

Economic impacts of Geographical Indications: Worldwide evidences from 9 case studies

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Abstract: Geographical Indications (GI) are Intellectual Property Rights that are defined in international agreements (ADPIC, Lisbon agreement) as well as in multilateral (European regulation, and other regional laws) and national laws. This paper presents preliminary research results from a vast data collection and analysis of the economic impacts of GI processes worldwide. GI “processes” are understood as the pathways from product having strong reputation, to the group of concerned stakeholders and especially the producers (farmers and processors), along the interaction with public authorities in charge of the registration and the protection of the use of the related geographical name. Nine case studies have been selected in order to offer a range of situations by ensuring diversity of countries, agricultural sectors, markets, size of the value chain, legal protection framework (*sui generis* or trademark), and type of strategies (promotion or protection).

Keywords: Geographical Indications, Economic impacts.

1 Introduction

Geographical indications (GIs) may be considered as tools for the development of sustainable food systems, thanks to the territorial anchoring of GI products and the collective strategy of producers to promote, guarantee or protect their origin-linked quality product and preserve their local resources. The anticipated effect of GIs is an increase in producers' income through a better selling price, greater competitiveness (differentiation strategy) and commercial advantages (reserved use of the name) (Jena & Grote 2010). The definition of specific origin-linked characteristics (i.e. connected to natural and cultural resources) is moreover a way of preserving the local heritage linked to this production. GIs are implemented in different countries, as development tools that allow better recognition of products, the boosting of producers' organizations and their power in negotiations within the value chain, and improved market access, as a number of technical assistance projects have shown. However, donors and other partners often require economic data relating to the development of GIs. Unfortunately, little work has been done to analyse of the economic impacts of GIs. The main reason is the difficulty of distinguishing the impacts of the legal protection of GIs from other factors such as the organization of the value chain and power relations, the marketing strategy or producers' skills. Another reason lies in the relatively recent development of GIs, especially in developing countries or those in transition, so that there has not been enough time to obtain the full picture needed for analysis of major impacts.

The purpose of this paper is to assess the economic impacts of instituting a GI as a protective mechanism or tool, through the analysis of ten case studies of products in various regions of the world that have GI recognition and meet very well the conditions in terms of justification, heritage and collective dimensions, and potential for differentiation. It is a matter of measuring the capacity of the GI as a protective tool to generate economic effects in terms of price, income for producers (and hence redistribution of value down to the first link in the chain) and market access. The scope of the paper is the economic impacts of GI “processes”, understood

as the pathways from product having strong reputation, to the group of concerned stakeholders and especially the producers (farmers and processors), along the interaction with public authorities in charge of the registration and the protection of the use of the related geographical name.

2 State of the Art and Objectives of the Paper

Geographical indications may be implemented as tools for the development of sustainable food systems, in particular in projects of rural development that are supported by donors (like FAO, UNIDO, UNCTAD, AFD, etc.). Stakeholders and policy makers often ask for economic data on GIs, especially in terms of impacts. Although the economic impacts of GIs have been well documented by various researchers (Moschini et al. 2008; Josling 2006; Zografos 2011; Rangnekar 2004; Jena & Grote 2010; Barjolle 2015a) empirical demonstration of the net benefits of GIs is relatively sparse, especially in countries outside Europe where GI procedures are more recent. Therefore, at the beginning of this study, there was a need to develop a methodological framework, i.e. a common approach to assess the main economic impacts of the process to engage in the formal recognition and protection of a geographical name, as well as the protection itself.

The economic background behind the idea of economic impact of protecting the name of product is threefold.

First, it is the whole theories' corpus about asymmetry of information between agents, when a buyer is not able to assess quality at the time of buying. The seller may hinder defaults, and this hinders the well functioning of the market, and the consequences have been already explored in the particular case of GI (Moschini et al. 2008; Mérel & Sexton 2011; Mérel 2011). Therefore, norming, controlling and labelling are processes that are balancing this malfunctioning, as GIs refer to this kind of "quality" which cannot be assessed easily enough at a first sight on the point of sale by the consumers.

Second, the economic impact relies to the "reputation's effect" of the GI, which is very similar to the trademark's effect. Consumers know about the name because of the investments of promoting the brand, and before of the quality level and the certitude for the consumers to get the desired quality when buying the product holding the brand. The set of "product-quality-certitude-brand" is increasing the willingness to pay (WTP) of the consumer. This value added by the value chain actors in offering high quality, not deceiving consumers, and investing in branding advertising has a "return of investment", that generates a financial flow that goes back to the producers (Deselnicu et al. 2013).

Third, the value created by these two mechanisms (necessity of norming-controlling-labelling and the investment in the branding) varies much from case to case. In the particular situation where the name is a geographic one, where the product has long history, when especially if the quality of the product is linked to the particular set of natural and human factors around it, it has a good background to benefit from a good value added. However, it has been proved by previous researches that it is not always the case. From the rural development perspective, the expected economic impacts are that the value added goes upwards in the value chain and support the economic welfare of the farmers, and the processors at each stage of the value chain. According to a value chain approach, it is possible to make the analysis of this mechanism (Fitter & Kaplinsky 2001; Mancini 2013; Barjolle 2015a; El Benni & Reviron 2009).

In short, what is important is that the costs and benefits are balanced in a way that allows the producers' and consumers' welfare to be at equilibrium.

Previous interdisciplinary research (Vandecandelaere et al. 2010; Tregear et al. 2007; Belletti & Marescotti 2011; Quiñones et al. 2014; Fournier & Durand 2012; Barjolle et al. 2009; Barjolle et al. 2007; Barjolle 2015a; Barjolle & Jeanneaux 2012) allows identifying some key points: Producers mainly control and influence: (1) how to gain and (2) retain the WTP of the consumers (3) at a cost covered by the selling price.

For performing well, some key success factors have been identified: (1) the effective "link to the terroir" (characteristics of the product that are linked to the natural and human factors (Casabianca et al. 2011) (2) its "translation" into a consistent Code of Practice, which norms, controls and allows

labelling the “character of the product”, and (3) the information that the consumers get thank the advertising of the actors. The main factors that influence both all those elements is the governance within the value chain and the institutional framework and support (Barjolle 2015b; Barjolle & Philippe 2012; Barjolle & Sylvander 2002; Quiñones Ruiz et al. 2015). Investment and financial capacities are as well key elements for the economic development. An objective of the research is to discuss their accuracy, and to identify other factors that influence the economic impacts of a GI process.

3 Methodological Considerations

3.1 Selection of the Cases

At the very beginning of the research, criteria were set to select 10 case studies. The three groups of criteria were as follows.

First, we selected GIs with specific characteristics of the products strongly linked to *terroir*. This is a basis element of the reputation and this is what justifies registration of the GI as an intellectual property right (justification dimension).

Second, we were selecting groups with existing effective governance regarding the GI (code of practice, monitoring, collective promotion of the GI as a sign of quality). In fact, the producers involved in producing or processing the GI product and their involvement in the management of the quality sign are at the heart of the process. As the heirs and guardians of the specific quality (link to know-how and use of natural resources), they are the people in a position to define the production and processing criteria in the code of practice. The criterion here is the existence of some form of organization (formal or informal) that collectively decides aspects relating to the GI (at least those linked to production, but maybe also to marketing) and brings together all those involved in the value chain. The management of the GI requires a local association of the stakeholders in the value chain who are involved in the GI with regard to the criteria in the code of practice (heritage and collective dimension).

Thirdly, we checked that the GI has a real market. The GI is a tool for protection or marketing, or both; for producing impacts, the establishment of the GI should take the market into account. The criterion here is the existence of a collective strategy for promoting products with a GI (market placement) and hence the involvement of all those involved in marketing (economic dimension).

Based on these selection criteria, the authors selected the cases as follow:

Asia	India	Darjeeling tea	Protection
Africa	Cameroon	Penja pepper	Protection
	Morocco	Taliouine saffron	Promotion
America	Brazil	Wine from the Vale dos Vinhedos	Promotion
	Colombia	Colombia coffee	Protection
	USA	Kona coffee, Hawaii	Promotion
Europe	Spain	Manchego cheese	Promotion
	Switzerland	Tête de Moine cheese	Protection
	Serbia	Futog cabbage	Protection and promotion

3.2 Methodological Approach

The effects of the protection are very linked to the effects of the commitment of and efforts done by all actors in the GIs' value chain, and the stakeholders around them. We have taken the two aspects as a unique one, what we call “GI process”, and the objective is to assess a first range of economic impacts. In effect, it is extremely difficult to assess the economic impact in an exhaustive manner across a large variety of case studies, for several reasons. In particular, the context is very different from case to case, and the availability of data and the access to primary data are very different as well, as the willing of the actors in the value chain to collaborate influence strongly the access to data. For all these reasons, the methodological approach proposed here was set up in a pragmatic way, proposing some key indicators, but being flexible for an implementation that has to be adapted to each specific context.

The research was done at two main levels: meso (value chain of the GI product) and micro (enterprises). Only the meso level required a standardized data collection and analysis in order to make cross analyses based on comparable data. The micro level was adapted depending to the context, available data and resources.

Some general questions have been applied to each case study, while specific research questions have been defined in taking into account the context and the specificity of each case.

General questions were the following:

1. What are the economic impacts of the GI process? (cf. stage 2)

In order to collect data to answer this first general research question, the analysis of the economic impacts has been carried out at the three levels mentioned above (value chain, enterprises and resilience of the GI system).

In order to explain the differences in economic performance among GIs themselves, and between GIs and their substitute products, the influence of various factors have been taken into account.

2. What are the causal relations that can explain the impacts observed? (cf. stage 3)

The search for causes that would explain the impacts observed was one aspect of the in-depth study undertaken by master's students. This second level has been adapted during the definition of the specific research questions and hypotheses.

Four stages were proposed to conduct the research: (1) Description of the product and its value chain; (2): Economic impact evaluation; (3) Causal relations and (4) Discussion with the stakeholders).

Stage 1: Description of the product and its value chain

This analytical presentation of the context is important, inasmuch as it will provide the framework for the study and the basis for comparisons. The critical point is to identify the characteristics of the product that give it its special quality and are the basis for consumers' recognition of a level of specific quality. Sources of information were face-to-face interviews with key people selected for their good knowledge of the product and documents as existing specifications or code of practice applied for the product.

The mapping the value chain and its stakeholders, operations and flows of materials and capital, was done in order to carry out a functional analysis of the productive structure of the value chain. The way GI value chains are organized varies widely, with some being fairly integrated (with varying degrees of formality), while others operate more informally. The number of links in the value chain, their importance and the way they are coordinated will influence transaction and information costs, as well as the strategic choices made by the stakeholders, who, as (Perrier-Cornet & Sylvander 2000) state, are interdependent and work together to monitor specific advantages, but retain their autonomy and property rights.

The task here is to describe the dynamics of the system, then to determine the role of each link, the relations connecting the operators to each other and how these relations can increase the market value of the product for consumers.

The methods were the value chain and actors' mapping. Sources of data were face-to-face interviews with experts and stakeholders in the value chain and secondary data (official and grey literature, internal dataset of the producers' group, statistics, etc.). The tools usually used are the map of stakeholders in the wider sense, that is, the economic players directly involved in upstream and downstream exchanges of the reference product (the GI studied) and also the institutional players or organizations that have a role in its development (product union, research, agricultural development etc.).

Stage 2: Economic impact evaluation

The bases for comparison are the GI product and one or more substitute products. The three levels of economic impact evaluation defined previously are meso- (value chain), and micro-

(enterprises) levels, and resilience. Indicators have been set in 5 dimensions, as follows. Variable to explain were (1) Economic dimension and (2) Resilience. The explanatory variables were the legal protection, the governance and the quality management.

Methods were: Quantitative data are given priority for each indicator, during at least 5 years, but if possible much more, for allowing a discussion of price transmission, market power transmission, market stability and the control of volatility, an essential point in stabilizing stakeholders' expectations.

Sources of data: Statistics if available. Analysis of long-term series (over 20 years, for example). Data for at least five years should be obtained. In addition, qualitative information should be collected from a representative number of stakeholders (or experts) in such a way that they can be converted onto scales (for example, the Likert scale – see annex 2). Apart from collecting data on prices at different points in the value chain, information should also be collected on the way prices are set at the various points.

Stage 3: Causal relations

At this stage, the objective is to set up a causal diagram, which describes the links between explained and explicatory variables, in a narrative way (and if possible with a figure). The objective is to link the effects observed at the economic impacts level (economic status and resilience), with the causes, which can be identified in many aspects:

- The local setting around the GI (composed by both the natural and human factors of the territory, which confer specificity to the product);
- The history of the GI (in the two dimensions of the history of the product and of the social construction of its quality, including its registration as a formal GI);
- The other explanatory variables that have been pre-identified for every cases, like juridical protection, quality, and governance;
- Any other cause, which could be very case-specific.

Stage 4: Discussion with the stakeholders

The point here is to see what the advantages of these systems are from the stakeholders' point of view, and also their perception of the levers of economic and territorial development. The stakeholders to be included are those directly involved in the value chain, but also, more broadly, other players who may have a connection with the GI, including players from other economic sectors (such as tourism) or such political players as local communities or support institutions (bodies involved in research, agricultural advice, regional development).

A priority here is a discussion of the analysis of economic and territorial impacts, based on the views of experts and other stakeholders in the system. This discussion may be filled out with analysis of the specific contributions of each case, compared with the results found in various bibliographical references. This allows a validation of the conclusion and critical comments on the approach.

4 Results

The GI products and their related value chains have been described in nine Master theses and their main characteristics are as follow.

Café de Colombia (Colombia)	<p>This GI applies to a flagship commodity of the international market. The strong reputation of the Colombian Coffee is the results of an long strategy of differentiation based on quality management linked to the branding of "Colombian Coffee" since the introduction of the Juan Valdez trademark in the 80'. Small producers get a premium. It also contributes to the strengthening of a country's global reputation.</p> <p>The governance of this GI is very effective: the national Coffee Federation strengthens its political legitimacy notably through its efforts to promote coffee in Colombia, as well as the setting of a minimum price paid to producers.</p>
Kona Coffee	This GI has a strong reputation and shows significant positive economic impacts that benefit the

(USA)	<p>small coffee growers. Two visions of the GI coexist in this case, which is a source of tensions between the actors of the sector:</p> <ul style="list-style-type: none"> • The GI as a tool of differentiation in the international market for a high-quality coffee, a niche product based on a solid reputation, allowing blend even if taking the risk of the name usurpation and fraud; • The GI as a territorial development tool, with the maintaining of small farms and the development of farms-shops, integrating all the tasks from production to marketing, and offering 100% origin “Kona” to informed and demanding consumers.
Taliouine Saffron (Morocco)	<p>This GI approach aims at encouraging a flagship product development within a territorial dynamics, to boosting local development and to stopping rural migration in an economically marginalized zone.</p> <p>It is based on a set of specifications incorporating traditional practices, being very open and therefore, all producers have the status of GI-users. The introduction of the GI has a positive economic impact on their income.</p> <p>The approach has a leverage effect on the structuring and professionalization of the value chain. A strong public policy to support small-scale agriculture was contributing much to that structuration, especially by the creation of a 35 cooperatives network. The lack of strong empowerment of the actors impacts negatively the economic impacts.</p>
Futog Cabbage (Serbia)	<p>This recent GI targets local production with a dual objective of preserving a local variety and enhancing economic development. As the reputation of the Futog cabbage was well established in Serbia, the effect of certification on prices was immediate and positive for producers. A unique processing unit gets a strong positive effect of the GI-process, but is not paying back proportionally the farmers.</p> <p>The relatively young institutional framework implies a certain collective learning of the new system, mainly in order to perfect procedures and sensitize all actors, in particular producers and consumers.</p>
Queso Manchego (Spain)	<p>The registration of Queso Manchego as a GI has allowed to protect a specific ewe breed and know-how recognized for a long time. As a result, the cheese makers were able to face strong competition and all risks of usurpation. This old GI is well organized, sustained, efficient and largely open on export.</p> <p>The value chain has faced a crisis situation. The resilience of the value chain was very good. The stakeholders have been able to access new markets, especially the American market. As a consequence of the fast growth of the market demand in the US, the producers’ organization has taken decision to change the code of practices, relaxing some requirements, to be able to produce more quickly. Therefore, tensions have emerged between the “old traditionalists” and the “new entrepreneurs”.</p>
Tête de Moine (Switzerland)	<p>The development of a technical innovation to taste the cheese made it possible to revive the Tête de Moine cheese value chain in the 1980s. This product has a very strong reputation. It occupies a seasonal niche market (in winter), with a high price premium. Farmers and processors incomes are supported by the diversification of cheese factories in other PDO cheese and other specialities. The agricultural sector and the GI itself are strongly supported by public actors and all this support consolidate the positive impacts of the GI process. The interprofession is well organized and effective in promoting the product.</p>
Darjeeling Tea (India)	<p>This GI was set up to protect the very well-know name of an old export commodity, and to develop new markets. This strategy, led by the State, is more a response to usurpation, and to cope with the raising demand of sophisticated consumers in the international market than to an endogenous dynamic. The impacts of the GI process on the economic welfare of the producers, and on the improvement of the social standards for the employees are notable.</p>
Penja pepper (Cameroon)	<p>The implementation of the GI has had a prime mover/driver effect on the entire pepper value chain (GI and non GI) in the region and beyond, allowing significant technical upgrading in terms of productivity and quality, as well as an important impact on local development. The GI strategy has put emphasis on including farmers in the governance, in reducing usurpation of the name, and in paying the premium achieved on the European remunerative markets upstream to the producers.</p> <p>The role of the new interprofessional body, which brings together producers, nurseries and distributors, is decisive for developing the collective action, in particular by ensuring an annual minimum price for pepper from Penja paid to producers. The certification is not achieved yet completely.</p>
Wine Vale dos Vinhedos	<p>This GI approach was initiated in response to competition from foreign wines. It was based on the identity of the valley and contributed strongly to its touristic development.</p> <p>It has also had a driver effect on vitivincultural farms, which have adopted innovative practices in the valley and beyond. This has negative impact in increasing the risk of usurping the name “Vale dos</p>

Vinhedos".

The evolution from a PGI to the PDO, which is more demanding on farming practices, has led to the exclusion of certain farms but also contributed to the adoption by new PDO users. This PDO product is positioned as the flagship of the Valley and is a driver effect for rural development. Indirect effect was the increase of land price, leading to new tensions in the region and supplementary costs for the producers.

The GI approach has increased the incomes of the wine-producing establishments, and the role of the producers' organization (APPROVALE), which is strongly supported by public players, is key in its development.

The search for their economic impacts has been done according to the methodological approach described above. The results are summarized in Table 1.

The identification of the key elements of their economic performance has been done through econometric analysis, presented in detail in nine separated reports, which are the basis for the quantitative assessment. When additional material has been collected and analysed, it has been reported and interpreted in the Table 1.

5 Discussion

The analysis of the 9 cases allows feeding back the success factors identified in the literature: the specific quality formalized in the code of practice, the collective action organized in a structure with a good governance, the effective marketing strategy and the legal/institutional framework.

The specific quality defined in the code of practice

The quality differentiation is identified clearly as a pathway for generating positive economic impacts to farmers, especially in terms of price (see the results: in all our cases, the prices for the GI products are higher than their respective benchmarks). Based on our results, the income of farmers or processors is as well positively impacted, because the production costs remain below the selling price (true for the 4 cases analyzed from this perspective).

The positive effect of the GI on prices (and incomes) is at least partially directly or indirectly due to the quality effect that allows the consumers to identify a real advantage for them when buying the product. Besides this consumers' effect (increase of the willingness to pay of the consumers), the effect on price may be linked to the higher protection of the product through the IPR protection. Indeed, the risk of depreciation of the product through imitation confusing the consumers is lower. Such risk appears when producers not respecting the same conditions of production and therefore not facing the same costs of production offer similar product to consumers at lower price. This unfair competition exerts pressure on the producers offering the quality that satisfies really the consumers and supports the reputation building process of the product. Indeed, the premium is better maintained because the code of practice requires from competitors located in the area of origin to fit all conditions, therefore face same costs, to enter the GI system, and from competitors localized elsewhere are totally excluded (Barjolle and Jeanneaux, 2012).

The key element is to offer the expected quality to consumers. Quality has a broad sense in this perspective (Allaire 2003). This quality is not only linked to superior characteristics like better texture, appearance, or taste. It includes other characteristics linked to the specific origin, for example specific cultural features (like traditional meals or event). The specific quality that origin provides to a given product is at the basis of a differentiation strategy of the product on the market, to enter place-based or territorially differentiated niche markets (Bramley 2011). In this view, typicity represents a unique market positioning opportunity in a globalized market.

The strength of the specific quality linked to origin as key driver of any differentiation strategy also depends on the type of GI strategy as developed by the producer group. When the strategy aims more at defending a strong reputation against unfair competitors, it is different from the "offensive" perspective, where the strategy is to better establish the reputation of the GI product. In the first case, reputation is established since a long time, and in our cases, is linked to specific practices, all already put in the code of practice. For example for Colombian Coffee or Darjeeling Tea, the premium price pre-exists the registration of the name of the product as Geographical Indications: the consumers know already the quality linked to the product. In the second case, the reputation

has to be strengthened. The registration and then the certification often means that the code of practice introduces innovative practices to upgrade the quality, as in the cases of Penja pepper and the Vale dos Vinhedos wine. The economic impact is then clearly linked to these steps of the implementation of the GI.

In the particular case of the “Tête de Moine”, economic impacts were linked to another type of innovations. In that case, the innovation was linked to the way of consuming the GI products, and occurred after registration. It was the introduction of the Girolle, a tool to eat the cheese.

Collective action and governance

The local resources provide the ground both for differentiated physical components on the final product and for intangible and symbolic attributes (Barjolle et al. 1998); Belletti, et al 2015), and such an activation of the local resources to define the typicity represents a social construction process (Casabianca et al. 2011) based on the producer’s collective willingness and coordination for a collective differentiation strategy.

Because of this collective nature, the GI process strengthens the collective action on the territory by bringing together different stakeholders, as observed in all cases. The level of governance can be associated to the type of actions and levels of economic impacts.

On one hand, horizontal coordination allows for a shared vision about the quality definition and management, economies of scale in terms of production/processing and marketing. On the other hand, when stakeholders share their vision vertically among the value chain, this allows for distribution of adding value strategy (fixation of minimum price, as in the case of the Colombia coffee and Penja pepper). In the Penja case, the GI organization (gathering inputs supplier, producers, and traders) is very young but already leads to an agreement of minimum price, collective purchase for production, etc. Some cases demonstrate clearly the running of well-established “interprofessions”, like in the cases of “Tête de Moine” and “Manchego” cheeses or the Colombian Coffee. Formal “interprofessions” bring together vertical and horizontal organizations, ensure coordination among stakeholders, and provide a strong governance structure with powerful effects. These exemplary organizations have therefore clear rules of functioning, and provide an important list of advantages to their members. This formal organization of the collective decision making process have lead to services for their members in many dimensions:

- Quality upgrading. Strong GI organization enhances the certification independently from the national context and size of the GI system. In many of the cases, they take role in quality management. Especially, they provide excellent traceability and guarantees systems, as demonstrated by Darjeeling tea, Colombia coffee, Futog cabbage, Tête de Moine and Manchego cheeses, Vale dos Vinhedos wine.
- Ensuring bargaining power of a group of actors, in particular producers toward downstream actors,
- Market information. The GI organizations may organizing transparency on the market, as it is the case for the Colombian Coffee where *Federación Nacional de Cafeteros de Colombia* (Fedecafé) publishes regularly green coffee prices on the market to farmers.
- Allowing economies of scale in providing services or goods (in the production, or the promotion so to reinforce the signal component of GI).
- Getting public support. In some countries, public aid can be conditioned to a collective organization of producers (example of Saffron de Taliouine case for the support to certification to cooperative and GIE).

Nevertheless, the bargaining power of producers towards downstream segment of the value chain is not always strongly manifested. For example in the case of Futog cabbage, the unique processor is in a monopoly position and this may weaken the GI system if the main part of the added value is kept at the processor level. In the case of Manchego cheese, the recent change in the market strategy benefiting to large-scale actors instead of the smaller and traditional ones, makes the link to origin less strong and potentially less sustainable in a long term. Finally, in the case of Colombia, despite that the national Federation is very strong and fair towards the small-

scale producers, long series of data show that the national price increase is less transmitted on producer's price than the international price decrease.

This sheds the light on an important aspect: the strength of the organization is not sufficient to lead to positive economic impacts. A good illustration is the case of Taliouine Saffron, where public support was given to improve the structuration of the value chain and to establish a strong GI organization: the number of cooperatives from 2010 and 2014 has been multiplied by 7, and an overall GI organization has been created (gathering all cooperatives, economic associations ("groupement d'intérêt économique") and companies). In that case, the public support has stressed the structuration, and the empowerment of the producers may be not really as strong as it should be, and this may weaken the long-term organizational capacity. Indeed, an important ingredient for the governance is the trust and solidarity among actors, to lead to the necessary local combination of cooperation and competition (the "coopetition") [Dagnino & Padula, 2009].

Finally, it is interesting to see how in the case of Colombia coffee, the GI process, both at national and European levels, may have also played a direct role for the organization in terms of reinforcing legitimacy (Barjolle et al. 2017).

Effective marketing efforts

One key role of the GI organization is to define and manage the collective part of the marketing strategy. This collective action is complementary to the individual efforts of the GI's actors, who keep managing their own marketing strategy in parallel.

Through our study, we can observe how the stakeholders' engagement in the marketing efforts influences the economic impacts.

(1) Branding the GI. Many cases show that the capacity to build agreements with downstream actors is key for the economic impacts. It strengthens the visibility of the GI product, and the correct use of the registered name of the product at the front of sale. This is particularly important in the cases where the GI system has been essentially developed among producers, either because the GI essentially covers a commodity while processing takes place outside of the production area (e.g. Colombia coffee or Darjeeling Tea), either because farmers and processors are not directly selling to consumers and the retailers are not interested in the GI strategy, notably to retain bargaining power. An interesting example is given by the strategy of the Coffee Colombian Federation, about how to better activate the signal to consumers. First, the code of practice covers the final coffee – without being specific on the quality requirements at this stage – and second, the use of the GI by the final market actors is conditioned to an agreement between the Federation and the company, so to ensure some compliance to the branding strategy (use of the name linked to the compliance with the code of practice).

(2) Exclusivity strategy. Our cases show that the marketing strategy is driven by the kind of GI approach (offensive, defensive) and the market channels (niche or mass). The best economic impacts in terms of prices are when the GI organization adopts a strategy where the prices are not dumped by a brutal increase of volumes, which exceeds the demand. The "exclusivity strategy" refers to the definition of the level of requirements in the CoP that determines the quality level compared to non-GI product, and consequently a certain inclusiveness of producers as a result of their capacity to meet the requirements. To illustrate this, we may refer to two opposite examples: on one side, the Saffron of Taliouine. The strategy is not exclusive: the CoP accepts all existing practices, allowing all saffron in the area to use the GI. On the other side, the "Tête de Moine" cheese is exclusive: the code of practices accepts only cheeses with raw milk coming from less than 25 km from the dairy and matured 60 days. The Futog Cabbage is another example of this "exclusivity strategy" that is associated to a specific low productive variety, or the Vale dos Vinhedos wine PDO which accepts only winemakers having invested in the *palissage* system with a restricted number of varieties and lower yields. Two "commodity" cases (Colombia coffee, Darjeeling tea) have important volume on the global market and the objective of benefiting to all producers. They are therefore not following the "exclusivity strategy". But the Kona coffee is as well such a commodity, developing a positioning on niche markets, direct consuming and selling, and therefore "exclusive". In the middle of these two sides, we have cases where the strategy is not cleared yet. For instance, Penja pepper could still decide to invest marketing efforts towards

niche market, positing the origin pepper as an exclusive product (like the Kampot pepper from Cambodia targeting chefs), or to continue competing on the pepper commodity market. Another example of such intermediary position is the Taliouine Saffron, which has not yet focused on a clear niche market strategy. The exclusivity is associated to lower volume and potentially higher prices, but that benefit to fewer producers compared to a non-exclusive strategy. Depending on the situation, one or the other may be more adapted, or could depend mainly on the decision of producers engaged in the strategy.

(3) Access to new markets. Thanks to its long time establishment, the Manchego case illustrates how the code of practice can serve an evolving marketing strategy. Initially developed by small-scale producers to differentiate their cheese from the others made from more productive sheep, and preventing from usurpation, the code of practice has evolved more recently to serve the objective of reaching new markets. To be able to follow the demand, the producers' group has chosen to change the conditions of production in the code of practice. The new code of practice allows now feeding the sheep with more concentrates. New large-scale actors have entered the production, and this has supported the rapid development of the export markets, especially in the US. This has impacted the increase of volumes.

The legal framework and the role of public sector

A sound legal system for IPR protection is a key success factor. As a protection of an IPR, GI process improves market efficiency by reducing asymmetric information, through providing information to consumers and by limiting unfair competition and free riding behavior thanks to the enforcement of GI legal provisions.

The Kona coffee is an example of the failure of the legal framework. The name is registered under a trademark with some basic rules for its use (except the localization in the Kona area, i.e. the larger Hawaii island): this leads to different types of product under the GI "Kona": from 10 to 100% of Kona coffee inside. These basic rules and product definition bring to conflicts in the value chain. The success seems not to be directly linked to the protection of the name related to a set of requirements. Although premium price can be observed for all "Kona" coffee (compared to other Hawaii coffee), we can assume this premium to be lower than if the GI would be reserved for 100% Kona coffee. Currently, the farmers defend low volume for GI reserved for 100% Kona coffee, hoping a high price, and they do not care if the turnover for the entire supply chain is low. Traders defend a high volume reserved for 10% Kona coffee at lower price, but getting a premium, with a relatively high turnover for the supply chain. The traders control nowadays the situation on behalf economic advantage for Hawaii State. Therefore, the success factor for the producers appear to be important niche markets that value the cultural assets associated to the Hawaii production area: first, the domestic market with the direct sales and tourism ("boutique farm") and for the traders, the driver of their success is the strong market demand in Japan and other American states which profit to the traders.

At the contrary, for the "old European" cases, Manchego and Tête de Moine cheeses, as well as for the Darjeeling tea and Colombia coffee cases, the legal and institutional frameworks seem to provide all the necessary functions and clear information to users, so to protect producers and consumers and in an efficient way. The fact that the GI legal and institutional frameworks are ancient has allowed stakeholders to learn collectively so to reach a fluid functioning.

For the other cases, the legal and institutional frameworks are more recent and a learning process is ongoing at the institutional level. The main difficulties appear when it comes to the GI use and certification of the product; for example the long time needed to establish the certification system in the Penja pepper, the reduced number of producers involved in the Futog cabbage in Serbia, as many of them prefer to "wait and see" to better understand the advantages and constraints as the official procedures may not be sufficiently clear at the moment; the lack of clarity about the simultaneous use of PGI and PDO in the case of the Vale dos Vinhedos wine. These weaknesses in the functioning of the implementation of the GI legal implementation have been identified as hindering factors for the economic impacts of the GI process.

Another function of public actors is the support to GI development so to enhance its contribution to public goods (FAO, 2009). Different situations can be observed regarding the role and importance of public intervention:

- *Public support to the GI promotion by local and/or national authorities:* this is the case for Tête de Moine cheese for which the interprofession gets significant public financial support for the advertising, and gets as well the legal enforcement of its decisions when matching the majority rule, if needed. Vale dos Vinhedos wine gets supported for the development of the PGI and the PDO. Kona coffee has been strongly supported by the Hawaii department of agriculture for creating and registering the TM. In the cases of Futog cabbage and Penja pepper, strong public aid was given during their establishment phase, as public authorities (Serbian government, the Intellectual Property African organization) participate to the cooperation project that support their development. Important to note that, in a broader perspective, Serbian and Cameroon GIs don't benefit at the moment from public GI supportive policies.
- *Strong public-private coordination in the GI management:* this is the case for Colombia coffee where the export fees are managed by the Fedecafe to be invested in the value chain and the GI strategy has been discussed and approved by public authorities; also in the case of Manchego cheese, local authorities are members of the regulatory body;
- *Direct involvement of public actors in the GI process decision making:* the Darjeeling tea case is quite unique, public authorities through the national Tea Board manages directly the GI system, in collaboration with the Darjeeling association that were created in a second stage. The saffron of Taliouine may be also part of this category, as local authorities (who have presented the request for registration) and national authorities (through important funding and their conditions) have shaped the GI system.

These observations show that public authorities always play a role at some point and in some levels, in the support to GI development, taking different forms according to the context and history of the case, as it has already been identified in other contexts (Biénabe & Marie-Vivien 2015; Fournier & Durand 2012; Barjolle et al. 2017). Such involvement is beneficial for the GI development, especially in the initial stage (to support the first certification costs like in Futog cabbage or saffron of Taliouine). With a long-term perspective, the empowerment of the local actors is crucial, otherwise, reality shows that low understanding and/or decision power over the GI system from the producers lead to strategic failure, like in the case of Saffron of Taliouine or Darjeeling tea.

Investment capacity, territorial dynamism and size

As highlighted in the background, the investment capacity and the territorial dynamism can be also considered as success factor of GI impacts, although not independent from the governance and policy support aspects.

The importance of local support and investment, as a key element to initiate the GI process, is demonstrated highly in the cases of the Penja Pepper, Taliouine Saffron and Futog Cabbage. The territorial dynamism was not the focus of our research, but we have identified strong governance at local level as necessary for scaling up the reputation effects of the GI. The capacity of the GI organization and producers to coordinate with local actors may boost rural development, with impacts on the other local activities (production of other goods and services, tourism). In this regard, the Vale Dos Vinhedos wine is very interesting as it shows how such strategy can pre-exist and determines the GI process. In the case of the Darjeeling Tea, the expansion of the tourism around the Tea gardens, linked to the splendid landscape offered by the Tea plantation and the Tea "culture" is exemplary of what can be developed in that sense.

Another dimension is the impact on preservation of local resources: specific characteristics are often strongly determined by a local variety or breed. For example, in the case of Futog cabbage, the specific local variety determines the organoleptic characteristics (thinness of the leaves and sweetness) of the final product. In that case, the code of practice, as formally examined by public authorities and allowing registration, is an important tool for the *in situ* conservation of such less productive and fragile cabbage variety.

6 Conclusion

The paper presents economic impacts of nine GI “processes”. The research made show that the economic impacts are rather positive in all cases. This is partly due to the selection criteria of the products, that all meet the legal definition of the GI, and the collected evidences confirm the hypothesis when the basic conditions of registration of the GI are met, the economic impacts occur.

The pathways to impacts were analysed and confirm well as well key elements found in a sparse way in the literature, that play a role in contributing to achieving positive economic impacts. The first element contributing to impacts is the existence of specific characteristics linked to the geographic place where the product comes from. The transcription of these characteristics in the code of practice, and the quality management system both contribute to the consistence of the differentiation strategy along time. Therefore, the second element is related to the existence of effective collective decision making processes, made by a strong producers’ organization. This organization is the one deciding precisely on the content of the code of practice. Besides, other collective decisions may strengthen the effectiveness of the differentiation strategy, like quality upgrading, market information, lowering of certain collective costs like research, access to public support, etc. The main additional dimension that has a direct influence on the economic impact is the marketing strategy, both at individual and collective levels of the GI value chain. Effective marketing strategy is a mix between the branding that may increase the notoriety of the product, the positioning of the product on the market, and the access to new market. Adaptation of the content of the code of practice may be necessary to adapt to market changes.

Finally, the public support is a major component that may boost or hinder the GI process, and therefore has a strong influence on the economic impacts. The aid given by the public sector may be relayed by the private sector, in efficient public-private partnerships. The limit of the involvement of the public hand is certainly the lack of empowerment of the value chain actors, that weaken the long-term efficiency of the producers’ organization.

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Table 1 : Summary of the economic impacts of the GI process, for the 9 case studies

Case studies	Price	Costs, profit
Café de Colombia	A premium of 38 cent US\$ compare to non-GIs coffee producers, between 2007 and 2012	Costs increased by 28% between 2009 and 2014, mainly due to high fertilizer prices and an increasingly limited and difficult labor force in rural areas.
Kona Coffee	The price of <i>Kona coffee</i> appears to be two to three times higher compared to other coffee from the Island of Hawaii, and five times compare to world price. Premium price between 20% et 50% higher than the « standard » Hawaii coffee price.	The <u>income</u> of all Kona producers increased almost fivefold between 1991 and 2008, from \$ 4.5 million to € 21.1 million. By way of comparison, the income of all other island producers, KMH (Kauai, Maui and Honolulu), rose from \$ 0.31 to \$ 8 million over the same period.
Taliouine saffron	Increase of prices paid to producers outside cooperatives: +40% between 2000 and 2014. Prices evolved from roughly from 11 500 Dh/kg in 2000 to roughly 16 000 Dh/kg in 2014. Increase of prices paid to producers via cooperatives: +500% between 2000 and 2014. Prices evolved from roughly from 3 300 Dh/kg in 2000 to roughly 17 000 Dh/kg in 2014.	
Futog cabbage	Mean increase of the fresh cabbage price paid to producers on the green market: +57 %. Mean increase of the fresh cabbage price paid to producers by wholesalers: +53%. Mean increase of the fresh cabbage price paid to producers in front of house:+70%. Mean increase of the fresh cabbage price paid by the processor: + 1,6 RSD/kg (from 7,5 RSD/kg to 9,1 RSD/kg) after the AOP registration, roughly +21%. Mean increase of the fresh cabbage price paid on the road: +26%. Premium price of Futog cabbage compared to its substitute, the Bravo cabbage: Between 2006 and 2011, the prices of the two cabbages are similar; From 2012, the price difference between the two cabbages is increasing. 2012: premium of 18% compared to the substitute (fresh and fermented). 2013: + 20% compared to the fresh substitute and 24% compared to the fermented substitute. 2014: + 16% compared to the substitute (fresh and fermented)	In the economic approach of the « Model Farm », costs of production are quiet comparable between GI and non-GI cabbage, therefore, the effect on income of the premium is significant.
Queso Manchego	Cheese price: Increase of the price paid by the consumer: + 45 % before/after the European PDO (1996) (roughly 10,6 euros/kg before to roughly 15,3 euros/kg after) - Increase of the price paid by distributors to retailers:+ 45 % before/after the European PDO (1996)(roughly 7,8 euros/kg before to roughly 11,3 euros/kg after). Increase of the price paid by distributors to direct distribution:+ 45 % before/after the European PDO (1996)(roughly 6,3 euros/kg before to roughly 9 euros/kg after). Increase of milk price at farm gate: + 5.5% between 2005 and 2010: increase of Manchega milk price from 0.91 euros/l in 2005 to 0.96 euros/l in 2010.	
Tête de Moine cheese	Milk price evolution: Tête de Moine milk price higher than Tilsiter milk price (non-PDO Swiss cheese) and up to 10 cents higher than the milk price for other local cheeses: 0.43% in average by year between 1999 and 2014 - 27% after the PDO registration (2001): 96.36 CHF/100 kg before PDO and 70.09 CHF/100 kg after PDO - Cheese price: + 57% between 1999 and 2014 at the EU level (exportations) (from roughly 15 €/kg in 1999 to roughly 24 €/kg in 2014). Continuous increase at the national level: +4% between 2001 and 2004: from roughly 20 €/kg in 2001 to roughly 21 €/kg in 2004. + 5.13% between	

Case studies	Price	Costs, profit
	2004 and 2014 : from roughly 21 €/kg in 2004 to roughly 24 €/kg in 2014. Wholesalers price stable : 14 €/kg between 1999 and 2014.	
Darjeeling Tea	Premium compared to substitutes: Between 1991 and 2013, in average a premium of 60.4 INR/kg and of 66.9 INR/kg respectively compared to substitute Assam and Doar teas : Almost twice higher than substitute Assam and Doar teas those last years - Price increase : Significant increase of prices after 2011, European Union PGI registration date. Price increase of 4% between the before PGI period and the after PGI period	
Penja pepper	Beginning of harvest prices have increased in average by 118 %, from 6 200 FCFA to 13 500 FCFA between the periods [1995-2013] and [2013-2015] - End of harvest prices have increased in average by 129 %, from 3,375 FCFA to 7,750 FCFA between the periods [1995-2013] and [2013-2015]	Average <u>increase in profits</u> between 2006 and 2015 through the adoption of new technologies for farmers moving from "basic" techniques to new techniques proposed in the GI: In 2006: gain of 565%, going from 620,000 to 4,120,000 FCFA / ha / year - In 2015: gain of 528%, going from 1,420,000 to 8,920,000 FCFA / ha / year
Wine Vale dos Vinhedos	Average increase of PDO wine prices: In 2015, PDO wine price varied between 19,90 €/liter and 25,00 €/liter, as non PDO wine price was between 13,75 €/liter and 18,00 €/liter	Average increase in production costs following the PDO specification: + 50% for PDO wine vs non-PDO wine - In 2015, the cost of producing PDO wine averaged € 15.55 / liter compared with € 10.50 / liter for non-AOP wine. Increase in the net margin of the PDO wine: + 115% for AOP vs. non AOP wine - In 2015, the net margin of PDO wine was 6,60 € / liter compared to 3,15 € / liter for non-PDO wine. Average increase in income of wine-producing establishments in the PGI and then in the PDO: Between 2010 and 2015, + 186% for small establishments and + 56% for large establishments
Case studies	Production and number of producers	Market Access
Café de Colombia	Punctual reduction of 33% between 2008-2012	
Kona Coffee	An increase of production of 250%: from 1000 tons in 1995 to 3500 tons in 2015. Number of producers has increased of 36%: from 609 in 1991 to 830 producers in 2012	Important volumes sold as Kona. Quantities assembled: Confidential information. 4040 tons of roasted coffee exported (most of which is Kona coffee) in 2014. 2080 tons of exported green coffee (most of which is Kona coffee) in 2014. Access to new markets has been improved thanks mainly to online sales of boutique farms on the domestic market but also for export (+ 60% between 2011 and 2014).
Taliouine saffron	Decrease in quantities sold by non-cooperative producers: -26% between 2000 and 2014 (From 856 kg in 2000 to 631 kg in 2014) - Increase in quantities sold by cooperatives and private enterprises: + 1075% between 2000 and 2014 (From 29 kg in 2000 to 341 kg in 2014) The number of cooperatives increased from 5 cooperatives in 2010 to 35 in 2014.	PDO sales in the supermarkets of coastal cities (Casablanca, Agadir and Rabat) benefited from a 137.5% increase between 2010 and 2014, export managed by cooperatives and companies increased and finally, local stores were created.

Case studies	Production and number of producers	Market Access
Futog cabbage	Production reduction of -76.60%: from 2000 tons in 2010 to 468 tons in 2014	
Queso Manchego	An increase of 83%: from 5890 tons in 2001 to 10757 tons in 2013 - Concentration of farms of 44%: from 1430 farms in 2000 to 798 in 2013	Increased market share of Spanish GI cheeses: + 5% between 2001 and 2013 (From 50% in 2001 to 55% in 2013) - Exports: Access to new markets: USA. Multiplication by 14 between before and after the European PDO (1996) : 165 tons before / 2 320 tons after
Tête de Moine cheese	An increase of 300%: from 565 tons in 1986 to 2262 tons in 2014 - A significant and rapid increase in volumes is verified in the years following the introduction of the AOC in 2001: from just over 1,400 tons in 2002 to more than 2,000 tons in 2006	Exports (mainly France and Germany): + 2427% between 1986 and 2014. (From 55 tons in 1986 to 1390 tons in 2014)
Darjeeling Tea	Relatively stable: Average production of 10,500 tons between the period before the PGI and that after its establishment	Exports: Stability and diversification. About 70% of the production (about 7 000 tons) destined for export between the period before the PGI and that after its establishment. Diversification of exporting countries: from 35 countries in 2004 to 45 in 2013. Type of contract: Approximately 55% of auctions and 45% of direct sales
Penja pepper	An increase of 328%: from 70 tons in 2010 to 200-300 tons in 2015 - An increase of number of producers of 1900%: from 10 producers in 2011 to 200 producers in 2015	
Wine Vale dos Vinhedos	Average increase in production of the grape variety <i>Vitis vinifera</i> : Between 2001 and 2013, an increase of 47.8% (From 50 million kg in 2001 to 73.9 million kg in 2013) - Average increase in production of the variety of American grapes / hybrids: Between 2001 and 2013, an increase of 40% (From 384,900 tons in 2001 to 537,300 tons in 2013) - Average decrease in certified AOP quantities: Between 2012 and 2014, the actual certified production of wine decreased by -78% (From 262 kl in 2012 to 49 kl in 2014)	

Source: Authors elaboration.