

# Local products and geographical indications: taking account of local knowledge and biodiversity

Laurence Bérard and Philippe Marchenay

---

Most of the time, local agricultural products and food stuffs are linked to the animal or plant world. Whether they are raw materials or transformed, they are involved in biological processes when they are cultivated, raised, and manufactured. There is a great abundance of different practices and forms of knowledge, revealing, as if that were necessary, the inventive capacity of societies and the extreme malleability of living organisms. Certain products are based on complex systems capable of maintaining various forms of biodiversity, ranging from a landscape to a microbial ecosystem, and including plant varieties and local animal breeds. The forms of local knowledge and technical practices are the most visible factors – because they are the most directly observable ones – which influence this biological diversity. Today, geographical indications (GIs) have an international reputation (Sylvander 2005). Beyond the legal protection of the geographical name, which represents their founding principle, they can contribute to maintaining biodiversity in general and genetic resources in particular. These are good fields of study for understanding how the combination of natural factors and human factors can influence biological and cultural diversity.

## Space, time, and shared knowledge

The diversity of local products is omnipresent, as reflected by the impressive quantity of drinks, cheeses, meats, oils, pastries, fruits, and vegetables. It is also expressed by their social status and history, as well as in the various production techniques or methods of trade they give rise to, which are subject to great variations. Sometimes

the rich foundations of a culture emerge from behind a product. In other cases the link can be much more subtle. Beyond this extreme polymorphism, these products all have a particular relationship with space. Their inscription in a place is related to their historical roots and the collective practices that produce them. In other words, they straddle space and time, and are built on shared knowledge and know-how. They all have a history, the temporal range of which varies depending on each case; however, the anteriority that

gives depth to the place is indeed present, and is linked to the memory they transmit. Shared know-how constitutes the other component defining local and traditional agricultural products and foodstuffs; according to the place they occupy, these practices sometimes testify the organisation of a group or of the entire society.

Laurence Bérard and Philippe Marchenay are researchers in the eco-anthropology and ethnobiology research unit of the Centre National de la Recherche Scientifique and the Muséum national d'Histoire Naturelle. They head the "Terroir Resources – Cultures, Customs, and Societies" Department located in Bourg-en-Bresse (Ain), at the Alimentec Technopole. Their research focuses on the ethnological dimensions of local farm and food products. They work on bringing to the fore, characterising, and analysing the cultural specificity of such products. Their work emphasises the knowledge, practices, and representations implemented in the elaboration, conservation, and use of these resources.

Email: [laurence.berard@ethno-terroirs.cnrs.fr](mailto:laurence.berard@ethno-terroirs.cnrs.fr); [philippe.marchenay@ethno-terroirs.cnrs.fr](mailto:philippe.marchenay@ethno-terroirs.cnrs.fr)

Their collective dimension makes them belong to the local culture, and makes it possible to distinguish provenance from origin: the difference between merely coming from a place that does not attribute the least particularity to it, from belonging to a place that involves a relationship with a special meaning. These are the cultural criteria that link a place to a history and to a social group, and which help organise and consider this diversity and characterise the nature of this link (Bérard and Marchenay 1994, 1998, 2001, 2004, 2005).

Some of these products are designated by their place of origin, that is, the geographical name of the place where they were elaborated. This association translates the link established between the quality, the origin, and the reputation that derive from it. We speak of *beaufort* and *comté* cheeses, and *volaille de Bresse* (Bresse poultry). This practice of designation is both ancient and widespread. It is found in classical antiquity, and there is not a single country in the world in which a geographical origin is not linked to particular products. The carrots from the Oudane oasis in Mauritania are considered to be the best in the country; the paprika from Kalocsa, in Hungary, is beyond comparison; and English Stilton refers back to the village of the same name in the county of Leicestershire. This practice is somewhat problematic, because the reputation attached to a place encourages its abusive appropriation the better to sell a product, which constitutes an unfair trading advantage for the local producers, and at the same time is a way of deceiving the consumer.

## Regulations to protect origin in Europe and in the world

French law has long recognised the use of a geographical name to identify and protect against counterfeiting a product whose character is linked to a *terroir* and specific know-how. The setting up of a single market by opening up the borders and giving the producers of the various countries in the European Union the opportunity to sell their products freely has increased the risk of abusing a name. This fact raises the problem of what these products “of particular quality” will become and, more broadly speaking, of those that are specific to each country. It is in this

general context that the European Council adopted a regulation on 14 July 1992 concerning the protection of geographical indications and designations of origin, which was greatly inspired by the French model (European Economic Community 1992).

The protected designation of origin (PDO), which can be compared to the French *Appellation d'origine contrôlée* (controlled designation of origin – AOC), and the protected geographical indication (PGI), ensure protection based on a relationship to a place. Both designate “the name of a region, a specific place or, in exceptional cases, a country, used to describe an agricultural product or a foodstuff originating in that region, specific place, or country”. In the case of PDOs, “the quality or characteristics are essentially or exclusively due to a particular geographical environment with its inherent human and natural factors, and the production, processing and preparation take place in the defined geographical area”. In the case of PGIs, “a specific quality, reputation, or other characteristics can be attributed to this geographical origin, and the production and/or processing and/or preparation take place in the defined geographical area” (European Economic Community 2006, p. 14).

The philosophy of PDOs is to protect, with a name, a unique product that is not reproducible in another *terroir*. The entire production process must be carried out in the same zone and the coherence and influence of this zone on the characteristics of the product must be demonstrated. Meanwhile the PGI label is based on the reputation of the product, its history, linked to that of a locality, and its particular characteristics or qualities. This approach does not impose a single zone in which all the operations must take place: in particular, the raw materials can come from elsewhere. PDOs and PGIs are grouped under the more general term of geographical indicators (GI). This principle has been invoked at the international level within the framework of the Trade-Related Intellectual Property Rights Agreement established by the World Trade Organisation. In this it is stated that the geographical indications:

are, for the purposes of this Agreement, indications which identify a good as originating in the territory of a member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is

essentially attributable to its geographical origin. (TRIPS, Annex IC, article 22, p. 328).

It is obvious that this agreement contains some important weaknesses. For instance, at the time of writing, only wines and spirits are really protected. The European Union is fighting for this protection to be extended to all products and for them to be listed and protected within the framework of an international register. Nevertheless, this is only a first step, bearing witness to the increasing interest at the international level in products whose quality is linked to their origins. The creation of the association Origin (Organization for an International Geographical Indications Network) in 2003 confirms this tendency (Origin 2003). Today, Origin groups together 70 associations of producers in more than 30 countries on all the continents and is militating for better international protection of GIs and the recognition of their role in sustainable development. Developing countries show increasing interest for this new approach to their local resources, as is demonstrated by the current rallies to this trend.

## Cultural biodiversity and protection of origin

Animal breeds, plant varieties, landscapes, and microbial ecosystems correspond to an accumulation of knowledge, practices, and adjustments. These vary according to the nature of the products, which are themselves dependent upon local social and environmental conditions. This combination of factors underpins and organises distinct levels of biological complexity. Biodiversity, “a set of living beings, their genetic heritage, and the ecological environments in which they evolve” (Centre National de la Recherche Scientifique 1998, p. 6), could not exist without the practices and knowledge developed by the societies that create it, and maintain or reduce it. The protection of geographical origin can encourage this cultural biodiversity to be taken account of, or even reactivated.<sup>1</sup> To accomplish this, it is indispensable to take into account not only the biological characteristics, but also the local knowledge and practices involved. These elements, which are an integral part of the specificity of the products,

are taken into account in the increasing elaboration of the criteria that must be respected and that constitute the specifications of GI. The delimitation of the protected zone and the definition of the conditions of production are the two major issues in the protection of a name. The French examples discussed below show how links can be established between biodiversity and protection.

### Ardèche chestnuts

In the Ardèche region in the south of France, local communities were organised for centuries around chestnut groves. The management of this environment led local producers to identify, select, and then graft an impressive number of varieties, of which the size, shape, and organoleptic qualities of the fruit correspond to customs that differ according to the different areas in Ardèche. In the north, for a long time the fruit of the *combale* variety, which was eaten boiled, was part of the daily meal, in the same way as bread. In the south of the department, the *pourette* was extensively used and became a veritable subsistence foodstuff. Occupying almost the entire area, the chestnut tree shaped the landscapes and marked in a lasting way the heritage, customs, and social life of Ardèche. The traditional chestnut grove is at the same time the trace of a culture, a civilisation, and a local product intimately linked to a *terroir*. Faced with its decline, there was a proposal to introduce hybrid varieties, satisfying certain technical and commercial criteria. But this innovation, involving a very different management of the chestnut grove, moving from agroforestry to an intensive orchard system, created a great deal of tension (Dupré 2002, pp. 125–129). This led the producers to reflect upon an AOC approach that offers simultaneously the possibility of protecting the local varieties, the traditional management of trees, and the kind of landscape. The AOC *châtaigne d'Ardèche* designation has been obtained in 2006. The specifications include 19 main varieties, all of which are local.

### Cider, calvados, and perry in Normandy

Cider, perry (which resembles cider but is made from pear juice), *pommeau*, and calvados are beverages, or beverages that are then distilled; the



*Bleu de Termignon* cheeses mature, high pastureland of Entre-Deux-Eaux, Savoie, France, August 2005.  
Marchenay/Bérard, CNRS

basic ingredients of which are apples and pears. In Normandy in the west of France, their production has traditionally been based – and to a large extent still is – on the exploitation of the meadow orchard. This system of cultivating trees and grasslands over a long cycle provides on the same land various kinds of complementary products: fruit for beverages, grass, milk, and meat. A total of six cider-based products and six milk-based and cheese products have an AOC.<sup>2</sup>

The Norman meadow orchard corresponds to a historical and current reality which is simultaneously interesting to farming, the environment, the local economy, the cultural heritage, and biodiversity. Varietal diversity is particularly high there. Within the calvados area for example, there are 177 varieties officially listed and 477 designations (taxa) in the orchards identified by the *Institut national des appellations d'origine*.<sup>3</sup>

This diversity represents the production objectives: some varieties are more or less well-suited for making ciders or perries for direct consumption, for the distillation of calvados, or the production of must for *pommeau*. In effect, the final result is often linked to the subtle mixture of different varieties. The diversity is also due to a strategy of protecting against the risks of alternation in the setting of fruit, a phenomenon that is frequent in traditional orchards.

The AOC Domfront perry obtained in December 2002 is exemplary in terms of the conditions of production. On the one hand, the main variety is the *plant de blanc*, well-known locally, accompanied by complementary local varieties. On the other hand, this is the first AOC that strictly defines how the plant resources, here pear trees, must be managed and the related agroecosystem, the orchard. Plant density (less

than 150 trees per hectare), standard growth trained on high stem, association with a pasture, are criteria that correspond to local customs. This consideration of local norms and plant resources introduces a landscape dimension in the cider economy and falls within the perspective of conserving cultural biodiversity. In addition, as the traditional meadow orchard is a refuge for a certain number of animals, in particular insects, mammals, and birds, it contributes to saving many species because of the resulting biodiversity (Bérard *et al.* 2006).

### Charolais beef

Charolais beef has a particularly good reputation. The fame of the animals from this area – which gave its name to the breed – has for a long time been excellent. Two reasons for this are put forward: the local tradition of selection, which has always attached the greatest importance to the quality of the meat, and the value of the grazing, which enables exceptional finishing and is the fruit of the fatteners' skills. In effect, the know-how concerning the land and the vegetation, particular to the zone, determines the growth potential of the animals. The management of the grass is the central issue in the Charolais system (Lizet 1993). The most significant know-how resides in how the livestock farming is organised, in relation to the meadows which the stockbreeder possesses. Nearly 3500 farms specialising in the production of livestock for meat are located in the Charolais beef zone. They are characterised by a useful agricultural area that covers a minimum of 80 per cent of extensive prairie.

The AOC currently being applied for insists on the need to take account of this specific way of raising cattle, which is closely linked to the management of the grass and a breed adapted to its environment. In these conditions, the beef cattle, heifers, and cows may all be eligible for AOC status.

### The Dombes carp

The fish farming practised in the ponds of the Dombes (Ain) is oriented toward raising carp. This activity is not recent; it emerged in the medieval period because of the need to find fish at a time in which food prescriptions were very strong. Today

it is based on an extensive system that alternates fish farming and grain farming on the same land. (ponds are emptied every year, to be fished, and then refilled. After around five years, the fish ponds are left to dry up, so that crops of maize or oats can be grown.) This particular form of crop rotation generates a complex set of technical and cultural practices that produce biodiversity, by conserving, in particular, a great number of wild animal and plant species, including the plankton and micro-organisms in the water and in the soil. The farming systems and the methods of appropriating the land, the great diversity in the categories of users of the environment, the specific practices, and the weight of the hunting activities constitute the main parameters that determine the functioning of these cultivated ponds (Bérard and Marchenay 1981). Here, the landscape offers the peculiarity of completely changing in appearance during the wet and dry periods. The Dombes fish is currently being considered for a protected GI label.

### And, of course, cheese

At the crossroads of biology and culture, cheese products occupy a privileged position. From a raw material, milk, there is a multitude of ways of manufacturing and of variants, emerging from a great number of practices. At the heart of all of this, the interaction between living organisms and cultural entities shapes the originality of cheeses, particularly – but not always – when this concerns AOC. The cheese-making systems unite countless practices and forms of knowledge from all domains of living organisms, including plants, animals, and micro-organisms.

Grass, the primary product, is the basic resource. In addition, the cheese-making systems shape the landscapes and ensure that they are maintained, via the pastoral activity underlying their existence. There are many examples: the Chaumes fields in the Vosges mountains with *munster*; high mountain pastures in the northern Alps with *beaufort* or *abondance*; landscapes of *burons* (cheese-making structures) in the Massif central with *cantal*, *salers* or *laguiolle* cheeses; the prairies of the high Jura with *comté* or the *garrigue* in the Cévennes with *pélardon*; not to forget the meadow orchards in the west of France with *livarot*, *pont l'évêque*, and *camembert*. In any case, the practices are linked to knowledge about nature and the environment.

One simply has to compare, based on photographs, the appearance of currently active cheese-making zones – which show an open landscape – with that of other zones where activity has stopped, with landscapes that are becoming closed, invaded by encroaching vegetation. Maintaining the pastures is an ongoing, long-term endeavour.

The animal is the indispensable intermediary between the grass and the finished product. Local breeds are becoming more and more important in the designations of the origins of cheeses. The breed appears to be a subtle combination of biology and culture, adapted to specific needs and conditions. For a certain number of AOCs, breeds are specified in the description of the conditions of production. For others the discussion is open, and sometimes the question is not yet on the agenda.

In the AOCs, there is a great diversity of breeds, especially bovine: *salers* for *salers*; *vosgienne* for *munster*; *normande* for *livarot*, *pont l'évêque*, or *camembert*; French *simmental* or *brune* for *époisses*; *tarine* or *abondance* for *beaufort*, *abondance*, and *reblochon*; *montbéliarde* or French *simmental* for *comté*, *mont d'or* and *bleu de Gex* and so on. These animal breeds are more or less numerous, but in no case are they endangered. On the contrary, in some cheese-making sectors, there may be the reintroduction and reactivation of local breeds threatened with extinction, such as for example the *villard-de-lans* for *bleu du Vercors* *Sassenage* or the *aubrac* milk branch for *laguiole*.

Micro-organisms occupy a very important place in the elaboration of cheeses. Many of them are provided by the natural inoculation of the milk. This concerns a biological capital that is an integral part of the elements of the *terroir*, even if they cannot be seen by the naked eye. Another path towards biodiversity from cheeses is the maturing process, which is an essential phase in making cheese. Mould, yeast, and bacteria evolve together in an extremely complex environment, with effects of multiplication and interaction which are themselves triggered off and controlled by the local practices and know-how.

Finally, one cannot speak of microbial biodiversity without evoking the places in which the maturing process takes place, veritable humanised ecosystems in which the temperature, humidity, and other factors are capital for the inoculation and maturing of cheeses. These

are the cellars of the high Alps pastures, or those of the *terroir* of the *Causses* in the Aveyron with their natural *fleurines*, the natural caves in which certain local cheeses mature, or even the transfigured railroad tunnels.

### And not forgetting . . .

Broken olives, black olives, and olive oil from the valley of Baux-of-Provence, olives from Nice, olive oil from Haute-Provence, olive oil from Aix-en-Provence, black olives and olive oil from Nyons, all of which are AOCs, mobilise many cultivars, and the list will undoubtedly continue to grow, in particular with the oils from Corsica. The four decrees concerning the Le Puy green lentil, an AOC since 1996, the Espelette red pepper (2000), the Paimpol bean (1998), and the sweet onion from the Cévennes (2003) give a description of the types of local varieties suitable for AOC labelling and indicate that producers can use the seeds produced on their farm. This is also a way to manage – at the local level – agrobiodiversity *in situ*.

### A way of thinking differently about farming

Contrary to what one might think a priori, the farmers who invest in these approaches are often at the cutting edge of development. The AOC system invites a different approach to agricultural development. Distancing itself from essentially productivistic systems, it offers the opportunity to farmers to establish production schemes according to other models. Within this framework, it is the local practices and uses associated with particular natural conditions that are put forward to identify and maintain the specificity of a product, as the legal scholar Marie-Angèle Hermitte points out:

The difference between these two conceptions of progress: automatic, linear progress, deriving mechanically from technological change, and more complex progress, which can be satisfied by the conservation of memory and the maintaining of customs, which have arrived at a high degree of perfection, leads to what is perhaps the most profound originality of the designation of origin with respect to the other intellectual property rights. (Hermitte 2001, p. 205)

The approach implies the conviction of the producers. The producers themselves set the

conditions of production in the specifications that are validated by the Institut national des appellations d'origine, but have the possibility of modifying them. This regulation authorises the elements within the established protocols to be reconsidered. Such a situation allows social positioning to take place by leaving open adequate room for negotiation, in particular as far as the methods of production are concerned.

Therefore, GI, and in particular the AOC, are tools making it possible to take account of this combination of cultural and biological diversity, as long as those concerned so desire. These are options that give the opportunity to initiate, then maintain the dialogue in a concrete way between scientists, managers, the agricultural world, local authorities, and other interested individuals. Paradoxically innovative, these agricultural models, which are more respectful of the environment and local resources, have become the precursors of surmodern farming, while becoming economically viable in the long term (Lamine and Roué 2005).

Protecting local products means conserving varied local ecosystems at various levels: animals, plants (breeds and local varieties), plant associations, microbial ecosystems, including the places for maturing cheeses and the land-

scapes. This is also a way of maintaining in a formal way shared knowledge and practices. This is all the more interesting, given that most of the products having a designation of origin label are produced in extensive systems which associate localised practices and biological diversity. However, taking account of this diversity is confronted by the effects of globalisation. Trade internationalisation associated with the unrestricted circulation of goods generates and imposes standards that are more and more constraining. These rules were conceived at the industrial scale and take very little account – or only in rare cases – of the characteristics linked to small units of production and local products. For their survival, it is important to think about standards adapted to their specificity and to small production units. While output criteria are not open to discussion – there can be no question of marketing products injurious to health – input criteria should leave room for negotiation and an enlightened and reasonable interpretation of the texts. Otherwise these products will in some cases disappear and in others be stripped of what makes them interesting, with predictable consequences for biodiversity.

*Translated from French*

---

## Notes

1. A debate could take place on the ways of naming this diversity of living organisms which have been developed by human societies on the basis of quite different perspectives: agro-biodiversity, ethno-biodiversity, bio-cultural diversity, and so on.

2. Cider-based products: calvados, Pays d'Auge calvados, Domfrontais calvados, *pommeau*

from Normandy, Pays d'Auge cider and Domfront perry. Cheese and milk products: camembert from Normandy, pont l'Evêque, livarot, neufchâtel, as well as butter and cream from Isigny.

3. These taxa do not necessarily constitute specific vegetal material; however, this richness in the nomenclature constitutes a good indication of cultural

biodiversity. Beyond the strictly genetic aspect, the way of describing the varieties, the construction of the vernacular nomenclature, the choice of varietal collections, the representations linked to the tree and to the fruit are all interesting starting points for analysis.

---

## References

BÉRARD, L., AND MARCHENAY, P. 1981. "Ethnologie et écologie d'un système agro-piscicole: les étangs de

la Dombes", *Le monde alpin et rhodanien*, 2<sup>nd</sup> and 3<sup>rd</sup> quarter 69–102.

BÉRARD, L., AND MARCHENAY, P. 1994. "Ressources des terroirs et diversité bioculturelle: perspectives

de recherche”, *Journal d’agriculture traditionnelle et de botanique appliquée*, 36 (2), 87–91.

BÉRARD, L., AND MARCHENAY, P. eds 1998. “Patrimoine, montagne et biodiversité”, *Revue de géographie alpine*, 86 (4).

BÉRARD, L., AND MARCHENAY, P. 2001. “A market culture. ‘Produits de terroir’ or the selling of heritage”, In: Blowen, S., Demossier, M., and Picard, J., eds *Recollections of France. Memories, identities and heritage in contemporary France*. New York, Oxford: Berghahn, 154–167.

BÉRARD, L., AND MARCHENAY, P. 2004. *Les produits de terroir. Entre cultures et règlements*. Paris: CNRS Editions.

BÉRARD, L., AND MARCHENAY, P. 2005. “Diversity, protection and conservation: local agricultural products and foodstuffs”, In: Sanga, G., and Ortalli, G., eds *Nature knowledge. Ethnoscience, cognition, and utility*. Oxford: Berghahn, 366–378.

BÉRARD, L., FABIAN, T., AND MARCHENAY, P. 2006. *Le pré-verger cidricole de Normandie. Un système*

*de culture pérenne et fragile*. (Forthcoming).

BÉRARD, L., MARCHENAY, P., CEGARRA, M., DJAMA, M., LOUAFI, S., ROUSSEL, B., AND VERDEAUX, F. 2005. *Biodiversity and Local Knowledge in France*. Paris: INRA, CIRAD, IDDRI, IFB.

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE 1998. *Dynamique de la biodiversité et environnement*. Paris: CNRS.

DUPRÉ, L. 2002. *Du marron à la châtaigne d’Ardèche. La relance d’un produit régional*. Paris: Éditions du CTHS.

EUROPEAN ECONOMIC COMMUNITY 1992. “Regulation (EEC) No 2081/92 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs”, *Official Journal of the European Communities*, No. L 208.

EUROPEAN ECONOMIC COMMUNITY 2006. “Regulation (EEC) No. 510/2006 on the protection of geographical indications and designations of origin for agricultural products and

foodstuffs”, *Official Journal of the European Union*, No. L 93.

HERMITTE, M.-A. 2001. “Les appellations d’origine dans la genèse des droits de propriété intellectuelle”, *Études et recherches sur les systèmes agraires et le développement*, 32, 195–207.

LAMINE, C., AND ROUÉ, M. 2005. “Le naturel et la qualité”, *Nature, Sciences, Sociétés*, 13 (4), 383–420.

LIZET, B. 1993. “L’herbe violente”, *Études rurales*, 129/130, 129–146.

ORIGIN (ORGANIZATION FOR AN INTERNATIONAL GEOGRAPHICAL INDICATIONS NETWORK) 2003. Available online at <http://origin/technomind.be> [Accessed 7 March 2006].

SYLVANDER, B. 2005. “Les produits d’origine: les enjeux du XXI<sup>e</sup> siècle”, In: INAO ed *Le goût de l’origine*. Paris: Hachette/INAO, 60–77.

TRIPS 1994. “Agreement on trade-related aspects of intellectual property rights”, Annex IC of the Marrakesh Agreement Establishing the World Trade Organization.