

Summary

Innovation in the food industry;
An international benchmark study

Michiel van Galen
Katja Logatcheva
Tom Bakker
Elsje Oosterkamp
Gerben Jukema

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Summary

Innovation in the food industry An international benchmark study

S.1 Key findings

The Danish food industry is more innovative than that of the Netherlands. The Dutch food industry ranks third in this comparative study of eight countries. The Netherlands scores highly on the indicators that describe the input side of the innovation system, but the companies generate less revenue from new products and are less focused on marketing and organisational innovations than most other countries (see table S.1). Production process efficiency and cost reduction are often the main focus areas of Dutch companies. In the longer term, this could cause the competitiveness of and jobs in the Dutch food industry to come under pressure.

- Compared with the other countries studied (Denmark, Germany, France, Italy, Poland, Spain and the United Kingdom) the Dutch food industry has a relatively strong position in terms of R&D intensity and a strong position in cooperation in innovation.
- The only country with a greater number of patent applications to European Patent Organisation EPO per million inhabitants than the Netherlands is Denmark. This indicates the relatively high importance of the food companies in the Netherlands. However, the majority of patent applications come from a small number of large high-tech food companies.
- This large number of patents does not lead to a proportionately large number of new products. Far from all innovations in the food industry are based on patents and thus lack the protection of patents.
- In the Netherlands, most innovations come from a relatively small group of companies. Many innovations come from start-ups on the one hand and large companies and multinationals on the other. Most of the implemented innovations are product and process innovations; organisational and marketing innovations are seen to a lesser extent.

- The available data about innovation by companies in the food and beverages industry does not allow for a comparison of different branches of the industry.
- Revenue from new products in the Netherlands lags behind that in the other countries surveyed. The revenue is mainly generated by existing or slightly modified products. To remain competitive, food companies focus primarily on efficiency of production processes and distribution.
- The number of SMEs in the food industry in the Netherlands is relatively large. SMEs are less likely to have formal R&D and innovation, but are more often involved in other forms of innovation, such as in niche markets. Both the market concentration in the food industry itself (in some sectors a limited number of companies control a large share of Dutch production) and the changes in the sales structure (concentration at customers) and competition with private labels vary by country and sub-sector. To what extent these variations are an explanation for much or little innovation is a question that requires further investigation.
- The relatively high public investments in innovation and knowledge in the Netherlands are reflected in the quality of the knowledge institutions. However, it is impossible to determine what proportion of public spending on knowledge and innovation specifically reaches the food industry. In terms of scientific quality in the food domain, the Netherlands does relatively well.
- Table S.1 shows the scores of the countries surveyed, for each indicator. The best countries get a + and the worst countries a -. The Netherlands receives the second highest score for innovation input in this benchmark, after Denmark. For innovation output the Netherlands does less well.

Table S.1	Food industry benchmark, a)							
Indicator	DK	GE	FR	IT	NL	PL	SP	UK
<i>Innovation input</i>								
R&D companies	+	-	-	-	+/-	-	-	+/-
Government R&D	+/-	+	-	+/-	+/-	-	+/-	-
Knowledge (citations)	+	-	+/-	+/-	+	-	+/-	+
Business environment	+	+	+/-	-	+/-	+/-	+/-	+
Collaboration	+	-	+	-	+	+/-	+/-	-
<i>Innovation output</i>								
Patents per million inhabitants	+	+/-	+/-	+/-	+	-	+/-	+/-
Technological innovations	+/-	+	+/-	+/-	+/-	+/-	-	+/-
Revenue from new products	+/-	+/-	-	-	-	-	+	+/-
Non-technological innovations:								
- organisational	+/-	+	+/-	+/-	-	-	+/-	+/-
- marketing	+/-	+	-	+/-	-	-	-	-
Labour productivity (va/fte):								
- absolute (2007)	+/-	+/-	+/-	+/-	+	-	+/-	+/-
- growth 2000-2007	+/-	+	-	-	+/-	+/-	+/-	-
Total score input (+ minus -)								
	4	-1	-1	-3	2	-3	-1	0
Total score output (+ minus -)								
	1	4	-3	-2	-1	-5	-1	-2
Total score								
	5	3	-4	-5	1	-8	-2	-2
Total benchmark ranking								
	1	2	6	7	3	8	4	4
a) Some indicators relate to food, beverages, alcohol and tobacco. Government R&D applies to all sectors. Countries are scored based on their relative position as best (+), middle group (+/-) and worst (-). Source: See the relevant chapters.								

S.2 Complementary findings

- The food industry consists of various sectors, each with its own structure. In the Netherlands, the food industry is the largest branch of industry and consists of a relatively large number of SMEs.
- In some sectors of the Dutch food industry, the concentration is high to very high.

- Denmark is the leader among the countries surveyed when it comes to efforts for innovation: firms' R&D expenditures, collaboration in innovation, knowledge and business environment. Germany tops the list when it comes to the results of innovation. However, we have several remarks concerning the comparability of the figures for this indicator from the CIS survey.
- The food industry exhibits a limited dynamism in all countries except the United Kingdom. For these countries, including the Netherlands, this indicates limited internal competition and relatively high entry thresholds.
- A good business environment is important for innovation and can be improved in the Netherlands through steps such as reducing the costs and duration of procedures for establishing new businesses and obtaining building permits.

S.3 Methodology

The Dutch Ministry of Economic Affairs has asked LEI, part of Wageningen UR, to provide insight into the position of the Netherlands in terms of innovation compared with important competitor countries. The following questions were posed:

1. How does the Dutch food industry perform on the selected indicators compared with other European countries (see parameters for selection of countries)?
2. Are there differences between the various groups of companies within the food industry?
3. Are there differences in the way the various governments promote R&D and innovation?
4. What explanations can be given for the trends that emerge from the data and the differences between countries and sectors?

The benchmark analyses the innovative performance of the food industry in the Netherlands and compares it with that of other countries. The research methods include a literature review and analysis of existing data sources.