
THE NEW WORLD ORDER AND THE DAIRY INDUSTRY

The future agenda: Climate change, Bio-fuels,
Increasing demand and Food Crisis.



PM FOOD & DAIRY CONSULTING

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Executive summary / report highlights

1. Introduction

This report from **PM Food & Dairy Consulting** focus on the paradigm shift, that the dairy industry has experienced the recent 2 years with rising product prices, rapid growing demand and supply problems, but also increasing production costs. An irreversible process has started with a New World Order is characterized by the future agenda:

- Climate change
- Increasing production of bio-energy
- Food crisis
- Global economic growth

This new agenda has created price turbulence and changed the supply/demand structure and the situation will never be the same again. The dairy industry has to adapt to the new situation and the future milk price will be determined of the market and the performance of the dairies – the time s of price support and stable prices are over.

What are the possibilities and challenges for the dairy industry from 2008 to 2020 in light of the new world order?

The report analyses the impact of the New World Order on the dairy industry with focus on the development of the supply and demand side, and the future political framework. By assessing different scenarios for the future the responses and strategies for the dairy sector are outlined. Finally, the report focuses on the recommendations for the political regulations of the dairy sector in the future.

2. The new world order

The future agenda for the dairy industry are more complex because of new dimensions to the agenda: Climate change, bio-energy, food crisis, and other factors like global economic growth.

2.1 Climate change

Climate change and the global heating has been a major issue for several years and it has affected the political agenda significantly. This has also an impact on the future conditions for the global agricultural production including the dairy industry:

- Livestock is responsible for 18% of the worlds greenhouse gas emissions as measured by CO₂ equivalents (UN report 2006). This can lead to restrictions for the milk production in the future.
- The average expected increase in the middle temperature by 1.4-5.8 degree Celsius in this century would change the milk production possibilities in the different regions of the world. Some tropic and sub tropic areas will be more vulnerable due to increasing draught problems while the temperate areas will experience better growth conditions due to a warmer climate. In general the world total milk production and future

production possibilities will not be severely affected by the climate change, but the production will change between the regions.

- The need for irrigation will increase in the future and there has to be devoted much more research and development in this field.

2.2 Bio-energy

The political reaction to the climate problems have been to set goals for increasing production of bio-fuels to reduce the greenhouse gas emission and increase the national energy security. Recently, the criticism of the bio-fuel policy has increased due to the increasing food prices and emerging hunger problems. It is questioned if the agricultural production should be used for food or simple energy where the environmental gains are doubtful, due to the negative impact of bio-fuel:

- The positive CO₂ balance from bio-fuel is questioned from several scientists.
- The clearing of forest and jungle to create land for sugarcane, corn or palm oil production leads to soil erosion and break down of biomass.
- Increasing pressure on water resources due irrigation and the use of water in the refineries.

According to the World Bank the bio-fuel production has affected the food market in three ways:

- Huge amounts of grain, that earlier were used for food and feed, is now used for bio-fuel, with higher food prices and increasing costs for the animal production inclusive the milk production.
- The farmers have been encouraged to reserve huge arable land to production of grain and maize to bio-energy
- This has caused increased speculation in arable products as an investment object, which has escalated the prices even further.

2.3 Food crisis

The new world order is also including the present food crisis, which has occurred due to an imbalance between supply and demand that has been building up the last 4-5 years. The major reasons for the increasing food prices and hunger threats are: the increasing oil and fertilizer prices, reduced harvest of many crops the recent years due to climate problems in several regions, increasing demand for food in especially the BRIC-countries, and the increased production of bio-fuels.

The agricultural production and also the milk production is expected to react to the significant higher prices by increasing the production, but at the same time the world population is growing and the demand for food and dairy is rising. This means, that the supply will have difficulties to keep up with demand in the foreseeable future, although there will be price

fluctuations from year to year it will be at significantly higher level than before 2006/07. **The new world market order for agricultural products including dairy products has emerged.**

2.4 Other factors

The economic development in the world, population development, and the global political agenda are important factors in the future agenda.

The development in the world economy is the driver for the future dairy market, and the emerging economies in the BRIC-countries and the new EU Member States have a significant GDP growth of 4-8% annually.

In relation to the dairy industry to the following developments into consideration:

- The brightest prospects are in the new economies both in relation to expand the agricultural production inclusive milk production and expanding the market base. The growth rates for food and dairy consumption is 2-3 times the level in the OECD countries.
- The increase in world trade with dairy products will especially be between emerging economies due to the huge protection potential if the necessary capital and technology is invested in these countries.
- The consumption in the OECD countries on the food and dairy market will be intensified with decreasing margins in the future.

The new world order and the future agenda is one the one hand complex and contradictory and on the other it contains a lot of possibilities to develop the world milk production and the dairy industry.

3. Supply

The supply-side includes the milk production and the dairy industry and the report analysis the future possibilities to the expand world milk production and the development of the dairy industry.

The world milk production increased by 121 million MT from 1984 to 2005 equalizing an annual growth of 5.7 million MT, and the development from 2008 to 2020 the main developments are:

- The milk production is expected to increase between 65 and 105 million MT depending especially on the EU potential for increasing the milk production.
- The largest expansion is expected in China, South America, India, USA and Oceania – all countries where the structural development has not been hindered by supply management systems.
- In the next decade there will also be a significant shift in the world milk production pattern. In 2020 the milk production in developing and emerging countries will exceed the production in the developed countries.
- A lot of factors can influence the milk production until 2020 for example the negative/positive effects of the climate change and the political reactions to solve the

problem. The price development for milk and dairy products is also decisive for the future incentives to produce milk.

The world dairy industries are at very different levels from selling the raw milk from the farm gate to global dairy companies producing high added value products. The report describes the different stages of development of the dairy industry in the different regions, and it focus on the major dairy companies and their position in relation to the new world order and the new agenda. Some of the conclusions are:

- Multinational companies and EU dairy companies dominate the internationalization of the dairy industry. Fonterra is the only external player of importance. This trend is expected to continue until 2020.
- The structural development and concentration of the dairy industry will be more evident in the future, leaving very little room for medium sized dairies with no specialization and brands.
- The requirements for the dairy industry will be multifold in the future with increasing demand for new products, health concerns, brands and cheap products, increased functionality, carbon food print and political correctness.

4. Demand for dairy products

The global demand for dairy products has undergone dramatically changes the recent years. A long period from 1980 to 2005 with oversupply and buying up of dairy products for intervention in the developed countries the situation have changed to the demand exceeding the supply from 2006 and onwards. All the actors on the dairy scene, milk producers, the dairy industry, traders, retailers, the food industry, consumer, and politicians were surprised, and it has been difficult to act in a situation where the market signals changed so suddenly.

To outline the future demand situation for dairy products the report analysis:

- The global demand 2008-2020
- The future price developments
- The World market for dairy products
- Consumer trends
- Retail chains
- Food service and food industry
- Implications for the dairy industry

Some of the conclusions are:

- The demand for dairy products is expected to increase by nearly 250 million MT from 2008 to 2020 with an average increase of 3% annually
- In the same period the world market prices for dairy products will keep at a substantially higher level than the pre 2006 levels. The prices will be more volatile but at a higher level due the likely undersupply in most of the period.
- The internationalization of the dairy industry is progressing fast, but the retail chains and food service are globalizing even faster, and on the one hand it paves the way for

westernizing the consumption patterns, but on the other it also increases the global competition in relation to food and dairy products.

5. The political framework

The milk production and the dairy industry have in the last 50 years been strongly politically regulated in most OECD countries. Initially the aim was to stimulate and support the expansion of the milk production in the aftermath of World War II. Until the late 1970's the policy was successful and all the countries and regions in OECD countries became self-sufficient with dairy products and many also developed a substantial export to third countries. The milk support policy consisted of price support, intervention system, export support and market protection one way or another in the countries. The general rule was that the support was linked to the production to stimulate expansion

The two major players on the world agricultural scene were EU and USA, and they had both developed a complicated and expensive agricultural policy. They both used the same policy elements as mentioned above, and the support mechanism for the milk and dairy sector was nearly similar by keeping a high milk price for the farmers. The main difference was in relation to the grain policy. USA as the major exporter of grain and soya kept the price at world market level and used other decoupled payment systems to secure the income of the arable farmers. EU, on the other hand created the CAP with a high grain price as the fundament through market protection and price support. This fundamental difference affected the future reforms of the agricultural policies in the following decades. By the high protection and high price for grain the CAP appeared to be much more protective than the US agricultural policy.

5.1 Success and reform 1984-2008

The price support policies were so successfully that the production goals were reached over two decades in EU and the US and other OECD countries had also increased the milk production significantly. The consequence was surplus production in the developed countries with increasing intervention stocks, falling prices both internally and on the world market and accelerating public spending to keep up the price support. In the period from 1980 to 2000 the countries acted very different to cope with the surplus problems.

Changes in the dairy policies 1984-2008

EU	- Milk quota system	1989	- Supply management instead of severe price cut
	- MacSherry reform (Minimal price reductions)	1993	- Moderate Import
	- Fischler reform (22% price reduction, developed support)	2003	- Comprehensive reform of the milk sector
	- Health Check (Dismantling of the quota system)	2008	- Next step to liberalization
USA	- Farm Bill		
	- Whole herd buyout program	1980s	- Investments to control the supply. But without effect.
	- DIEP – reform	1990	
	- Reform of the Federal milk marketing order	2002	- Moderate adjustments – no substantial reform of the US dairy policy
	- Counter Cyclical payments to farmers	2002	
Canada	- Milk quota system	1970s	- Highly protected dairy industry
	- Two tier pricesystem (Overruled by WTO)	1990	- Efficient quota allocation system
	- Milk – policy still under criticism	2000	- WTO II will have severe impact on the dairy policy
New Zealand	- Abolishing of agriculture support	2000	- 30 % drop in agriculture income, less for dairy producers due to low support
Australia	- Complete deregulation of the dairy support	2000	- Hardship due to drought in the period 2000-2008
	- The internal prices are only protected by tariffs		- Forcing the structural development
Others:			
Norway	- Milk supply management	Whole period	- Highly protected and supported dairy sector
Switzerland	- Price support		
Japan	- High tariffs		- WTO II will have severe impact

Source: PMFOOD&DAIRY CONSULTING

5.3. Future political agenda 2008-2020

The future political agenda affecting the dairy industry is more complex and more interrelated with other political topics. The past was characterized by sector policies with support for the

dairy policy and imbalances imposed from other policy decisions or market and exchange rate changes could be balanced out by the price support mechanisms. The dairy policy has been reformed in most OECD countries and the price support is nearly abolished and the supply management system in EU and Switzerland is under dismantling. This means that external changes affect the dairy industry more directly and integrated in the general global economic development and political changes. The future political agenda is very broad and a lot of political topics and issues influence the future possibilities for the dairy industry.

Future political agenda 2008-2020

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU	EU Health Check						New CAP + budget						
	Dismantling the Milk quota system								EU without quotas				
US	Farm Bill 2012						New Farm Bill						
WTO	WTO I			New WTO II - Dismantling export support - Less agriculture support - More market access									
Others	Change in national dairy politics in Canada, South America, Russia, China, India, Australia, New Zealand, Japan, Norway and others												
Climate	New Kyoto-agreement in Copenhagen → new limits effecting the dairy industry												
Bio-fuel	EU/US goal 2010			Reassessment of 2020 goals in EU and US?									
Food Crises	FAO summit		New actions - Developing agriculture in developing countries (Green revolution II) - Speed of GMO? - More research										
Trade	Increasing use of bilateral agreement												
Environment	Regional and national restrictions concerning: Water and air pollution												
Animal welfare	High on the agenda on the OECD-Countries												
High politics	Political conflicts Religious conflicts Lead to problems for the dairy industry especially in the Middle East and Africa												

Source: PMFOOD&DAIRY CONSULTING

From 2008 until 2020 further eliminating the direct support for the milk production and dairy products will reform the dairy policies in most OECD countries. The liberalization process will continue with more direct market signal to the milk producers and the dairy companies leading to more volatile prices.

The WTO negotiations will at the end of the day lead to a WTO II agreement (described above) paving the way for continuing the reduction of production related support and more market access. Due to the very slow negotiating process in WTO, with 8-10 years to reach an agreement and the long implementation period, bilateral and regional trade agreements will still prevail and even increase in importance for the trade with dairy products

The new world order and the related agenda with climate change, bio-fuels and food crisis will generate political regulations in the future with substantial impact on the dairy industry. At the same time the focus will be increased on environmental regulations as a consequence of the new agenda. The developed countries will strengthen and expand the existing regulations and the developing countries and the emerging economies will be forced to deal with the environmental problems related to the extreme economic growth.

Animal welfare and sustainable agricultural production will also be high on the agenda. In the past it was a phenomenon in the most developed countries, but in a globalized world the demand for these “soft values” will increase. It means that the dairy industry has to consider the whole value chain from the milk production to the final products.

As the dairy sector gets more and more internationalized with global dairy companies it also implies a higher vulnerability to high politics. Dairy products are not only food, but also values and are related to national positions in international and regional conflicts. The dairy companies have to be much more strategic in their way of operating and the “political correctness” is very important.

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6. Scenarios for the dairy industry

On the basis of a SWOT analysis of the world dairy industry PM Food & Dairy Consulting has constructed three future scenarios:

- Optimistic
- Balanced/realistic
- Worst case

The uncertain parameters like economic development, oil prices, political decision, and market developments are decisive for the future possibilities for the dairy industry.

7. Strategies for the dairy industry

The paradigm shift signalizes a new few future agenda for the milk producers and the dairy industry, and it is very important to take this into account, and the report answers the following questions:

- Which regions and countries will be expanding the milk production?
- What is the profile of the future milk producer?
- Who will be the winners and losers among the world dairy companies?
- How will the cooperatives perform compared to the private dairy companies?
- Can the dairy industry meet the demand from consumers, politicians and the retail chains?

8. Conclusions and recommendations