
Proximity, territory and sustainable management at the local level: an introduction

Amédée Mollard

GAEL, INRA-Université Pierre Mendès France, BP 47 38040 Grenoble
Cedex 09 France

(e-mail: mollard@grenoble.inra.fr)

André Torre

SADAPT, INRA-INAP-G, 16 rue Claude Bernard, F-752321 Paris
Cedex 05 France

(e-mail: torre@inapg.inra.fr)

Abstract: This introductory article presents the general theme studied in this special issue of the *IJSD*, concerning the relations between proximity economics and sustainable environmental management at local level. Interest in this research theme has grown significantly in recent years because of the rising concern about the environment but also following the realisation that environmental processes and changes have local origins and impacts. The articles published in this issue all highlight the local dimension of these processes, showing that organised proximity facilitates sustainable environmental management by local actors. To start with we show that the globalisation of activities and of human relations has paradoxically been accompanied by the realisation of the importance of the 'Local', which has also affected public policies. We then present the main concepts of our analysis in terms of geographical proximity, before testing our hypotheses by examining the changes that have occurred in agricultural activities, and their environmental impacts in European countries. To close our introduction we present the articles included in this issue.

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1 Introduction

This special issue of the *IJSD* is dedicated to the study of the possible relations between proximity economics and sustainable environmental management at the territorial level. This research theme, which was not discussed in previously conducted studies on proximity (Gilly and Torre, 1999; Kirat and Lung, 1999), is now being explored extensively following the growing concern over environmental issues but also because there is a new awareness that environmental processes and changes have local origins and impacts.

The force and the inevitability of globalization are now commonly acknowledged; it affects the economic and relational environments of both individuals and organizations in all sectors of activity: the world of finance – with the inescapable globalization of financial flows and of share ownership; the production sector – with the ever-growing relocalization movement and the emergence of global products; or commercial exchange – with the intensification of international trade and the widespread diffusion of information and communication technologies (ICT). No sector seems untouched by this process, which affects both individuals and firms.

Environmental management is not excluded from this movement. Since the Rio Summit in June 1992, the term ‘global change’ has been on everyone’s lips and people now reason in terms of environmental strategies for the planet. Whether it concerns the first steps taken to reduce CFC emissions and protect the ozone layer, or the new principles of forest management and the conventions for biodiversity, or the plans for the preservation of water quality and the fight against soil erosion or atmospheric pollution and for the reduction of greenhouse gas emission, the reflection on environmental issues is always conducted at the global level and leads to international summits uniting players from all over the world, and to the definition of policies for which the approval of all world partners is necessary (Faucheux and Noël, 1990).

However, this movement of globalization should not conceal the importance of the local dimension to take these major developments into account and act on their consequences. It has become clear – and this is the central hypothesis of this special issue and introductory article – that all environmental problems, whatever their global or local manifestations, always have anthropogenic, localized or localizable origins. Indeed, the different parties involved in the process, either as the cause or the victims of the problem, are themselves localized. Nuisances are always generated in a specific location, and the first victims are always those living the closest to that location. Similarly, public and environmental policies, even when adopted at national or international level, must always materialize in measures adapted and implemented at the territorial level. It is therefore necessary to concentrate on the local dimension in order to understand the origins of environmental problems, and be able to find solutions that can be accepted – if not also found – by local actors .

Proximity analyses can help us to better understand these problems because they raise the question of the role of the ‘Local’, of the ‘territory’, of the region and even more of neighbourhood that is so important in the case of environmental problems; indeed, environmental problems affect neighbours before, as some cases, spreading regionally, nationally or globally.

2 The rise of the ‘Global’ and the force of the ‘Local’: actors, activities and public policies

Too often we neglect to acknowledge that all environmental problems, including those that have global effects – such as the contribution of agriculture to the greenhouse effect or the reduction of biodiversity for example – always have a local origin even though the latter is sometimes difficult to identify, as is the case of diffuse pollution for instance. If it is acknowledged that anthropogenic pollution emissions are necessarily localized and therefore different from one location to the other, it is then necessary to take into account the differentiated vulnerability of environments and define technical solutions adapted to

the local conditions of production. It is also necessary to discuss the appropriate scales of action and coordination and the public policies that are likely to take the different contexts into account.

Although the global nature of environmental problems and the necessity of finding solutions at the planet level are often emphasized, evolutions are in reality more complex and contradictory for at least two reasons. First, because conflicts and controversies concerning environmental issues often originate, develop and are expressed at the local level. The development of a waste dump, of an incineration plant, the path of a highway or railway line project first affect the populations and environments situated in proximity of these facilities, and solutions must therefore be found through consultation with the local partners. The same remark goes for water issues, the local dimension of which is particularly important. Second, because with the intensification of growth, while the scales of production and level of specialization have increased and as these productive spaces have turned to ever more distant and foreign markets, an inverse tendency has emerged in force. Diversified, small-scale activities at local level have developed, particularly in the rural sectors or areas excluded from the process of 'modernization', but also in areas situated in proximity to concentrated industrial systems (Amin and Thrift, 1993); in particular, there has been an emergence of industrial districts and other localized clusters based on small-firm production (Becattini, 1990; Saxenian, 1994). This explains why the 'Global' and 'Local' are often opposed to each other, and why the relations between both spatial scales are so complex.

In fact this opposition is dialectical; it is indeed related to two exclusive logics, but it can also give way to a necessary complementarity between both, mutually fostering, dimensions: the Global requires and permits the Local, while the Local can more easily thrive under the shelter of the Global. The case of products differentiated on the basis of their local origin and then sold anywhere in the world illustrates this concept. Another symbolic example is that of the development of e-commerce, which simultaneously results in increased traffic congestion in urban areas because of the necessity to deliver the products to individual homes.

Similarly, individuals are at once in a local logic (I live and work here) and in a global logic (I am also there, I place orders on the stock exchange and intervene on a public market through communication technologies). In the environmental field this duality also exists. It finds expression in the tension between the globalization of natural resources or of environmental problems and the growing demands, by certain local and intermediate communities, for the protection of the environment, but also in the fragile equilibrium between public policies and how they materialize and are appropriated at the local level.

Environmental policies, which should aim to reduce the negative impacts of the economic constraints of production and trade, have proved unable to correct the negative impacts on the environment of the globalization process, which is closely related to the economic growth model (greenhouse effect, depletion of the ozone layer, reduction of biodiversity...). The notion of 'sustainable development', developed by the Brundtland Commission in 1987 and popularized following the Rio summit of 1992, can be explained in relation to the globalization process. It appears as the overall balance of positive and negative economic, social and environmental features, but at macro-economic rather than decentralized level (Barbier and Markandya, 1990). This is the most common usage of the notion of 'sustainable development', although, inevitably, there are criteria of sustainable development that can be observed at micro-economic, localized and

individual levels. In this global vision of the environment, some economists introduce the abstract concept of natural capital (Costanza, 2001) as a complement to the 'land' factor in a generic production function. But they seldom mention the notion of local and territory-specific natural resources (Conway, 1993), so that the notion of space is often excluded from the equation.

This leads us to the main hypothesis of this issue. All environmental problems, whatever their manifestations (even at global level), have local origins as the actors who are affected by or cause these problems are themselves in specific locations. Efficient solutions to these problems can therefore be found by mobilizing, and taking these actors into account. This also means that solutions and policies aimed to solve these problems must take into account their local and specific origins. However, two different modes of local and proximity management of the environment can be distinguished:

1 *The territorialization of actions and policies from the top down*

This solution consists in shifting away from policies designed and defined at global level and in attempting to 'deglobalize' and 'localize' them. This is what the European Union has attempted to do by defining specific actions for specific areas, for example in the fight against nitrate pollution of surface and ground water (Council Directive 2000/60/EEC). From a theoretical point of view, Tietenberg (1974) considers that public policies can be 'localized' by significantly reducing the degree of finesse of information without sacrificing too much efficiency.

The advantages of this 'spatialization' rest on a double differentiation of the strategies of action or regulation: according to the heterogeneity and sensitivity of the environments (Addiscott, 1993), by first targeting the areas in which measures to reduce negative environmental impacts are the most efficient; and according to the heterogeneity of the actors, by targeting the actors for which these measures will be the most cost-effective. It is therefore necessary to identify the most vulnerable environments and the areas where the players can adopt new production techniques at the lowest costs. It is then essential to determine the appropriate and optimal spatial scales of intervention in order to take into account these heterogeneities without generating excessive information costs. (Xepapadeas, 1992).

In this type of approach, there are different possible ways of 'spatializing' the efforts and solutions aimed to reduce the negative impacts of agriculture. But one question remains unanswered: will the local actors approve these solutions if they are designed without taking their concerns, preferences and rationalities into account?

2 *The territorialization of actions and policies from the bottom up*

Rather than imposing 'good solutions' to the actors concerned, be it through subsidies or taxes, it is probably more efficient to first go to the place where the problem originated, in a bottom-up approach, by interacting with the actors who are located closest the source and with those who are the most affected by the environmental damage. The spatial variability of physical and social parameters strongly influences the costs of pollution reduction and the efficiency of the measures taken to reduce environmental damage. This raises the question of how an efficient management of the environment targeting the place where the problem originates can be implemented. This question requires that spaces be differentiated according to the objectives to be met and to the means to implement in order to reduce the pollution in the areas where these measures will be the most cost-effective. The studies carried out on territorialized policies confirm that their spatial

differentiation presents real economic advantages in comparison with uniform policies. The results show that the extent of cost reduction depends on the degree of heterogeneity taken into account (Mapp *et al.*, 1994) and on the characteristics of the population targeted by the public policies (Fleming and Adams, 1997).

From a more general perspective, natural resources that make up the environmental profile of territories are not all a matter for European or national environmental policy. They can also be a matter for energy, water or territorial planning policies. In France for example, plans for catchment basin management, although they involve the farming communities, have goals that are not necessarily compatible with certain forms of environmental incentives. Territorial collectivities play a small role in the local orientations of these policies. Finally, national or European policies or regulations are more or less well accepted and enforced according to the locations and regions, some policies being successfully implemented in some geographic areas while others remain unconvincing. Similarly, local interpretations or the ways in which supra-local policies are implemented and materialise at the local level vary tremendously and often translate in a high level of tolerance in order to adapt the measures to the local characteristics and specificities of an area.

3 The potentialities and constraints of geographical proximity: the analysis of proximity dynamics

To account for the effect of individual actions and locally based environmental policies, the concept of ‘localization’ externalities – that is externalities generated by geographic interactions (Tiebout, 1956) or proximity – is sometimes referred to. We know that most natural resources needed for economic development are localized at the level of rural or urban territories. The effects related to their relative ‘immobility’ can be qualified as ‘territorial externalities’ when their benefits or negative consequences are seen only locally. However, these effects are sometimes more distant and more difficult to identify, as in the case of river estuaries or marine environments, or of greenhouse gas emission. In short, the greater the ‘distance’ between the source and the receptor, the more difficult it becomes to determine what generated this externality; and the greater the proximity between the origin and the receptor, the easier it becomes to exploit this proximity to manage the environment. It is from this point of view that a territorial approach to externalities can be beneficial.

A more recently explored approach, in terms of ‘proximity economics’, is also possible (Rallet and Torre, 2005). In this approach, geographical proximity expresses more than just the kilometric distance that separates two entities (individuals, organizations, towns, etc....) in geographic space.

It has two essential properties:

- 1 It is binary: naturally, there exist infinite gradations (more or less far from, more or less close to) but the purpose of examining geographical proximity is to determine whether one is ‘far from’ or ‘close to’.
- 2 It is doubly relative: (a) The geographical distance on which the distinction between proximity and distance is based, is relative to the means of transport available to get from one point to another. The kilometric distance is weighted by time and/or

transport cost. (b) Proximity is not purely objective: individuals make a '*judgement*' as to the nature of the geographical distance that separates them. The judgement consists of considering all parameters that influence the distance and in converting them into the statement according to which one is close to or far from something or someone. These parameters include objective data (kilometres, time, price) but also the perception that individuals have of them. Nevertheless, although it is social by nature (determined by the means of transport available) and subjective (based on a judgement), geographical proximity can be, at a time t , considered as a given element of physical space representing a constraint that is imposed, at that time t , on the actors to undertake their actions.

The advantage of an analysis in terms of geographical proximity lies in the very specificities of this notion; specificities that make it possible to identify and understand the spatial dynamics at work within territories. Indeed, it presents three significant characteristics that are echoed in the problems discussed here.

- 1 *Geographical proximity has high potentialities in terms of organization of production and of economic and social exchanges. These potentialities can remain largely unexploited if they are not activated.*

Applied studies on the diffusion of knowledge externalities or on the effectiveness of coordination modes show that geographical proximity plays an ambiguous role. It is a necessary but insufficient condition for the coordination of actors (Filippi and Torre, 2003); in other words, being close to other actors is not sufficient to interact efficiently with them. There are other important dimensions to consider, such as the organization of actors into networks and the implementation of concerted or common actions that promote local development. The existence of concentrations of activities in certain geographic areas, such as 'local systems' or technopoles, confirms our reasoning. The potentialities of geographical proximity must be activated by using co-localization as a factor increasing the opportunities of face-to-face relations, or the diffusion of tacit knowledge. This leads to a reflection on the interdependence of co-located actors. It is in this perspective that are conducted proximity analyses (Pecqueur and Zimmermann, 2004), which all highlight the importance of formal and informal interactions combining the different types of proximity according to the needs of the actors and to the stages of coordination.

Furthermore, the recent reflections on questions of space show that the latter often present a double heterogeneity: a heterogeneity of the populations on the one hand – in terms of their activities, socio-cultural origins and representations, and a heterogeneity of economic activities on the other. Geographical proximity alone cannot generate processes of interactions and synergy at local level. And rural, urban or peri-urban areas are today characterized by diversity and a confrontation between the different types of activities, of socially and culturally different populations. This raises the questions of coordination, of modes of organizations and of collective action.

- 2 *Geographical proximity is a source of tension and can lead to the emergence of conflicts between local actors, because of neighbourhood problems related to land-use and congestion, generated by proximity when it is imposed on certain categories of actors.*

Indeed, local actors can be *locked in* one location (situation of *spatial lock in*) and can then be in a situation of unwelcome proximity with their neighbours. Such a situation can arise when two neighbouring farmers face problems related to erosive runoff with water flowing across the different parcels, or when a land-consolidation plan is deemed inequitable by one of the parties. But this type of situation is even more common between actors who have different representations of land and use the latter differently, as in the case of the construction of an incineration plant or of a highway for example.

In such situations, geographical proximity is unwelcome by some local actors or groups of actors, this constraint generating negative externalities associated with the co-localization on one same support good (pollution or toxic emissions), or land-use and neighbourhood conflicts related to the question of land (co-localization, congestion, nuisance associated with the construction of buildings...) (Caron and Torre, 2000). The possibility, often mentioned in the literature, of avoiding the constraint of proximity through mobility or through a monetary exchange, is conditioned by two factors:

- Some activities (in particular those related to the exploitation of ground or underground resources, as well as an important part of agricultural and agro-food activities) are not movable and remain structurally anchored to a given territory. Ground, underground, water, etc. are here and not anywhere else;
- The financial constraint significantly limits human mobility and the possibilities of relocating activities.

- 3 *Nowadays social and economic actors are often in a situation of ubiquity, i.e. capable of being at once here and there.*

Far from being a product of science fiction, this capacity, which has existed since the invention of the telephone, has increased decisively since the emergence of the Internet and the development of ICT. One individual, or even better, a firm, can act at once locally and globally by making its suppliers compete with each other at global level, or by passing orders on stock exchanges abroad, for example. Actors are not only localized but also capable of acting in real time in different places, which means that their registers of actions go far beyond their mere location and that they can develop interactions at local and 'global' levels (which has been possible for a long time with the development of transport techniques) at the same time, in real time (which is new). It is this relative ubiquity of the action of actors in space that must be examined in order to understand how a 'space of flows' is linked to a 'space of places' (as mentioned in archipelago economics: see Velz 1996).

This approach to geographical proximity, taking into account the ubiquity of actors, raises questions once again about the traditional conception of the localization of activities. The problem is no longer to determine where an actor is located (in relation to the localization of other actors) but to understand how the action of actors develops simultaneously at different spatial scales.

But geographical proximity is not the only type of proximity. There is another form of proximity that is not geographical but relational in essence. *Organized proximity* is the ability of an organization to make its members interact. The organization facilitates interactions within it, and anyway, makes them *a priori* easier than with units situated outside the organization. Two main reasons explain this.

First, belonging to an organization translates into the existence of interactions between its members, inscribed – as the evolutionist language puts it – in the *genes* (routines) of the organization. This is what is called the *logic of belonging* of organized proximity: two members of one organization are close to each other because they interact, and because their interactions are facilitated by the (explicit or implicit) behavioural rules and routines that they follow. Thus, other things being equal, cooperation will, a priori, develop more easily between researchers and engineers belonging to the same firm, the same technological consortium, or the same innovation network.

Second, the members of an organization are said to share the same system of representations, or set of beliefs, and the same knowledge. This social relation is mainly tacit. This is what is called the *logic of similarity* of organized proximity. Two individuals are considered as close because they are ‘alike’, i.e. they share the same system of representations, which facilitates their ability to interact. Thus two researchers belonging to the same scientific community will be able to cooperate more easily because they not only share the same language, but also the same system of interpretation of texts, results, etc.

Geographical proximity is not a sufficient condition to efficiently organize the activities of economic and social actors. Even though it presents interesting opportunities in terms of relations or information and knowledge exchanges, its potentialities can be realised only if relations of organized proximity are mobilized, whether they be based on a logic of informal networks or on more institutional bases (Filippi and Torre, 2003). Furthermore, the drawbacks of geographical proximity, in terms of congestion, negative externalities or neighbourhood conflicts, can be mitigated, and even eliminated, by mobilizing relations of organized proximity, in particular by setting up consultation or negotiation processes.

4 The example of agricultural change in European and developed countries

In this section we illustrate the above analysis by discussing the changes that have affected the model of agricultural development in European countries in the last few decades, their environmental consequences and their local specificities. We start from the fact that the intensive growth model developed in the 1960s in the agricultural sectors of industrialized countries has had many negative impacts on the environment, impacts that we now try to avoid or solve through the implementation of new systems of production and new rules of the economic game.

4.1 An unprecedented growth of productivity and production: major risks for the environment

From the 1960s onwards, the agricultural sectors of European countries experienced an unprecedented increase in productivity and in the volumes produced. This ‘agricultural revolution’ was possible thanks to a continuous increase in agricultural production per

surface unit and thanks to the intensive use of inputs that limited the effects of natural constraints: generalization of the use of chemical fertilizers to maximize yields in different – even infertile – soils; irrigation to compensate for the shortage of rainfall or of useful water reserves; selection of varieties enabling producers to grow all types of vegetable species whatever the regional context. The intensification and mechanization of all stages of the production process have resulted in reduced workloads, an increase in fixed capital, an increase in the surface area per holding, and land consolidation. This has reduced agro-ecosystems to a status of neutral and passive support of production. As a consequence of this development of agriculture a massive rural depopulation occurred, contributing, in turn, to the expansion of urban metropolises.

Although this growth model resulted in unprecedented agricultural growth for at least 30 years, questions about its legitimacy and efficiency started to be raised in the 1980s. Indeed, it translated into an increasing social cost of structural surpluses and into a level of market support expenditure deemed excessively high. Furthermore, the negative impacts of this evolution on agro-ecosystems were observed in the early 1980s: pollution of water and soils by phytosanitary products and nitrates, air pollution and contribution to the greenhouse effect, problems of erosion and soil compaction, poorer biodiversity, spatial imbalances... (Mollard *et al.*, 2003). These negative effects translated into extra costs and raised questions by society concerning the protection of the environment. However, it was only in the 1990s that significant shifts in techniques and production processes were defined and benefited from the support of public policies that acknowledged their long-term benefits (Hervieu *et al.*, 2000).

This unprecedented growth of agricultural production was accompanied by the standardization and normalization of products driven by profound changes in lifestyles and consumption patterns, especially in urban and industrial areas. The agro-food sector, taking an industrial approach, then experienced a period of rapid growth with gains in generic quality. This resulted in the emergence of mass production, the concentration and specialization of agricultural holdings in certain zones, while certain ‘marginal’ areas where conditions for the development of this model were more difficult to find, were left behind. Under the pressure of the increasingly international competition, the continuous drop in prices reinforced the development of mass consumption at low prices, thus considerably reducing the share of household budgets devoted to food. In France for example, it decreased from 30% in 1960 to 16% in 2000, less than half of which for agricultural products (SCESS, 2001).

4.2 A continuous increase in scales of production, exchanges and decision-making

This co-evolution of production and consumption led to the progressive disappearance of a large part of locally specific products, a significant part of which was produced for their own consumption by rural households, which at the time represented a high percentage of the total population of countries. In 30 years, we progressively shifted toward a largely ‘globalized’ production, based on a high level of specialization of agricultural holdings and agro-food firms and on high trade flows with other countries. This was followed by an increase in the size of holdings and agro-food firms, which translated into increasingly large scales of production and distribution, not only in industrialized countries but also in developing countries. As a consequence of this, the level of coordination between the

different economic actors of the production chains – and later between the different institutions concerned – simultaneously increased in the same proportions.

The ever-increasing scales of production, exchanges and decision-making at both private and public levels, have become incompatible with the spatial scales at which environmental management can be defined and implemented. Indeed, the state of the agricultural environment in a given area results from an interaction between local, biological, pedological, climatic and agronomic variables. It is this interaction between several variables that defines a territory and consequently that defines a territory of action and decision-making for farmers and the other actors concerned. Reciprocally, in view of the uniformity of environmental management as it is practised at present, it would be useful to be able to differentiate the strategies of action and decision-making of farmers and other players concerned, according to the more or less important coherence between the local environmental variables.

This logic of spatial scales at which the management of the environment takes place clashes with the scales at which economic decisions are made. The latter undoubtedly vary, and many decisions are made at decentralized levels: the economic decisions made by the farmer concerning his farm, or those of agro-food firms or retailers concerning the commercialization of products, for example. But market constraints often impose a shift toward large, national, European, global scales. Therefore the problem that arises here is that of the clash between the two types of scale. The model of intensive growth we have briefly described tends to erase the relevance of intermediary territories, which are defined by specific physical and economic characteristics (mountains, river basins, catchment basins, employment and production basins, agglomerations...) and whose relatively small size facilitates the compromise between economic and environmental constraints.

4.3 Public policies have become standardized as a result of globalization

It should have been up to public policies to alleviate the clash between the scales at which the environment can be managed and those at which economic governance takes place. But we know that the process of industrialization of European agriculture owed part of its success to the fact that it was supported by the uniform agricultural policy of the EU based on price support granted to producers according to the volumes produced but with little differentiation between the different types and places of production. We also know that the measures successively implemented in the framework of the Common Agricultural Policy of the European Union since 1962 have strongly contributed to the development of this model of intensive growth, by associating technical modernization with the restructuring of agricultural lands and rural space (Hervieu *et al.*, 2000). Finally, we know that the corrective measures implemented – such as the allocation of compensatory allowances for natural handicaps or the subsidies allocated to farmers in the framework of agro environmental or rural development measures – could not entirely compensate for the standardization of this policy. Although these measures were designed to take into account the diversity of agricultural environments, particularly in mountain regions (Chatellier *et al.*, 2002), they remained too limited in their scope and enforcement to really counteract the dynamics of globalization and the progression of mass production. Thus, agricultural policies, far from reorienting the process of intensive growth described above, actually contributed to reinforcing the process of globalisation.

However, this dynamic has been called into question and reoriented following two recent events:

- the health crises that affected the agro-food sector and resulted in a significant loss of confidence by consumers in this type of products, such as the dioxin chicken scare and the BSE and avian influenza crises;
- the opposition to the intensive growth model that grew increasingly strong as soon as the negative effects on natural resources of this model were proved and revealed to the public.

Today, reference to the advantages of the productivist, intensive, universal and generic model of growth is progressively giving way to a new conception in which the Local is taken into account and given due importance, and which paves the way for different forms of development.

4.4 The differentiation of production and consumption modes

The model of mass consumption of standardized products that was born in the 1960s has not disappeared and still accounts for a large share of household budgets and of foreign trade flows. But it has been enriched by a continuous increase in product differentiation observed in many industrial sectors, such as the automobile and computer industries, and also in the service sectors as a result of the increasingly frequent association of material goods and non-material services that differentiate the products. Managers refer to the concept of 'product-service system' to qualify the association between material goods and services (Mathieu, 1996) which enables firms to supply 'personalised' products differentiated according to the contextual preferences of consumers. The latter expresses his/her preferences for several characteristics of the good (environment-related, for example) and no longer for the product itself (Lancaster, 1991). In short, household demand for food has progressively become more diversified with, beside the demand for standardized goods, an increasing demand for products differentiated on the basis of quality, origin or *terroir*.

There are two different approaches to the quality differentiation of agro-food products. The first focuses on the upstream of the product's life, the methods used for its production and transformation. This approach takes into account the conditions of production more than the product itself. The other approach focuses on the consumption and origin of the product. In both cases, there is an interaction with the environment, but the question is to know whether and how the latter is better taken into account.

- Product differentiation related to *production processes* evokes the image of an agriculture for which the quality of the environment in which the product was produced is as important as the quality of the product itself. But this approach can correspond to a number of rather different situations: organic agriculture, which is growing fast and explicitly focuses on environmentally sound farming practices; integrated production, which is more developed in the fruit sector and encouraged by the retail industry; specifications or standards of production defined by organizations of producers in the framework of 'quality approaches', some of which are recognized and regulated by the public authorities (reasoned agriculture, ISO 14001 standard), but whose impact is difficult to assess. In reality, these initiatives are, in most cases,

more sectoral than territorial. They generally aim to improve generic production standards rather than to explicitly protect the environment.

- Product differentiation on the basis of *quality and origin* is a mode of qualification that is more traditional than the above-mentioned one. It is designed to be more readable by consumers and its economic impact is very significant (Lagrange *et al.*, 2000). Although, in its definition, this approach to quality is independent from environmental concerns, the production and transformation methods adopted to produce these products are often anchored in tradition and *terroirs*; they are practised with care for natural resources and take increasingly and explicitly into account criteria of environmental acceptability in the product specifications. This could make them a possible lever to improve the relationship between agriculture and the environment (Mollard and Hirczak, 2004).

In short, differentiation based on the quality of production processes or products can have a positive impact on the environment if it promotes a diversification of productions and the use of environment-friendly agricultural practices. With the intensive model, the homogenization of crops has had negative consequences on biodiversity and has resulted in an increase of parasitic risks. Conversely, the diversification of productions anchored in local or territorial areas or related to specific outputs is an explicit factor of biodiversity. It also has positive effects on the environment when it preserves the typicality and diversity of rural spaces and landscapes. In fact, when the main factors of product differentiation are the geographical origin of the product and the environment, this differentiation inevitably leads to the differentiation of territories.

4.5 *The territorialization of public policies and the management of the environment*

Global and uniform policies progressively started to shift and diversify their objectives at the beginning of the 1990s, following the reorientation of the model of intensive growth towards more diversified technical systems and forms of production that were better adapted to the characteristics of the different agricultural environments. This evolution has marked the end of standardized agro-ecosystems founded on generic production techniques. In Europe, the first attempts at differentiation have consisted of developing the 'rural development' aspect of agricultural policies and to limit, via the products, the levels of market support and export subsidies. But one question has not yet been explicitly and actively addressed: that of the spatial scales that would be the most efficient for the implementation of a policy more focused on the development of territories.

We have mentioned several times in this article the relevance and absence of the territorial scale as a scale of analysis of the relations between the different components of agro-ecosystems, and as a scale of decision-making and coordination. We have highlighted the legitimacy of this decentralized approach for a more efficient management of the relation between the environment and agriculture. But territorial differentiation remains relatively absent from the current public incentive schemes of the public policies that influence this relation (Colson, 1999).

Policies should in fact aim to develop and implement 'plans for rural territories' that integrate and take into account all activities carried out in a given space in order to better manage their interface with the environment and natural resources. Following the example of urban planning, 'development maps' for environmental spaces could define, in rural

territories, modalities of spatial distribution of environmental-risk areas that are partly, but not exclusively, related to agricultural activities: zones that must not be exploited, protection perimeters, interruption of risk-laden activities or the reduction of their level of specialization, limitations on the construction of polluting facilities, promotion of diversification in activities, etc. This obviously raises questions that cannot be answered by the representatives of agriculture and of the corresponding institutions alone.

5 Presentation of the articles published in this Special Issue

The articles presented in this issue show the advantages of linking proximity relations and the local anchorage of environmental processes. They all highlight the local dimension of these processes, but also show that geographical proximity between the actors cannot alone generate solidarity between them or enable them to engage in concerted and common actions or to adopt a common vision of the future. Strong social and institutional relations, such as those described in the analysis of organized proximity relations, are necessary to activate the potentialities of geographical proximity and can lead to the mobilization of all local players to find solutions to environmental problems and constraints.

The article written by Requier-Desjardins and Rodriguez Borray deals with the question of panela (raw cane sugar) production in Columbia and of its implications in terms of relations to the environment. The authors show that the notion of Critical Natural Capital (CNC), which is essential for understanding the local dynamics of economic development and of environmental preservation, is coherent with proximity analyses. Indeed, the CNC has a strong local dimension - in terms of the natural resources and the actors of production found in the same geographic areas. And this dimension must be related to a differentiation in terms of relations of geographical proximity and their local anchorage. Furthermore, the implementation of local and concerted solutions reconciling economic and environmental needs, rests on forms of agreements and negotiations the importance of which is often highlighted in approaches in terms of organized proximity, whether in its dimensions of belonging or similitude.

The article by Muradian, Folchi and Martinez Alier is dedicated to an analysis of the copper industry and its productive activity, as well as the land-use and neighbourhood conflicts generated by this activity, which is more and more important in terms of export, particularly towards Europe and Japan. The authors focus particularly on the situation in Chile, a country in which the copper industry plays a crucial role in the development of the national economy. The main hypothesis proposed by the authors is that the environmental conflicts provoked by the copper extraction activity are not merely related to the conditions of production and to their impact on the environment but must also be related to the population density, profit distribution and the importance of social rights. This hypothesis is in keeping with proximity analyses in that it highlights the importance of non-geographical conditions and more particularly of organised proximity in the emergence of conflicts and in the processes of conflict resolution.

Aznar and Perrier-Cornet carry out an analysis of the role of environmental services in natural and rural areas; their analysis rests on the study of three rural communities in Auvergne (France). Basing their reflection on the notion of institutional sectors – which can be interpreted as groups of actors and institutions linked together by organized

proximity and therefore by common beliefs and representations - they describe and analyse the evolutions that have occurred in rural areas. More particularly, the authors show a decline in the importance of agriculture, in favour of activities related to the maintenance and improvement of the living environment of rural residents, whether they be new or old residents. It is the institutional sector of local public action that now occupies a predominant position, with supporting measures implemented by the State and the European Union.

November's article examines the question of risk and its spatial dimensions, based, in particular, on the case of fire incidents that occurred in a number of urban areas. The author shows that the consequences of fire incidents are more serious in urban areas because of the high population density, but also that this type of environment presents a geographic concentration of different types of risk (industrial, social, environmental...). Rather than using the notion of geographical proximity, which she deems insufficient, she chooses to mobilize that of connexity which refers, in particular, to networks of actors, and to the capacity of mobilization of the actors concerned, which constitutes the 'positive' side of risk. In this, her analysis is in keeping with analyses in terms of organized proximity, which refer both to the network relations between actors and to their ability to mobilize each other in order to undertake actions on the basis of shared anticipations and representations.

Lecourt and Baudelle's article focuses mainly on development planning conflicts, suggesting that it is possible to analyse them in terms of proximity. They use the notions of spatial (or geographical) proximity, which presents a geographical dimension, and social (or organized) proximity, which presents a relational or institutional dimension. On the basis of their analysis of different projects of railway projects implemented in France, they show more specifically how conflicts concerning development projects can generate social proximity, by creating a social bond between the actors who oppose such projects – actors who, it must be noted, are often initially used to functioning within groups or associations. This study, which deals with the relation between social proximity and spatial proximity, reveals how conflicts can generate social proximity between individuals who share a common goal. Spatial proximity, which contributes to this process, is however a necessary but insufficient condition for its emergence.

The article presented by Joannon *et al.* focuses above all on the question of geographical proximity in situations of erosive runoff. Their analysis is based on the case of Upper Normandy. The authors show that geographical proximity can play a determining role in the struggle against erosive runoff, and present a new tool for analysing relations of proximity between farmers. Considering the fact that farmers have only limited knowledge of the problem of erosion and are largely incapable of carrying out concerted collective action, Syndicats de Bassins Versants have been created in order to organize them at local level. The results of this study clearly show that long distances, the size of farmed agricultural land, and the high number of external farmers constitute major obstacles to the creation of ad hoc cooperative processes, and therefore that geographical proximity is not sufficient to create cooperation relations. Geographical proximity must be 'supported' by social and institutional relations, which are at the basis of organized proximity and which condition the collective functioning of local actors in the resolution of environmental problems.

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