

Geographical Indications, in Situ Conservation and Traditional Knowledge

ICTSD Project on Genetic Resources

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Introduction

Ever since the Convention on Biological Diversity (CBD) and soon after the World Trade Organization (WTO) came into being, geographical indications (GIs) have been a neglected area in the various fora addressing biodiversity and intellectual property. This neglect is due to several reasons, among them the fact that GIs were long viewed as a protectionist strategy and an issue of interest mainly to Mediterranean Europe. Moreover, the historical continental old/new world divide has influenced discussions while the aura of *gourmetism* or of a *champagne syndrome* has not been useful. For long the combination of these factors did not allow for the careful consideration of GIs, for example in the article 8j discussions within the CBD.

The situation changed only in the last decade or so when many countries began to embrace GIs as a useful rural development strategy. The importance of this issue is growing steadily. There are now 110 countries proposing to link negotiations on access and benefit sharing (ABS) related issue at the WTO with those of a multilateral GI register and the extension of GI protection to products other than wines and spirits. This proposal, which is being discussed in the Trade Related Aspects of Intellectual Property Rights (TRIPS) Council, reveals a large range of negotiation positions, considerations and interlinkages, the details of which are not subject to this paper but can be found elsewhere.¹ It should be noted, however, that regardless the outcome (or non-outcome) of the negotiations on the “draft TRIPS modalities”, the level to which the issue has been taken already and the fact that it is proposed as a “single undertaking”, shows that the disclosure requirement in patent applications as proposed as part of the ABS regime is now considered as part of a package that involves recognizing the value of geographical names and their link to rural development and biodiversity conservation. It is certainly fair to ask whether this GI/ABS link at the WTO is an opportunistic trade-off, or whether it reflects major policy changes in a large number of countries. Either way, the fact remains that legislative changes, and the registration and commercial development of GIs are underway in most biologically-



International Centre for Trade
and Sustainable Development

¹ Correa C. 2010. *Geographical Indications and the Obligation to Disclose the Origin of Biological Materials: Is a Compromise Possible under TRIPS? ICTSD Policy Brief No 8; see also ICTSD's IP website, <http://www.iprsonline.org>.*

diverse developing countries (e.g. Brazil, India, China, Vietnam) and in developed countries that in the past were opposed or skeptic about GI (e.g. Germany, Japan).

This information note presents an abridged version of previous work by the author prepared with the aim of providing a panorama of current trends in GIs as they relate to biodiversity conservation and rural development, and their potential contributions to poverty, hunger alleviation and environmental goals.² In this note, the focus is on basic GI concepts and the overall conclusion of the overview of over 30 GI cases and their relation to *in situ* conservation, traditional knowledge and governance aspects of geographically differentiated value chains. It is presented in the hope that it may contribute an additional perspective to the discussions currently taking place in the CBD and the WTO.

But how does GI development relate to the *in situ* conservation of genetic resources and rural development? It is widely acknowledged that the genetic diversity in the hands of farms is of worldwide importance. Globalization of food trade impacts the everyday decisions of farmers worldwide because agroindustrial generic products have increasing access to local and regional markets. Attempts by farmers, usually supported by public policies, to compete with generic products may change local agricultural practices and genetic resource use. If market success is a key component of the sustainability of small farmer livelihoods and the conservation of the diverse genetic resources they use, then GIs and informative labeling offer the possibility of commercializing production with a differentiated identity, avoiding the type of competition that is based on volume, low prices and marketing.

When consumers associate a geographical name with a certain quality, there is a reputation to protect and use to the benefit of producers. If the GI promotes the success of an economic activity based on a biological resource, a landscape and a livelihood, then the connection between GIs and biodiversity conservation becomes evident.

Basic GI concepts and legal diversity

A geographical indication (GI) is “a sign used on goods that have a specific geographical origin and possess qualities or a reputation that are due to that place of origin”. Products protected by means of GIs must have qualities linked to the territory from which they derive. The character and tightness of the quality/geography link varies according to the natural and cultural history of the resources and their transformation processes, as well as to the legal framework in which the GI develops. GI protection involves recognizing a collective exclusive right to the use of a geographical name or sign on a good. The GI product represents a public good because its intrinsic characteristics have patrimonial values that belong to no one in particular: a reputation built collectively over generations. This is the reason why GI management is delegated by the state to their users, and their patrimonial character justifies public intervention against misuse. GIs are usually geographical names, but they can also be composed of symbols and icons as long as they convey geographical information. Legally, the options for GI protection include defense against unfair competition (e.g. through litigation or fraud repression) and positive protection through registration under various forms (e.g. designations or appellations of origin, protected geographical indications or certification trademarks). Figure 1 presents a schematic overview of GI protection schemes available.

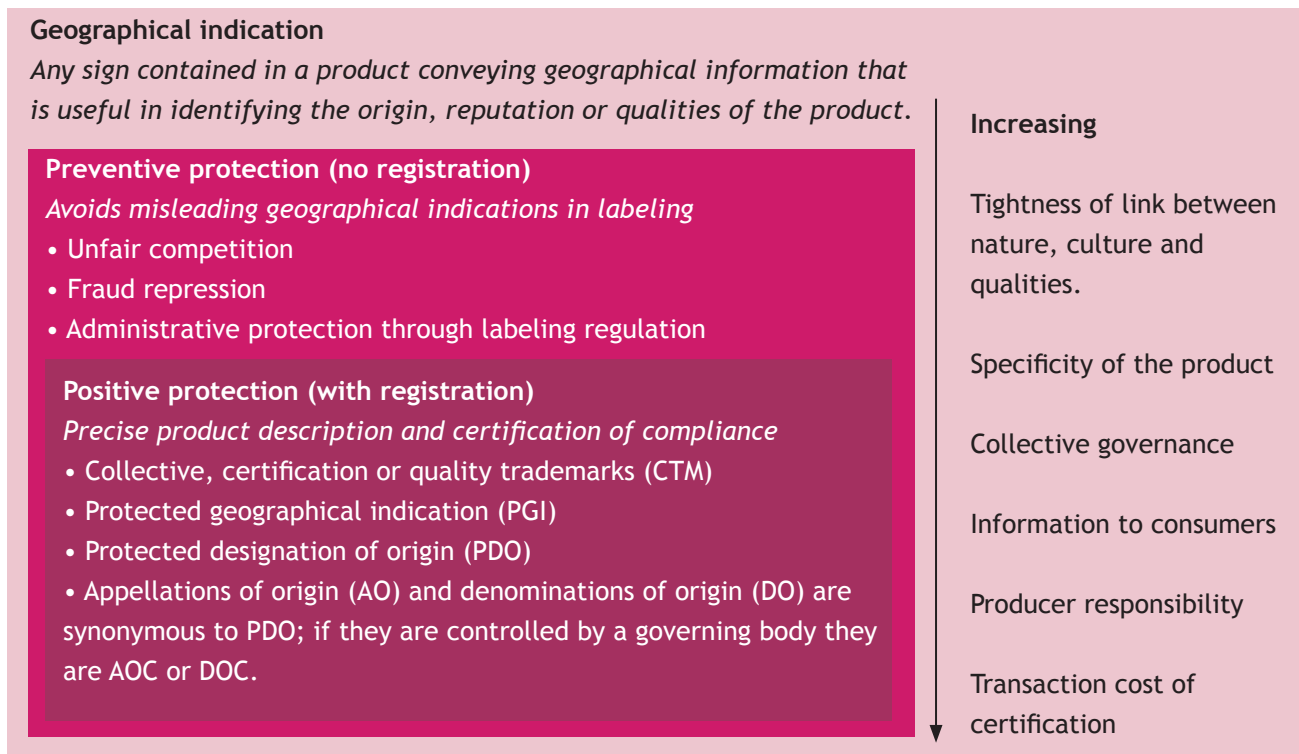
2 Larson J. 2007. *Relevance of geographical indications and designations of origin for the sustainable use of genetic resources. A study prepared for the Global Facilitation Unit for Underutilized Species, Food and Agriculture Organization (FAO), Rome.*

3 O'Connor B. 2004. *The law of geographical indications. Cameron May International Law and Policy, UK:26.*

4 Barjolle D. and B. Sylander 2000. *Protected designations of origin and protected geographical indications in Europe: regulation or policy? FAIR 1 -CT 95- 0306. Final Report. European Commission, Rangnekar D. 2004. The Socio-Economics of Geographical Indications: A Review of Empirical Evidence from Europe. ICTSD UNCTAD Issue Paper No. 8. Geneva. (www.iprsonline.org).*

Figure 1. Overview of different types of geographical indications

Includes preventive and positive protection. When registered, GIs can be protected indications of geographical origin, geographical indications (PGI) or appellations/designations of origin (AO), which may or may not be controlled by a governing body, thus the C in AOC.



Although the diversity of legal approaches to the protection of GIs may suggest that it is a subject difficult to grasp, there is one simple underlying rationale: to offer producers protection against “free riders” and provide them the means to differentiate their product in the market using a geographical identity. Preventive protection gives producers the legal means to defend their reputation against unfair competition and basic rules of labeling allow them to use the GI without registration. Under the preventive form of GI protection, available legal instruments include unfair competition and consumer protection, neither of which are intellectual property rights. The rationale is that harm is produced by someone that “free rides” on the reputation of someone else; the subject of harm being either the producer of the authentic product or the consumer that is misled.⁵

Positive GI protection schemes require a description of the product that proves its link to a territory, and

the existence of a governing body⁶ that oversees compliance with the description. Within registered GIs we find various options that include special types of trademarks, indications of geographical origin (IGO), protected geographical indications (PGI) and protected designations of origin (PDO).⁷ The latter is synonymous with appellation of origin (AO) or denomination of origin (DO), in which there is a tight link to a territory, a collective know-how, and production takes place in a defined area. The appellation of origin (AO) is the oldest type of registered GI and it guarantees a tighter link between quality, reputation, territory, resources and culture. Every AO is a GI but not every GI is an appellation of origin. Those which are not AO tend to have a looser link to the territory. Whichever the type of GI, there is always some kind of geographical information in the product that is useful to consumers in their purchasing decisions. The quality conveyed by GIs to the consumer is defined by the meaning of the protected name, the legal figure used and the product description with which it complies.

5 Rangnekar D. 2003. *Geographical Indications: A Review of Proposals at the TRIPS Council: Extending Article 23 to Products other than Wines and Spirits*. ICTSD UNCTAD Issue Paper No. 4. Geneva. (www.iprsonline.org).

6 The term governing body is used because of its relative cultural neutrality. It is intended to include legal figures such as the French Syndicate, the Spanish Consejo Regulador or the Italian Conzorcio used in Europe, but also the wide array of organizational schemes that may perform similar governance activities in other regions, particularly in developing countries.

7 PGI and PDO terms are used here in the sense defined within the European Union within a multilateral context, thus they are a useful reference but their use does not intend to give them any particular importance in the context of this note.

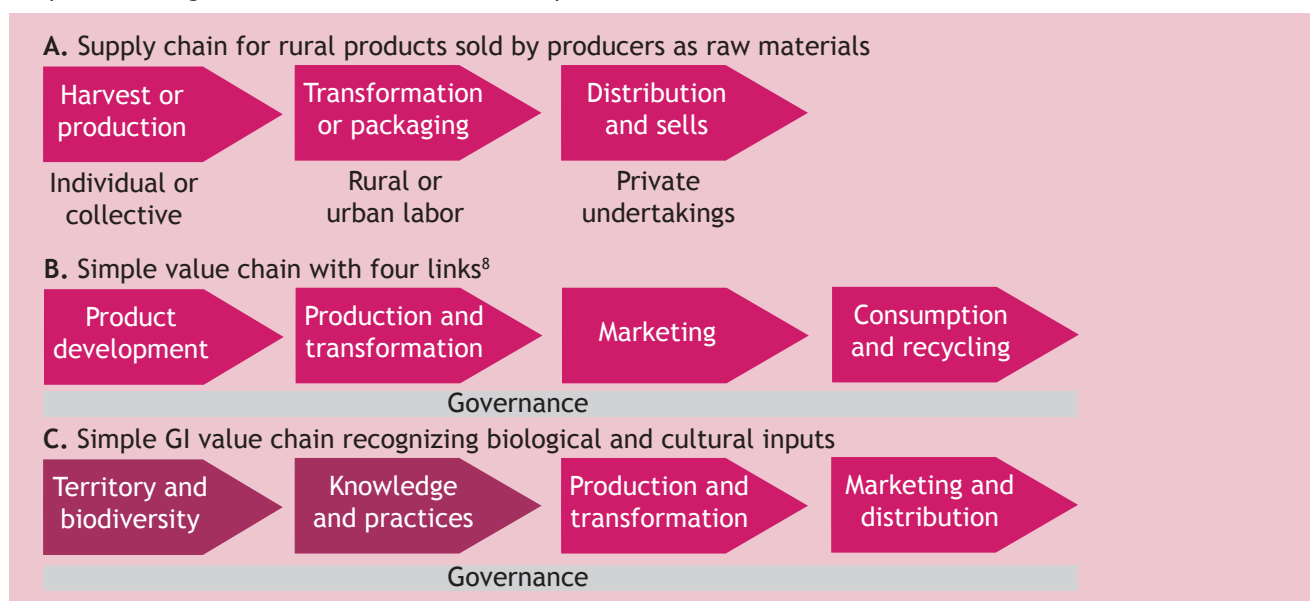
GI value chains, biodiversity conservation and traditional knowledge

GI differentiation is useful when rural producers and their organizations are involved in delivering a final good that the consumer will purchase (even if it is not transformed, as in the case of fresh produce with a certain quality that is packed and labeled). However, in developing country rural economies, farmers selling on the market are mostly simple suppliers of raw materials (Figure

2A). A simple value chain (Figure 2B), beyond the supply of raw materials, highlights the dynamic interaction between the links of the chain and the governance structures (organization, regulation and upgrading capabilities) that define relations between stakeholders. This simple value chain suits innovative industrial markets that begin in product development. However, it does not work for GIs because it does not consider the tangible and intangible natural and cultural inputs that are implicit in geographically indicated products.

Figure 2. From supply chains to GI value chains

A. Simple supply chain of raw rural produce; B. Simple value chain including its governance component; C. A simple value chain modified to include territory and biodiversity, knowledge and practices, as natural and cultural inputs for production; governance is also a central component in this modified GI value chain.



The value chain framework was used to describe GI cases including the tangible territorial and biodiversity components of a product, as well as the intangible contributions of TK in value chains (Figure 2C). These aspects are central to the *in situ* conservation of genetic resources because biological resources are not isolated from agroecosystems and they are highly dependent on traditional knowledge (TK) inherent to rural livelihoods. A GI conveys in a sign a territory and its resources, as well as the work, knowledge and practices of the people whose livelihood is linked to the product. Because of these intangible aspects, agreements and regulations have to be adopted collectively to meet a production standard that respects tradition and authenticity while it involves the necessary innovation to achieve certain qualities (Figure 2C). As governance is the

means by which these agreements are reached and supervised, the role of governments and governing bodies is included in the framework of this study as an issue to be addressed throughout the value chain.

In a globalised trading system the issue of geographical and cultural distances between producers and consumers is very important. This is a dynamic and specific theme for each product, but GI labeling may aid in acknowledging, and in some instances in reducing this distance. The availability of exotic products in distant markets requires that producers communicate with consumers. Migration has also led to culturally close but geographically distant consumers, and geographically close consumers may be culturally distant to a product because of urbanization and the loss of cultural knowledge.

⁸ Kaplinsky, R., and M. Morris. 2000. *A handbook for value chain research*. IDRC Available at <http://www.bdsknowledge.org>.

Thus, GI promoters and developers must be aware of the fact that the meaning of GI labels represents a social construction of a certain consensus that explains the importance of each specific GI and its markets.⁹ In any case, labeling rural products to provide geographical information is useful in all of the generic situations described above. The value chain approach applied to GIs should take this into consideration.

This simple framework was used for the qualitative evaluation of 30 cases from a conservation and rural development perspective. They were documented based on secondary sources (published research, technical literature and documents available on the web) and selected to illustrate both tradition and

innovation; contributions and threats to biodiversity conservation; the use of traditional and innovative knowledge and practices; economic benefits at different levels; and governance issues.

Overview and lessons from GI cases

Table 1 presents a synthesis of documented positive contributions of GIs to biodiversity conservation (ecosystems/landscapes and species/genes), knowledge and practices (traditional/innovative), and economic benefits (Local/Regional and National). These aspects of sustainability are assessed qualitatively as ‘relevant’, ‘modest’ or ‘negligible’ and negative and positive trends are identified.¹⁰

Table 1. Qualitative contributions of geographical indications to conservation and development

Region/Country Geographical indication	Year	GI Type	Biodiversity conservation		Knowledge & practices		Economic benefits		
			Ecosystems Landscapes	Species Genes	Traditional	Innovative	Local	Regional	National
Cow milk cheeses of Eastern France									
Comte	1952	AOC/CTM							
Emmental	1958	Gen.	↓						
Reblochon de Savoie	1958	AOC						↑	
Beaufort	1968	AOC							
Abondance	1990	AOC							
Tomme des Bauges	2002	AOC		↓					
Emmental de Savoie		GI						↑	
Emmental Francais East Central		PGI						↑	
Developed countries									
Scotch Whisky, UK (19th centry,).	1990	CL		↑					
Calasparra Rice, Spain	1982	AOC							
Huetor-Tajar Asparragus, Spain	1996	PGI							
Quality Swabian Hall Pork Meat, Germany	1998	PGI							
Corsica Honey, France	1998	AOC							
White pearled com flour, Italy		TSG							
Montes de Granada Olive Oil, Spain	1998	AOC		↓					
Rheintaler Ribel Mais, Switz.& Liech.	2000	AOC							
Maple Syrup, Quebec and Vermont		CTM		↓					
Special designation sakes, Japan		CTM/ AOC							
Developing and transformation country									
Tequila, Mexico	1977	AOC	↓	↓				↑	
Mezcal, Mexico	1994	AOC	↓	↓	↓	↑			↑
Budvar beers, Czech Republic	1994	PGI							

⁹ Dwijen Ragnekar, personal communication.

¹⁰ For detailed descriptions and sources see Larson 2007 op cit.

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Pisco, Peru and Chile	1990's	AO							
Rooibos Tea, South Africa.	1990's	Gen./CTM	↓						
Phu Quoc Fish Sauce, Vietnsm	2001	AO	↓						
Quinoa Real del Altiplano, Bolivia	2002	AO		↓					
Layer-pie of Prekmurje, Slovenia	2004	TSG							
Hai Hau Tam Xoan rice, Vietnam	2004	AO		↓					
Giant White Cuzco Maize, Peru	2005	AO		↓				↑	
Guanaco, South America	nd								
Argan Oil, Morocco.	nd		↓	↓				↑	
Cassava Gari, Western Africa.	nd								

Key to table

↑ Positive trend given certain interventions ↓ Negative trend without intervention

Relevant

Modest

Negligible



The first group of cases is a cluster of GIs within a product class and a region: the cow milk cheeses from Eastern France. These AOC cheeses show that GIs are a suitable instrument in rural development because they benefit local communities through the localization of economic activities. There is evidence of their contribution to landscape and genetic resource conservation in Eastern France. There is also evidence of their contribution to the utilization and recognition of traditional and innovative knowledge and practices, as well as of economic benefits to local farmers and the national economy. Some trends towards homogeneity were identified, which favor the development of distinctive characters but decrease the internal diversity of practices and products.¹¹ Their contribution to biodiversity conservation at the landscape and ecosystem level relates to management of the herds at low density with little fertilization, favoring species diversity in the prairies. In genetic resource conservation they contribute to the population growth of rare breeds, while there is a potentially negative trend which lies in the specialization of certain cheeses (e.g. *Tomme des Bauges*) in only one or two breeds. All AOC cheeses use traditional knowledge and practices

while PGI and generic cheeses use semi industrial techniques. Innovation in labeling strategies seeks to incentivize further localization of cheese production (e.g. farmers' cheeses using green labels).

From the economic perspective AOC cheeses provide relevant income at the local and regional level, while only a few have a national impact. If the trend towards localizing farmer's cheeses continues, the economic benefits for local and regional economies will be safeguarded and possibly increased. The overview shows that the positive experience with *Comté* cheese in this regard is not exceptional. The rural territories of the Jura and the Northern Alps have chosen AOC differentiation as their mainstream strategy to face the challenges of the 21st century.

In addition to the cases focusing on cheeses from Eastern France, ten interesting GI cases from developed countries include: Scotch Whisky (perhaps the oldest GI in common law countries, with an important landscape component and triggering a new interest in barley varieties); the first designations of origin (DO) for rice and asparagus in Spain; a quality label related to the recovery of a rare and endangered breed of pork in Germany; the diverse varieties of

¹¹ Gerz A. and F. Dupont. 2006. *Comté cheese in France: Impact of a geographical indication on rural development*. Pp 75-87 in van de Kop et al. (Eds.) *Origin-Based Products: Lessons for Pro-Poor Market Development*. Bulletin 372, KIT, Amsterdam and CIRAD, Montpellier.

honey under the *Miel Corse* DO in France; the olive groves of Granada; two distinctive maize signs (a traditional specialty flour from the Veneto region in Italy and a landrace from the Rheintaler Valley in Switzerland and Lichtenstein); the sugar maple forests of Eastern North America and their syrup; and lastly, the special designation sakes of Japan.

Most GI cases from developed countries focus on less-favoured areas in terms of productivity (mountainous or dry areas). Given the economic context (purchasing power and volume in national and regional markets), differentiation allows the development of local and regional economies that provide more jobs per production unit and a higher commercial value. These simple outputs improve the viability of rural livelihoods threatened by competitive economic conditions. The local populations can capitalize on the *originality* and *authenticity* of their resources and products. The contributions to the conservation of biodiversity are not necessarily explicit objectives of the GIs, but rather a consequence of the economic viability of a specific livelihood tied to a genetic resource. Indirectly, certain practices of GI production create conservation benefits at the landscape and ecosystems levels. Evidence shows that biological and genetic resource conservation may be a direct consequence of GI value chain development.

From developing and transformation countries three DOs for spirits and one beer are included because their history has been relatively well documented and they provide useful lessons. They are not foodstuffs, but contribute to poverty alleviation in the form of value added products from rural areas. *Tequila* is Mexico's first DO and illustrates the impacts of industrial development on diversity with or without a GI. *Mezcal* is a DO, which means it is an indirect GI or generic concept with wide boundaries that pose governance challenges. The *Budvar* beers are European PGIs registered by Czech producers. These beers have a long history of conflict with trademarks overseas. *Pisco* is an AO of importance to the diversity of grape varieties, but is also afflicted by governance problems due to the simultaneous registration by both Perú and Chile.

In terms of GIs for products other than alcoholic beverages, the *Rooibos* tea from South Africa illustrates the successful defense of a GI through its

recognition as a generic. This case also emphasizes the role of fair trade and organic markets for the sustainability of small cooperatives. The *Phu Quoc* fish sauce from Vietnam introduces the challenges of governance over mobile resources and the potential exclusion of a product with a GI from the staple foods of poor consumers. Bolivia's DO for *Quinoa Real del Altiplano* was developed to face unfair competition in an export value chain that already was successful. The DO for aromatic rice from the Hai Hau district in Vietnam shows the positive contributions of governance but signals the risk - as in the case of quinoa - of excluding landraces that are less recognized or valued commercially. The layer pie from Slovenia illustrates the delocalized nature of TSGs and their role in defending the character of regional foodstuffs. The giant white maize from Cuzco is a Peruvian AO driven by an export market and with the potential to include small farmers in the value chain still unrealized.

Finally, three cases are presented where no GIs have been registered as yet but discussions are underway. One of these, Guanaco, is a wildlife animal species from South America. The other two, which are from Africa, involve a staple food (*Casava Gari*) and a non-timber forest resource for high end markets (*Argan oil*).

The case studies show that developing and transformation countries are immersed in trends of agroindustrialisation that will have environmental and cultural costs if not addressed. The challenges for GI implementation in developing countries are greater than in developed economies because the institutional context tends to be weaker or undeveloped in aspects such as fraud repression, intellectual property, and natural, biological and genetic resource management. Consequently, the results are not as straightforward or positive in developing countries as in developed countries. In fact, negligible effects and negative trends are more frequent, while contradictory situations abound. Such adverse conditions are challenging, but there are also important opportunities to be grasped because of the existing biological and cultural diversity. Table 2 indicates some of the main lessons from this overview of cases with respect to biodiversity conservation and traditional knowledge. Lessons with regard to economic aspects and governance can be found in Larson 2007.

Table 2. Lessons learned from GI cases

Opportunities are indicated with a ✓ symbol and pitfalls with ✗.

Biodiversity conservation

- ✓ Direct contributions to landscape and ecosystem conservation are important in GI production systems based on natural vegetation, perennial crops or extensive low input livestock management.
- ✓ In GIs based on monoculture agricultural systems direct environmental benefits result from convergence with organic production methods.
- ✓ Direct conservation of genetic resources results from GI implementation when they are intrinsic to the product itself.
- ✓ Endangered genetic resources can be recovered directly when a successfully marketed GI is developed and management of germplasm is done by producers, the governing body and in alliance with regional research institutions.
- ✓ GI production systems based on well-managed extractive activities promote the conservation of natural vegetation and forested areas with benefits to ecosystem and landscape conservation.
- ✓ The existing biological and cultural diversity in developing and transformation countries is an asset that can be developed through GI differentiation.
- ✗ Linking a GI to a specific variety, breed or subspecies as a response to productivity and market demands marginalizes other genetic resources that are biologically and culturally relevant. This specialization may “help” define product character in terms of consumer perception but it incentivizes loss of genetic diversity.
- ✗ In situ conservation practices and GI development cannot be easily recognized and developed under economic conditions in which financial and human resources are lacking.
- ✗ Practices such as intensive fertilization or irrigation are contradictory to GI principles because the link to the territory is implicitly modified and production unsustainable.

Knowledge and practices

- ✓ Cultural differentiation may be as important in GI differentiation as natural factors (e.g. the biological identity of the raw materials).
- ✓ There are no fixed concepts of tradition, while innovation to face the challenges of marketing is ongoing within local and culturally relevant production practices.
- ✓ GIs have played a role in the recovery and valorization of traditional practices linked to the use of underutilized genetic resources that were neglected by industrialization.
- ✓ Strong links between product and culture justify GI protection and benefit rural development even if there are no biodiversity conservation contributions.
- ✓ Small producers have achieved adequate quality systems, product development and labeling, all substantial aspects in the access to new markets. Precise use of geographical information can be easily added with or without GI registration.
- ✓ TK that is key to food production such as seed selection criteria, recipes and food conservation practices, can be effectively used for GI development and thus protected from the most obvious forms of biopiracy.
- ✗ Formal concepts of quality tend to homogenize production processes and this may imply the marginalization or loss of relevant TK.
- ✗ Formal and well distributed knowledge and information about the biological resources and the cultural practices with GI potential is lacking in developing countries.
- ✗ It is common that small farmers that conserve and use genetic resources cannot produce surpluses to participate in market oriented activities such as GI development which requires a minimum economic activity.
- ✗ Quality criteria may eliminate a high percentage of production from commercialization due to selection criteria.

Conclusions and recommendations

Current trends in multilateral and national GI protection systems indicate that developing countries are active in GI development. They are getting organized and beginning to make decisions regarding GI protection. Reformed or new GI legal frameworks are now more than exceptions and the growing number of GIs registered in diverse countries shows that the issue is moving in practice.

The 164 countries that are parties to the Paris Convention have, in principle, preventive GI protection through prohibition of unfair competition practices. Thus, the legal means to defend GIs from unfair competition practices are basically available worldwide (UNCTAD/ICTSD 2005). Depending on national laws, actions against free riders may be brought to court or to administrative authorities by affected producers or consumers. Bringing legal action against false or misleading use of GIs will in most cases require a demonstration that damage has been done and that the public has been misled.¹² These are the same legal principles that apply to trademark infringement, in which there is extensive jurisprudence that shows the importance of demonstrating that the use is likely to cause confusion or to deceive consumers.¹³

Within the WTO, protection given in the TRIPS Agreement is stronger in the sense that there is a precise and flexible definition of geographical indications. A membership of 150 countries (November 2006) provides for the most comprehensive and global GI protection in existence. The last decade has seen substantial new GI regulation because countries have developed GI systems on their own initiative or in order to comply with their international trade obligations, particularly TRIPS obligations. Still, it “can be said that geographical indications implementation has occurred in the most diverse

and uncoordinated manner”.¹⁴ The challenges for compatibility in a multilateral GI system remain complex, but minimum common denominators can be found.

Besides the issues of national compliance with TRIPS in GI protection, a relevant subject in itself, the main issues in the WTO Doha Round negotiations are the multilateral register for wines and spirits and the extension of protection to products other than wines and spirits proposed by some countries. The legal, economic and cultural importance that countries give to geographical labeling in their internal markets will ultimately define their profit from a multilateral protection system. The extension of protection to products other than wines and spirits, if accepted, would mean that translated GIs and mentions such as type or style (even if the true manufacturing place is provided in small letter) would be prohibited, given certain conditions, in all products and not just wines and spirits.¹⁵

Current trends in GI development worldwide suggest that the design and implementation of GI protection frameworks are not a question of deciding which type of protection to choose - preventive or positive. It is a matter of identifying the best way of developing both to their benefit and with the lowest possible transaction costs. Indications of source, basic labeling of generics, the possibility of registering GIs or DO according to the specific value chain, and promoting innovative approaches to marketing with a geographical identity, should all be considered within GI implementation strategies.

Regarding sustainability, it has been showed that GI development may promote biodiversity conservation directly through the use of a specific genetic resource, or indirectly through production and management practices that include landscape and ecosystem considerations. Direct benefits in terms of sustainability in rural

¹² Rangnekar D. 2003, see note 5

¹³ Agarwal S. and M. J. Barone. 2005. *Emerging Issues for Geographical Indication Branding Strategies*. MATRIC Research Paper 05-MRP 9. Midwest Agribusiness Trade Research and Information Center. Iowa State University. (www.matric.iastate.edu).

¹⁴ Watal J. 2001. *Intellectual Property Rights in the WTO and Developing Countries*. Kluwer Law International. The Hague: 264.

¹⁵ Grazioli A. 2002. *The Protection of Geographical Indications*. Bridges 6, No. 1. (www.iprsonline.org).

landscapes derive from the fact that governance and market success contribute to the viability of rural livelihoods that depend on the sustainable use of specific biological and genetic resources.

In agriculture, biodiversity includes the biological and genetic resources that are managed, used and preserved by rural communities, as well as the interactions that take place in agroecosystems. Components of biodiversity become resources when they are harvested or used; utilization is mediated by the traditional and innovative knowledge and practices (TK) of those who inhabit a territory.¹⁶ Although the conservation of wildlife may sometimes be achieved by isolating a territory from human activities, the conservation of agricultural diversity relies on the TK of peasant and indigenous communities. When peasant and indigenous communities use, or are interested in using, their biological resources to develop marketable products based on their TK, new governance challenges arise about the control over resources and practices. If communities and organizations do not strengthen or build such governance capacities they are prone to lose their resource base or control over their TK. GIs are a means to provide the necessary governance to retain certain control over resources. TK and the names of products that can be successfully differentiated in the market.

Value chain differentiation is a very important concept that should be considered so that successful GI implementation does not become an economic mechanism that excludes poor farmers or consumers from functional foods due to price increases. For nutritional and cultural reasons, such an outcome of GI implementation is unacceptable. To avoid it, producer organizations, cooperation agencies and developing and transformation country governments should focus on clear differentiation in policies, regulations and product development of the value chains that address local, regional, national and export markets.

Based on the evidence gathered, some final general recommendations to be considered in the implementation of GI protection systems as they relate to biodiversity conservation and rural development are outlined below:

- Focus on the creation of an enabling institutional environment prevents the false or misleading use of GIs, favors fair competition, the reduction of knowledge asymmetries and the implementation of legal and institutional frameworks in intellectual property and GI governance.
- GI registration systems should be precise and flexible and also consider the legal framework for the development of governing bodies.
- GI recognition in all sectors of food production is required if they are to contribute to the *in situ* conservation of genetic resources for food and agriculture. Policy objectives not inherent to GIs, such as the sustainability of a harvest, should be validated and products clearly labeled as limited productions.
- The biological and cultural resolution of rural resources information systems in developing countries should increase substantially in order to respond to specificity of resources and products in biologically rich countries.
- The governance features of GIs should contribute to the respectful and creative use of traditional knowledge and practices. Innovation in GI governance may be needed to address the particularities of community and indigenous resources and knowledge.
- Regarding hunger and poverty alleviation goals, it is important to avoid economic exclusion processes at the local and regional level as a consequence of developing only high end, valuable national and export markets. Differentiation of value chains for local and regional markets may help avoid such exclusions.

¹⁶ In this study, the expression traditional knowledge (TK) conveys a flexible understanding of tradition, it is not always old but can be innovative, it is collective and inter generational. In particular, it considers practices as part of TK because of their relevance to *in situ* genetic resource management and sustainable harvesting of biological resources, as well as their transformation into useful and marketable products.

- The challenges for small farmers in GI development are basically related to their scale. Thus, emphasis should be placed on low cost and flexibility in GI protection strategies, regional markets, and access to market knowledge.
- Value chain analysis is a useful tool that will contribute more to understanding the emergent properties of GI value chains if we also consider the tangible territory and its biodiversity, and the intangible knowledge and practices of the regional cultures that

create foodstuffs and other products based on local biological resources that merit their recognition as GIs.

In terms of the CBD agenda, the current neglect for GIs within discussions on *in situ* conservation and the protection of traditional knowledge should end and there should be in-depth discussions on their possible drawbacks for developing countries, as well as on their positive contributions to the pressing issues of conservation and development in rural diverse areas worldwide.

Annex: Selected references for GI cases

Eastern France AOC cheese

Bret J.J. 2005. AOC Comté. Pp 220-221 in Bérard *et al.* (Eds.) Biodiversity and Local Ecological Knowledge in France. CIRAD-IDDRI and IFB-INRA, France.

Boichard D., Maignel L. and Verrier E. 1996. Analyse généalogique des races bovines laitières françaises. INRA Prod. Anim., 9 (5), 323-335.

Gerz A. and Dupont F. 2006. Comté cheese in France: Impact of a geographical indication on rural development. Pp 75-87 in van de Kop *et al.* (Eds.) Origin-Based Products: Lessons for Pro-Poor Market Development. Bulletin 372, KIT, Amsterdam and CIRAD, Montpellier.

Scotch Whisky

The Status of Traditional Scottish Animal Breeds and Plant Varieties and the Implications for Biodiversity. www.scotland.gov.uk

The Scotch Whisky Act 1988 / The Scotch Whisky Order 1990

Calasparra Rice

MAPA 2003. Libro Blanco de la Agricultura y el Desarrollo Rural. V.A. Impresores. España.

www.arrozdecalasparra.com

Huetor-Tajar Asparagus

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