

## **BETWEEN LOCAL AND GLOBAL: A GEOGRAPHICAL ANALYSIS OF ITALIAN AGRO-FOOD SYSTEM OF INNOVATION**

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### **Abstract**

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The agro-food is one of the main manufacturing industries in Italy. It accounts for more than 2 million firms, making up 9% of the Gross Domestic Products (GDP). However, Italian agro-food industry has several weak points such as small dimension of firms, county's dependence on agricultural products realized abroad and weak innovative activities. Based on these assumptions, this paper offers a geographical analysis of Italian agro-food system of innovation aimed to evidence actions that firms and policy-makers have to realize. Specifically the paper evidences that firms have to invest in internationalization and innovation and policy-makers have to support them in several ways.

*Key words:* economic geography; agro-food; innovation; Italy; world; made in Italy

### **Italian Industry**

The food and drink industry is the largest manufacturing industry in the European Union. It is a complex system in which agriculture interacts with other sectors for production of related inputs, food transformation, distribution, etc. The Italian agricultural, food and restaurant sector accounts more than 2 million firms, making up 9% of the Gross Domestic Products (GDP). The value of Italian agro-food is based on a complex combination of natural and economic factors. Italy has a territory characterized by hills and mountain and a climate tempered because of the presence of Mediterranean Sea (Amato, 2011). The economy is based on the mature industries of Made in Italy with strong difference between the North and the South. The former has a strong industrial development and private firms; the latter has higher unemployment rates and a small development rate (Cirelli et al., 2005). The bigger enterprises are localized in the North of the country and are managed by families, while small and medium firms are localized in the south of the country. Despite of one fifth of the EU-28's holdings are in Italy, it occupies the first place in Europe for agriculture of quality

products (Protected designations of origin and Protected geographical indications) (Citarella and Sorrentini, 2010) (Table 1).

**Table 1**  
**Italian agricultural context and main socio-economic characteristics**

Population (n°, million)	58.413
Total Area (km <sup>2</sup> )	301.336
Farms (n°)	1.959.038

*Source:* Istat, 2016

Italy is the first European country for the number of Protected designations of origin (PDOs) and Protected geographical indications (PGIs). Among the agro-food quality-certified products, sectors with the highest number of certifications are fruit, vegetables and cereals, cheeses, extra virgin olive oils, meat preparations, fresh meat and other sectors. Emilia-Romagna and Veneto are two regions with the highest number of PDO and PGI products. Most of certified operators are exclusively involved in production activities of cheese, extra virgin olive oil and fruit, vegetables and cereals (Bruinsam, 2003).

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Quality products contribute to promoting development in the mountainous areas of the country. The major crops are grain and rice (28.3%) meadows and pastures (27.2%) and fruit and citrus fruits (6.4%). Italy is in a prominent position for the organic production that involves firms 60 000, with about 93.165 hectares total extent and about 23 hectares average dimensions, with a bigger incidence in the South and in the islands (Reardon and Barrett, 2000) (Table 2).

**Table 2**  
**Agro-food quality-certified products**

Typology of certified quality products	Italy
PDO	570
PGI	235
TOTAL	805

Source: Istat, 2016

### The Agro-Food System of Innovation

Italian agro-food industry has several weak points. First of all the small dimension of firms represents a bottleneck for Made in Italy since export propensity tends to rise according to size. Another downside is county's dependence on agricultural products realized abroad. The country produces fruit and wine and imports sugar, soy, grain, milk and meat. Also problematic is Italy's focus mainly on mature markets for exportations. The percentage of Italian food exports on the world market is around 3%, however emerging markets are almost absent. Italy exports mainly to the EU (67%), Canada and the U.S. (11%) and Asia (6%). To overcome these weaknesses, industry needs more resources directed to firms that invest in internationalization initiatives, lower taxes and less bureaucracy (Cook and Crang, 1996).

Moreover, the global agro-food sector has to face a myriad of new challenges, including climate change, degradation of natural resources, and plant and animal pests and diseases as well as changes in dietary patterns that affect food systems (Nosi and Zanni, 2004). For facing all these challenges this historically poor financed industry needs more support from Ministers to innovation. In Italy there is a general absence of public and private research in the specific agro-food field (Morris and Evans, 2004). Food firms are likely to use research developed in other sectors (spill-over effects) and not use technologies applied abroad (spill-in effect). Several authorities have to cooperate to the process of reinforcement of research and development in agro-food industry (Salvatori and Spagnoli, 2009; Crewe, 2000).

Agricultural research in Italy should be focused on sustainable production, diet and nutrition, food safety, ecology, regional development and landscape management. With the aim to sup-

port Italian innovative development of agro-food, in 2015 FAO joined with three main Italian research institutions such as the National Research Council (CNR), the Council for Agricultural Research and Economics (CREA) and the National Agency for new technologies, renewable energy and sustainable economic development (ENEA) (FAO, 2016).

National Research Council (CNR) areas of work include research and technological development in the areas of Agriculture and Food Sciences, Bio-Medicine, Engineering, Environmental and Social Sciences with more than 100 research institutes and 8000 researchers. Council for Agricultural Research and Economics (CREA) is focused on advanced research on agriculture, food, fishery, forestry and economics with more than 1,700 researchers. National Agency for new technologies, renewable energy and sustainable economic development (ENEA) operates in the fields of energy, the environment and new technologies employing over 2600 staff across its 11 research centres.

Combining these resources, 10 000 scientists in 100 research institutes across Italy, may help to reinforce research and technology development, manage natural resources more sustainably, promote innovation in agriculture, and improve healthy nutrition (Fagan, 1997). The agreement marks a turning point in Italy-FAO relations, helping address the growing challenge of bringing sustainability into the food and agricultural systems of Italy and supporting Italy in making food systems more inclusive of global, national and local authorities, institutions, firms and consumers (Table 3).

**Table 3**  
**Agro-food system of innovation**

Level of Action	Global	National	Local
Authorities	EU	Italian Minister	Local policy-makers
Research institutions	FAO	CNR CRA Enea	University
Agro-food firms	Multinational	Medium size firms	SME
Consumers	Global market	National consumers	Local tradition

Source: Our elaboration on data Fao 2016

### Innovation in Agro-Food: Between Local and Global

The EU spends just 5% of the annual budget in food and agricultural researches but has planned to invest 248 million Euro in food and drink industry through Horizon 2020. The food issue is housed in the Horizon 2020 program's aim is to contribute to securing sufficient supplies of safe, healthy and high quality food and other bio-based products, by developing

productive, sustainable and resource-efficient primary production systems, fostering related ecosystem services and the recovery of biological diversity, alongside competitive and low carbon supply chains. This will accelerate the transition to a sustainable European bio-economy, bridging the gap between new technologies and their implementation. The effort is based on the fact that most of the entire supply chain in food industry is made by small and medium enterprises, which suffered the most from European economic turbulences (McMichael, 1994).

In Italy, the total expense invested in the food search by both public and private research is of about 300 million euro that corresponds to 1.3% of the value added in agriculture. According to the Istat data, greatest expense in research for the agro-food industry is destined to the experimental development sector and applied research (Lee, 2000).

However, global, national and local policy-makers have to work jointly to improve research activities for facilitating cultural country development and new advancements in the knowledge. It is likely to invest in activity of research aiming to increase human capital value, facilitate assimilation of new produced knowledge at worldwide level and develop new technologies, new products, processes and services. The policy-makers have to jointly work for supporting the basic research, developing human capital able to realize applied research, intensifying cooperation between public research institutions and firms for turning basic and applied research in entrepreneurship (Winter, 2003). Most of research aimed to safeguard consumers health has to be focused on biology, agro-alimentary products and biological products, sustainability applied to productive processes (organic farming, supply chains, etc.) and correct information and communication (Lockie and Kitto, 2000).

## Conclusion and Discussion

The agro-alimentary is a mature industry that in Italy is based on the huge quality of products. However, Italian firms that operate in all the stages of agro-food value chain have to face new challenge coming from the rapid development of global scenario have to realize several innovations. Therefore firms have to take opportunities coming from internationalization in emerging countries, application of new technologies coming from basic research, development of products able to satisfy clients' and customer's needs. Summing up, firms have to develop adaptive ability to combine internal research with external one. In their innovative activities, such firms have to be also supported from global, local and regional policy-makers with joint programs and financial subsidies.

## References

- Amato, V.**, 2011. Alcuni elementi di propensione all'internazionalizzazione. In: T. D'Aponte and E. Mazzetti. (Editor), *Il Sud, i Sud: geoeconomia e geopolitica della questione meridionale. Società Geografica Italiana*.
- Bruinsam, J.**, 2003. World agriculture: Towards 2015/2030 an FAO perspective. *Earthscan*, London.
- Cirelli, C., L. Mercatanti, E. Nicosia and C. M. Porto**, 2005. Il gusto del territorio tra tradizione e globalizzazione: il glocal food a Catania. In: Atti dell'VIII Seminario Internazionale di Geografia Medica, Geografia dell'alimentazione, vol. 1, Rux, Perugia, pp. 461-474.
- Citarella, F. and F. Sorrentini**, 2010, *Il club di Prodotto come Sistema Integrato si Qualità, Loffredo Editore*, Napoli.
- Cook, I. and P. Crang**, 1996. The world on a plate. Culinary culture, displacement and geographical knowledges. *Journal of Material Culture*, **1**: 131-153.
- Crewe, L.**, 2000. Geographies of retailing and consumption. *Progress in Human Geography*, **24**: 275-290.
- Evans, N., C. Morris and M. Winter**, 2002, Conceptualizing agriculture: a critique of post-productivism as the new orthodoxy. *Progress in Human Geography*, **26**: 313-332.
- Fagan, R.**, 1997. Local food/global food: globalization and local restructuring. In R. Lee and J. Wills, (Ed.), *Geographies of Economies*, *Arnold*, London.
- FAO**, 2016. Statistical yearbook. <http://www.fao.org/home/en/>
- INEA**, 2016. Statistical yearbook. <http://www.inea.it/>
- ISTAT**, 2016. Statistical yearbook. <http://www.istat.it/it/>
- Lee, R.**, 2000, Shelter from the storm? Geographies of regard in the worlds of horticultural production and consumption. *Geoforum*, **31**: 137-157.
- Lockie, S. and S. Kitto**, 2000. Beyond the farm gate: production-consumption networks and agri-food research. *Sociologia Ruralis*, **40**: 3-19.
- McMichael, P.**, 1994, *The Global Restructuring of Agro- Food Systems*. *Cornell University Press*, Ithaca, N.Y.
- Morris, C. and N. Evans**, 2004. Agricultural turns, geographical turns: retrospect and prospect. *Journal of Rural Studies*, **20**: 95-111.
- Nosi, C. and L. Zanni**, 2004. Moving from "typical products" to "food-related services": the Slow Food case as a new business paradigm. *British Food Journal*, **106** (10-11): 779-792.
- Reardon, T. and C. B. Barrett**, 2000, Agroindustrialization, globalization, and international development: an overview of issues, patterns, and determinants. *Agricultural Economics*, **23** (3): 195-205.
- Salvatori, F. and L. Spagnoli**, 2009. Il paesaggio agrario negli scenari odierni. Spunti e riflessioni. In: *Una Vita per la Geografia. Scritti in Ricordo di Piero Dagradi. Patron*, Bologna.
- Winter, M.**, 2003, Geographies of food: agro-food geographies – making reconstructions. *Progress in Human Geography*, **27**: 505-513.