

## **Some Factors of Success for Origin Labelled Products in Agri-Food Supply Chains in Europe: Market, Internal Resources and Institutions.**

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### *Abstract*

*This paper provides an overview of a FAIR research project into the specific conditions and institutional requirements for the development of PDO and PGI products (Protected Designation of Origin and Protected Geographical Indication). The research project is to be completed in 1999 and it is hoped that the assessments and recommendations made will help in harmonising the implementation of European Council Regulation (EEC) No 2081/92.*

*Twenty-one supply chains in seven countries are analysed (France, Italy, Greece, Netherlands, UK, Spain and Switzerland). The primary factor in success is the capacity of a set of firms in a supply chain based in a particular area to effectively coordinate such matters as the identification of joint objectives, definition and control of quality, variety management, image promotion, and research & development. Market characteristics are secondary factors in success. Following Bouquin (1986) we draw a distinction between effectiveness and efficiency. Emphasising the crucial step of goal setting (effectiveness) may highlight the relevance of internal resources and competencies of a set of firms, according to Teece (1981). This explains why the set of firms manages not only to react to their environment but also to influence it. This approach is consistent with a number of rationality and organisation models proposed by Simon (1976). This kind of transition from individual to collective forms of management shows a possible link between an approach in terms of hybrid forms (efficiency) and an approach in terms of core competence (effectiveness). We end with an evaluation of Reg. (EEC) 2081/92 and highlight a number of problems with its implementation.*

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# 1. Introduction

This paper is intended as a starting point for reflection and discussion of the socio-economics of origin labelled products in agri-food supply chains. It concentrates on markets, internal resources, systems of firms, and institutions. We begin with the simple idea that a supply chain must fulfil a number of conditions if it is to be successful in a highly competitive global environment. Some of those conditions relate to mobilisation of the system's resources (what might be termed the "local agreement"). Other conditions relate to public policies and their application ("general agreement"). We contend that the collective process of value creation is an essential factor but that it must be backed by a suitable public policy.

By way of introduction it might be useful at this point to refer to some important definitions for the discussions in this seminar.

1. *Why are some geographically labelled products protected by national and/or EU regulations?* The North-South divide apart, international negotiations in recent years have polarised around two opposing positions. On the one hand the Anglo-Saxon outlook characterises any attempts to restrict trade through the use of designations of origin as protectionism and restraint of competition (cf. the United States' unrestricted use of the Chablis designation for wine). In contrast, other countries consider that such usage is tantamount to "passing off"; it constitutes unfair competition as an undue advantage is gained by usurping the good name of a product that has been built up by substantial, long-term, collective and individual investment. The European Community sided with this latter view in 1992 by introducing the policy set out in Council Regulation (EEC) 2081/92. However, and this is an important point, the European Community sought to justify this policy by attributing central importance to the connection between the quality of the product and the region whose name is protected. We shall now look at how this was done in a series of stages so as to get the language straight.

2. "Origin Labelled Products" must first of all be different from standard products in the same market since the Regulation refers explicitly to their qualities or characteristics. At this point it might be useful to introduce the idea of *differentiation* as found in Industrial Economics. It means something similar to the original sense of *specificity*: the product is said to be *differentiated* if it has *specific characteristics* (that are measurable in the sense of substantial or intrinsic) and *if consumers perceive it as such*. And here we have recourse to the idea of *relevant economic market* delimiting products that consumers view as substitutes for each other.

3. Moreover, in some countries quality policies have sought to justify the protection of names and/or collective brands by arguing that what differentiates the products are their *specific modes of production* (Allaire and Sylva, 1996). This is true of, say, organic farming, which is currently defined by specifications laid down in a number of countries, and at European and soon world level in the Codex Alimentarius standards. Consequently, the thinking behind the European regulation and behind other national policies on quality (such as the French policy) requires something more than what is known as "horizontal" differentiation. Yes, the product to be protected must be different, but that difference must be attributable above all to the mode of production.

4. In the case of "Origin Labelled Products" reference to the mode of production is further reinforced by the fact that quality is *"due to a particular geographical environment with its inherent natural and human factors"* (for PDOs) or that *"a specific quality, reputation or other characteristics [are] attributable to that geographical origin"* (for PGIs) (Regulation 2081/92). This text forms a basis for distinguishing between *"Origin"*, as defined above and *"Provenance"*, taken as the place of production of a good regardless of its specific mode of production. It can be seen in this respect that the distinction between *"goods of origin"*, meaning goods for which there is a "sum of shared knowledge" between producers and consumers (Ruffieux and Valceschini, 1996) is not restrictive enough, since in principle it does not entail any codification of production

processes. However, it is true, as we shall see, that an essential condition for "Origin Labelled Products" to be successful is that consumers must have a positive perception of them and share cultural affinities with them. When these factors are officially acknowledged as part of a regulation designed to protect their geographical designation, such products are said to be of "*Protected Origin*".

5. France and Italy have gone a step further by referring to *typicity* (Scheffer, 2000). Different institutions and countries attribute greater or lesser importance to this concept. Two approaches to *typicity* have been proposed: "*typicity 1*" is horizontal meaning that the good is *both specific (different) and unique* and therefore relates to a given region (*typical of ...*); "*typicity 2*" is vertical and supplements *typicity 1* by emphasising its determinants, i.e. the combination of natural and human production factors that go into making it (Salette, 1997). The fact that the latter factors are related to *human know-how*, and are not readily separable from natural factors (Bertrand, 1975) might suggest that they cannot be readily reproduced: while knowledge may be handed down (in time) under certain circumstances, it is not easily transferable (in space) (Casabianca and De Sainte Marie, 1997). In this sense, the concept has a certain cultural content. *Terroir* can then be defined as a homogeneous and bounded zone where conditions for "*typicity 2*" are fulfilled.

6. Such a definition of "Origin Labelled Products" presupposes a *two-tier agreement* for the good to be fully characterised, that is :

- a local agreement between firms to achieve specificity and *typicity* and to work together on a common project,
- a general agreement, confirmed by a clear and stringently applied policy on quality and origin.

The need for widespread recognition in the definition of a good, as proposed by Thévenot (1995) and seconded by Allaire (1995a and 1995b) means these two stages are inseparable. Of course, widespread recognition can be achieved by a fixed, long-term brand policy pursued by a large company. However, "Origin Labelled Products" are often produced in less-favoured regions by networks of small firms with little in the way of resources to secure such recognition without backing from public policy. This type of production provides a compromise between big industry and small independent producers (Sylvander and Marty, 1999) while ensuring international protection.

Hence our contention that *the collective process of value creation is an essential factor but that it must be supported by a suitable public policy*. We propose here to examine these two stages in the characterisation of "Origin Labelled Products". After considering a number of theoretical points of view about the subject (Part 2), we look at a method for assessing how and under what circumstances systems of firms set up or operate a set of specific resources (Part 3). We then comment on the results and examine EU policy on the protection of origins (Part 4).

This review is based on a FAIR research project on "PDO-PGI products: market, supply chains and institutions".<sup>3</sup> The aim of the project is to analyse the economic and institutional conditions for developing PDO-PGI products in the European Union (Regulation 2081/92) and to make recommendations to the EU and the institutions concerned about how to make the quality policy a success. This will involve achieving an appropriate degree of harmonisation of the decision-making process among local, regional, national and community levels. Field surveys were conducted of the following 21 supply chains where products are registered at European level as PDOs or PGIs.

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<sup>3</sup> The partners in the programme are: Fearnle A. & Wilson, N., Wye College (GB), De Roest K et al., CRPA (IT), Galanopoulos K. et al., University of Thessaloniki, Fotopoulos C., Vakrou A. et al., NAGREF (GR), Sylvander B. & Lassaut B., INRA-UREQUA, Leusie M., Chrysalide (F), Van Ittersum K. et al., Wageningen (NL), Barjolle D, Chappuis JM, Dufour M, IER-EPFZ (CH).

**Table 1 : The 21 PDO-PGI supply chains studied**

Country	Product
France	Cantal, Agneau du Quercy, Comté, Pommes de terre de Merville, Huile d'olive de Nyons
Greece	Feta, Zagora Mèla, Peza Olive Oil
Italy	Prosciutto di Parma, Parmigiano Reggiano, Fontina
Netherlands	Noord-Hollandse Edammer, Boeren-Leidse met Sleutels (cheese), Opperdoezer Ronde (potatoes)
UK	West Country Farmhouse Cheddar Cheese, Scotch Lamb, Jersey Royal Potatoes
Spain	Jamón de Terruel, Ternasco de Aragon
Switzerland	Gruyère, Abricot Luizet du Valais

We should specify from the outset that by "successful" we mean meeting at least three of the following criteria (see point 3.3.):

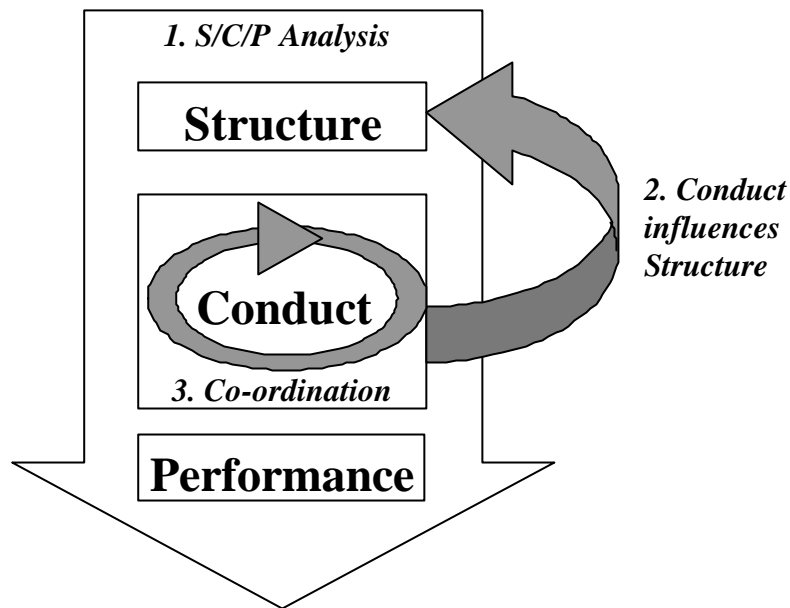
- Significant turnover and economic importance.
- High growth rate (greater than that of the reference market).
- Notoriety of specific product name and/or mark or collective brand name.
- Positive price difference compared with the closest substitute product.

## 2. Theory

Organisational economists of the 1950s, seeking to define the circumstances under which economic optimum and social welfare could be achieved, developed the Structure-Conduct-Performance paradigm. The aim was to identify and stamp out anti-competition practices such as the imposition of entry barriers or monopolies (see Figure 1, point 1: S-C-P analysis).

The concept of economic efficiency, taken from industrial economics, involves determining how resources can best be allocated to achieve the chosen objectives. It is assumed that firms manage to compete in the market by optimising their economic efficiency. The firm is analysed in terms of its operational efficiency, which involves cutting costs without adversely affecting profits. In classical economics, it is assumed that firms operate in the same market with the same products. Firms are therefore assumed to share the same main objective of maximising profit. The market is analysed in terms of pricing efficiency, i.e. the degree to which the free market allocates resources and coordinates production and sales in line with consumer wishes while optimising social welfare.

Many writers on marketing management challenge these assumptions, emphasising the ability of firms and sets of firms to formulate relevant objectives and subsequently to manage their activity. This supplements the concept of economic efficiency with that of economic effectiveness. There is therefore a range of possible objectives for different products and markets. Many management and organisational economists have attempted to circumvent anti-trust policies to find ways of increasing profits. The firm's strategy consists therefore in using internal resources to steal a march on its competitors and alter market structure (see Figure 1, point 2: "Conduct influences Structure").



**Figure 1: Different approaches to market analysis**

The third stage in Figure 1 involves small firms coordinating their efforts so as to influence market structures on the basis of their specific collective resources. We shall now examine this point.

The idea that there is not just one but a whole range of objectives has a more fundamental origin. For several decades now economic theory has recognised that the firm is something more than just a production function. This, we believe, is closely bound up with the issue of setting objectives. The basic postulate advanced by Coase (1937) alters the way we view the firm, which is defined as an organism whose internal structure and relationship with the outside world change over time. To consider the organisation as a set of operators with different and contradictory objectives is implicitly to challenge the idea that the firms pursue the same goal.

By conceding that firms have different objectives, it becomes legitimate to evaluate their performance relative to their objectives in addition to performing a cost/benefit analysis. There are thus two aspects to consider both of which are familiar to management science writers (Martinet, 1983; Bouquin, 1991): effectiveness (are the goals relevant?) and efficiency (are the objectives achieved with maximum economy of resources?). Effectiveness is the capacity of an organisation (or system) to set relevant objectives. Efficiency is its capacity to manage resources in a manner which minimises costs for a given output (or maximises output for a given cost) (Le Moigne, 1990).

We agree with the two basic assumptions of Simon and March (1958): the world is a complex and uncertain place and firms' information-processing capacities are limited. It can be argued that a firm's ability to set itself suitable objectives is in itself a factor in its performance and competitiveness.

This idea is similar to that of procedural rationality proposed by Simon (1976). Since there can be more than one objective and more than one combination of ways to achieve those objectives, the reasoning underlying the decision-making process becomes crucial. Satisfactory or acceptable solutions (*satisficing*) replace optimum solutions and the problem-solving procedure takes on added importance.

In emphasising the importance of the firm's decision-making capacities Simon is emphasising the importance of its internal resources. Similarly, Barney and Hesterly (1996 :133) claim that the SCP paradigm gives too much weight to the firm's environment: "However, the attractiveness of an industry cannot be evaluated independently of the unique skills and abilities that a firm brings to that industry".

This position ties in with that of Teece (1981) who emphasises the specific competencies of firms. More generally, the evolutionists (Dosi et al., 1990, Dosi, 1991) attempt to reconcile the internal (inherited skills, path dependence, learning) and external (market opportunities and selection by the environment) factors of competitiveness. In accepting the assumption of procedural rationality and of *satisficing*, these economists implicitly concede that while profit maximisation is important consideration must also be given to setting an objective and defining a valid way in which to achieve it.

The principle of coherence as advocated by evolutionists is commonly applied in management and entails consistency within and between each of the firm's functions. Coherence relates to the observed behaviour of managers, which corresponds more closely to procedural rationality (Simon, 1976) than to profit maximisation.

The evolutionist approach draws a distinction between two aspects of the concept of effectiveness:

- the existence of one or more objectives,
- the consistency of these objectives with the internal resources mobilised.

We might usefully add here the idea of *relevance of objectives*. This depends on the specificity of the organisation as well as on the particular environmental conditions. Philippe and Sauvée (1997, p. 5) report that "A given organisation can set varied objectives, in relation to its track-record, its socio-economic context or to competition conditions in the market place. But it should select only these objectives which can make sense and limit the uncertainty in a complex environment". We confine ourselves here to the first two aspects.

In this study we explore a certain type of conduct characterised by many firms jointly managing the same product in the way one large firm might do (see Figure 1. point 3. Coordination). The PDO/PGI group of firms often includes numerous small businesses or industrial agricultural cooperatives, and even industrial operators whose objective is not profit maximisation. There may be several objectives including survival, developing existing special quality products or creating and distributing new ones, saving rural activities, maintaining the land, ensuring regional development, or optimising production rights.

Nevertheless, it is important to point out that PDO and PGI must stem from a collective process. The foregoing theoretical developments can be applied to a set of operators, which we shall term the "operator system", supposing that they manage to define common objectives (which they seldom do in practice). If they share a common objective, their activity and performances can be accounted for through consideration of the way each firm's management reacts to market information. Coordination between operators in such systems is intended to piece together a specific form of supply. It is on this basis that we investigate the factors determining whether or not PDO and PGI supply chains are successful at micro and meso level.

Figure 2 shows the different factors affecting the market for a given product. For the firm, **product specificity** (differentiation) and **market relevance** are the main strategic choices underpinning its performance. At meso-economic level, the product is constructed collectively by a large number of firms. **Specificity** is therefore achieved through a social construction process. The choice of a future market is at least as important as the common rule laid down for collective control of the product (promotion, research & development, quality standards, etc.). Collective performance is dependent on both these factors. Research also indicates that operator motivation and the legitimacy of the union are important factors in supply chain performance (meso-economic level). Naturally there is interaction between each firm's strategy and the supply chain as a whole.

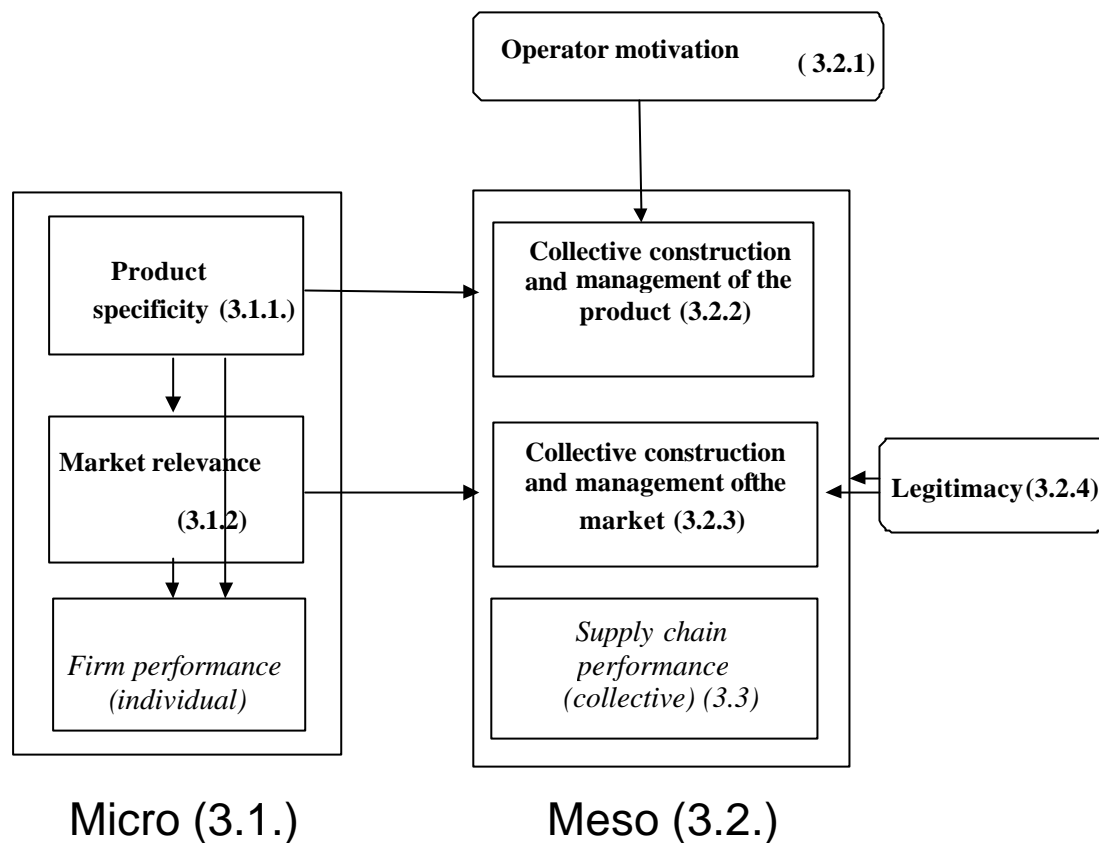


Figure 2: Product, market and viability/profitability at micro- and meso-economic levels

### 3. Methodology

In an attempt to identify the essential factors behind successful PDO/PGI products, we adopt two different standpoints. First we compare the scores calculated for each criterion and for each product (*calculated success*). Secondly we ascertain success from four main determinants of market performance (*observed success*). We assume that if calculated success and observed success are correlated, then the criteria for success have been correctly identified. Theoretical considerations and case study findings lead us to give precedence to two sets of factors: (1) factors relating to supply and demand, and (2) factors relating to organisation, which explain the performances of the PDO-PGI supply chains.

#### 3.1. Factors relating to supply and demand

##### 3.1.1. Product specificity

We begin with the assumption that success is dependent on the product being highly specific.<sup>4</sup> Specificity involves the product meeting a number of conditions (Sylvander & Lassaut, 1994):

- It must have **measurable characteristics** which are genuinely different from those of substitute products. These fall into two categories:
  - **Discernible and measurable characteristics** which the consumer can identify when buying or consuming the finished product.

<sup>4</sup> This is consistent with the "Differentiation Principle", the main principle in marketing and management theory (e.g. Porter, 1985; Kotler, 1997).

- **Indiscernible characteristics:** a distinction may be drawn here between intrinsic characteristics (that it is often mandatory to state on the packaging, e.g. nutritional composition) and production characteristics (that are cited by the seller but that it is not mandatory to state on the product).
- The product must be **perceived as different** by the consumer.
- The **technology** that goes into making it must be different from that used for substitute products. In the case of PDO/PGI products, the technologies have to reflect the connection between the final characteristics and the **terroir**, underlining what we have termed product **typicity**.<sup>5</sup> In competitive markets, the degree of specificity conferred by PDO/PGI listing may not be enough to differentiate between products: the **intrinsic (or substantial) quality** of the products, the uniformity and consistency of their distinctive characteristics must be taken into consideration too. We make provision for this by specifying whether any quality assessment or test is made prior to sale (based on a standard or a special grading system).
- The **designation** used for the product must be significantly different from the name of the standard product. In the cases studied here, some names like Comté or Cantal are household names and refer exclusively to the product. Others like Scotch Lamb or Agneau du Quercy are merely the combination of a geographic and a generic element. In the case of PDO products, the region's name generally has positive connotations for consumers.

The degree of specificity as evaluated for each of the products under study is shown in Table 8 (column 311).

### 3.1.2. *Relevance: the specific product must find demand in a relevant market*

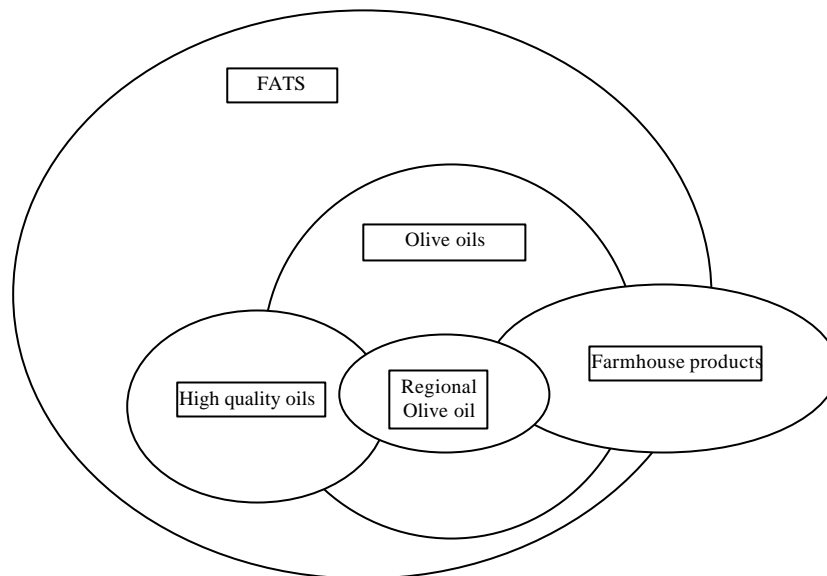
The success of a specific product is often dependent on management correctly defining the market for it. This definition takes us beyond the "naturalist" concept of the product market (as defined by the nature of the actual product and its most common use).<sup>6</sup> The relevant market for Parmigiano Reggiano, for example, is not so much the **cheese** market as that of **meal ingredients**. In the same way, the relevant market for Huile d'olive de Nyons is less the **olive oil** market in general than the market for **farm products bought by holidaymakers**. Table 8 indicates the **reference market** for each product studied.

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<sup>5</sup> This concept is essential to PDO under the regulation. The technology must produce discernible effects on the product's measurable characteristics and also convey a message about the product's image. Enterprises must then generally compromise on economic effectiveness; they combine technical factors engendering marked differences in the product's final characteristics with factors promoting consumer confidence. The resulting technology may be termed "hybrid technology". It is a combination of old know-how and modern thought or innovation (Marty, 1997; de Sainte Marie et Casabianca, 1997; Sylvander, 1998). What is important is that new technology for improving the PDO or PGI production process should be adopted with regard to the crucial points of typicity. If all production conditions affecting product typicity are maintained, then the product's main differentiation potential is preserved. In any case, one major factor in success is the capacity of PDO / PGI supply chains to achieve such hybridisation around traditional values.

<sup>6</sup> In France, "Label Rouge" chicken only took off when it finally found its relevant market. In the first decade (1965-75), Label Rouge Chicken was sold in the traditional form of cut chicken through specialist channels (poultry and retail butchers). The product only got off the ground when it was decided to sell it in supermarkets and very large shopping centres to urban, middle-class customers. In its oven-ready form, it has extended its market; it is positioned not only in the currently thriving quality poultry segment, but is also service food, a larger market with even greater growth.





**Figure 3: The concept of relevant market**

Market relevance can be evaluated from three factors (see Table 8, column 312):

- **Customer appeal** created by the product's specific characteristics. This is dependent on the level of consumer expectations and on how well the product meets those expectations. Long-standing ties between the product and the region instil habits and traditions reinforcing this appeal.
- Significant **willingness to pay**. This has to be evaluated through consumer surveys (Van Ittersum, 1999).
- A **distribution system** geared to the targeted consumers. Choosing the right distribution channel is one of the main factors in market relevance.

### 3.2. Factors relating to the internal organisation

We assume, thirdly, that the success of PDO-supply chains and products is also closely related to the ability of the set of firms to manage the PDO-product collectively. In order to confirm this assumption we consider:

- *the set of operators and their motivations;*
- *coordination & cooperation among firms with regard to product management;*
- *coordination & cooperation among firms with regard to market management;*
- *the legitimacy and effectiveness of local, regional and national institutional support.*

#### 3.2.1. Operator motivation: the necessity for differentiation and protection in a precise area

The balance among the different interest groups within the supply chain is an important factor in facilitating the decision-making process. In our case studies, we identify three kinds of firm (see Table 4):

- the **initiator**, who was the first to spot the opening, to obtain legal protection, and/or to see the need for better differentiation of the product on a collective basis;
- the **interprofessional body**, that is the applicant group (in the sense of Regulation 2081/92) seeking legal protection for the product under the PDO / PGI schemes;
- the **channel captain**, the economic leader in the supply chain.

The role of an **initiator**<sup>7</sup> is generally to implement collective management of the product. In the early stages, the initiator's role is to secure the commitment of the individual operators throughout the production chain and to induce them to adopt a common code of practice and external controls (Sylvander, 1998). Subsequently, the initiator has to drive the decision process in a collective manner, so that every firm is informed of changes allowing it to comply with the conditions laid down in the code of practice. The application process itself may engender difficulties.<sup>8</sup> A careful balance must be struck among the three "decisions makers" in the supply chain: the initiator, the interprofessional body (if any), and the channel captain. The existence of the initiator is the criterion we employ to evaluate "calculated success" (see Table 8, column 321).

To perform well, the set of firms and each operator have to be very committed. We rank **motivation** as an important criterion for achieving success (see Table 8).

We assume also that the pressure from **competitors** is an important factor in forging cohesion and therefore success. We consider competitive pressure at three levels: the **risk of or trend towards standardisation**, the **pressure from substitute goods**, and **unauthorised use of the name**<sup>9</sup> (see Table 8, column 321).

### 3.2.2. Coordination and cooperation among firms with regard to product management

In assessing how effective coordination and cooperation is with regard to product management, we consider two main factors:

- **The capacity to bring out the product's differentiation potential.** The product itself may be attractive to consumers. This might be because the product corresponds to a particular taste or use, or because it is particularly convenient. It may be the product itself that appeals to consumers, with no need for collective management of the product or of quality. We ascertain whether the potential appeal of the product is a result of the collective management process by examining product specificity alongside market relevance (see Table 5).
- **The ease with which each operator can appropriate the collective process.** One of the important factors during the approval procedure is the ability of the firms to adapt their own strategy to the collective one. At the beginning of the process they must negotiate an initial draft of the code of practice. Thereafter, during the implementation phase, they must meet all the constraints imposed by the code of practice (some firms have to invest to adapt their production process to the code of practice), submit to testing and inspection, and pay the fees for product certification (Sylvander, 1995). Even if the product is not highly specific (as defined by the code of practice), good quality management (such as a grading system) may nonetheless guarantee success on the market. We consider that the grading system is also a result of a collective process, and take it into account when appraising coordination and cooperation

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<sup>7</sup> The initiator may be a producer group, a manufacturer or a distributor. In some cases it is an interprofessional body, generally working with a producer's union and a processor's group.

<sup>8</sup> A degree of cohesion is needed to reach a consensus on product and market strategy. Many difficulties arise for instance when the initiator defends interests other than those of the channel captain's. Small-scale dairies may be the initiators whereas channel captains are big industrial dairies representing more than 70% of total production. In such cases, conflicting interests make it very difficult to establish the code of practice. Tension also arises when the channel captain is not dominant within the interprofessional body, or when the initiator disagrees with decisions of the interprofessional body.

<sup>9</sup> The need for protection and differentiation generally derives from a direct threat (in the case of a substitute of comparable quality to the product) or from an indirect threat, when there is a strong trend towards standardisation of the reference product itself (e.g. Cheddar Cheese). In some cases, the specific product itself is threatened by standardisation because of its success, either for production reasons (automation, more consistent quality) or for market reasons, when the products have such an impact on the market as to be perceived by consumers as quasi-generic. In such cases, operators react by seeking new ways to reinforce product specificity (Comté, Peza Olive Oil).

within supply chains. Some supply chains are also able to make up in part for their low degree of specificity through good **management of the intrinsic quality of the product**<sup>10</sup> (see Table 8, column 322).

### 3.2.3. Coordination and cooperation among firms with regard to marketing management

Some degree of cooperation between firms is generally required to fulfil the conditions cited above. This leads to the emergence of institutions that carry out certain important functions previously performed by individual firms: defining codes of practice, testing and inspection, grading, promotion, market management, research & development. Several functions traditionally carried out by individual firms may be pooled if the operators think that it is their interest to do so (Richardson, 1972).<sup>11</sup> Essential functions subject to cooperation include:

- quality management of raw material procurement: suitability of raw material to the desired end product;
- product definition (code of practice) in accordance with the market and differentiation objectives;
- enforcement of the code of practice and grading of the final product in accordance with the market;
- payment for the raw material according to the final quality of the product;
- promotion and management of the collective brand and/or mark;
- management of output and growth: system of supply control;
- research, development and training.

These functions must be carefully calculated and finalised; cooperation does not always benefit everyone in the system.

We attempt to ascertain whether collective market management proves to be profitable to the firms in the supply chain, by assessing whether management is flexible, neutral or inflexible, according to Table 6.

At the general level of the set of firms, the main question is one of the degree of consistency: a promotional policy, for example, will not work and may even be detrimental if the product is not differentiated, or is poorly-defined or inadequately controlled, etc. Quality grading is effective only if the raw material and payment for it are directly dependent on compliance with quality criteria (set in order to obtain the best possible end product).

A second issue is the relationship between collective management and the **leeway** left to each firm. There must be sufficient market segmentation and competition between firms for the system to evolve. Each firm is supposed to have scope to vary product quality to suit its own strategy (Marty, 1998). This leeway allows firms to manage competition in segmented markets (Lassaut, 1997; Lassaut et al.; 1997). Scores for the 21 products are listed in Table 8.

### 3.2.4. *The legitimacy and effectiveness of institutional support*

In those countries where provisions similar to Regulation 2081/92 were already operative (France, Italy, Spain), national and regional authorities have often given staunch support to designation reservation initiatives. This support may take several forms: financial assistance with the procedure, advisory boards, but also financial support for individual firms or applicant groups (interprofessional bodies). This financial help may serve other objectives such as promoting employment in less-favoured areas or revitalising economically less-diversified areas. Countries to which the concept of geographical product protection is new may have to help producers' applications for registration by providing them with extra support and advice.

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<sup>10</sup> This is true of Cantal, Noord Hollandse Edammer, Boeren-Leidse met Sleutels, West Country Farmhouse Cheddar, Ternasco Lamb, Scotch Lamb and Peza Olive Oil. By contrast, specific products may be weakened by poor quality management.

<sup>11</sup> A given set of firms is then considered as an "operator system" if it achieves sufficient cohesion to operate like a single firm. We suggest the concept of fundamental competence should then be transferred from the firm to the "operator system".

### 3.3. Evaluating performance

Profitability could not be evaluated directly on a large scale. We have taken "success" to mean the conjunction of at least three of the following criteria:

- Significant turnover and economic importance.
- High growth rate (greater than that of the reference market).
- Notoriety of specific product name and/or mark or collective brand name.
- Positive price difference compared with the closest substitute product.

As far as social performances are concerned, we refer to the potential of PDO/PGI product to stimulate rural employment.

## 4. Results

### 4.1. Economic success

Profitability is a necessary but not a sufficient condition for PDO-PGI supply chains to survive and thrive. Profitability is an expectation of the initiators and a more immediate requirement of their partners. It is dependent on the balance between the need for cooperation and the spur of competition: appropriation by the different firms of the "PDO-PGI supply chain" concept, coordination among these firms on issues such as product definition, testing and inspection, non-Malthusian supply control, collective promotion of the product. However efficient they may be, the institutions must allow scope for the adaptations necessary to continued existence in a changing and competitive environment.

#### 4.1.2. "Calculated" success

Four factors derive from the results presented previously:

- Urgency, reflecting the motivation of the firms themselves to build a system of product differentiation and designation reservation. (See 3.2.1.)
- Specificity, reflecting the objective difference between the product and its substitutes. (See 3.1.1.)
- Relevance, reflecting market attractiveness, intensity of consumer demand for the product, and the choice of distribution channel. (See 3.1.2.)
- Coordination & cooperation, reflecting the ability of firms to achieve collective and efficient product management. (See 3.2.2. & 3.2.3.)

These four scores are then multiplied by each other and divided by four.

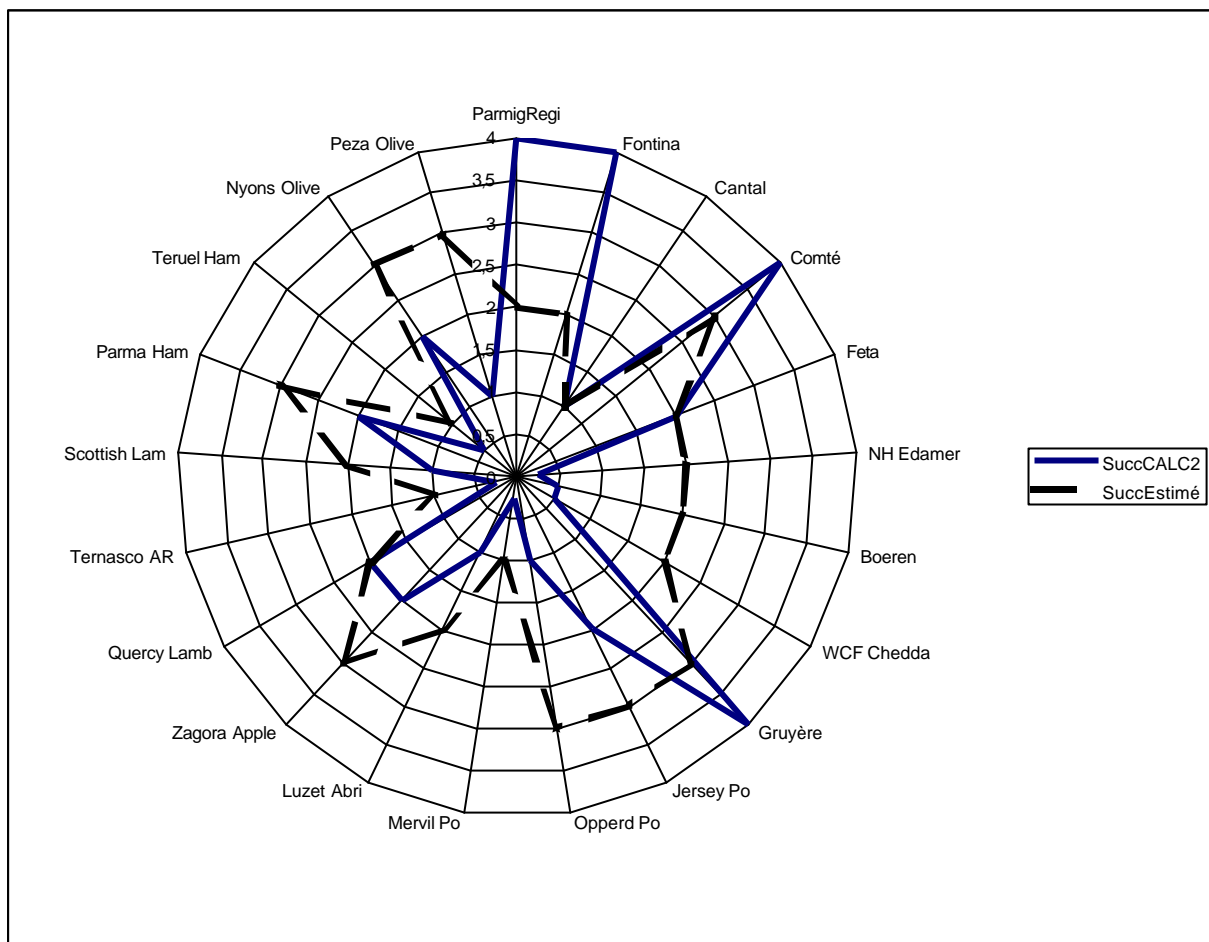
#### 4.1.3. "Observed" success

This is derived from performance evaluation as described above (cf. 3.3.).

4.1.4 Result of the double viewpoint

**Table 2: Performances of the 21 products under study**

Calculated success →	0.25	0.5	1	2	4
Observed success					
1	<sup>2</sup> Merville Potatoes, Ternasco of Aragon	Teruel Ham	Cantal Scotch Lamb		
2	Noord Hollandse Edammer	West Country Farmhouse Cheddar Boeren-Leidse met Sleutels	Luizet Apricot	Feta Quercy Lamb	Fontina Parmigiano Reggiano
3			Peza Olive Oil Opperdoezer Ronde	Parma Ham Jersey Royal Potatoes Zagora Apple Nyons Olive Oil	Comté Gruyère



**Figure 4: Evaluating of the economic success of PDO-PGI supply chains**

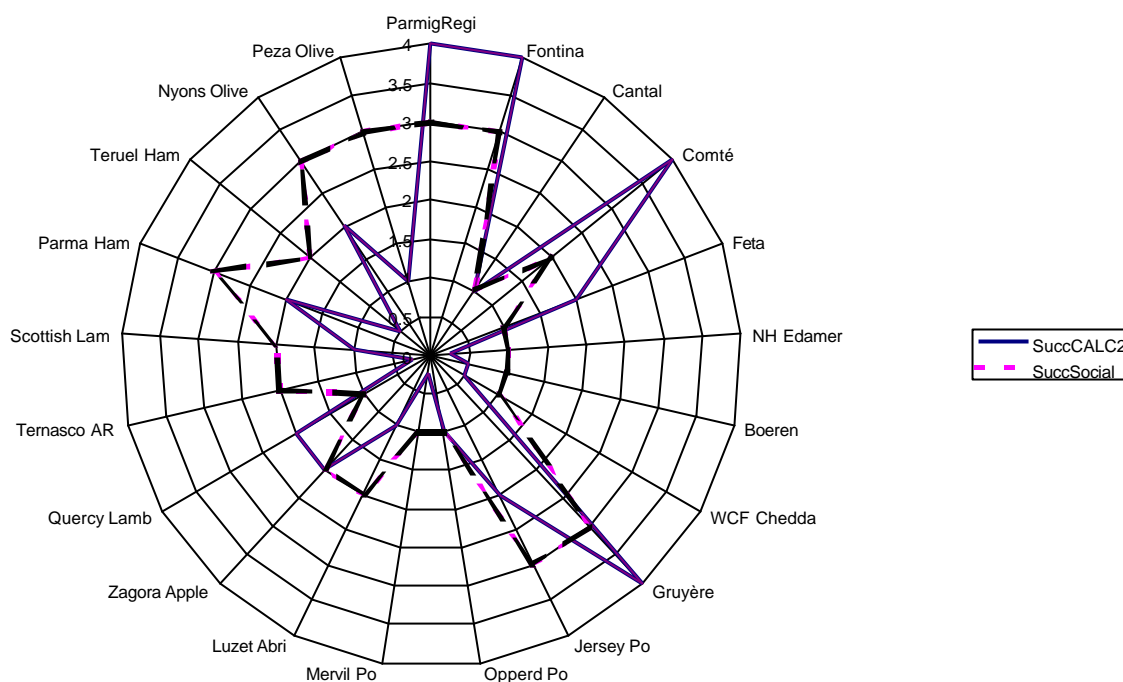
This table prompts the following remarks: there is a close correlation between calculated and observed success. The factors identified therefore really do account for the success of the supply chains studied here.

Nevertheless, observed success is greater than calculated success for all but three products. This may be because **producer price** is not a perfect indicator of supply chain efficiency. It may depend on the success factors too, which could influence firms' profits or sale prices (that could not be compared across all the supply chains for want of comparable data).

The issue here is not one of the absolute success of supply chains, but rather of their success relative to the EU's willingness to support them by means of reserved designations in order to promote the interests of consumers and of less-favoured areas (see Regulation 2081/92). Noord Hollandse Edammer certainly presents good performances, but they are not very different from those of its very close substitute Hollandse Edammer (the same goes for Cantal, Scotch lamb, Pommes de terre de Merville, or Ternasco de Aragon). This result holds whether the product's value is increased without being specific (Noord Hollandse Edammer), or whether its value is not increased greatly (Pommes de terre de Merville).

#### 4.2. Social success

As far as *social success* is concerned, PDO-PGI registration procedures are often designed to maintain or promote local development especially in those countries that first introduced such provisions (France, Italy and Spain). From this point of view, the supply chains studied have different impacts on regional economies. We have attributed scores from 1 to 3 for low, moderate or high impact (see Table 7).



**Figure 5: Evaluating the products' social success**

These results calls for the following remarks: except for the four highest-scoring products (Parmigiano Reggiano, Fontina, Comté, Gruyère) social impact is more important than economic impact in the narrow sense. The social role of a supply chain is important in spite of modest performances and is limited neither to the criteria by which success has been defined here, nor to producer prices. This fully vindicates European policy on geographical designations. This phenomenon is perceptible in all countries, even those only now beginning to implement the law. This may signify that the phenomenon could spread in a balanced fashion throughout Europe.

### 4.3 Comments on the impacts of PDO Regulation

#### 4.3.1 The objectives and expected effects of Regulation 2081/92

We propose to draw a distinction between the objectives of PDO-PGI legislation and its expected effects as stated in the Regulation from a careful reading of regulation 2081/92. The preamble to Regulation makes the following distinctions reflecting the divergences between Member States during negotiations. Application of the Regulation can be evaluated relative to these factors.

#### *Objectives :*

- \* An uniform legal framework for protection of geographical names for all the countries of the Union,
- \* Clear information for consumers about the origin of the product,
- \* Diversification of agricultural production in order to strike a better market balance between supply and demand (provide a legal framework for differentiation by origin).

#### *Expected effects*

- \* Products presenting certain characteristics may become an important asset for the rural world, in particular in less-favoured areas by improving farmers' incomes and maintaining the rural population in these areas,
- \* Added value for producers in exchange for a genuine effort to improve quality.

#### 4.3.2. National legal and institutional bases

Most PDO/PGI products registered so far with the European Union have been handled under the "quick procedure" for designations which were already protected within a national system or that had become accepted usage where such system were non-existent. The products studied here therefore bear the clear marks of the national legislation and practices of their countries of origin. This results in a wide diversity of cases.

The conditions under which the Regulation is applied vary greatly from one country to another in terms of means, institutions and procedures. The research project concentrated on seven countries (France, Italy, Spain, UK, Netherlands, Greece and Switzerland). Far greater resources were committed in France and Italy than in the other countries studied.

Designations of origin have enjoyed protection by law in France and Italy for more than 60 years now.<sup>12</sup> In France legal protection (court orders upon petition from the injured party) paved the way in the 1930s for regulation on the protection of designations of origin for cheese and then agricultural produce and foodstuffs in the broadest sense.<sup>13</sup> <sup>14</sup>Designations of origin are controlled in France by a public body, the INAO, with an annual budget of FRF92 million in 1997 and more than 200 employees, some 150 of whom man 26 regional branches.

In Italy a 1954 statute lays down the basic rules for attributing and protecting designations of origin or type for cheese.<sup>15</sup> The controlled designation of origin system for Italian cheeses is based on that statute to this day. The statute also provides for the formation of a national committee for the defence of designations of origin and type for cheeses, which is the highest national body advising and supporting government with regard to the diverse interest groups in the sector. The statute empowers consortiums to carry out mandatory quality controls of cheese. These voluntary defence consortiums, made up of producer groupings, operate on a self-regulatory basis while performing a public function (product supervision and investigation of fraud). The Ministry of Agriculture confers control of the PDO on the consortium. In Italy central government and the regional authorities are very much committed to the cause: for example, the Emilia-Romagna regional council finances laboratories and a data collection network on the biochemical quality of milk used in manufacturing Parmigiano Reggiano (Antonello, De Roest and Corradini, 1997). The autonomous region of Val d'Aosta finances, among other things, the building of new cowsheds and the network of access tracks to the Alpine pastures (Antonello, De Roest and Corradini, 1997).

#### 4.3.3. Registration procedures

The regulation is implemented at several levels in each Member State. Regulations are directly applicable and do not require any national legal basis for their implementation. However, in keeping with the EU principle of subsidiarity, Member States retain extensive control. Member States can intervene in many areas with regard to PDO/PGI:

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<sup>12</sup> And to a lesser extent Greece, Spain, Portugal, Belgium and Luxembourg.

<sup>13</sup> cf. protection of Roquefort (1922), Comté (1952) and Cantal (1956).

<sup>14</sup> 1935 decree creating the PDO and a public body to administer the sector (INAO). Statute of 28th November 1955 defining the conditions for recognition of denominations of origin for cheeses.

<sup>15</sup> Statute no 125 of 10th April 1954.



- Providing information to the profession, setting up regional or national relays / specialised institutions to circulate information.
- Verifying and approving dossiers for forwarding to Brussels.
- Supervision of the product inspection and certification system.
- Protection of names through diplomatic and judicial channels.

It is worth noting that Member States are not all involved in these activities to the same degree. Southern countries (France, Italy, Spain, Portugal and Greece) attribute more importance and more resources to supporting certified origin products than northern ones which have no specific aid packages or institutions but are simple administrative go-betweens between the professions concerned and the European Commission.

Accordingly the applications made to the Commission under the simplified procedure have been very diverse.<sup>16</sup> There is no escaping the fact that the actual registrations are for products with very varied characteristics. The standard procedure may allow the Regulation to take on a slightly greater scope although registrations under the simplified procedure in some sense form legal precedents which considerably restrict the room for manoeuvre of the Commission and its scientific sub-committee. For this reason we think that national procedures will continue to be predominant in the selection of products for registration.

#### 4.3.4 .Evaluating the scope of the EEC Regulation

This scope is evaluated relative to the objectives and expected effects referred to above.

a. The importance of protecting the name (risk of improper use) depends on the appeal of the name for widespread use outside the traditional area of origin. Products like Parmigiano Reggiano, Feta or Gruyère face a very high risk of improper use. As they are already well-established household names, even outside their production region and internationally, these names are potential prey for unscrupulous enterprises.<sup>17</sup> For these products, the Regulation is a real necessity.

For a second group of products, their notoriety remains regional or national (Fontina, Cantal, Comté, Cheddar, Scotch Lamb, Prosciutto di Parma, Peza Olive Oil). The danger for these products is one of infringement in their own production area (alteration of the traditional recipes to cut costs or improper use of the name for products made in neighbouring areas). The Regulation is useful for this second group, even if the dangers and the stakes are not as great as for the first group.

A third and final group of products appears to be much less or not at all in danger of seeing its name improperly used. These are often composite names (a generic term with a geographical term) such as Jersey Potatoes, Abricots Luizet du Valais, Zagora Mèla, Jamon de Teruel, Huile d'olive de Nyons). For these products protection of the name is not an issue.

b. Consumer protection (danger of confusion with close substitutes) is of particular concern where many very close substitutes can be found on the same markets. Precise identification of the products allows consumers to be sure about the nature and exact provenance of the product. The Regulation is much needed for products with names composed of a generic and geographical component. The products can be readily differentiated by consumers who might otherwise be indifferent to or unaware of the product's exact origin.

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<sup>16</sup> Commission Regulation (EEC) 2081/92 provides as a first stage for a "simplified" denomination registration procedure for denominations given national protection before 26th January 1994, at which date Member States could notify the Denominations Commission that the denominations (1) were already covered by a national system, or (2) that their usage was already established if such a system was not available. In all 459 products (306 PDO and 135 PGI) were registered under the simplified procedure. The simplified procedure means that the Commission has ruled on the denominations without any formal procedure for objection.

<sup>17</sup> Much as trademarks suffer from infringement.

c. Diversification consists in the supply of varied products from small independent producers as opposed to mass production of standardised products by big industry. Products only contribute to this objective if a "cottage industry" type of production is actually operative. Regulation 2981/92 does not expressly set out to maintain small businesses. Only three of the products studied do not come under this heading. Cantal is made to very perfunctory specifications which has allowed intense concentration of cheese makers. This has led to very low milk prices and therefore to the decline of farms in difficult areas. Noord-Hollandse Edammer is made from milk produced by intensive dairying techniques and in a single industrial cheese plant. Boeren-Leidse met Sleutels involves a very small number of enterprises whose production alternatives are almost equivalent in value.

d. It is more difficult to assess to what extent designations of origin have achieved the expected effects because of the complexity of the factors involved. For example, farm income is also boosted by targeted agricultural policy measures (aid for farms in mountain areas), and countryside protection may also be supported by specific measures (regional parks, listed buildings, zoning schemes, etc.). The most obvious conclusion is that the most artisanal products are those that contribute most to the expected effects. This is tied in with the greater intensity of labour in small-scale industry.

Several products are located in less-favoured areas and contribute, through their consumer price, to increasing the return for farmers' (higher milk prices) and small cheesemakers. These are products (Parmigiano, Comté, Gruyère, Fontina, Feta, Agneau du Quercy, Huile d'olive de Nyons) that allow for more labour-intensive economic efficiency and so a higher level of employment per unit output. The remuneration from the commercial enhancement of value makes the holdings viable and therefore protects heritage and landscape that are threatened by open competition. The remaining products in the study have contrasting positions making it difficult to draw any general conclusions. Cantal suffers from low market prices for the reasons referred to above.

It can be concluded overall that the European Regulation is a necessity for all the products studied. The objectives of the Regulation have been achieved. The Regulation fills the earlier legal loophole with regard to preventing the risk of deterioration of traditional regional foodstuff names and of confusion for consumers about the provenance of products.

However, it is more difficult to evaluate the Regulation's impact on more remote objectives referred to in the official texts as potential consequences. The only observation that can be drawn from the examples studied is that, for some products from less-favoured regions, their success on the market allows small-scale labour-intensive production to pay its way. Holdings in these areas would be less viable without this remuneration. It would require far greater transfers in the form of direct payments to maintain the same numbers because of the natural handicaps that greatly reduce their competitive potential in markets where there is increasingly intense international competition.

#### *4.3.5. Problems in implementing Regulation 2081/92*

### **Examination and application**

Acceptability and formulation of applications varies widely by country and product. Applicant groups are of different types and not uniformly representative, which may lead to distortions of competition and unequal processing of dossiers. To implement adjustment measures on application examinations, there is no complete guide to:

- the conditions for appointing experts and the qualifications required in this field;
- in-service training to be set up for experts;
- stages which should comply with a procedure of public inquiry.

In terms of expertise, some points of registration applications are reviewed in some countries by competent experts who can properly judge the geographical coherence of the production area, justify the criteria selected in the specification and assess the connection with the natural and human *terroir*. The ability to conduct an expert appraisal is important for the profession and for equity in processing applications. In particular the relation of cause and effect between regional natural and human factors and quality is difficult to evaluate by codified methods.

In terms of public inquiries, a procedure is systematically provided nationally in France, for PGI, which is not the case elsewhere, and may be a source of concern in terms of independence and impartiality.

### **PDO-PGI product certification, controls and sanctions**

Certification lends credibility to the system notably in the eyes of consumers but also intermediate purchasers in mass distribution or foreign operators. Checks that the products comply with their specifications, traceability and in particular the monitoring of raw materials in the case of PDO are important points for the future commercial success of the products. Evaluation of the final quality of the product, in particular its appearance and taste, is also one of the mainstays of consumer trust.

In the context of certification, the specific PDO/PGI are not very detailed and vary by country and product. Requirements are not equivalent:

- at the three levels of certification (inspection of enterprises and processes, control of traceability and final evaluation of product);
- in terms of costs, thereby inducing distortion in competition;
- in terms of control plans laid down by quality groups which share no common basis.

Moreover, the Certification Bodies have no general accreditation at present.

As the defence of protected designations is still a matter for national authorities, there is no common strategy able to ensure automatic protection throughout the European Union. In view of the current situation with regard to international conventions governing the usage of geographical names for agricultural products, an active international defence of protected designations is still not operational.

### **Consumer information, PDO/PGI promotion**

The European Commission has considered it essential to explain the meaning of the PDO/PGI distinctive labels to the general public in the community languages. Article 5 of Commission Regulation (EEC) 2037/93 provided that the Commission would take the necessary steps for a period of five years. The European Union has already spent 8.8 million ECUs on an extensive communication campaign to heighten producer, consumer and distributor awareness of PDO/PGI. The result of the campaign will be known this year.

A proposal of the Council Regulation on information and promotion for agricultural produce in non EU countries provides for support for information campaigns in those countries and in particular for the PDO/PGI system.

## **5. Conclusion**

A number of results are worth emphasising by way of conclusion to this analysis of PDO-PGI supply chains.

1. The first important result is that the spontaneously identified product categories are not discriminating features:

- The *nature of the product* does not predominate, even if it is of great importance: we can find products in all the categories listed: only four cheeses out of nine are considered highly successful, etc. We observe that raw products may command high prices in spite of seasonal and logistic constraints while a number of processed products command only low prices.

- Likewise, the *country of origin* is of some (but not overwhelming) importance, because tradition is dependent on country: nonetheless Jersey Royal potatoes, Feta, Zagora apples and Opperdoezer Ronde rank among the successful products.
- The *number of firms in the supply chain* might be thought a constraint compelling them to coordinate their actions: but this is not the case. Some extensive supply chains are well coordinated (Parma Ham, Parmigiano Reggiano), others less so (Cantal, Luizet Apricot). Similarly some short supply chains are well coordinated (Nyons Olive Oil), other not (Merville potatoes).

2. The second conclusion is that we are unable to identify any single factor that can guarantee a product will be successful. It seems a conjunction of factors is required.

- Product specificity is very important: the Regulation forges an association between quality, characteristics and geographical origin. The whole tenor of the Regulation is based on such specificity. However, several specific products have not met with success. Abricot Luizet du Valais is not sufficiently well-perceived by distributors or consumers for it to develop; the very typical Ternasco de Aragon faces stiff competition from typical substitutes; hand-made cheddar is not enough to convince UK consumers to buy farm products; and the list continues. Other less specific products have performed well because they are commercially and technically well managed (e.g. Jersey Royal potatoes).
- Market relevance is certainly an important factor, because it determines consumer purchasing behaviour. However, as we have seen, several products positioned in relevant markets fail to thrive if they are not specific enough. This is generally because of competition from more successful substitutes as with Ternasco de Aragon lamb and Teruel Ham. The Jersey Royal and the Opperdoezer Ronde achieve different results in the same relevant market: a better co-ordinated market organisation between intermediaries and retailers makes the Jersey Royal more successful.
- *Coordination* is, of course, a particularly important factor, because it is both a condition for and a result of the understanding between firms. The origin of such coordination is nevertheless still something of a mystery that could only be unravelled by complex historical research. It is not thought of as an exogenous model for the firms, but is seen instead as a process under construction. The existence of a channel captain facilitates coordination: this is the case when a single or very few processors dominate the supply chain (Zagora apples, Peza olive oil or Nyons olive oil). This situation often arises when old-established but inefficient firms have gone to the wall. Coordination is closely connected with the constraints on distributors, particularly in the Anglo-Saxon market as far as standard products are concerned. Close but informal coordination has been observed with Quercy Lamb and Scotch Lamb, with few downline firms. In some cases an obvious lack of coordination is observed despite there being only a few firms in the supply chain (Cantal).
- *Government funding* cannot of course be considered an important factor: it can do more harm than good by putting the firms in a position of dependence (as with Fontina or of the supply chains, which are under administrative control in Switzerland). It may be beneficial for the launch and the early stages of a project, but only under certain circumstances. Government backing is most useful when it contributes to a supportive framework but stops short of doing what the firms are there to do (research assistance for Parma Ham, legal support for Nyons olive oil).

3. The third main result is that success is based on the capacity of several firms to construct their specific supply chain by:

- collectively setting **relevant objectives** (as far as territorial and, if necessary, sector related governance is concerned) on the basis of their individual competencies (technology, know-how, strategic management, innovation, etc.).
- **firm and flexible control** of the functions identified in this paper; firm control to ensure compliance with the essential rules, and flexible control to ensure that each operator can be involved in the project while developing its own strategy.

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## Appendices

**Table 2 : Evaluation of Specificity of the 21 products studied**

Products	Specificity					Score	Comments
	C	Q	F	D			
Parmiggiano Reggiano	+		+			2	Product in everyday use; technologically specific but not often perceived as such by consumers.
Fontina	+	+	+			2	Very specific and perceived as such by the Italian consumers (price premium product).
Cantal				+		1	Product with a widely-recognised denomination (very positive image of the region) but with very unequal characteristics and a low level of typicity. Not perceived by the consumers as a price premium product.
Comté	+	+	+	+		2	Highly specific with an current tendency to standardisation.
Feta	+		+	+		2	Daily consumption in Greece. Problem with the generic aspect of the denomination (many imitations throughout Europe).
Noord Hollandse Edammer		+				1	Very little difference with standard Edammer cheese but Polder cheese image for Dutch consumers
Boeren-Leidse met Sleutels	+	+		+		2	Perceived as different by consumers: farm identity. Other components of specificity are weak, because the characteristics and the technology are not different, and the Denomination is not known outside the area.
West Country Farmhouse Cheddar			+			2	"Handmade" and "farmhouse-made" are the main specific features. The product is little known as such by the consumers. The denomination is partly generic (Cheddar cheese).
Gruyère	+	+	+			2	Very specific : characteristics are variable due to different terroirs. The technology is non industrial. The denomination is very specific in Switzerland. Consumers perceived the product as a price premium ones.
Jersey Royal	+	+	+	+		2	Very specific.
Opperdoezer Ronde	+	+	+	+		2	Perceived as specific with quality standards
Pomme de terre de Merville						1	Standard product but not very regular. The denomination is the only factor of specificity seen by consumers.
Abricots Luizet du Valais	+	+	+			2	Weak appearance, but quality standards and well perceived by consumers.
Zagora Mèla		+	+	+		2	Standards, (altitude); good quality, well perceived.
Agneau du Quercy			+	+		2	Perceived as different; quality standards.
Ternasco de Aragon		+	+	(+)		2	Not very different from its substitutes.
Scotch Lamb						1	Not very different from its substitutes but well perceived by Scots.
Prosciutto di Parma				+		1	Not specific.
Jamon de Teruel	+	+	+	+		2	Specific.
Huile d'olive de Nyons	+	+	+			2	Specific variety, well-known area
Peza Olive Oil		+		+		1	Not very specific: common variety.



**Table 3 : Initiator**

<b>Types of Initiators</b>	<b>Products</b>
Regional/ National Administrative Bodies	Feta, <b>Jersey Royals</b> , Opperdoezer Ronde, Pomme de terre de Merville, Scotch Lamb, Abricot Luizet du Valais
National processors	Cantal, <b>Noord Hollandse Edammer</b>
Local farmers at request of regional / national administrative Bodies	Boeren-Leidse met Sleutels, West Country Farmhouse Cheddar
Local processors	<b>Agneau du Quercy</b> , Prosciutto di Parma, Huile d'olive de Nyons
Local processors at request of regional / national administrative Bodies	<b>Zagora Mèla, Peza Olive Oil</b> , Jamon de Teruel
Local farmers with local processors	Parmiggiano Reggiano, <b>Fontina, Comté</b> , Gruyère

***Bold type** : existence of a channel captain*

**Table 4 : Consistency between product specificity and market's relevance**

Specificity Market relevance	<b>Low</b>	<b>High</b>
<b>Low</b>	Cantal Noord Hollandse Edam Cheese Pomme de Terre de Merville Peza Olive Olive oil  <b>Score 1</b>	Feta Boeren-Leidse Met Sleutels West Country FH Cheddar Ternasco de Aragon Abricot Luizet du Valais  <b>Score 1</b>
<b>High</b>	Scotch Lamb Prosciutto di Parma  <b>Score 1</b>	Parmigiano Reggiano, <b>Fontina, Comté</b> , Gruyère, Opperdoezer Ronde, Jersey Royal Potatoes, Zagora Mèla, Jamon di Terruel, Agneau du Quercy, Huile d'Olive de Nyons  <b>Score 2</b>

**Table 5 : Co-ordination & co-operation on market management**

	Inflexible management	Neutral management	Efficient management
Score	1	2	3
Qualitative management of supply (adaptation of raw material to the desired final product)	No management	Selection, classifying of raw material	Orientation of the upstream qualities
Definition of the product (code of practice) adapted to market demand	Inflexible, opportunist Closed	Low or moderate	Flexible : each operator can appropriate the definition for its own use
Control of the code of practice	Unequal, partial	Low or non-existent	Coercive
Grading of the final product	Incomplete or partial	Low or non-existent	Efficient with change of class
Payment of the raw material quality	Yes, but not relevant criterion	No	Yes, on the final product quality
Volumes and growth management	Yes, inflexible (quotas management) Or not very legitimate	No	Yes, flexible (change of class management, zone, etc.)

**Table 6: Social success of the 21 products studied**

Types of situation	Score	Products
Low impact (Score 1)	1	Feta, Nord Hollandse Edammer, Boeren Leidse met Sleutels, West Country Farmhouse Cheddar, Opperdoeze Ronde, Pomme de terre de Merville, Agneau du Quercy
Moderate impact (Score 2)	2	Comté, Cantal, Abricot Luizet du Valais, Zagora Mèla, Ternasco de Aragon, Scottish Lamb, Jamon de Teruel
High impact (Score 3)	3	Parmiggiano Reggiano, Fontina, Gruyère, Jersey Potatoes, Prosciutto di Parma, Huile d'Olive de Nyons, Peza Olive Oil

Table 7 : Assessment of indicators for every products

	3.1.1	3.1.2 Market relevance						3.2.1 Motivation of Firms					3.2.2 Co-ordination on product management				3.2.3
Products	Specificity	Reference market	Closest Substitutes	Attractiveness	Willingness to pay	Distribution	Relevance	Initiator exists	Operator motivation	Risk or Trend of standardisation	Pressure of Substitutes	Misuse of name	Collective quality manag.	Inter-profes. / Union	Firm without external assistance	Final Taste Eval.	Collective Marketing Manag.
Parmigiano Reggiano	2	Cooked pressed Cheese (Italy and Europe)	Grana Padano	+++	+++	++	High	++	++	+	+++	++	++	X		X	3
Fontina	2	Semi Hard Cheeses (Italy)	Fontal	+++	+++	++	High	++	++	+	+++	++	++	X		X	1
Cantal	1	Uncooked pressed cheese (France)	Laguiole Salers	+	+++	+++	Low	+	+	+++	+	++	++	X		X	2
Comté	2	Cooked pressed Cheese (France and Germany)	Gruyère Beaufort	++	+++	+++	High	++	++	++	+++	++	+++	X		X	3
Feta	2	Feta (Greece and Europe)	Imitations France and Denmark	++	++	+	Low	+	+	+++	++	++	+				2
Noord Hollandse Edammer	1	Cooked pressed Cheese (NL)	Edammer	++	+	++	Low	+	+	+	+	++	+++		X	X	2

Boeren-Leidse met Sleutels	2	Hard Cheese (NL)	Leidse Cheese	+++	++	++	Low	+	++	+	++	++	+++	X		X	2
West Country Farmhouse Cheddar	2	Cheddar (GB)	Cheddar	+	++	+	Low	++	++	+++	+++	++	++	X		?	2
Gruyère	2	Cooked pressed Cheese (Switzerland and Europe)	Etivaz, Comté, Beaufort, various imitations	+++	+++	+++	High	++	++	++	+++	++	+++	X		X	2
Jersey Royal	2	Early potatoes (GB)	Early potatoes	+++	+++	+++	High	+	+	+++	+++	+	+++		X		3
	3.1.1	<b>3.1.2 Relevance of the Market</b>						<b>3.2.1 Motivation of the Firms</b>					<b>3.2.2 Co-ordination regarding Product Management</b>			<b>3.2.3</b>	
<b>Products</b>	Specificity	Reference market	Closest Substitutes	Attractiveness	Willingness to pay	Distribution	Relevance	Initiator does exist	Actor's motivation	Risk or Trend of standardisation	Pressure of Substitutes	Misuse of the name	Quality Collective Manag.	Inter-profes. / Union	Firm without external assistance	Final Taste Eval.	<b>Collective Marketing Manag.</b>
Opperdoezer Ronde	2	Early potatoes (NL)	Early potatoes	+++	+++	+++	High	++	+	+	++	+++	+++		X		2
Pomme de terre de Merville	1	Potatoes (France)	Potatoes	+	+	+	Low	+	+	++	+	+	+		X		2

Abricots Luizet du Valais	2	Fruits (Switzerland)	Imported Apricots	+++	+	+	<b>Low</b>	+	+	+	++	+	+		X		1
Zagora Mèla	2	Apples (Greece, Europe and other Mediterranean countries)	Star King Apple	+++	+++	+++	<b>High</b>	++	++	++	+++	+	+++		X		2
Agneau du Quercy	2	Lamb (France)	Every lamb Medium age	+++	+++	+++	<b>High</b>	++	+	+	+++	++	++		X		2
Ternasco de Aragon	2	Lamb (Spain)	Every lamb - Young	+	+	++	<b>Low</b>	++	++	+	+++	++	+		X		2
Scotch Lamb	1	Lamb (GB and Europe)	Every lamb - Older age	+	++	+	<b>Low</b>	++	+	+++	++	+	+++		X		2
Prosciutto di Parma	1	Cured Ham (Italy and Europe)	San Daniele	+++	+	++	<b>Low</b>	++	+	+++	++	+	+++	X		X	3
Jamon de Teruel	2	Cured Ham (Spain)	High Quality Jamon de Serrano	+	+	+	<i>Low</i>	++	+	+	+++	+	+	X		?	2
Huile d'olive de Nyons	2	Olive Oil (France) Farm products (France)	Non industrial olive oil	+++	+++	+++	<b>High</b>	+	++	+	+	++	+++	X		?	3
Peza Olive Oil	1	Olive Oil (Greece)	Local PDO Greek Olive Oil.	++	+	++	<b>Low</b>	++	++	+	+++	+	+++	X		?	2

Relevance is low when at least 2 boxes have only two crosses. Otherwise relevance is high. To be classified as strong a criterion must total at least three crosses. Finally, need is very low if three boxes contain either one or two crosses. Otherwise need is high.

**Table 8 : Calculated success of the 21 supply chains**

Products	Urgency	Specificity	Relevance	Co-ordination	Total Score
Parmiggiano Reggiano	2	2	2	2	4
Fontina	2	2	2	2	4
Cantal	2	1	2	1	1
Comté	2	2	2	2	4
Feta	2	2	2	1	2
Noord Hollandse Edammer	1	1	1	1	0.25
Boeren-Leidse met Sleutels	1	1	2	1	0.5
West Country Farmhouse Cheddar	2	1	1	1	0.5
Gruyère	2	2	2	2	4
Jersey Royal Potatoes	1	2	2	2	2
Opperdoezer Ronde	1	2	2	1	1
Pomme de terre de Merville	1	1	1	1	0.25
Abricots Luizet du Valais	2	2	1	1	1
Zagora Mèla	2	2	2	1	2
Agneau du Quercy	1	2	2	2	2
Ternasco de Aragon	1	1	1	1	0.25
Scotch Lamb	1	1	2	2	1
Prosciutto di Parma	1	2	2	2	2
Jamon de Teruel	1	2	1	1	0.5
Huile d'olive de Nyons	1	2	2	2	2
Peza Olive Oil	2	1	2	1	1

**Table 9 : Observed success of the 21 supply chains**

Products	Turn Over & Volume	Growth rate	Reputation & Image	Price premium	Total Score
Parmiggiano Reggiano	2	1	2	1	2
Fontina	1	2	2	1	2
Cantal	2	1	1	1	1
Comté	2	2	2	2	3
Feta	2	2	1	1	2
Noord Hollandse Edammer	1	1	2	2	2
Boeren-Leidse met Sleutels	1	1	2	2	2
West Country Farmhouse Cheddar	2	1	1	2	2
Gruyère	2	2	2	2	3
Jersey Royal Potatoes	2	2	2	2	3
Opperdoezer Ronde	1	2	2	2	3
Pomme de terre de Merville	1	1	1	1	1
Abricots Luizet du Valais	2	1	2	1	2
Zagora Mèla	2	1	2	2	3
Agneau du Quercy	1	2	1	2	2
Ternasco de Aragon	2	1	1	1	1
Scotch Lamb	2	1	2	1	2
Prosciutto di Parma	2	2	2	2	3
Jamon de Teruel	1	2	1	1	1
Huile d'olive de Nyons	1	2	2	2	3
Peza Olive Oil	2	1	2	2	3