Innovation in Practice: the Teagasc Model

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Impressions of Finnish knowledge system

• Innovation deeply embedded in Finish political and economic system
• Innovation seen as required across all sectors … broadly based
• Innovation seen as a continuum from capability [‘R’] to product development [‘D’] (e.g. Valio)
• Greater preponderance of research institutes with each having a sectoral focus
• Impressive formal collaborative networks between universities, research institutes and industry
Agri/Food/Fisheries Sector

- Largest indigenous sector; 10% of the economy
- 170,000 jobs; 50% indigenous exports; 30% total net exports
- Every €100 exports adds €50 to GNP vs. €20 for pharma and ICT
- Rapid ascension of the value chain in recent years, e.g. IMF 16% global exports, high incidence of MNs
- Low level of R&D spend 0.2% to 0.3% of sales, high incidence of SMEs
- Big opportunities for growth, dairy sector
Teagasc in brief

• Teagasc is the national public body providing integrated research, advisory and training services to the agriculture and food industry.

• Our Mission is to support science-based innovation in the agri-food sector and wider bio-economy so as to underpin profitability, competitiveness and sustainability.

• Functions: research in primary agriculture & food processing; knowledge transfer (primary agriculture); education (primary agriculture) & training (food processing)
Innovation in agri-food key requirements (1)

- Integrated ‘farm to fork’ approach needed
- Primary sector critical … food safety, sustainability, quality and cost efficiency …
- Highest scientific quality a given … international benchmarking
- Research role in the knowledge system … ‘provide, procure, adapt and transfer’
- Appropriate balance between the ‘R’ and the ‘D’
Innovation in agri-food key requirements (2)

- Collaboration and partnership essential … disciplines and institutions … public and private
- Development of professional ‘knowledge transfer’ capability … neither automatic or costless … investment required in personnel and systems …
- Understanding knowledge customer needs …
- Absorptive capacity of potential knowledge customers needs to be strengthened …
Features of Teagasc practice: primary production

- Integration of research, knowledge transfer and education functions
- Continuum from component or project to systems (whole farm) research
- Structured connections between research demonstration farms (dairy and beef) and networked commercial farms
- Learning from our knowledge customers’ needs ‘Stakeholder Consultation Groups’ (SCGs)
- Developing an innovation pipeline … bioscience >> applied research >> on-farm application
Features of Teagasc practice: food processing research

• Collaborations … most recent … Teagasc-UCC alliance … single portal for dairy processing research
• Food for Health Ireland … collaboration between Teagasc, universities and industry
• Valio-Ireland joint Ph.d. and researcher-exchange programme …
• Moorepark Technology Ltd. … a unique pilot plant resource for the dairy industry owned by Teagasc and the industry …
• Our approach in summary >>>> …
Food for Health Research Collaborations
Collaboration

UCC/Teagasc
Strategic Alliance
in Food Research

"The abolition of quotas in 2015, in an increasingly deregulated market, presents a challenge to the industry to move up the value chain. Commitment to collaborative R&D, harnessing the collective strengths of the research institutes and industry, is essential in driving successful, market-led, growth and I welcome this initiative."

Mr Kevin Lane, CEO
Irish Dairy Board

University College Cork

Teagasc
Irish Agriculture and Food Development Authority
• A sophisticated pilot plant for product development and process scale-up.

• Jointly owned by Teagasc and Dairy Companies.

• A major asset for product and process innovation.

• Many ingredient successes:
  – Alpha lactalbumin for infant formula
  – Cheese and yogurt
  – Drying
  – Bioactives for functional foods
  – Food colorants
Delivering R & D solutions to the Food Industry

In Cheese
- Develop new varieties
- Develop Improved ingredient cheeses
- Improve efficiency and quality

In Infant Formula
- Develop new ingredients
- Improve safety
- Scale-up spray drying technology

In Food and Health
- Improve dairy nutrition (salt, fat, protein)
- Develop new Functional Foods (probiotics, prebiotics, weight reduction)
- Innovate in NPD (vitamins, bars, lactose free, omega 3...)
Teagasc Innovation Model in Summary

INNOVATION

Public/Pre-Commercial

Dissemination

Research Information
(Generation and procurement)

Publications
Conferences
Training Courses
Public Advice/Comment

Applications
Trials
Pilot Plant Validation

Useful Products / Processes

Patents
Public/Private Research Partnerships

Industry uptake

Commissioned Research
Pilot plant/analytical services
Technology licensing
Consultancy/advice

Knowledge Push
Market Pull
Thank You