute size of the raw materials burden, let alone that of specific ingredients. Similar to Heineken and Inbev. In 9m-07, Carlsberg's gross margins were down 110bp at 50.6% (vs. 51.7%) as a result of higher raw materials costs. Nevertheless, successful restructuring compensated for this, and EBIT margins were up by 130bp to 12.8%. In addition to hedging, the company uses efficiency measures and to a lesser extent pricing to compensate for higher input costs.
Hedge	Carlsberg has already fully hedged its raw materials requirements for FY-07. Hedges up to and beyond 12 months are in place.
Pricing power	None. Pricing is not the primary tool used by Carlsberg to offset higher input costs.

INBEV

Feedstock exposure	Type: Raw materials estimated at 6-7% of sales and 15-16% of COGS, barley/malt is the single largest agro commodity.
Impact	InBev does not disclose details concerning the absolute size of the raw materials burden, let alone that of specific ingredients. Nevertheless, like Heineken, barley/malt is InBev's single largest raw material. Sugar is also important for the soft drinks business. As of the start of the year, InBev guided for an impact of EUR120m-130m in FY-07, representing 80-90bp of sales and 30-40bp of COGS. COGS as a percentage of sales climbed 15bp y-o-y in H1-07, driven by both agro commodities and packaging costs. Alongside hedging, InBev uses efficiency measures, and to a lesser extent pricing, to compensate for higher input costs. It expects COGS per hectolitre to increase at a lower pace than inflation, something that was achieved in FY-05, FY-06 and also expected to be met in FY-07. However, for FY-08, it expects consolidated COGS to move in line with average inflation, which is some 3.5-4% in InBev's case.
Hedge	InBev has already fully hedged its raw materials requirements for FY-07. Hedges up to and beyond 12 months are in place.
Pricing power	The positive impact of pricing and mix improvements was 2.0% in FY-06 and 1.9% in 9m-07. As said, pricing is not the primary tool used by InBev to offset higher input costs.

NUTRECO

Feedstock exposure	Type: Grains, corn, cereals, soymeal, 70% of input costs Type: Fishmeal/oil, 30% of input costs Input costs / COGS represent 67% of total sales
Impact	Thus far, higher input costs have had almost no impact on Nutreco's gross margin. This is best illustrated by the 13% price increase Nutreco reported in H1-07. Nutreco's pricing power can be explained by: 1) the fragmented customer segment; 2) purchasing power, as the company is a major buyer of selected raw materials. For example, its fish meal and fish oil purchases account for 7.5% and 20% of total global supply; and 3) knowledge related to recipes, substituting inputs.
Hedge	Company uses hedges and is able to pass on price increases in a relatively short period of time (3-6 months).
Pricing power	As said, pricing was 13% in H1-07 driven by compound feed (15% price increases), aquafeed (14%) and meat (14%). Pressure from higher input costs has never been a real issue in the past decade.

UNILEVER

Feedstock exposure	Type: Edible oils, 11-12% of COGS or 6% of sales Type: Dairy, 3-4% of COGS or 2% of sales Type: Tea, 3% of COGS or 1-2% of sales
Impact	Impact of higher input costs was over EUR600m or 160bp of sales in FY-06 and accelerated further to already approx. EUR550m or 180bp of sales in 9m-07. The company guides for a FY-07 impact of 200bp, up from the previous guidance of 160bp.
Hedge	Savings (EUR660m p.a. or 210bp of sales), changing recipes and pricing power are the main tools to tackle higher input costs. Specifically, Unilever has reduced exposure to oils and fats due to technology based on lower-fat offerings. Concerning savings, purchasing and restructuring each contribute some 50% of the total. While input costs are rising, savings have also increased. Purchasing savings have stood at EUR400m for some years now, and they continue.
Pricing power	Pricing power so far has been relatively weak compared to Danone and Nestlé, to Unilever's disadvantage. However, pricing power has increased from one quarter to the next, and was 2.1% in Q3 2007 and 1.4% YTD. Additional price increases are planned for the remainder of FY-07 as well as FY-08, clearly a positive trend. D&E markets: As mentioned above, pricing power is highest in D&E markets (>3% for Unilever and in fact above the company average of 2%) and is stronger in emerging countries versus western Europe in particular. This is due not only to Unilever's relatively strong market positions in these emerging markets, but also to its flexibility in terms of packaging formats. Similar to other consumer goods producers, Unilever does not so much use the conventional cost + margin = price model but a so-called reverse engineering model, where an affordable unit price is taken as a starting point. Subtracting a margin from this affordable unit price results in a target cost level. The latter is not a fixed amount but varies as packaging formats can be changed.

NESTLÉ

Feedstock exposure	Milk: 13% of COGS, 5.5% of group sales Green coffee: 8% COGS, 3.3% of group sales Fruit and vegetables: 7% COGS, 2.9% of group sales Cocoa: 6% COGS, 2.5% of group sales Sugar: 5% COGS, 2.1% of group sales Flour: 4% COGS, 1.6% of group sales
Impact	The group highlighted that it has started to pass price increases on to customers in 2007 already. Volumes in some categories have softened slightly, as was clearly visible in Q3-07 results, with group organic growth of 6.8%, implying a marginal slowdown vs. the 7.4% reported for H1-07 and resulting from a stronger-than-expected pricing component of +3.9% in Q3-07 (vs. the +2.1% reported in H1-07) combined with lower volume growth of 2.9% (vs. 5.3% in H1-07). At the time of 9m results, management guided for above-target organic growth and sustainable margin improvement for FY 2007, after the record 60bp margin expansion reported in H1-07, although it warned input cost pressure would have been skewed towards the second half of the year. Early this year, CEO Brabeck emphasised that commodity price pressure was set to ease in 2008 and reiterated his confidence in reaching goals in FY 2008 and delivering on organic growth targets. Food inflation was said to have reached a peak in many segments, with lower price pressure for the overall food category anticipated for 2008. He also highlighted his confidence in Nestlé's business regardless of whether the US economy undergoes a recession. The impact of additional rising input costs is set to be lessened thanks mainly to price increases to the end-customer, while margin pressure is to be reduced by productivity gains, product reformulations, packaging changes and a reduction in marketing expenses.

Hedge	Hedging policies on all the main commodities. Providing strong visibility on 2007, and allowing management to be "comfortable" with the current level of the consensus (40bp margin improvement in 2007E, implying a 20bp improvement in H2-07).
Pricing power	High pricing power. The group benefits from: 1) strong brands; 2) an increasing number of value-added products (i.e. nutrition, pet food), which reduce the weight of raw materials in production costs; and 3) few commoditised products implying less substitution in favour of private labels, which have lower pricing power and are expected to experience a squeeze in their already low margins. Pricing power in D&E markets: Nestlé uses pricing more as a tool for "strategic value creation" than a tactical "cost plus" mechanism in all markets. Developing and emerging countries represent around one-third of group sales and present above-average profitability. Measures in place to tackle input cost rises are multiple, including: 1) pricing power, selective increases to selling prices in terms of regions/country and product categories also considered competition moves (not simply increases across the board); and 2) packaging changes and product reformulations. Pricing in emerging markets does not differ from the group average, so upgrades are possible compared to competitors – margins are not expected to decline in emerging countries

DANONE

Feedstock exposure	Milk: 25% of input cost, 16% of group sales Fruit: 7.5% of input cost, 2.8% of group sales Sugar: 5.2% of input cost: 2.0% of group sales
Impact	EUR300m in additional costs expected in 2007E and again in 2008E, mainly related to milk prices. Other agricultural raw materials have experienced no significant change. The group anticipates offsetting these additional costs mainly through price increases to the end-customer. It is also likely to benefit from productivity gains, product reformulation, packaging changes, etc. In 2008, we believe that the new Danone will have to face a total of EUR405m in additional costs. The group anticipates a rise in milk supply costs of around EUR290m for the dairy division in 2007, i.e. a gross negative impact of around 200bp on the 2007 operating margin. For 2008, the group's guidance for the historical consolidation scope is an increase in supply costs of EUR290m. We estimate that the integration of Numico is likely to bring additional extra costs of EUR115m, i.e. a total of EUR405m. These estimates reflect average milk price increases for powder and other dry derivatives on the one hand, and for liquid products on the other, of respectively 15% and 25% in 2008 vs. 2007 (after increases of 80% and 15% in 2007 vs. 2006).
Hedge	The majority of the milk supply is liquid milk, a product that cannot be hedged. No specific details provided by the company, but the hedging impact is likely to be limited.
Pricing power	High pricing power. The group benefits from: 1) an average 36% market share in the dairy category in the countries in which it operates; 2) an increasing number of value-added products, which reduce the weight of raw materials in production costs; and 3) fewer commoditised products, implying less substitution in favour of private labels. The group expects to pass on 3% price hikes on its dairy products in 2007 and 2008. In terms of offsetting EUR405m in additional costs, we remain confident in the group's ability to implement price increases for end-customers without hurting volume growth. In the dairy division, note that prices were raised in all major markets except France before 1 October, and there has been no major slowdown in volumes so far. This supports our scenario of a limited impact of raw milk price hikes on margins.

EBRO

Feedstock exposure	Rice: 28% of input costs Wheat: around 20% of input costs Sugar beet: 14% of input costs
Impact	Ebro Puleva has high exposure to the performance of agricultural feedstock prices, which affect the larger business units: pasta (31% of EBITDA for 2007E), rice (29%) and sugar (26%).
Hedge	No established hedging policy.
Pricing power	In pasta, Ebro's pricing power is strong in both Europe (especially France) and the US, although in the latter country it has stronger competition from the No. 2 player (Barilla). Ebro managed to raise prices in 2007 to offset higher raw materials costs. In rice, it is difficult to pass on the increasing raw materials costs to industrial sales (about 40% of the total, with a higher weighting in Europe), as Ebro has little negotiating muscle. The pricing power is much higher in the brand segment, as Ebro's brands are leaders in both Europe and the US. In sugar, there is no pricing power as sugar is a bulk product in most contracts.

■ The case of the retail sector

Food inflation has returned to stores over the past few months, and this is a new trend in certain markets such as France, where we saw deflation over the previous two years given very stiff price competition. Traditionally, food inflation is favourable to food retailers, in particular when it reflects an easing of competition. In this specific case, food inflation is linked to higher prices from suppliers (reflecting the increase in raw material prices).

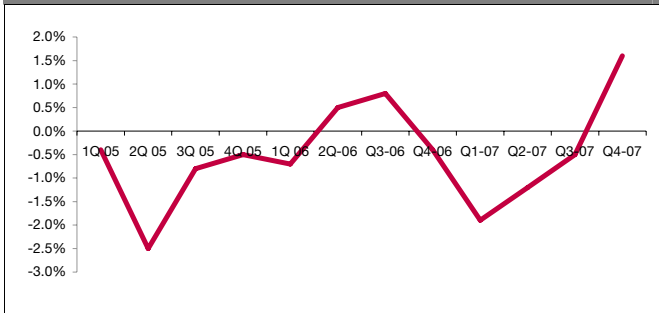
There are currently two main issues for food retailers:

Private labels not a stake, on the contrary...

■ **A pessimistic scenario for the margin trend?** The key question is to know whether retailers will be able to pass on all inflation to customers quickly. This depends on local competition, with a risk of a margin squeeze if some players decide to delay price hikes (to protect their price image and/or to gain market share). In all, we believe that this risk is rather limited in most European markets. The current inflation trend appears too general and too strong to be largely absorbed by retailers. In Q4-07, Carrefour showed inflation on groceries of 1.6% in hypermarkets vs. deflation of 0.5% in Q3-07.

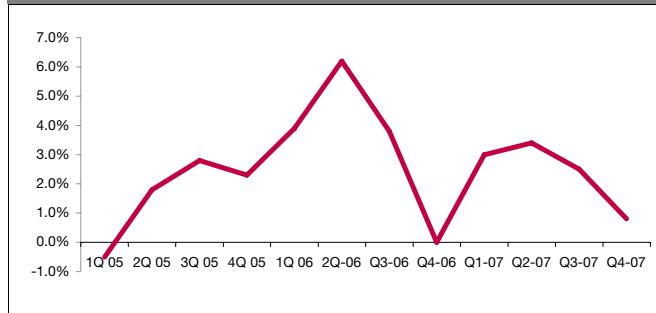
■ **Consumer spending.** Growing food inflation due to higher foodstuff prices? Such a trend could have a negative impact on volumes. While food is perceived as relatively inelastic (low sensitivity of volumes to prices) compared to discretionary products (e.g. big-ticket items such as TVs or furniture), rising inflation can nevertheless impact volumes to a certain extent. In that respect, retailers will have to find the right trade-off between inflation and volumes. Some retailers such as Casino may also benefit from this growing inflation trend through their higher exposure to strong private-label offers. Even though small suppliers of private-label items are also impacted by higher raw materials costs, retailers may protect their price image with a widening price gap between national brands and private labels. Another impact of the growing inflation could be a trading-down effect for customers: they could choose whether to buy more budget items or shift from traditional grocery stores (hypers/supers) to hard discounters. In this respect, Leader Price's recovery could be driven by the return of the hard discount format in France after two years of market share losses

INFLATION / DEFLATION IN CARREFOUR'S FRENCH HYPERMARKETS ON FOOD



Source: Cheuvreux

VOLUME GROWTH IN CARREFOUR'S HYPERMARKETS IN FOOD



Source: Cheuvreux

CARREFOUR, CASINO, COLRUYT, DELHAIZE, TESCO, SAINSBURY AND MORRISONS

Feedstock exposure on private labels	In supermarkets, we believe that at least 60% of food items show higher inflation. UK food retailers have a higher percentage of private label items, with Tesco, for instance, generating 55% of its UK sales with its eponymous brand. For Continental European food retailers, exposure is lower at around 40% in Belgium and 35% in France.
Impact	Since September 2007, food retailers have been confronted with rising food prices from suppliers.
Pricing power	Rising food prices are likely to deteriorate relationships between suppliers and retailers. The main pricing power of retailers vis-à-vis suppliers is to place stronger emphasis on private labels, which provide a higher margin than national brands on average. Given the current price gap between national brands and private labels (ca. 30%), even if retailers pass the same price increases on both categories onto clients, the pricing gap in absolute terms should widen, thus improving de facto the pricing image of private-label brands.

■ The case of the catering sector

Higher food inflation reflects a more challenging environment for catering groups. However, there are several options to limit the negative impact on margins (renegotiation of contracts, better sourcing, cost optimisation, etc.).

SODEXO AND COMPASS

Feedstock exposure	Sodexo is active in service vouchers/cards and facilities management, two businesses that are not concerned by higher food inflation (altogether 23% of group sales and 35% of EBITA). The group is exposed to this trend for its food service business, which accounts for 77% of group sales and 65% of EBITA. We believe that the exposure of Compass is around 90% of sales and EBITA.
Impact	Food inflation is a key issue for catering companies, as it reflects a more challenging environment. While food inflation has a positive impact on organic growth (Sodexo's management expects external inflation of 4-6% in 2008 vs. 3-4% in 2007), there is a risk of a margin squeeze. To manage food inflation, catering companies have several options: 1) purchasing and supply chain efficiencies; 2) optimisation of menus (to find new products that are less affected by inflation); and 3) the renegotiation of contracts to pass this inflation on to customers. Note that for 'management fee contracts' (32% of sales and 25% of EBITA for Sodexo), there is no risk in theory, as the group provides the service and billing to clients. For 'P&L contracts' (45% of sales and 40% of EBITA for Sodexo), there are indexing clauses in contracts (every 6 months or every year). For such contracts, the main risk is a delay in timing of renegotiations.
Management's view	Compass and Sodexo's management teams have proven rather confident in their ability to manage growing food inflation. Note that Sodexo has experienced a tangible de-rating in recent weeks following a 40bp margin squeeze linked to inflation in North America in H2 2006-07. Growing food inflation definitely reflects a more challenging environment for catering groups. However, we believe that higher inflation is likely to push catering groups to optimise their cost structures, and we believe that they have several options to face this negative trend.

V— Impact on agrofuels and agrochemicals

■ The case of agrofuels

The euphoria is behind us

After the substantial decline in the share prices of agrofuel players, investment opportunities may arise in 2008, but being selective is a must. In early 2007, we had a consensus that first-generation agrofuels, including bioethanol from wheat/corn and agrodiesel from vegetable oils (e.g. rapeseed oil), would not be sufficient for the EU to meet its target for agrofuels to account for 10% of total fuel consumption in the transportation sector by 2020.

We are entering 2008 with a new consensus in Europe: the only practicable and environmentally friendly means of replacing fossil fuels is with second-generation agrofuels, while agrodiesel appears to be an acceptable compromise in Europe to complete the incorporation targets and respond to the lasting deficit of diesel, fuelled by a growing demand for diesel engines.

Pressure to sustain energy driven demand

Despite the various drawbacks of agrofuel production, the recent increase in prices, the temptation to cut agrofuels and official announcements (for instance, "agrofuels have nothing to do with supporting the incomes of crop farmers"), incorporation targets will be altered to some extent by the rising concern of farmers over the consequences of the upcoming liberalisation of agricultural policies. Since the development of agrofuels is a perfect hedge against the decline of protection mechanisms, it is even likely to become a political argument for dismantling them. With farm employment at stake, agrofuels could also support job creation in the downstream activities and processing of agrofuels.

US vs. Europe: while in the US the political reality is that domestic agricultural lobbies want policies that support the use of domestic feedstocks, regardless of energy efficiency or environmental sustainability, the EU is slowly shifting to biofuel policies that have both economic and environmental comparative advantages

In this context, shifting price support and subsidies from broad agricultural policies to meeting specific agrofuel commitments is a critical point for the industry visibility (unless it focuses on a limited volume of specific crop-based fuels) although it faces major criticism from environmentalist lobbies (supported on this theme by the oil and gas lobby).

Responding to the agro-commodities challenge implies that subsidies will gradually decline to prevent any priority from being given to agrofuel demand, especially first-generation fuels, and it clearly means that 2020 incorporation targets could be at stake while the lack of a competitive production cost environment in Europe makes these difficult to reach.

Agrodiesel, fundamentally a safer place to be

While the EC's recent proposal to meet the 10% target requires that agrofuels achieve a minimum 35% of GHG savings, the fact that in 2007 the European Parliament's environment committee suggested a 50% minimum GHG savings in the Fuel Quality Directive review drives uncertainty about further restrictions of GHG emissions reduction requirements.

As mentioned in this report, establishing a 50% GHG cut-off criterion for incorporation targets would just barely make agrodiesel produced from rapeseed acceptable in European production and would negatively discriminate against European wheat, corn, and sugar beet production.

A very fast changing business environment

More visibility in some business and regions than others

Good reasons to prefer agrodiesel...

But local regulations remain critical

Also, while overall subsidies (tax exemptions) are at stake, the European agrofuel market is left open to international competition. Residual subsidies and distributor choice could be concentrated on supporting second-generation agrofuels so that they can contribute as much as possible to meeting 2020 targets and maintaining a level of agrodiesel production that could therefore develop further in the EU for the following three reasons:

- Its international competitiveness can be sustained at a reasonable cost;
- Its environmental balance is the best among European first-generation agrofuels;
- Its economics is rational as long as a diesel deficit persists in Europe.

2008 regulatory process: To date, the proposed draft has to be approved by the EU Council of Environmental Ministers before the final text is discussed and published by the Parliament while the mentioned criteria will **apply only in 2013** once voted.

National commitments remain key

Local regulation and fiscal support are two critical instruments to drive biofuel demand, and thus condition product prices. In some countries, this driver should be readjusted to find healthy fundamentals and be able to reach the 10% target

Spain

In June 2007, the Spanish government approved a mandatory target for biofuels: 3.4% by 2009, 5.8% by 2010 and an indicative 1.8% target for 2008. Agrofuel producers have pushed the government to set separate targets for agrodiesel and ethanol in order to boost visibility, and the CNE surprisingly proposed separate targets with a minimum percentage of ethanol usage by 2010 (2.5%) lower than that for agrodiesel (5.8%), which is not totally clear at this stage. We believe the future development of the Spanish Ministerial Order for agrofuels is likely to be in line with the European legislation.

Germany

We currently see overcapacity in the market due to declining demand in Germany. Based on the latest information, we see 300% overcapacity in Germany since the B100 market is completely disappearing. The reasons for this are increasing feedstock costs (e.g. rapeseed oil) on the one hand, and increased taxation from the beginning of 2008 to EUR0.15 per litre.

As a reminder, taxation of pure agrodiesel (B100) was introduced on 1 August 2006 at EUR0.09/litre. The tax rate was EUR0.09/litre in 2007 and will gradually be increased in 6-cent increments from 2008 until it reaches EUR0.45/litre (similar to the current tax rate for mineral diesel fuel of EUR0.47/litre) in 2012. We calculate that at a tax rate of 15-20 cents per litre, B100 would probably be more expensive than mineral diesel.

Hence we would expect a pure agrodiesel market in Germany to cease to exist from 2008 or 2009 (i.e. after the first or second 6-cent increment and depending on the market price for crude oil). Therefore, the expected decline in demand for B100 in Germany will, in our view, have to be offset by mandatory blending of agrodiesel, as the German government has committed to and is required to reach the EU target of replacing 5.75% of fossil fuels with agrofuels by 2010.

In addition, increased competition resulting from imports of B99 from the US is set to come to an end in 2008, with a US political decision to halt these subsidies and with the introduction of sustainability criteria.

Thereafter, increasing competition from abroad and political resistance for higher import tariffs on ethanol, together with the global rise in bioethanol capacity (e.g. in Brazil and the US), will lead to further price pressure and margin squeeze for European players such as CropEnergies.

How long will the political reality in US provide visibility for ethanol?

France

Tax reduction for biofuels blended in petrol were supposed to decrease as of the end of the year. This drop is likely to be less stringent than expected, but is still a first sign of the government's limited capacity to maintain very high subsidies. While France offers a privileged environment for agrofuel producers with high tax (TIC) and penalty (TGAP) incentives, this change is not precisely what would be needed to be more in phase with the EC proposal (the approval system does not promote imports and provides subsidies even for poor CO₂ processes).

US

The US is still a different picture, where regulation (the Farm and Energy Bills) is clearly improving and supporting the economics of agrofuels, although the US is thinking of reducing its import tax on ethanol from Brazil.

The Energy Bill plans to introduce very ambitious targets for second-generation agrofuels from 2010, targeting 18bn gallons by 2022, setting a cap for ethanol production of 15bn gallons and 3bn gallons for agrodiesel, representing a total of 36bn gallons of agrofuels.

The recent spread tightening, along with higher corn prices and falling ethanol prices, have weighed on the ethanol sector. While tightening spreads will negatively impact all producers, those with scale, experience with commodity cycles, liquidity and efficient operations should fare better. Such an environment is likely to spur accelerated industry consolidation. Continued spread tightening is likely to spur further consolidation, while more rational expansion plans drive concerns on overcapacity issues.

However, we believe that this situation is temporary in the US, and we expect that eventual ethanol capacity is likely to be significantly different from the current stated expansion plans. Companies have already begun scaling back plans to develop new capacities, and we therefore believe that the capacity glut that some are expecting will not materialise to the extent people fear, which would be a longer-term positive for the entire industry.

Abengoa is the No. 5 ethanol player in the US.

Biogas

Biogas has significant advantages over first-generation agrofuels:

- Production from 1ha of arable land is about eight times more efficient than agrodiesel and about five times more efficient than bioethanol;
- The whole plant can be converted into energy when producing biogas;
- Biogas can be produced from any organic feedstock, not just wheat or corn (but the yield obtained depends of course on the energy content of the feedstock used);
- Better carbon balance.

Nevertheless, with increasing feedstock prices, farmers are currently more willing to sell wheat and corn to agricultural trading companies than to invest in their own biogas systems, a trend that puts the entire biogas industry at stake.

Biogas makes sense but the business environment remains hostile

Biogas as a fuel

Biogas can also be used as a fuel. As cleaned biogas has exactly the same properties as natural gas and cars running on natural gas already exist, these cars could also be fuelled with biogas instead of natural gas. The blending ratio of biogas with natural gas can range from 0 to 100% without the need to modify the engine. Hence biogas can also be used as a biofuel in addition to bioethanol and agrodiesel. In Sweden, there are already 50 natural gas stations – 50% of the gas sold is already biogas. In Germany, there are currently more than 750 natural gas stations, and this number is set to have increased to around 1,000 by the end of 2007. About 39,000 cars running on natural gas are registered in Germany, which is the No. 1 in Europe, followed by Italy with about 450 natural gas stations and even 450,000 registered cars running on natural gas.

Given new developments in the Fuel Quality Directive, with further reductions in CO₂ and Sustainability Criteria to be met by biogas production and usage, the integration of biogas within the target could provide additional support and visibility for biogas players in Europe.

ABENGOA

Feedstock exposure	Wheat and barley: 6% of input costs Corn: 6% of input costs Sugar: 1% of input costs
Impact	In bioenergy (16% of the group's EBITDA in 2007E), total feedstock costs represent ca. 70% of the division's operating costs. Given the hike in grain prices (especially wheat and barley in Europe), we expect the EBITDA margin to deteriorate to 6.7% in H2-07E (from 9.5% in Q1-07 and 14.4% in Q2-07). From 2008E, we expect this effect to be offset by the consolidation of Dedini and the new and more profitable larger plants, as well as higher sales from the Babilafuente plant in Spain on the back of the new biofuel regulations.
Hedge	A very active hedging policy to protect bioenergy margins until Q3-07. In the context of high grain prices, we estimate that, at present, Abengoa has just 15-20% of its total grain needs in Europe covered, as it is waiting for lower prices in the new harvest. As a result, we see more EBITDA margin erosion in H2-07E. We expect Abengoa to recover its hedging policy by year-end.
Regulation	Spain's ETBE needs and the mandatory target for ethanol usage in France have helped Abengoa enter into long-term contracts with oil companies for 72% of total production in Europe in 2008E. This type of contract boosts producers' bargaining power, enabling them to partially pass through raw materials costs. We believe the development of regulatory frameworks with specific incentives in the EU will improve the visibility on Abengoa's earnings and help protect its margins in the coming years. The Spanish government recently approved mandatory biofuel usage targets of 3.4% in 2009 and 5.8% in 2010 (vs. the current 0.5% usage). A new law with separate mandatory targets for agrodiesel and ethanol is expected by year-end.

BIOPETROL

Feedstock exposure	Rape seed oil: 70% of feedstock costs Soybean oil: 30% of feedstock costs
Impact	The company reported weak Q3-07 results, below our and the market's expectations. One positive was that the Rotterdam plant is already producing agrodiesel; this is already incorporated into our figures.
Hedge	The company has neither specific hedges nor long-term supply contracts for feedstock supply. Hence profitability depends heavily on market prices for oil seeds.
Regulation	Agrodiesel taxation may not be increased in Germany. Although there has been speculation that the grand coalition was considering a 1-year postponement of the planned 6-cent tax increase on pure agrodiesel from the current 9 cents to 15 cents per litre, this hope has not materialised. The CDU's deputy parliamentary party head for research, environmental protection and reactor safety, stated that the planned tax hike would mean the end of many agrodiesel producers. Ms Reiche also has the support of the SPD's agrofuels expert, Marko Mühlstein, who wants tax exemption for the public sector. We currently see overcapacity of about 300% in agrodiesel in Germany, and about 200% overcapacity in Europe, as a result of which agrodiesel prices are declining while feedstock costs are rising.

CROP ENERGIES

Feedstock exposure	Wheat: 100% of feedstock costs Sugar: 0% of feedstock costs currently, but the company plans to increase its use of sugar
Impact	At current wheat prices of EUR260 per tonne, the company is no longer able to run its production at a profit. Its EBIT margin target of 20% is currently well out of reach and probably only realisable if wheat prices were to drop by 50% to EUR130/t, which is very unlikely in our opinion. We expect CropEnergies to generate a maximum of just 5% EBIT margin. In view of this unfriendly environment, we expect the company to switch its bioethanol production fully to a sugar feedstock basis, since this should enable it to generate at least a positive EBIT margin, as sugar prices have declined in recent months. In the wake of the Q2 2007-08 profit warning, we lowered our earnings estimates significantly, with the target price cut from EUR6.3 to EUR4.0.
Hedge	CropEnergies is trying to secure wheat over the futures market at less than EUR200t; the company has about one-third natural hedge since it also produces ProtiGrain, which is a by-product of ethanol. ProtiGrain is an animal feed whose price moves more or less in tandem with that of wheat, since ProtiGrain is a 100% substitute for wheat from the cattle farmer's perspective.
Regulation	As oil companies are also free to buy from abroad (i.e. Brazil), there are only limited regulations from the German bioethanol producer's point of view. The risks of rising feedstock prices is no longer offset by the potential for positive changes in subsidies for European bioethanol producers.

SCHMACK BIOGAS

Feedstock exposure (only for directly-owned operations)	Corn: 70% of feedstock costs Wheat: 15% of feedstock costs Grass: 15% of feedstock costs
Impact	Due to increasing feedstock prices, farmers are currently more willing to sell wheat and corn to agricultural trading companies than to invest in own biogas systems. Increasing revenues from utilities groups are not able to compensate for this impact in the near term. Schmack Biogas believes feedstock costs for biogas systems can be reduced by about 22% per tonne from the current wheat and corn price level through the use of intercrops such as grass and clover (between two harvests), limiting the impact of strongly increased agricultural feedstock prices. Costs out of control: The company has experienced unforeseen additional costs in larger biogas projects with utilities groups. We see a scissors effect that sharply reduces visibility and increases the risks for investors.
Hedge	No hedge at all. Since the company mainly supplies biogas systems to farmers, utilities groups and financial investors, the success of its business depends heavily on the future development of feedstock costs. If customers are not able to generate profits, the demand for biogas systems will collapse. Hence, Schmack Biogas has to secure supply from farmers to its customers via long-term contracts.
Regulation	On 5 December, feed-in tariffs for biogas systems increased slightly. The base tariff for a 500 kWh system increased by 0.3 of a cent per kWh, the bonus for combined heat and power per kWh from 6 to 7 Cent and the bonus if you use for 100% regrowing sources (i.e. wheat and corn) from 2 to 3 cents per kWh. Potential inclusion of biogas as a biofuel to meet EU targets of 10% by 2020 seems possible as biogas can be turned into fuels or can be taken into account by considering biogas as a biofuel equivalent. But this is only under consideration – and has not yet taken place. As a result, if the EEG field report proposals were to be implemented and a law to feed in biogas in natural gas quality were introduced, which can probably only be implemented from 2009, this carries the risk of a "transition year" leading to low demand in 2008. Schmack Biogas is currently the only biogas system provider with the technology to clean biogas in-house, thanks to its latest acquisition, CarboTech. According to company information, CarboTech is one of very few players in Europe with the ability to clean biogas to natural gas quality levels in order to feed it into the natural gas grid. Envitec, Schmack Biogas's major competitor, says that it is also able to do so.

Opportunities and risks for agro-chemicals businesses

■ The case of biochemicals

Most of the chemicals industry relies on oil-based raw materials. The increase in crop prices has no impact on their current raw materials and there is no real competition from green alternatives.

On the other hand, green chemicals (e.g. biolubricants and bioplastics) are likely to be negatively affected by the sharp rise in feedstock prices if regulations do not set them. We focus our impact assessment on green chemicals

Drivers for green chemicals

Development of green biochemicals is still in the early stages. However, we see two main drivers for the bio revolution in the chemicals industry, which is increasingly backed by policymakers:

- The increase in oil prices, which has been a wake-up call that we are approaching the peak in oil reserves and raises questions over the long-term sustainability of the current chemicals industry;
- The increasing momentum on climate change issues, with industrial production identified as the main culprit. Biomass, including micro-organisms, addresses all these issues: with potential stability of raw materials prices, biomass is the only renewable source of carbon. It also offers huge innovation potential, as new business models will appear.

Biochemicals include white and green biotechnology. White biotechnology includes all uses of biotechnology for industrial chemical production, via fermentation or biocatalysis, or starting with biomass raw materials. Biomass-based chemical products are expected to be worth USD50bn by 2010E.

Biorefining using feedstock

New biorefineries can take advantage of the differences in biomass components and intermediates and maximise the value derived from the biomass feedstock. A biorefinery might, for example, produce one or more low-volume, but high-value, chemical products and a low-value, but high-volume, liquid transportation fuel, while generating electricity and processing heat for its own use and perhaps enough for the sale of electricity.

Three types of biorefinery:

- NREL's starch/sugar platform is based on biochemical conversion processes and focuses on the fermentation of sugars extracted from biomass feedstocks.
- Syngas's platform is based on thermochemical conversion processes and focuses on the gasification of biomass feedstocks and by-products from conversion processes.
- Platforms based on vegetable oils.

The potential of biochemicals should clearly be evaluated along two criteria – environmental and economical:

Biolubricants: promising agro-application

Apart from the strong development of agrodiesel, there is also huge potential for biolubricants. Biodegradable lubricants are more costly than classical lubricants, they offer comparable and sometimes superior qualities. We estimate that the overall market for lubricants represents around 18 million tonnes, with western Europe accounting for 5 million tonnes. It is estimated that 85-90% of current uses can be replaced by lubricants from biorefining.

The key advantages versus mineral oils are: 1) ready biodegradability; 2) low toxicity; 3) multigrade, for year-round use; 4) high load-carrying ability; 5) strong anti-wear protection; 6) high temperature capabilities; 7) reduced combustibility; 8) low coefficient of friction; and 9) energy efficiency.

The European Directive establishing the criteria for the allocation of an ecolabel for certain lubricants says that, in addition to being rapidly biodegradable, labelled lubricants must also be non-toxic and made of renewable raw materials.

Current market share remains low (Germany is one of the largest markets for biolubricants, with an estimated 5%; by comparison, market share in France is only 0.5%). But the use of ecolabelled lubricants in protected areas (forests, lakes and water) will become compulsory in 2008, so their use could increase tenfold in France, and reach the level already attained in some European countries, such as Germany.

Enzymes

As an alternative to some chemical processes used to make products, enzymes offer a biological route and often a cleaner solution for industry. Eco-efficient enzymes consume less water, raw materials and energy.

The development of enzymes is fuelled by many more drivers, including emerging markets (starting to buy new technologies especially in consumer care), waste reduction, cost/performance and regulations. Enzymes are used in food/feed applications, detergents, technical applications (first and second generation agrofuels, all fermentation processes, waste management, etc.) and should not be diverted from their historical 6-8% growth.

NOVOZYMES

Feedstock exposure	Type: glucose (derived mainly from sugar) 30 % of input costs
Impact	For FY-07, we expect Novozymes's gross margins to decline significantly to 52.3% (vs. 53.7%) due to higher raw material costs, but also as a consequence of margin-dilutive acquisitions that were made in H1-07. This will lead EBIT margins to decline somewhat to 19.5% (from 19.7%) in 2007 based on our calculations.
Hedge	None
Regulation	Regulations very limited

DANISCO

Feedstock exposure	Type: sugar beet, corn 40 % of input cost:
Impact	Comments: In FY 2007-08 we expect a sharp drop in Danisco's gross margins to 34.9% (vs. 36.3%), as a result of higher raw material costs. Nevertheless, cost-cutting in sugar and ingredients is likely to compensate for this and we see a slight improvement in EBIT margins to 11.2% (10.8%).
Hedge	None
Regulation	Regulations very limited

VI – Impact on agro-suppliers

■ The case of agrochemicals

Farm revenues set to drive growth

The agrochemicals sector is clearly benefiting from the high soft commodity prices, as farmers' incomes are clearly rising in all parts of the world. Value was until recently captured by transformation and distribution operations, whereas the producer now benefits.

According to INSEE, French farmers' revenues from grains jumped 98% in 2007 (while production eased by 5%) after a 35% increase in 2006, following six years of a constant decline in revenues. Grain revenues are concentrated among just 15% of all French farmers, well above the average farming revenue increase of 12% in 2007 (dairy and livestock revenues have decreased).

Moreover, farmers should continue to benefit from subsidies. For example, under the CAP, subsidies to French farmers are expected to have declined by just 3% in 2007, representing EUR7bn and still a substantial proportion of revenues. We estimate that in 2007, farming revenues represented EUR67bn in France and EUR800bn in Europe.

This context should contribute to strong demand for fertilisers, crop protection and seeds, with strong price increases (in fertilisers) and volume growth (in seeds and crop protection agents).

We expect the situation to remain tight for the next three years (at least), as described in this report, and expect higher acreage in Europe, further developments in Latin America and eastern Europe, while we see China as clearly starting to invest in yield improvement technologies (modern crop protection and genetically modified crops).

SYNGENTA

Exposure to agro-equipment theme	With expected 2007 sales of USD8.7 billion, Syngenta is the largest supplier of crop protection chemicals and seeds to the farming industry.
Exposure to specific feedstock or zone	Syngenta is also the most diversified in terms of geography and crops. It is perhaps more exposed to corn, with some 20% of its total sales deriving from this crop; Syngenta is No. 1 in flowers, No. 2 in fruit and vegetables, wheat and rapeseed. It has the fastest-growing portfolio of products, and has consistently gained market share since 2005. In seeds, it ranks as global No. 2, and is developing its own genetically modified corn platform to compete with Monsanto's offering.
Impact	The rise of soft commodities is a short-term positive for all crop protection, seeds and fertiliser suppliers, as farmers have a clear incentive to protect yields in order to fully benefit from end-product price inflation. This inflation is due to: 1) low harvests since 2004 (the best year ever!), leading to historical lows in inventories of all major crops; but also 2) strong industrial demand (for Syngenta, we expect 4% growth in volume for the next three years).

VILMORIN CLAUSE

Feedstock exposure	Vilmorin is among the largest suppliers in vegetable and crops seeds (corn, soy, wheat) 46% of the sales are in crop seeds, of which 75% in Europe and 25% in the Americas. High exposure to corn: 28% of its sales (world No. 2) 47% of its sales in vegetable seeds (world No. 2)
Impact	The rise of soft commodities has a positive effect for the prices of seeds and also the volumes that the group can sell. In Europe, the group expects its volumes to grow by 5% for crops and vegetable seeds. In the short term, the trend in corn is less well oriented whereas the volume for soy seeds is well oriented. Between 2007-2010, we expect sales to grow by 6% pa and an EBITDA margin improvement to 11.2% in 2010 from 9.2% in 2007.
Hedge	
Regulation	More concerned by the GMO regulation in France and in European countries. Today their research on GMO is being carried out outside Europe.

■ The case of agro-equipment

High agro-commodity prices clearly benefit farmers' income in all parts of the world. Again strong fundamentals should provide a more stable environment for farmers even though higher volatility appears to be a real threat. As mentioned in this report, this risk is likely to be mitigated by a shift in policy from prices and production to revenue based programmes, which is positive in the long term as it translates in further visibility.

Agricultural challenges can only be met by improving yield, expanding farm land and developing new modes of harvesting (e.g. for agrofuels) and transporting crops. It means opportunities for all agricultural suppliers, further supported by specific subsidised loans (as the US Farm Bill includes USD2bn in new loans for supporting cellulosic ethanol).

MANITOU

Exposure to agro-equipment theme	25% of total revenues are generated with sales of telescopic handlers tailored-made for farming
Exposure to specific feedstock or zone	Global excluding the Americas
Impact	Double-digit growth in sales over the next few years linked to: 1) increased revenues of farmers; 2) higher prices for crops; and 3) initial equipment in central and eastern Europe. Reasons are: 1) high prices of cereals; 2) agrofuels and green chemistry; 3) new environmental regulations (French Decree on crop protection, French Water Law, Environmental crop farming programmes); 4) increasing size of farms; and 5) equipment in eastern European countries.

EXEL INDUSTRIES

Exposure to agro-equipment theme	52% of revenues generated with a broad range of spraying equipment for large-scale fields, vineyards, fruit trees and tropical crops.
Exposure to specific feedstock or zone	Essentially French, but in the future, the group intends to increase its presence in all the biggest export regions (eastern European countries essentially, which account for one-third of agricultural land in the enlarged Union and which benefit from CAP subsidies).
Impact	The order book is picking up as of Q3 2006-07 (double-digit growth), which should ensure leverage on the EBITA margin. Potential development through acquisition as Exel Industries is essentially domestic. Hardi (EUR906m sales in FY-06, EUR3m EBITA), a subsidiary of Danish group Auriga, would be an attractive target both in terms of size and geographical exposure.

VII – Appendix: Outlook for selected feedstock prices

■ Cereals – focus on wheat and corn

With insufficient harvests expected for 2007-08, following several years of shortage, prices for all grain crops are high. For wheat, prices have soared due to the interest of financial investors. The use of corn to make ethanol in the US is a major factor behind the increase for this grain crop, but wheat is barely concerned by ethanol production.

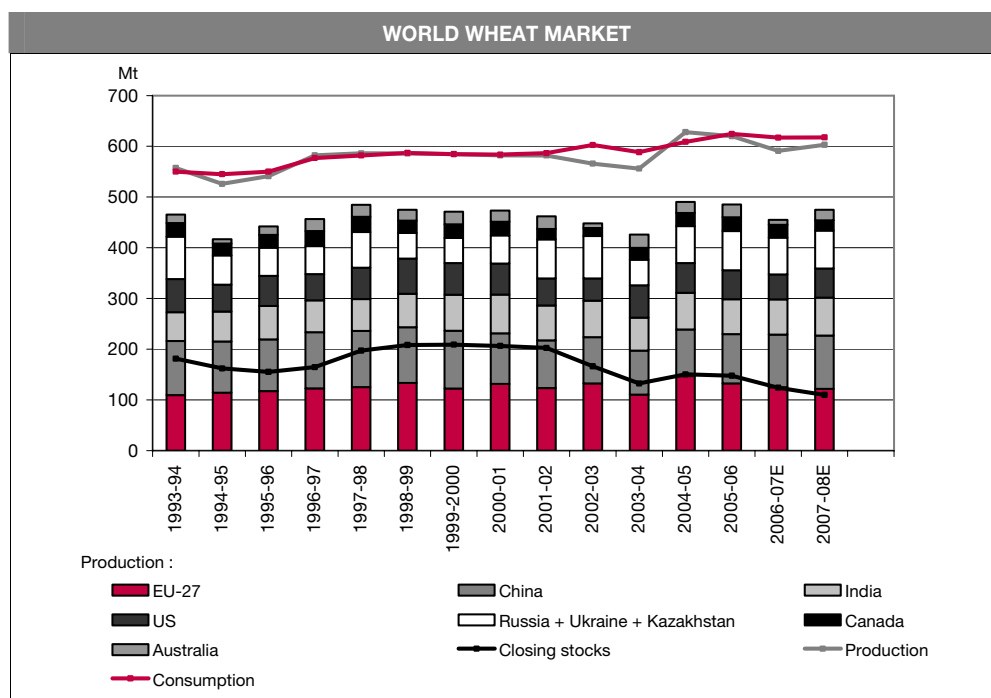
Wheat prices could fall given the excessive nature of the increase, and 2008 is likely to lead to a certain increase in surface area, which could restore the balance if weather conditions are good. The price of corn, which competes with soy and has to contend with demand for ethanol, is likely to continue to recover and remain steady.

The current balance on the wheat market

For wheat, the expected shortage in 2007-08, albeit limited, **follows six years in which there was more or less a deficit, apart from 2004-05. Stocks are now at their lowest level for 30 years.**

In addition to these fundamental factors, the fall in the dollar has clearly played a role, by contributing to higher dollar-denominated prices on markets for which the US is not the dominant player (as is the case for wheat).

Quotes continue to be higher than the spot price through to the futures price for May 2008; thereafter the price falls to EUR198/t (May 2009) vs. EUR240/t at present (Paris spot price).



Source: IGC, USDA

WHEAT MARKET TRENDS

World wheat market (IGC data)				
(million tonnes)	2004-05	2005-06	2006-07 (est. 27/9/07)	2007-08 (est. 27/9/07)
Production	628	620	591	603
Consumption	616	624	609	611
Production/Cons.	12	-4	-18	-8
Exports	110	110	111	104
Final stocks	140	137	119	110
Stocks/Cons.	23%	22%	19%	18%

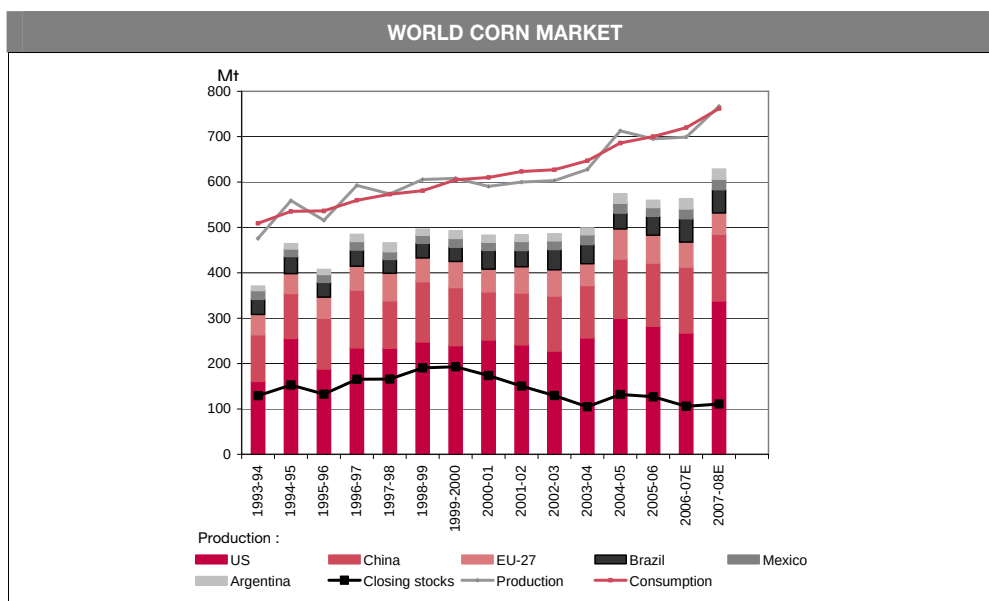
World wheat market (USDA data)				
(million tonnes)	2004-05	2005-06	2006-07 (est. 9/07)	2007-08 (est. 9/07)
Production	627	622	594	603
Consumption	609	624	617	618
Production/Cons.	18	-3	-24	-14
Exports	113	113	115	105
Final stocks	151	148	124	110
Stocks/Cons.	25%	24%	20%	18%

Source: IGC, USDA

The current balance on the corn market

The situation is more or less the same for corn (shortages in six of the past seven years), a market that is characterised by strong growth, and production that is both highly concentrated geographically and particularly volatile. The 2006 deficit was the trigger for the price increase; in 2007, the significant rise in production in the US (achieved at the expense of soybean surface area) resulted in a rebalancing, and in 2007 prices stabilised at a high level, albeit lower than the peak in February 2007.

However, futures prices are higher in the short term for all delivery dates until July (at Chicago: USD181/t at the peak in July 2008); the price then declines to USD172/t at December 2008.



Source: IGC, USDA

WORLD CORN PRODUCTION DATA

(million tonnes)	World corn market (IGC data)			
	2004-05	2005-06	2006-07 (est. 27/11/07)	2007-08 (est. 27/11/07)
Production	713	695	699	767
Consumption	686	700	720	762
Production/Cons.	27	-5	-21	5
Exports	76	79	87	95
Final stocks	132	127	106	111
Stocks/Cons.	19%	18%	15%	15%

(million tonnes)	World corn market (USDA data)			
	2004-05	2005-06	2006-07	2007-08 (est. 11/07)
Production	715	696	703	774
Consumption	688	704	725	770
Production/Cons.	27	-8	-22	4
Exports	76	83	87	90.4
Final stocks	131	123	101	105.4
Stocks/Cons.	19%	17%	14%	14%

Source: IGC, USDA

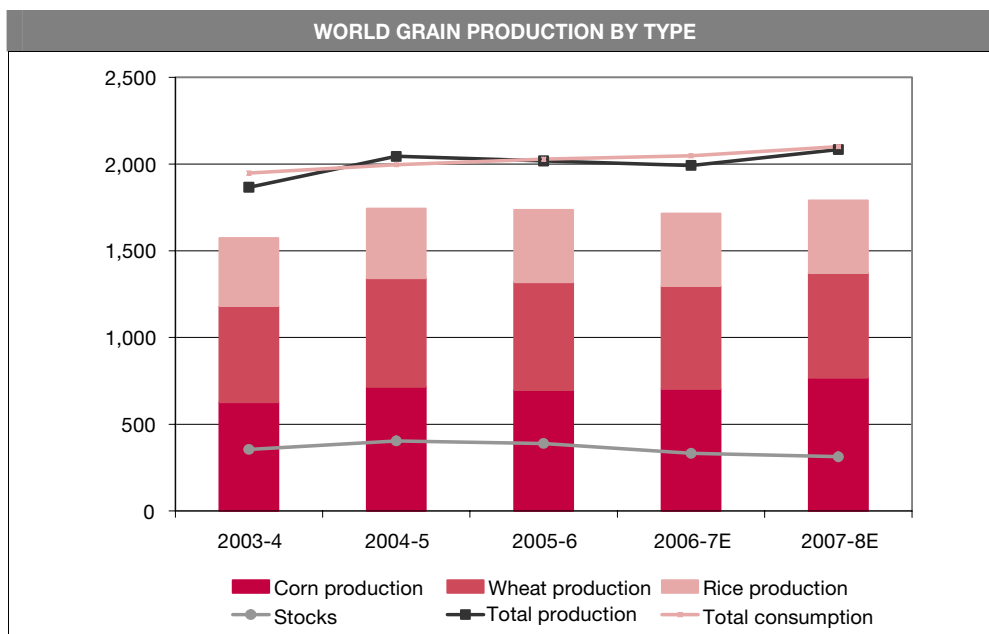
The current increase in prices, a result of both real shortages and investor interest in future development of grain crops for energy, could be seen as an important warning of what might occur if energy uses really expand as forecast. It is thus an early regulating factor, with a certain decline in the number of biofuel projects under consideration.

One-year outlook: We forecast a decline in prices in the coming months, especially for wheat, due to the highly speculative nature of the recent hike.

Long-term prospects worldwide

World production and consumption

Corn and wheat account for two-thirds of world grain production, followed by rice and barley. There is a growing proportion of corn crops.

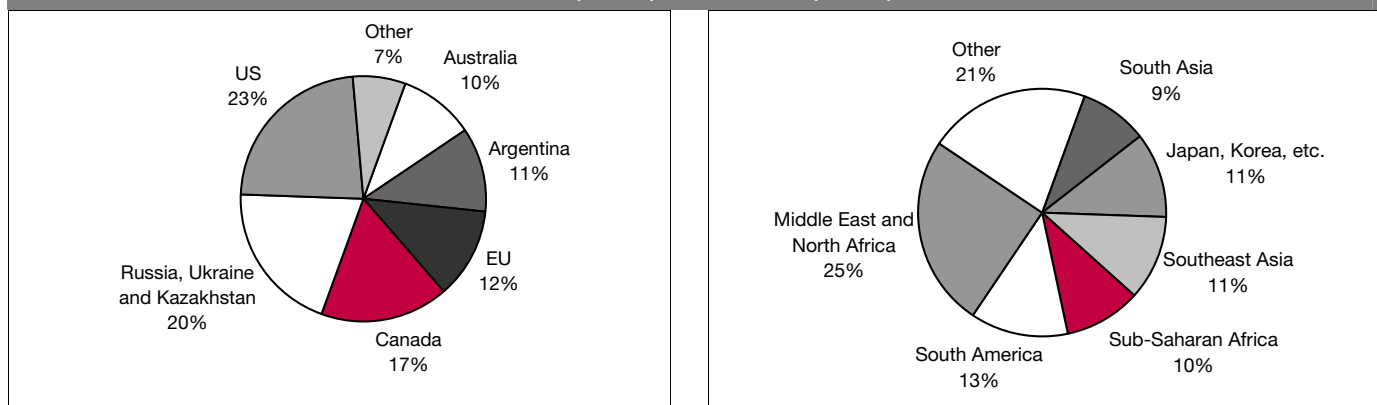


Source: USDA

International trade

Wheat and corn are the object of moderate international trade in terms of production: 18% for wheat, just 12% for corn (practically stable rates), vs. 7% for rice. This contrasts with oilseed and sugar, for which the international market plays a much more important role (three-quarters of palm oil production, two-thirds for soy including soybean crushing products, and around one-third for sugar).

WHEAT EXPORTS (113 MT) AND IMPORTS (110 MT) IN 2006-07

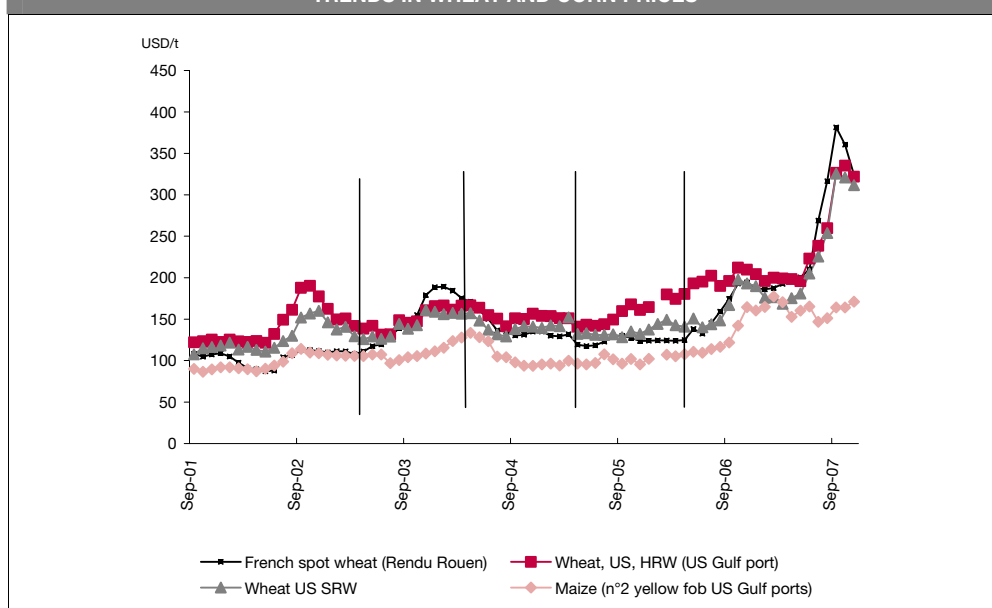


Source: USDA

Aside from the place held by the major producers (the US, Europe, Russia and neighbouring grain-producing countries), wheat exports are marked by the weight of countries whose production is limited but substantially focused on export markets, e.g. Canada, Argentina and Australia.

All grain crops have followed the same trends: production that is barely sufficient or insufficient for several years in a row (apart from 2004-05), characterised by particularly volatile weather conditions, hence a decline in inventories.

TRENDS IN WHEAT AND CORN PRICES

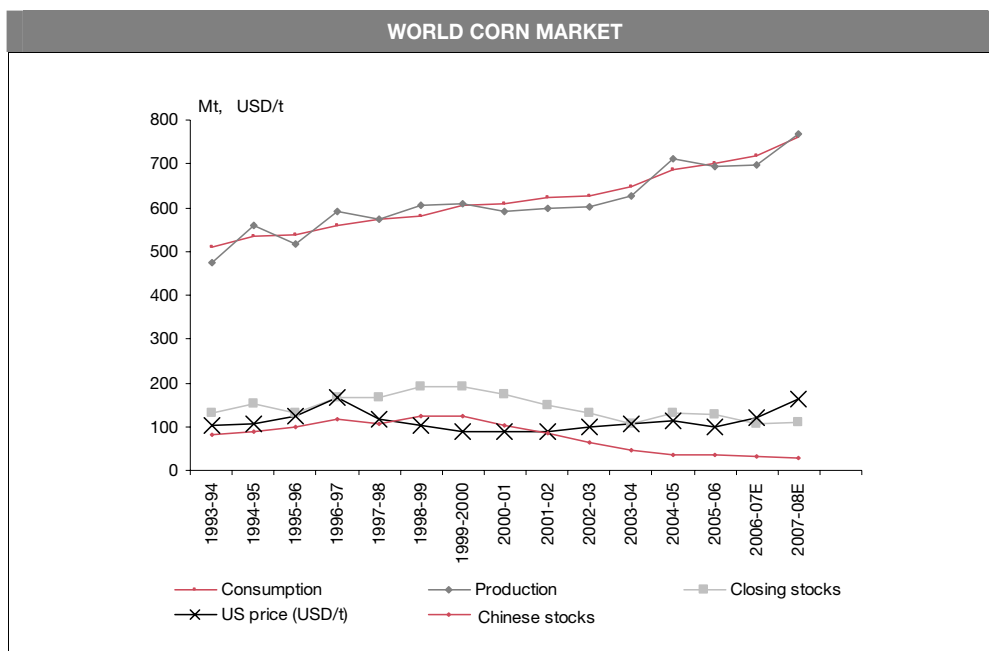


Source: CASA, EIS

The involvement of financial investors on this market is well known, as is their growing role over the recent period. Market players are in agreement that the surge in prices in 2007 is largely attributable to financial investors.

Wheat is traded on two major futures markets: CME / Chicago Board of Trade (CBOT) and New York Stock Exchange / Euronext / LIFFE (on the former MATIF in Paris for milling wheat and in London for forage wheat).

Furthermore, storage by producers, which is increasing at present in anticipation of further price increases, also boosts prices, notably in France.



In the above chart, the price given for each crop is the average for the first calendar year (e.g. 2006-07 = average 2006; 2007-08 = average January-September 2007).

The 2006-07 crop resulted in a global increase in consumption that was limited overall, including in the US, despite the rise in fuel ethanol. The shortage that appeared during this crop year, which followed a brief surplus period, triggered a sharp rise in prices in 2006 (which has now been overshadowed by the much more dramatic increase in wheat prices in 2007). However, cumulative shortages from 2001 to 2004, which resulted in a low level of stocks, have not triggered a similar reaction in market prices.

We can conclude that the rise in prices in 2006 was largely driven by investors motivated by the growth prospects for ethanol, which is set to increase from 7% of global corn production in 2005-06 to 12% in 2007-08 (from 50 to 90 million tonnes) according to current estimates.

■ Oilseeds – focus on palm oil

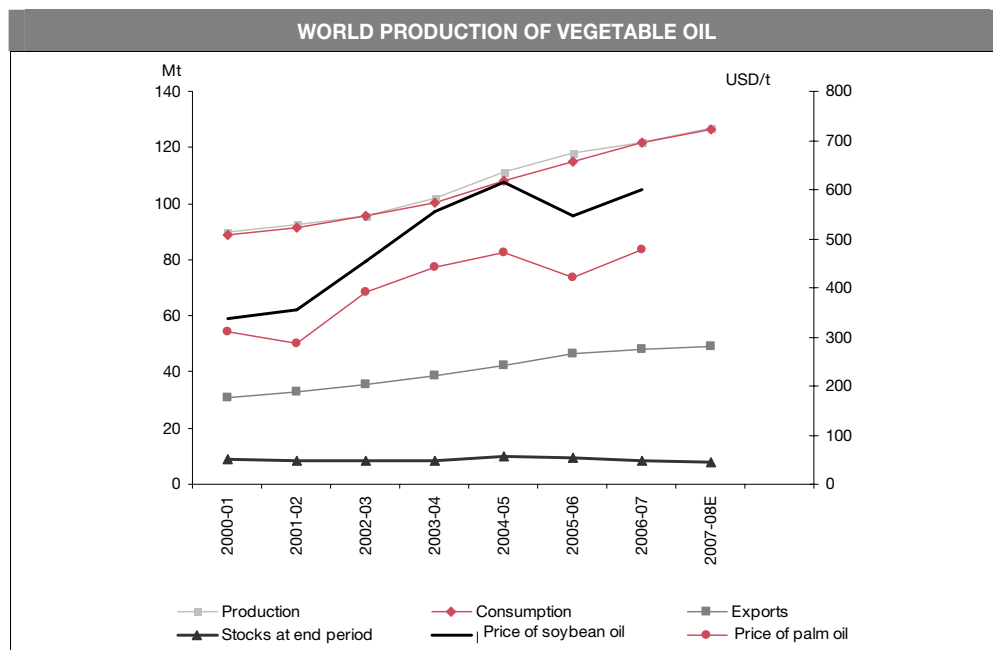
The oils and oilseeds markets have entered a period of high and volatile prices that will last as long as demand outstrips supply. Despite a (temporary) slowdown in agrodiesel consumption and the increase in soybean supplies from South America and developments in eastern Europe, the market is anticipating a further reduction in global stocks. Prices of oilseeds have reached record levels. Palm oil prices were especially buoyant at the end of 2007. The oilseed price trend will mainly depend on the increase in the 2007-08 harvest in South America.

Prospects for the 2007-08 crop year

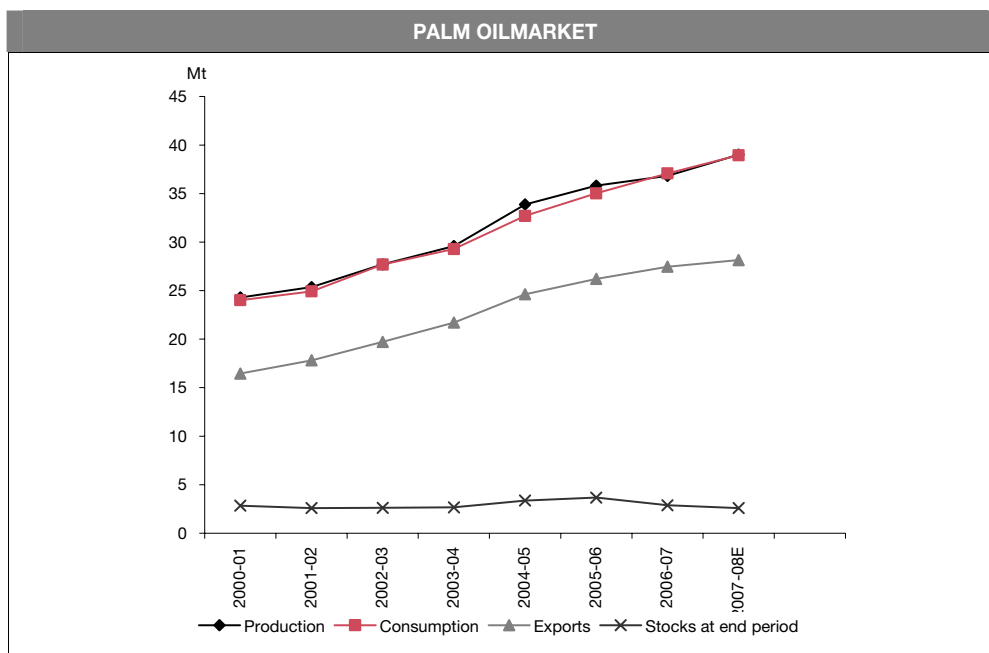
The price of oils in current value terms has reached at least a 20-year high, reflecting both the tense situation with respect to resources and stocks, and speculation on energy use. Palm oil is at the forefront in this situation.

Most analysts, while considering a possible temporary decline in the short term, agree on prospects for high prices for vegetable oils for several years to come. This looks likely given the increase in food demand, and if their use as fuel effectively grows, even moderately, and the price of corn remains at a high level due to ethanol, thus shifting American growers away from soy on a lasting basis. If more measures restricting the uses of palm oil are implemented (for environmental and social reasons), this could have either an upward (limitation of the resource) or downward (limitation of uses) impact on prices.

World production of the various oils is expected to continue to increase at a rapid pace (up 3.4% in 2006-07 and 4% in 2007-08, according to the USDA), but estimates by the USDA and by Oil World for palm oil in 2006-07 have been lowered (4% rather than 8%). The forecast for strong growth has been put forward to 2007-08 (6% according to the USDA, 9% according to Oil World).



Source: USDA



Source: USDA

Another question is to determine whether soy prices will be sufficient to bring US producers back to this crop.

According to forecasts, there is likely to be a deficit of palm oil in 2007, and the oil balance in 2008 continues to be a subject of speculation.

The increased tax on the export of palm oil in Indonesia (from 1.5% to 6.5% in June) may depress demand, but will contribute to an increase in prices. Conversely, India, by cutting slightly the duties applied to palm oil imports (from 60% to 50% and just recently to 45%) is encouraging consumption while at the same time eroding its own production.

Agro-diesel, a significant determining factor for the market, is not an important direct market for the moment, but is increasing the vegetable oil deficit in Europe and is beginning to make use of palm oil in Malaysia, Indonesia and China (estimated at around 1 million tonnes for 2007).

Problems of deforestation linked to the development of palm oil are beginning to become more visible: Malaysia and Indonesia have decided to launch a campaign to counter this.

New restrictions in the US on trans-hydrogenated fats (labelling requirements, prohibited in New York City restaurants in 2007, public awareness campaigns) are considered to be a favourable factor for palm oil. Nevertheless, the latter is only slightly less negative in terms of public health than trans fats: there is no reason that this effect will continue over the long term.

PALM OIL MARKET DATA: OIL WORLD

(m tonnes)	2004-05	2005-06	2006-07	2007-08
Production	33.3	35.8	38.6	~41
Consumption	32.5	34.9	~39	
Prod./Cons.	0.8	0.9	-0.5	
Exports	26.1	27.7		
Final stocks	5	5.1		
Stocks/Cons.	15%	15%		

Source: Oil World (ISTA Mielke GmbH)

PALM OIL MARKET DATA: USDA

(m tonnes)	2004-05	2005-06	2006-07	2007-08
Production	33.9	35.8	36.8	39
Consumption	32.7	35	37.1	38.96
Prod./Cons.	1.2	0.8	-0.3	0
Exports	24.6	26.2	27.5	28.2
Final stocks	2.9	2.9	2.7	2.3
Stocks/Cons.	8.80%	8.30%	7.40%	6.00%

Source: USDA, FAS

SOYBEAN OIL MARKET DATA: USDA

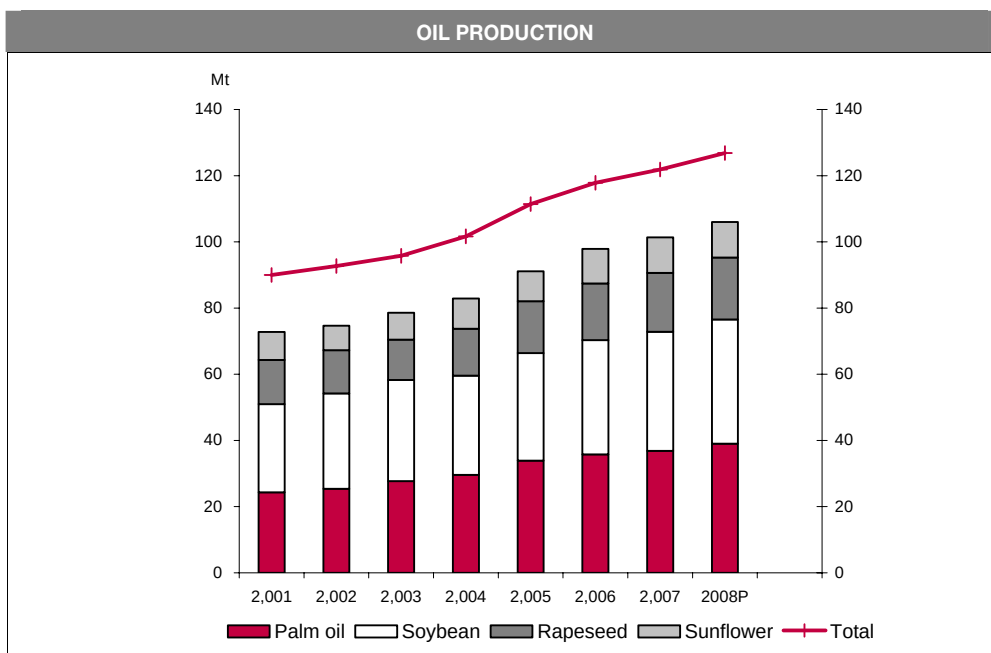
(m tonnes)	2004-05	2005-06	2006-07	2007-08
Production	32.5	34.5	36	37.6
Consumption	31.7	33.6	35.9	37.6
Prod./Cons.	0.8	0.9	0.1	-0.1
Exports	9.1	9.8	10.1	10.4
Final stocks	2.9	2.9	2.7	2.3
Stocks/Cons..	9.10%	8.60%	7.60%	6.20%

Source: USDA, FAS

As supply and demand proves tighter than previously expected in a context of low stocks, the continuing sharp increase in oil prices is not surprising. In addition to this, there is certainly a speculative factor linked to energy prospects.

Palm oil – world production and consumption

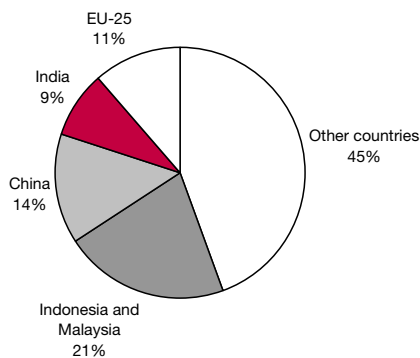
Palm oil must be viewed within the more general market for vegetable oils with which, to a large extent, it directly competes, particularly with soybean oil.



Source: USDA

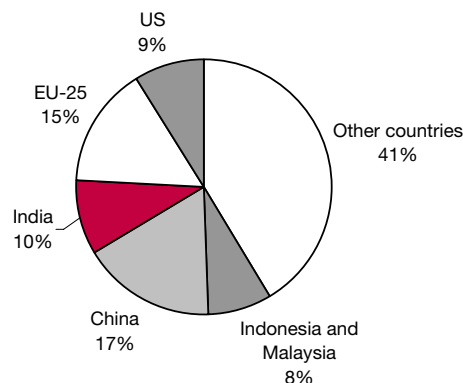
Vegetable oils generally show strong growth, as soybean oil and palm oil now represent 60% of the total. Soybean oil is essentially used for food, while palm oil also has important industrial uses (notably for soaps and cosmetics).

WORLD CONSUMPTION OF PALM OIL, BY REGION



Source: Crédit Agricole

WORLD CONSUMPTION OF VEGETABLE OIL, BY REGION



Source: Crédit Agricole

World consumption is spread broadly throughout the world. Note that China and Europe are areas of strong consumption of vegetable oils, palm and other, with a substantial production deficit in this domain.

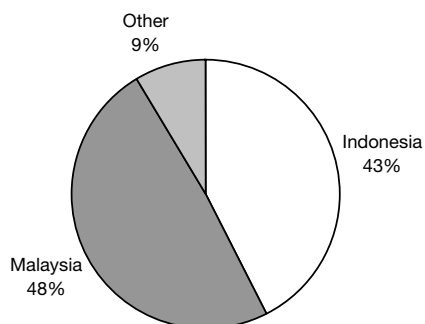
Consumption has risen in line with production in recent years. Consumption of vegetable oils has now reached an average of 19kg per person per year (i.e. 50g per day).

Palm oil – International trade

Exports represent three-quarters of palm oil production. The situation is similar for soybean oil, exports of which represent 66% of the total, either as soybeans, or as oil or meal.

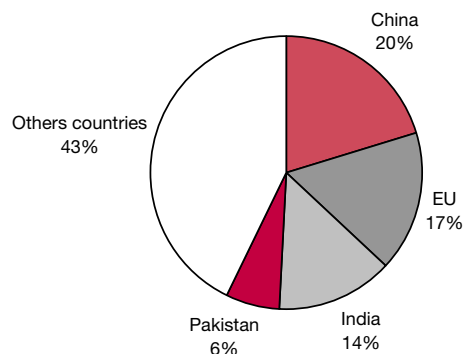
There are no strong restrictions on imports of vegetable oils in the EU and the US. Europe has long abandoned the protection of oilseeds and is structurally an importer, while the US has faced hardly any competition until recently. The major importers, such as China, India, and Pakistan, tax these imports (at a rate of 9% on oils in China, and around 70% in India for palm oil vs. around 45% for soybean oil). Palm oil producing countries manage foreign trade according to the situation (tax on exports if the resources appear insufficient: currently 1.5% in Indonesia).

WORLD PALM OIL EXPORTS, 2005-2006



Source: USDA

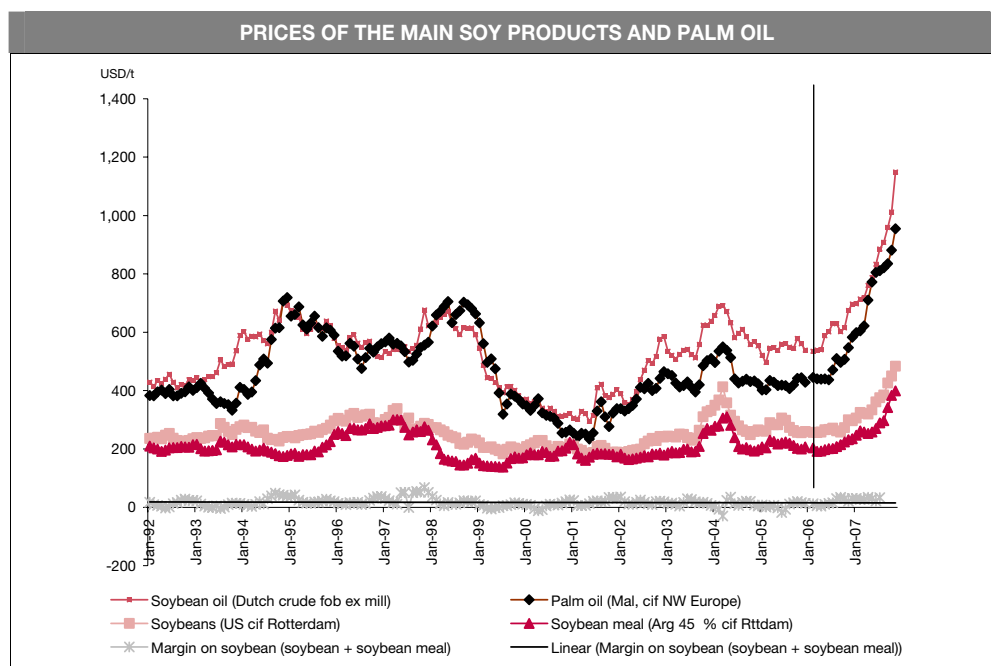
WORLD PALM OIL IMPORTS, 2005-2006



Source: USDA

The main players on the world palm oil market are Malaysian industrials and planters, such as the Synergy Drive group (now the biggest planter with 600,000ha) resulting from the merger of three public sector players — Golden Hope Plantations, IOI Group, KLK (120,000ha) — and Kuok, which is selling its plantation activity to Wilmar, etc. These companies are also active in Indonesia (and some in Europe), alongside Indonesian groups such as Salim, Sinar Mas and Bakrie

Oilseed prices are interrelated



Source: World Bank

The price of palm oil is to be compared with that of soybean oil, which in itself is part of a set including soybeans and soybean meal (the protein-rich part that remains after the oil is extracted and which represents 18-19% of the soybean). Palm oil produces little or no meal.

In 2003-04, a slight imbalance between production and consumption resulted in an increase in oil prices.

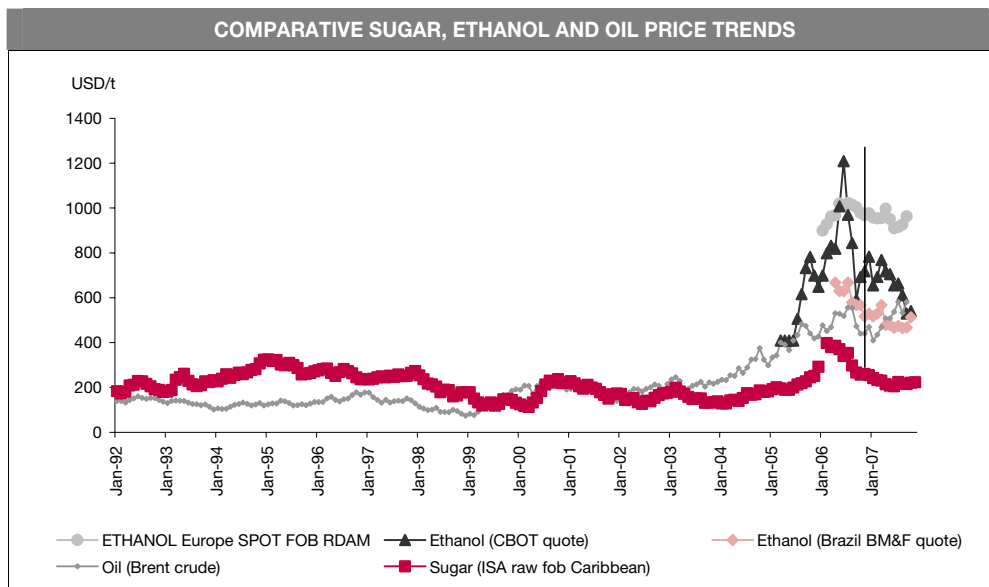
Palm oil is quoted on the Kuala Lumpur Commodity Exchange (KLSE). It is also quoted in India (NCDEX). A new forward contract was launched on 6 June 2007 on the Chicago Board of Trade (CBOT) by the JADE (Joint Asian Derivatives Exchange).

■ Sugar

Outlook for the 2007-08 sugar crop year

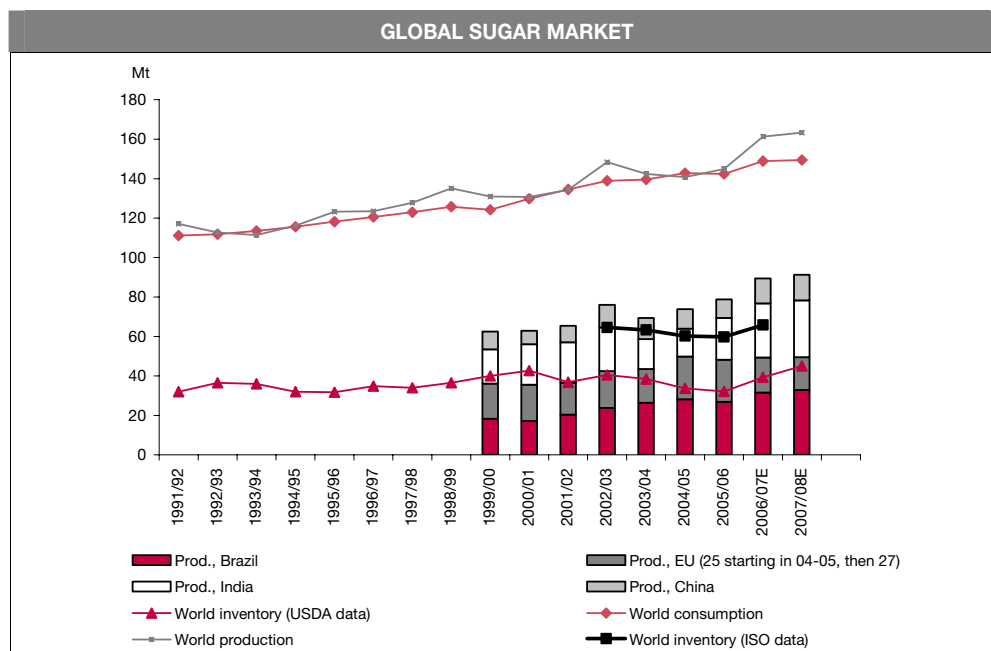
By contrast to grains and oilseeds, sugar markets look weak, with supply starting to outstrip demand (and continuing to do so for sugar). Another driver will then be the increased correlation between ethanol and oil prices.

Given forecasts of sugar crops that largely outweigh demand, prices are on a lasting downtrend. The expansion of ethanol end-markets has not yet absorbed world sugar cane production although the price of ethanol has recently rebounded. The question remains as to whether the rebound in oil prices will be sufficient to reverse this trend. In the short term, the combined effect of these various factors could create a certain volatility in prices, especially for ethanol.



World production for 2007 has been revised up a further 11% to more than 160 million tonnes, largely exceeding the record of 2002-03 after a further sharp rise in production in almost all sugar-producing countries, encouraged by soaring prices in 2006, apart from the EU, where production has declined with implementation of the EU's reform of its sugar regime. The decline in European production remains below target at present; tighter measures aimed at reaching the goal set would not, however, restore the balance at the world level.

According to the USDA, this level of sugar crops is likely to continue in 2007-08. As consumption is not increasing at the same rate, world inventories at the end of the harvest are thus estimated at 39 million tonnes in 2006-07, then 45 million tonnes in 2007-08. The surplus is even higher based on export volumes compared to demand from importers, according to the International Sugar Organisation (ISO).



Source: CA, EIS

The sugar market, although there no direct correlation, can no longer be examined independently from the ethanol and oil markets", with arbitrage carried out in Brazil, which is the world's leading producer of ethanol along with the US, for which around 50% of sugar cane production is now devoted to ethanol. Other sugar-producing countries such as Thailand will do the same. Sugar cane crop projections based on surface area under cultivation and yields are thus not enough to determine the amount of sugar production, as choices can be made over time with regard to the proportion used to produce sugar or ethanol — however, there is no precise information about the amount of leeway, as it depends on available capacity and its under-utilisation cost with regard to sugar and ethanol, respectively

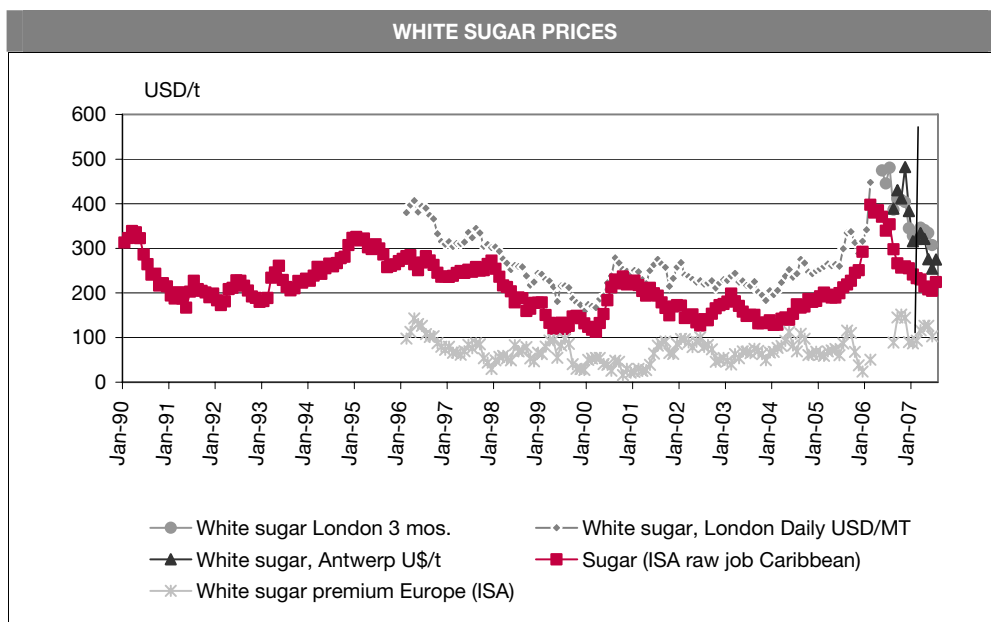
The increase in oil prices since the beginning of 2007 has not directly led to a rise in ethanol prices, as the market was fairly saturated for most of last year, notably in Brazil. But recently prices finally started to react, still limited by supply and demand-related factors:

- The industrial tool lacks flexibility;
- Flex-fuel vehicles, which now represent 20% of the existing fleet (and more than 80% of sales), and a fast-growing proportion of which using ethanol (only 65% in 2006 to 85% late 2007);
- Ethanol sales were curbed by the level of transport costs (ethanol production is primarily in the centre-south region of the country);
- The relative seasonal effect of ethanol production requires the build-up of higher stocks, so that the availability is the same throughout the year.

Also prices have been supported by the Brazilian government decision to increase the mandatory percentage of anhydrous alcohol in Gasohol or E10 (from 20% to 23%, then to 25% on 1 July 2007) in order to support the market.

Exports of Brazilian ethanol have not restored the balance to date, as the US is likely to import much less in the near future, given the increase in that country's distillation capacity. Moreover, there are still tariff barriers and the Brazilian real continues to gradually appreciate against the dollar, which adds to the increase in freight costs and to internal logistics shortcomings in Brazil.

All in all, a certain instability in ethanol prices, linked to the imperfect interaction between growth in production and in demand, is likely going forward. Expert commodity analyst FO Licht projects surpluses in 2007-08. The consequences on the sugar market depend on the degree of flexibility between the two products, which is difficult to gauge.



Source: CA EIS

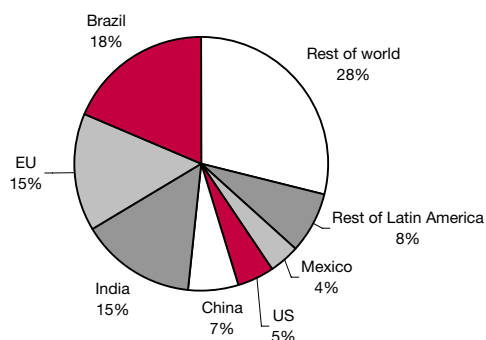
World sugar crop projections have led to what is viewed as a lasting decline in sugar prices. The increase in prices in July — to USD230/tonne for raw sugar, linked to harvest problems attributable to poor weather conditions in Brazil — has not curbed this downtrend. White sugar has withstood this decline better, with a high refining premium (i.e. the difference between white and raw sugar). This resulted from the decline in European exports, which primarily involve white sugar. Refining capacity has thus been opened in various white sugar consuming countries.

Going forward, the ISO forecasts that the surplus could last until 2008-09, with the main regulating factor being decisions by Asian producers, which react faster with their changes in cultivation.

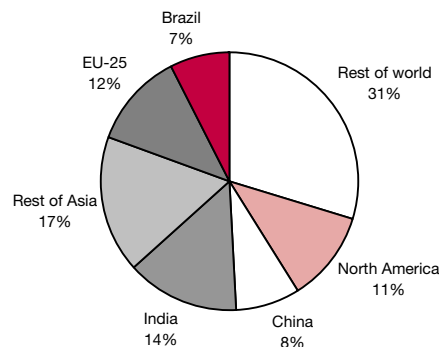
World context

Sugar: World production and consumption

WORLD SUGAR PRODUCTION AND CONSUMPTION BY REGION, 2005-06



Source: FAO, CA EIS



Source: FAO, CA EIS

World sugar production (around 150 million tonnes for the 2005-06 harvest) is broadly spread across the world, with sugar beet production (25% of world production) in temperate regions, essentially in the Northern Hemisphere, and sugar cane production (75% of world production) in tropical regions.

World production has increased 2% p.a. on average in recent years, driven by the expansion in Brazilian production (up 10% p.a.), which now largely dominates world output, ahead of the European Union and India. This trend has resulted in the rapid expansion of sugar cane production, which is more profitable, whilst that of sugar beets has been stagnating or even in decline over the past 20 years.

However, Brazilian production slowed in 2005-06 (down 3.9%), leading to a 5.9% decline in exports, due to a switch to ethanol, which now represents 50% of sugar cane end markets.

World consumption is also spread fairly evenly worldwide. It has grown at the same pace as output (2% p.a.) over the past few years. Sugar consumption now averages 22kg per capita per year (i.e. 61g a day), albeit with wide disparities between countries, ranging from 25g/day in China to 190g/day in the US.

African countries produce a total of just 8-9 million tonnes, of which 2.5 million tonnes for South Africa, and a combined 3 million tonnes for Sudan, Mauritius, Kenya, Swaziland and Zimbabwe.

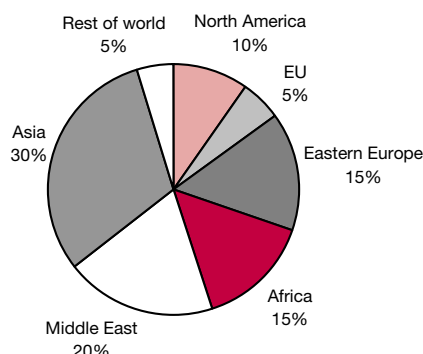
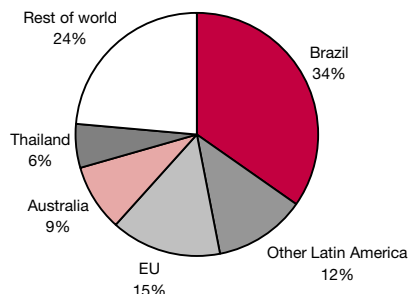
Sugar: International trade

Exports account for close to one-third of sugar production

Sugar trading is in part carried out within the framework of preferential access to domestic markets offered by the US and Europe to various developing countries, especially ACP and less advanced countries. There are similar arrangements in other regions as well; all in all, the "free market" for sugar is relatively small and represents close to one-third of world sugar trading, which is a factor behind the volatility of prices.

The arrangements offered by the EU and the US to African countries amount to a total of 1 million tonnes to date, but these are likely to increase in volume terms. However, the reform of the EU's common market organisation (CMO) in the sugar sector makes these agreements less advantageous, due to lower domestic prices.

WORLD SUGAR EXPORTS* AND IMPORTS BY REGION, 2005/06



* A sharp decline for the EU in 2005-06

Source: USDA

Exports are dominated by Brazil (34%), ahead of the EU (15% before the reform of the CMO), Australia (9%) and Thailand (6%). Along with expanding production, Brazilian exports have grown rapidly over the past few years (17% p.a. since 2002) and now account for more than 60% of output. Exports have remained fairly stable in the other regions, with annual variations in some countries depending on national harvests.

Several major regions are importers, notably Asia (30% of world imports), the Middle East (20%) and Africa (15%).

The main players on the global sugar market are industrial groups, such as European companies Südzucker, Nordzucker, British Sugar (Associated British Foods) and Téréos, several of which have cooperative status, Brazilian companies Cosan and Copersucar, Australian group CSR and South African Illovo (now Associated British Foods) and international trading companies such as Louis Dreyfus (now the No. 2 processing company in Brazil), ED&F Man, Tate & Lyle, Czarnikow and FO Licht.

Prices and stocks

End of harvest stocks source USDA

Following an increase in 2002-03, due to the sharp rise in world production, notably in Asia, stocks have been declining steadily and reached 31 million tonnes at the end of the 2005-06, i.e. 21% of world consumption.

Sugar is traded on two futures markets: New York Board of Trade (raw sugar = brown sugar) and London (LIFFE – white sugar).

The decline in Brazilian sugar production and exports in 2005-06 (to the benefit of ethanol) increased world sugar prices, which hit a record high in February 2006 (20.5 cents/lb), i.e., much higher than in previous peaks (1989-90 and 1994-95), although still well below levels in previous speculative episodes in 1973 and 1980.

■ Focus on milk

The world milk market reached the boiling point in 2007. The combination of sustained growth in demand, ongoing EU reforms, a rise in milk production costs and severe droughts in Oceania led to a 12% decline in available dry milk products worldwide. As a result, milk powder prices have more than doubled in a year, trading at up to USD5,600/tonne, whereas the historical price range was USD2,000-2,500/tonne.

Raw liquid milk prices depend on many factors (e.g. worldwide or European skimmed milk powder prices, butter prices, industrial cheese prices, the consumer price basket, local export regulations, one-on-one negotiations) and are set locally. Following the increase in milk powder prices, Food producers had to cope with sharp and unexpected increases in many regions of the world (e.g. Argentina, United States, Russia, southern Europe).

The world market is also faced with excess demand due to the rise in consumption in emerging markets.

Prices paid to producers, which are highly regulated, have been raised on several occasions, which represents a significant additional cost of 20-30% for transformers, notably for producers of cheese and yogurt.

In the EU, measures were announced to increase milk production quotas on a lasting or temporary basis (by 10-15% provisionally).

It can take several years to boost dairy production or bring it in-house, as Danone recently announced that it is planning to do.

TREND IN DANONE'S MILK SUPPLY

	2006		2007E hist. scope		2007E pro forma		2008E pro forma	
	(EUR m)	% total	(EUR m)	% total	(EUR m)	% total	(EUR m)	% total
Milk supply	1 300	100%	1 596	100%	1 915	100%	2 320	100%
Powder milk	156	12%	281	18%	736	38%	846	36%
Liquid milk	1 144	88%	1 316	82%	1 179	62%	1 473	64%

Source: Cheuvreux

2008 price outlook

According to Danone's sourcing and supplier development director, global milk production is expected to strengthen throughout 2008 (the consensus is expecting 2-3% growth vs. the low 1.7% achieved in 2007), whereas milk consumption is expected to be flat (2008 consensus expects 1.3-2% growth after 1.3% in 2007 and 2.3% in 2006). As such, milk powder and butter prices are expected to stabilise in 2008 before declining at the end of 2008 or in 2009.

As there is a lag effect in the translation of the price trend between internationally-traded products and raw liquid milk, on average farm gate prices are expected to continue to show a 40% increase in H1-08.

This trend results in a new challenge for agrifood groups: milk represents around 30% of the cost price of yogurt, 40-60% that of cheese, and an even larger proportion for milk for consumption.

Last but not least...

The rise in agro-commodities prices has had a significant impact on international food aid programmes. Since these programmes purchase their supplies on the world market, they have been forced to scale back. According to the Worldwatch Institute, "The volume of aid provided through the largest assistance programme in the US, Food for Peace, has dropped by nearly half since 2005, to 2.4 million tons".

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