

Sectoral Road Map: Food

Market and policy issues

- EU milk quotas will be abolished in April 2015.
- As the EU's largest surplus milk producer (% total output), Ireland will be more exposed to the vagaries of the world market than any other EU member state.
- The dairy products industry must thus aim to secure markets by expanding the product portfolio, strengthening current brands, and developing customer solutions, technical innovations and scale efficiencies for dairy food ingredients.
- In terms of meat, stiff competition exists because of South American imports, retail concentration, food security and currency volatility. There is a need for better marketing strategies: differentiating Irish beef to ensure increased penetration of EU markets; and, building on the Bord Bia quality-assured schemes for pork and bacon and the Bord Bia quality mark for poultry.
- Irish research in the area of food biotechnology is very competitive internationally. However, industry engagement is limited compared to that experienced in other advanced markets such as Finland, the USA and Japan. There is a need for more industry involvement to ensure that benefits accruing from research in this sector are harnessed for the Irish economy.

Shape and size of sector

- The abolition of quotas and the concomitant expansion of the dairy industry suggest that there will be a 50% increase in dairying by 2020.
- Ireland is gradually reducing its dependence on butter manufacture, which decreased from 60% of Irish milk production in 2007 to 56% in 2009. During the same period, the proportion of the milk going to cheese production grew from 23% to 31%.
- Three key international players in the infant milk formula sector are located in Ireland, supplying 12% of the global export requirement, with a combined turnover of €667m in 2009. This sector relies on the procurement of quality local milk and ingredients, and on Teagasc infrastructure in terms of dairy R&D, technological capability in ingredient formulation and scale-up, and personnel training.
- EU beef and veal production are expected to decline by almost 5% by 2015. A supply gap within the EU of approximately 600,000 tonnes by this year may create opportunities for efficient Irish beef producers.

Environmental and land use implications

- While the dairy and beef sectors are currently preoccupied with finding solutions to the problem of enteric methane emissions by ruminants, all aspects of the food industry are coming under scrutiny in terms of carbon footprint burden on the environment. Most importantly, customers for food



products and ingredients, e.g., retail multiples and infant formula manufacturers, are seeking evidence of sustainability measures being implemented at all stages in the chain from farm to fork.

Research and advisory actions

- Develop new and innovative high value-added, health-enhancing (functional) food products with improved sensory attributes.
- Ensure greater diversity, quality and consistency in non-Cheddar cheese products.
- Improve efficiency and quality in meat processing.
- Quantify known positive aspects in different meats (minerals, antioxidants, etc.), including 'mining' for bioactive components.
- Develop risk-based total food safety management systems for key pathogens and chemical contaminants in milk, meat and poultry. Particular priority areas for this sector where research is needed are *Campylobacter* in poultry, *Salmonella* in pigs, verocytotoxigenic *E. coli* in ruminant animals, and veterinary drugs and environmental drug residues in milk and meat tissue.



- Understand the role of food structure and function in order to influence satiety and deliver flavour, as well as targeted nutrients.
- Re-engineer manufacturing processes in order to be more competitive, and also to improve quality through reduction in the thermal burden imposed on milk/milk ingredients.
- Develop innovative packaging to avoid quality and safety problems.
- Key changes in food biotechnology trends must be tracked: health and wellness; nutrigenomics; lifestyle foods; food safety; GM testing; functional foods; regulatory controls/claims; clinical evidence; nanotechnologies; and, encapsulation.

Many of these research and advisory actions are already being addressed by the following initiatives:

- The UCC/Teagasc Alliance, which will mean that a greater critical mass is focused on food for health, food science and technology, and food business and consumer research.

- Gut health research is increasingly important in light of recent progress in the collaborative UCC/Teagasc, SFI-funded, Alimentary Pharmabiotic Centre (APC) project. New metagenomic tools open up new scientific opportunities to study the role of individual dietary behaviour and effects on gut microbiota. The Teagasc Food and Health programme also encompasses additional areas such as plant (nutraceuticals) and marine (Nutra Mara).
- The current five-year, dairy industry-led, EI-funded Food for Health Ireland (FHI) project will terminate in 2013, having achieved deliverables in the form of lead functional compounds derived from milk. Teagasc Food Research, along with Moorepark Technology Limited, is playing a central role in this consortium.
- Establishment of the Milk and Product Quality Forum, which is a stakeholder group set up to assist in the identification of evolving quality issues and the harnessing of resources to address such issues.

Further actions also required:

- Disposal of milk fat in an expanded post-quota milk production scenario is expected to be a major challenge. New research will focus on adapting milk fat and undertaking clinical studies to highlight positive attributes. Cheese is also expected to be an important outlet for the expanded milk pool and associated milk fat content; new research will focus on approaches to diversification of product type from a seasonal milk supply.

The outcome of the above actions will be:

- Research platforms of international standard in areas of relevance to Irish-based industry.
- Product development support for businesses through access to scientific expertise, pilot scale food production facilities, product testing laboratories and product development expertise.
- Engagement in the EU Framework Programme – knowledge-based bioeconomy research (KBBE), along with Irish food industry and SME partners.
- A skills development and training programme for food industry personnel.
- Food market research intelligence.
- A rapid response technical information service for businesses.

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The road map for food is available on www.teagasc.ie.