

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,900

Open access books available

186,000

International authors and editors

200M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com



Organic Farming and Landscape: Experiences and Perceptions in Alt Empordà (Catalonia, NE Spain)

Xosé A. Armesto – López

*Department of Physical Geography and Regional Analysis, University of Barcelona
Spain*

1. Introduction

The five sections comprising this chapter explore the word “landscape” and its meaning in the rural European Mediterranean world from the perspective of organic farmers. One of the aims of this chapter is to make the reader aware of the true nature of these landscapes, and of the need to educate inhabitants and visitors about their conservation. To this end, a case study is presented which focuses on the district of *Alt Empordà* (Catalonia, NE Spain). In the first, introductory section, some theoretical considerations concerning the concept of landscape will be discussed, and questions related to the terminology, typology and even contradictions which are encompassed in this word will be explored. The second section will consist of a brief description of the principal geographical features of the area studied, whilst the third presents the most relevant figures concerning organic farming production in Spain and Catalonia. The fourth section can be considered as representing the main body of the chapter, since it concerns the subject which has been the focus of this research: how organic farmers in the Alt Empordà district perceive the landscape. Rather than taking a rigid stance on the concept of landscape, which is after all a concept which everybody uses and is thus subject to multiple meanings and interpretations (Küster, 2004), the aim of this section is to try to describe the different perceptions that organic farmers have of this concept, and how they relate these perceptions to their activities and surroundings. Lastly, the main conclusions that were drawn from this study are summarised. Accordingly, perhaps the best place to start this chapter is with some brief reflections on the word “landscape”, and the associations and interpretations it elicits.

1.1 The concept of “landscape”

Landscape can be interpreted as a central concept within the context of the relationship which is established between humans and their surrounding environment. It is a concept which has been theorised, described and studied by numerous scientific disciplines, including Geology, Architecture, Art and Ecology. In the discipline of Geography to which the present author belongs, many authors since the 19th century have taken landscape as their central theme, exploring it from different perspectives (Schlütter, Passarge, Troll, etc.). Landscape responds to a perception, and can be defined as the appearance or aspect of a space within a specific area, thus enabling it to be distinguished from other, analogous units.

Its uniqueness renders it an unrepeatable entity. The Earth's surface, therefore, can be defined as a mosaic of unique landscapes (Ortega Valcárcel, 2000).

Landscapes are composed of both stable and dynamic elements which are determined by nature and cultural practices. Thus, landscapes where natural processes predominate and which are subject to continual change as a result of the processes of succession and evolution are habitually considered natural (Küster, H., 2004), whilst landscapes which have been shaped to a greater or lesser extent by humans are considered cultural landscapes. Agricultural landscapes are the product of human culture (Merriam, 1988) and thus form part of our common heritage (Pretty, 2001).

However, as Küster (2004) has indicated, it is becoming increasingly difficult to distinguish between these two categories, and he has thus proposed the use of the word "landscape" without further distinctions.

The study of landscape is therefore an empirical exploration of a set of interconnected elements. Attempts to define the subject of study vary considerably, depending on the scientific discipline with which the researcher in question identifies. For instance, agronomists and ethnologists employ different research methodologies to study landscape, and probably, their very concept of landscape itself is different. Despite this apparent difficulty, the only perspective considered adequate at the E-conference on *Biodiversity in the Mediterranean Region* for addressing the conservation of present day biodiversity was that of the study of landscape (Hernández *et al*, 2004).

From a methodological point of view, the approach taken in the present study was not to employ exclusive criteria which could only be ascribed to one of these sciences, but rather to combine approaches from various disciplines:

- a. Farms comprised the unit of analysis, as they would for an agricultural engineer.
- b. The instrument used for collecting perceptions of the landscape comprised a semi-structured interview, a method halfway between the approach a sociologist and an anthropologist might take.
- c. The ultimate aim was to understand not only how an area was structured but also how it was interpreted by the principal agents involved, thus pursuing a geographical objective.

The subject was addressed from a perspective which is related to agro-ecology, bearing in mind that, according to Guzmán, González & Sevilla (2000), this latter should observe the following alternative premises: a) a holistic analysis, b) a systemic focus, c) contextualisation of the subject, d) a subjective filter, and e) a pluralist conception.

According to Daniel and Vining (ob. Cit. García Asensio & Cañas Guerrero, 2002), when we employ the word "landscape", we are focusing on visual properties; however, in this study, the perceptions of landscape reported by organic farmers sometimes went beyond the merely physical.

Controversies apart, the following definition, accepted by most of the international community, can be taken as valid: "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (European Landscape Convention, 2000).

In fact, the farmers participating in this study were asked questions which transcended the basic unit of analysis, the farm, in order to avoid the bias that extrapolation to the rest of the district would cause, since according to Gliessman *et al*. (2007), agricultural production is a

much wider system than the farm alone, in which many more parts are interacting, including factors which are exogenous to the farm itself.

1.2 The importance of agricultural landscapes in the rural world

Despite the fact that agricultural production has been experiencing a slow decline for more than one hundred years, and that there are now other activities which for better or worse affect a landscape, agriculture continues to play the leading role as regards determining the landscape in numerous European regions. This provides a partial context for the present study, since agriculture constitutes a set of actions of a social nature (Baldock, 2004) which have played an important role in shaping the landscape (Von Meyer, H., 1996) ever since the transformation from primitive landscape to cultural landscape began 10,000 years ago (Gastó, Vieli & Vera (2006).

In Western Europe, landscapes have evolved differently according to the region. Such evolution may be towards agricultural intensification, which generally leads to a reduction in uncultivated areas, or towards the abandonment of agricultural land, leading to an increase in uncultivated land: according to Küster (2004), it is the latter development which is mainly responsible for changes to the landscape in rural Europe. These two processes induce ecological change at a landscape level which is frequently viewed as a threat to biodiversity (Burel & Baudry, 2001; Berendse & Kleijn, 2004). Indeed, rural landscapes in Europe currently represent the outcome of a history, on the one hand, of good farming practice, and on the other, of environmental destruction (Baldock, 2004), according to the region and moment in history (Küster, 2004). The case of change in Mediterranean agricultural landscapes is a paradigmatic illustration of this trend, as their outstanding resilience has been achieved through prolonged, sensible and restrained anthropic action (Vélez Restrepo & Gómez Sal, 2008).

The magnitude of agricultural impact on the environment depends to a great extent on the structure of the landscape in which farming is practiced (Fernández Alés & Leiva Morales, 2003).

Changes to agricultural landscapes are due not only to natural factors, but are also intimately related to economic and social change. Changing forms of land ownership, fluctuations in demand for agricultural produce, changes in agricultural policies and technological progress in agriculture and livestock rearing are all decisive factors which influence the evolution of these landscapes. Thus, farmers determine the cultural landscape through their organisation and use of the land (Llausàs *et al.*, 2009), and the landscape consequently develops characteristics peculiar to each place (García Ruíz, 1988).

It should be borne in mind that the landscapes generated by farms fulfil at least four groups of functions (Rossi, Nota & Fossi, 1997): a) ecological functions related to natural features; b) economic functions related to the economy of the producers; c) social functions related to the relationships which are established between the diverse agents; d) aesthetic functions related to visual and contemplative aspects.

Considering all the above, the initial hypothesis was that organic farmers in the district of Alt Empordà would have a positive image of the landscape when considering their own farms, but would regard conventional farms as presenting poorer landscape quality. It will be interesting to see whether, as Levin (2007) claimed, the relationship between organic production and landscape composition is independent of the variables regional location,

size or transformation: however, type of production, farm size and physical and geographical conditions generally exert a greater influence on landscape composition.

2. A brief geographical introduction to the study area. The district of Alt Empordà

The district of Alt Empordà is located in *Girona's* Province, in the far north east of the Autonomous Region of Catalonia, in the north east of Spain. It covers an area of 1,357 km², bordering France to the north and two other Catalanian districts, Garrotxa and Pla de l'Estany, to the west. To the east, it forms the northern half of the Costa Brava tourist coastline, washed by the Mediterranean sea, whilst its neighbouring districts to the south are Baix Empordà and Gironès (Fig. 1). From a physical point of view, three main factors should be highlighted which together help to endow this district with a distinctive personality. The first of these is the mountainous terrain to the north and the west, forming part of the foothills of the Pyrenees mountain range. To the east and south are the alluvial plains, colloquially known as the *Plana del Empordà*. And lastly, there are the areas of contact with the highest mountainous terrain in the north, which has traditionally been called the *aspres*, and the undulating hills, or *Terraprimis*, in the south east. In addition, some of the most important rivers in the Catalanian Mediterranean flow through this district, the Muga and the Fluvià, historically of great importance in the plains located on their lower reaches for irrigation purposes.

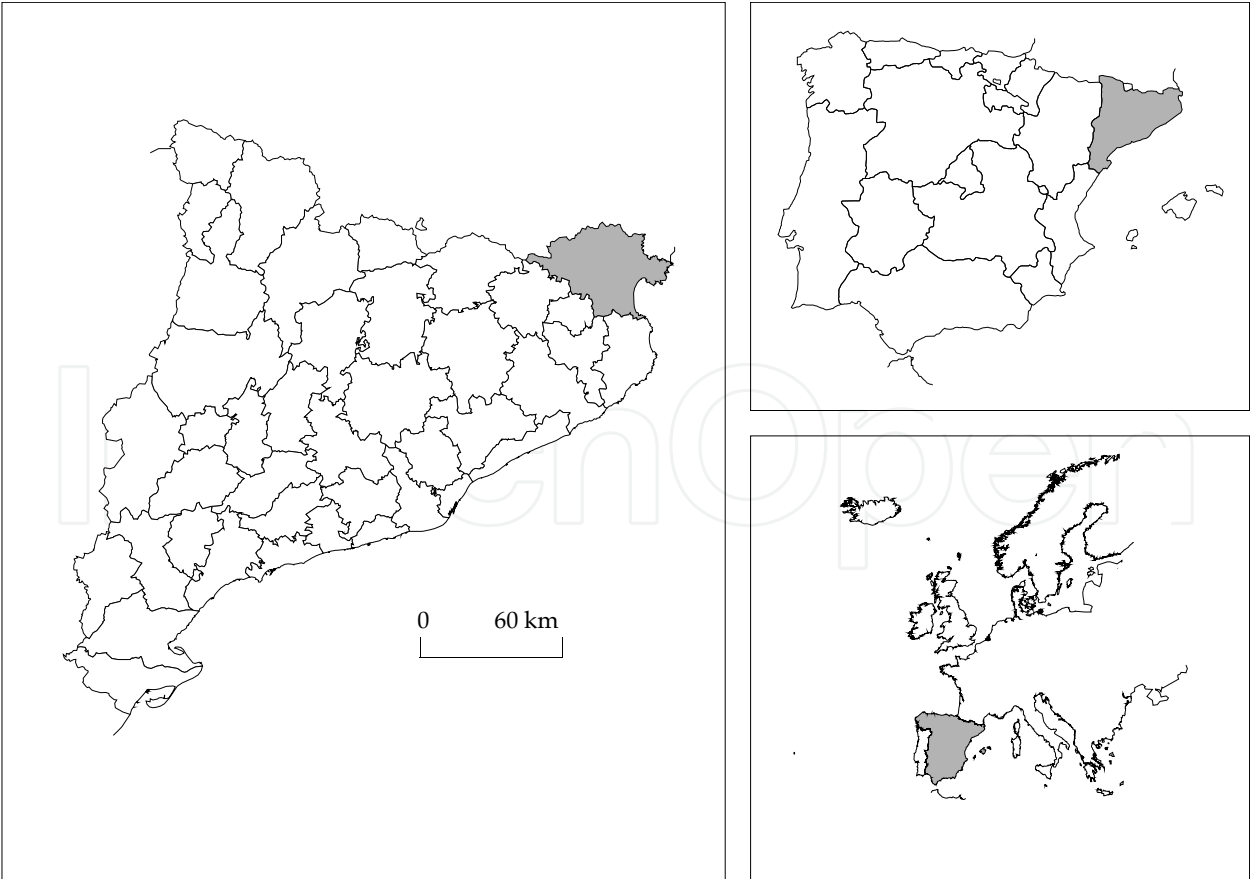


Fig. 1. Location of study area

The climate of this district is profoundly Mediterranean, although it acquires transitional sub-humid overtones in places where the relief is more pronounced. Summers are usually hot and dry, and winters are normally mild, with a mean temperature of slightly over 15 °C in the warmest areas and 12 °C in the colder zones located in the highest areas of the district. Precipitation is irregular throughout the year; however, maximum rainfall usually occurs in spring and summer (ranging from 500 mm annually in the extreme south to around 900 mm in the peaks to the north). From a climatic point of view, one of the most remarkable features of Alt Empordà, and one which exerts a strong influence on the district, is the *Tramuntana*, a strong wind from the north or north west which has traditionally conditioned farming practice. The natural vegetation occurring as a consequence of these climatic gradations presents a predominance of Mediterranean taxa together with a fair number of Euro-Siberian species in transitional climate areas.

The most noteworthy aspects of the human geography of the district can be summarised by a few figures referring to the population and the economy. Thus, in 2010, Alt Empordà had a population of 140,262 inhabitants (103 inhabitants/km²), 40% more than in 1986, and 53% more than in 1900. The district capital, Figueres, has a population of 44,255 inhabitants (31% of the district total).

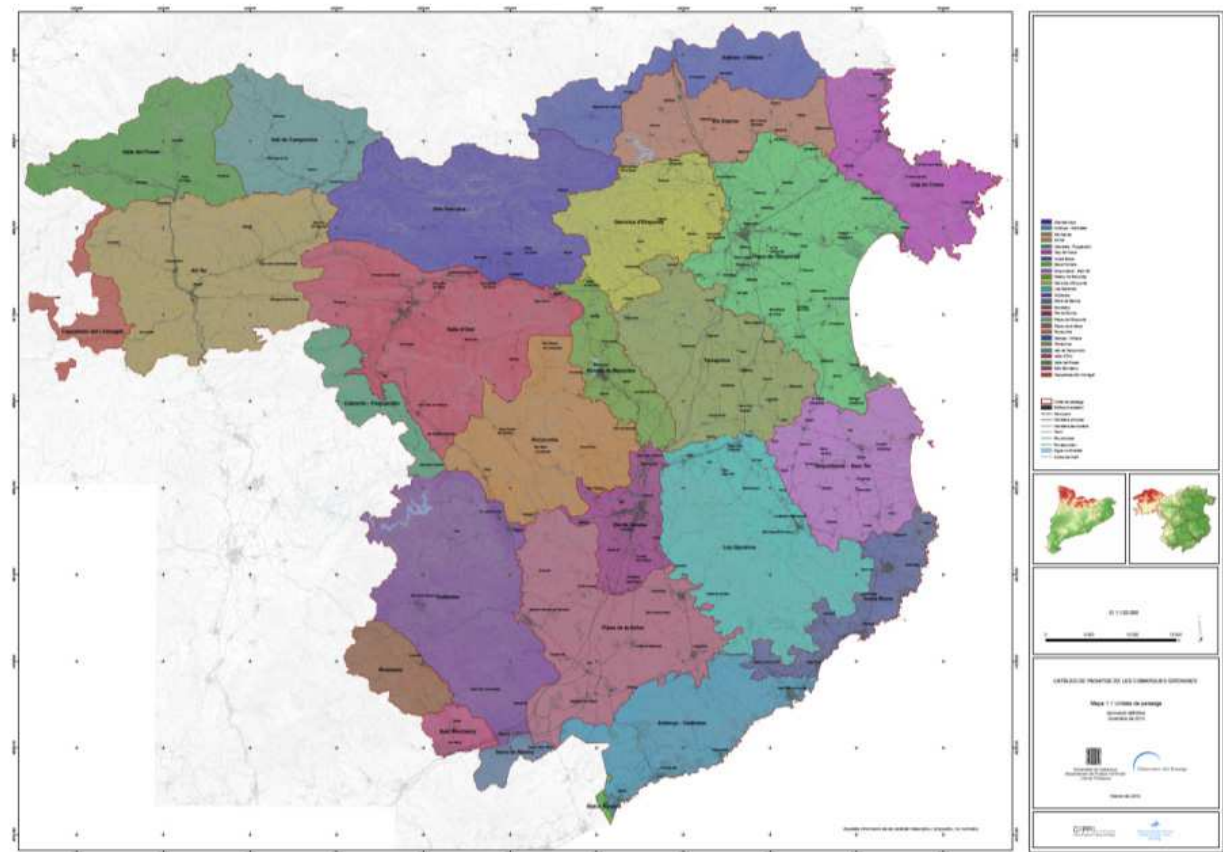


Fig. 2. Landscape units of Girona Province. Source: *Observatori del Paisatge de Catalunya* (2010)

As regards the economy, the service sector is the strongest economic sector, representing 72.5% of Gross Value Added (GVA), followed by the construction sector, representing

15.2%, industry (8.7%) and lastly, agriculture (3.6%). The proportion of the population employed in these sectors is fairly similar to the GVA figures.

Turning to the agricultural sector in the district, the main figures available indicate that there has been a slow decline in recent years in the total surface area given over to farms and farmed land. Similarly, the number of farms has reduced, although the number of livestock has increased in all categories.

A combination of physical and human factors has endowed Alt Empordà with a series of landscapes that the Catalan Landscape Observatory (*Observatori del Paisatge de Catalunya*, 2010) has inventoried and mapped, concluding that the district presents seven different landscape categories (Fig. 2).

3. General description of organic farming in Spain, Catalonia and Alt Empordà

Organic farming in Spain is no longer a marginal and ideological sector (González de Molina, Alonso & Guzmán, 2007), due to its strong growth, rapid expansion and popularisation over the last fifteen years, aided by extensive regulatory intervention (Armesto, 2007). For the authors cited earlier, this type of production may become an alternative to conventional farming in Europe. In 2009, certified organic land in Spain accounted for 1,602,868 ha, putting it at the top of European rankings for total organic surface area, ahead of countries which have traditionally been at the forefront in this respect (Italy, Germany, France and the United Kingdom).

Spain's organic farming sector took off in the mid-90s and was consolidated in three identifiable stages: from 1997 to 1999, from 2000 to 2006, and from 2007 onwards (Fig. 3). Figures (Spanish Ministry of the Environment and Rural and Marine Affairs, 2010) also show a significant increase in the number of producers, which has now reached 25,291.

Nevertheless, it should be borne in mind that there are very marked regional differences in Spain (Table 1). More than half of the total surface area classified as organic land in Spain is unquestionably located in Andalusia, with 866,799 ha, whilst at the other extreme, there are various regions which are much smaller and where certification has not made such headway (for instance, the Basque Country, Canary Islands, Cantabria, Madrid and La Rioja all have less than 10,000 ha of certified land). Catalonia falls about midway between these two extremes of certified organic surface area, with 71,734 ha in 2009¹. Most certified land corresponds to the category of pasture, meadows and forage crops (758,794 ha), but also includes a significant amount of woodland, cereal crops and olive groves. Organic livestock farming also presents a huge regional disparity: Andalusia once again holds more than half of the 4,547 organic livestock farms in Spain, whilst at the other extreme are those areas with less tradition of livestock farming (Murcia, the Canary Islands and Madrid all have fewer than 20 farms each). Most organic livestock farms rear cattle. It is the steady payment of agro-environmental subsidies which has been responsible for the growth of organic farming in Andalusia (González de Molina, Alonso & Guzmán, 2007).

¹ In contrast to whole Spain, Catalonia has already produced figures for 07/15/2011, showing that total surface area under organic production has now reached 83,506 ha (Catalan Council for Organic Agricultural Production – CCPAE – 2011).

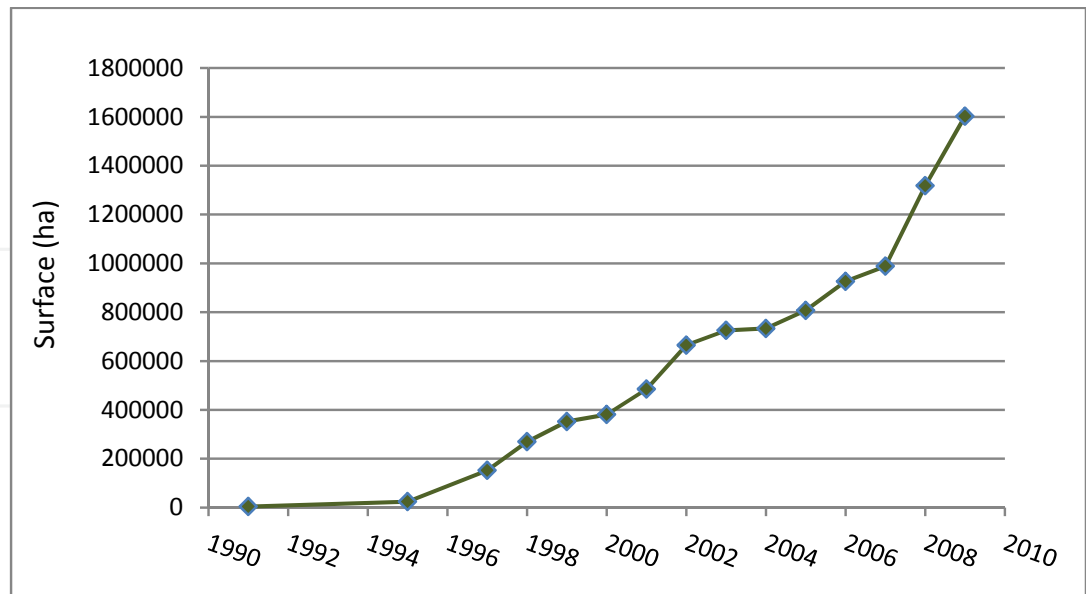


Fig. 3. Organic farming surface evolution in Spain (1991-2009) hectares. Source: MARM (2010).

	Organic Farming Surface	Number of organic farmers
Andalucía	866.799	7.794
Aragón	66.730	706
Asturias	14.019	276
Baleares	29.569	480
Canarias	4.236	665
Cantabria	5.796	128
Castilla-La Mancha	246.076	4.751
Castilla y León	22.154	334
Cataluña	71.734	899
Extremadura	115.017	3.648
Galicia	14.238	449
Madrid	6.043	199
Murcia	60.742	2.222
Navarra	30.843	556
La Rioja	8.634	205
País Vasco	1.484	170
Comunidad Valenciana	38.754	1.283
TOTAL ESPAÑA	1.670.870	24.765

Table 1. Regional surface of organic farming in Spain (2009) hectares

The case of Catalonia is almost unique within Spain, since together with Andalusia, Catalonia was one of the two regions which became a focal point for the alternative farming trends which arrived in Spain from other parts of Europe at the beginning of the 1970s. Consequently, the associated structures, regional implementation and the strength of its food industry have combined to render the region a benchmark in the context of Spain. With

397 organic livestock farms², Catalonia is second only in importance to Andalusia and the Balearic Isles.

Lastly, in order to contextualise the study area, Alt Empordà has a total of 3,987 ha of certified land, principally given over to pasture, meadow and forage crops and farmed by a total of 29 producers. Of these, 9 rear livestock, mainly cattle.

4. Perceptions of landscapes: Organic farmers in Alt Empordà

Following pages will show a brief methodological guide and the main discoverers due to field work.

4.1 Notes on methodology

The aim of the present study was to combine a psychological model, referring to the sensations and perception of the people who inhabited, visited or saw the landscape, with a phenomenological model focusing on subjective, individual sensations and how these were interpreted (García Asensio & Cañas Guerrero, 2002). In order to analyse some of the ecosystems, including agro-ecosystems, humans were considered as an integral part of the system under consideration (Vélez Restrepo & Gómez Sal, 2008).

As mentioned earlier, the unit of analysis for this study was the farmer, and consequently the farm, although the objective was to identify characteristic traits of perception in the agricultural district of Alt Empordà. Following Payraudeau & Van der Werf (2005), in this study an approach similar to that known as the Multi-Agent System (MAS) was employed. An in-depth, semi-structured questionnaire was administered to the farmers participating in this study. The questionnaire combined open questions with closed questions, and no time limit for completion was established.

The methodology used to construct the questionnaire was very similar to that employed by Schmitzberger et al. (2005) to analyse how agricultural styles in Austria affected biodiversity conservation in agricultural landscapes. Using the same approach as that taken by Hendriks, Stobbelaar & Van Mansvelt (1997) in their study of an organic farm in the Netherlands, the farmers were interviewed and the farm visited, but the area was examined independently of the farmers.

In addition to providing data on farmers' attitudes towards and concepts of landscape, which was the aim of the study, these interviews with the farmers also yielded information concerning how the farm was managed, together with the history of the farm and the farmer. After characterising the farm using a series of general items, the first question the farmers were asked was the same as that which Vereijken, van Gelder & Baars. (1997) asked in the introduction to their study on nature and landscape on organic farms: "what is a good landscape?". They were then asked a further five questions related to the quality of agricultural landscapes considered both at farm and district level. Next, they were asked nine questions related to diverse aspects of the landscape and its main agents. The interviewees gave a quantitative assessment on a scale of 1-7, using a variation of a psychometric scale for the first five questions, whilst the remaining four were answered on

² The 2010 figures for Catalonia indicate a 23.7% increase in farms over the previous year, with the number of organic farms now standing at 491 (CCPAE, 2011)

the basis of qualitative assessments with the concepts “much worse” and “much better” representing either end of the scale, respectively. The questionnaire ended with a final question to be answered on a scale of 1-7 concerning the relationship between the agricultural sector and Europe. This last qualitative item was included as part of a future plan to replicate this study in other areas of Catalonia, and although it had no statistical significance for this study, it may indicate other areas of interest.

Fieldwork was conducted in the spring of 2011. Of the 24 potential subjects identified as producers within the district studied³, 13 participated, and these comprised the study sample. All the subjects were interviewed in situ on their farms, with the exception of one who attended the interview in a public building in the capital of the municipality where he resided. When selecting the sample, the landscape category to which the farms belonged was taken into consideration in order for all categories to be represented, as far as possible. Nevertheless, to simplify the results and guarantee interviewee anonymity, the landscape categories in Alt Empordà were reduced to three (Fig. 4): mountains, plains and hills.

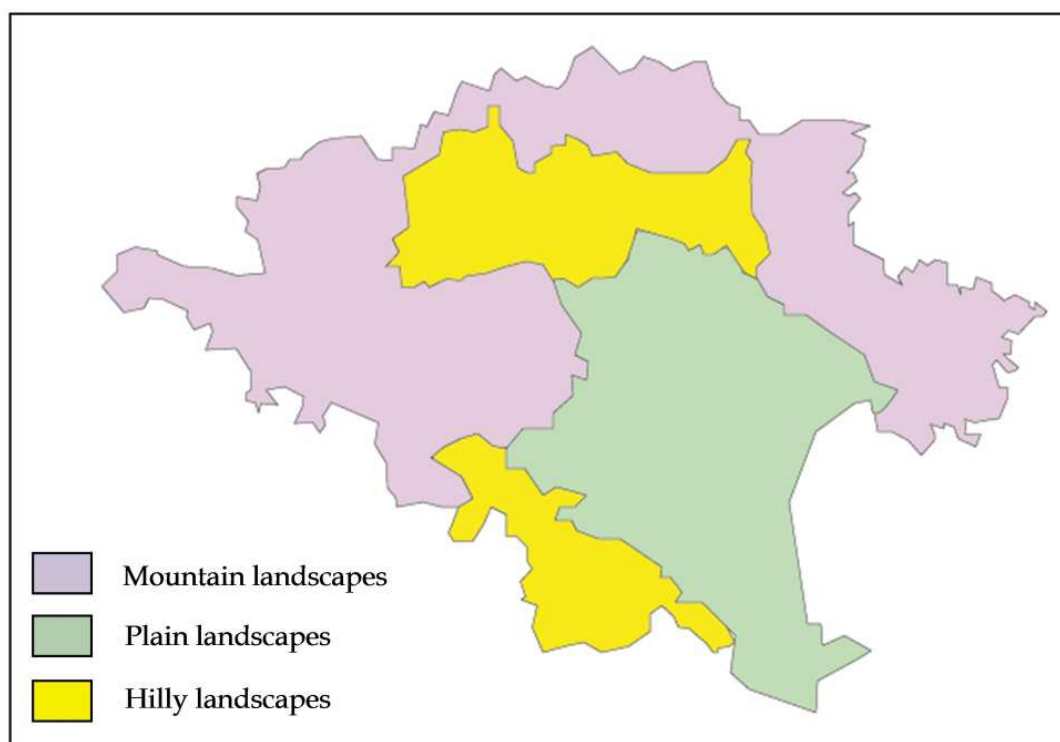


Fig. 4. Main types of Landscapes according to organic farmers

4.2 Characterisation of the farmers

All the farmers interviewed owned their farms, with the exception of one case where the interviewee was one of the sons of the owner and an active member of the family business. In total, five women and eight men were interviewed. On some occasions, the interview took place in the presence of other family members who also worked on the farm. These

³ The official number given in figures published by the Catalan Council for Organic Agricultural Production (*Consell Català de la Producció Agrària Ecològica*) is 33, including producers, transformers and vendors. In this study, only those identified as producers or producer-transformers were interviewed.

ended up participating in the interview, and thus three more people contributed a significant number of observations which were extremely pertinent to the study. Subjects were aged between 35 and 74.

Most of the interviewees were full-time farmers, although three reported working only part-time on their farms. The majority practiced exclusively organic farming on their farms, although again, three reported maintaining some conventional production. Three of the interviewees transformed their produce on their own farms. In general, the majority of the people working on the farm were family members, although four farms also employed contracted labour on either a full- or part-time basis.

Farms varied widely in size, ranging from 7 ha to over 1,000 ha, but the most common size was between 25 and 50 ha. The farms produced a wide range of products, but in general terms the most frequent types of production are those shown in Table 2. Lastly, typical interviewee characteristics are summarised in Table 3.

Landscape type	Number of organic farms studied	Main Products
Mountain	4	Goats, cattle, forest, orchards, hens, fodder, beekeeping, fruit-trees, olive’s oil
Hill	3	Fodder, barley, oats, wheat, wine, olive’s oil
Plain	6	Orchards, potatoes, olive’s oil, sheeps, hens, fodder, corn, pulses

Table 2. Main types of organic production according to landscape type

Organic farmer	Male 48 years old Owner of the farm Full-time worker Surface (25-50 ha) Organic farm (100%) Familiar worker aid Fodder, cereal and orchard productions with livestock. Olive’s oil production oriented to self consumption
----------------	---

Table 3. Characteristics of intervieweed farmer

4.3 Concepts associated with landscape

In answer to the initial question “What is a good landscape?”, the interviewees replied using up to a total of twenty seven different concepts. Some of these definitions coincided, and discourses related to balance or harmony, diversity and the survival of indigenous varieties as the defining elements of a quality landscape were the most frequently used concepts.

The aim of the second question was to obtain a more explicit response from the interviewees, and thus they were asked what they considered a good *agricultural* landscape.

In some cases, their reactions indicated a certain degree of surprise, since when answering the first question they had subconsciously based their response on a mental representation of the agricultural landscape about which they were now explicitly being questioned. Once the interviewer had provided the pertinent clarifications, responses differed in some respects from those made earlier. One line of reasoning in particular was employed by over half the interviewees, and thus indicated a general feeling: for there to be a good agricultural landscape, the fields must be farmed. Once again, the idea of diversity was also strongly represented. Other notable defining traits were the need for livestock and, in some cases, the presence of tree-lined riverbanks. As regards this latter point, the district studied still conserves areas where *closes* are the main landscape feature. In recent times, enclosed fields in the district have undergone drastic changes: managed by large companies, they no longer hold cattle or horses but have been turned over to poorly producing sunflower or maize crops in order to collect subsidies. In other cases, some of these fields have simply been abandoned (Llausàs *et al.*, 2009). Concepts associated with biodiversity also emerged on several occasions. The agricultural landscapes produced by smaller, less intensive farms are characterised by high biodiversity and a complex structural pattern (Küster, 2004). Conversion of conventional farms to organic farming favours an increase in biodiversity, improves the landscape and enhances the value of environment (González de Molina, Alonso & Guzmán, 2007).

In the third question, interviewees were asked what they considered to be the attractions of the Alt Empordà district, and it was this question which elicited the most extensive range of associated concepts from the organic farmers. However, to summarise the large number of features mentioned, the sea and the mountains, together with the light, were the elements that were frequently cited.

The fourth question asked the interviewees to list the dangers they felt were facing the district of Alt Empordà. After encoding their responses, it was possible to identify 25 factors which they associated with a deterioration in the district's landscape. Uncontrolled urban spread was the factor most frequently mentioned by the interviewees: it should be remembered that the study area constitutes the very essence of Costa Brava tourism, a context which has been the driving force behind economic and demographic growth in the region for the past forty years. Other issues cited by several interviewees included excessive industrial development, forest fires and the impact of projected wind farms.

In the next question, the participants in this study were asked to respond at individual farm level, in order to elicit what they identified as the attractions of the landscape for which they were directly responsible. Their responses indicated that for them, the main attractions of the land they managed were related to a subjective concept of aesthetics (Fig. 5), such as productive fields with a natural – and in some cases “wild” – appearance.

Continuing on an individual farm level, the last question in this conceptual section asked the organic farmers to explain what they felt were the dangers affecting the landscape for which they were responsible. Of all the concepts which emerged during the interviews, there were three which surfaced with the most frequency: the danger from fire (the farms of some of those interviewed either bordered wooded areas or were in part given over to woodland), and in this case an important management driver is related with wood clearance (Fig. 6), abandonment of farming (this was the second most frequently mentioned concept) and finally, what some referred to as a lack of interest on the part of the authorities in their work and methods.



Fig. 5. Organic farm's landscape in a hilly area (Alt Empordà – April 2011)



Fig. 6. Landscape evolution in studied organic farm (2004-2010). Source: Google Earth.

4.4 Landscape assessments

The landscape assessments were obtained from six closed questions incorporating six response options, which the interviewees scored on a scale of 1-7. It goes without saying that the heterogeneity of the organic sector in Alt Empordà reflects both the variable terrain, which the farmers identified as a landscape asset, and the diversity of types of production presented by organic farmers in Catalonia. As regards this latter aspect, Armesto (2008) includes a typological essay on organic farmers in Catalonia.

The first of these questions asked farmers to rank the quality of the landscape for which they were directly responsible on a scale of 1-7, where 1 = dreadful and 7 = excellent. Of all the

questions in this section, it was this one which elicited least divergence in the responses given, all of which can be considered positive.

The second question also involved ranking landscape quality, but this time, instead of assessing their own farms, participants were asked to assess neighbouring farms. Here, variability in assessments was much greater: some of the interviewees gave the lowest score possible, whilst others gave a high landscape score to their neighbouring farms.

In the third question, subjects responded to a statement which attempted to identify their perceptions of the contribution made by farmers to the physiognomy of the present day landscape in the district: in this case, 1 = zero contribution whilst 7 reflected the belief that farmers were the principal agents. Once again, divergence was enormous, in this case with various responses at either extreme. Thus, for two of the interviewees, farmers make no contribution whatsoever any more to shaping the landscape, arguing that farming is a disappearing sector without the power for autonomous management, whilst for another interviewee, farmers continue to be primarily responsible for the present day physiognomy of the landscape. In general, it could be said that the majority of respondents felt that farmers made a strong contribution to the appearance of the district's current landscape.

The fourth statement referred to the degree of involvement on the part of the authorities in maintaining the district's landscape. This question elicited the most unanimously low assessments from the respondents. Most interviewees felt that in general terms, the authorities took insufficient action.

The fifth question in this analysis concerned farmers' direct responsibility for the present day landscape in the district. Once more, the farmers interviewed gave very different responses, although in this case they generally acknowledged a certain degree of responsibility which was qualified by regulatory intervention.

The above quantitative questions specifically addressing landscape were followed by the sixth and last question, which asked the farmers to assess the effect of Spain's entry into the European Community on agricultural land twenty five years later. Inevitably, there were a range of responses accompanied by different explanations which were not ranked numerically but rather recorded during the interview. Overall, interviewees expressed moderate agreement that this had been positive.

In order to finish this presentation of the information collected regarding organic farmers' assessment of the landscape, an analysis of the four remaining questions is given below. These elicited qualitative judgements rather than a numerical score; the organic farmers participating in the study were given the choice of five possible responses: 1) much better; 2) better; 3) the same; 4) worse; and 5) much worse.

The first question referred to the farmers' perceptions of the environmental status of their farm compared to ten years previously. Answers were mainly positive. Four of the respondents had no hesitation in asserting that environmental conditions on their farms were much better, and none considered that the environmental condition of their farms was in any degree worse. In order to fully appreciate these responses, it should be borne in mind that, independently of whether their previous methods were more or less respectful to the environment, nine of those interviewed had registered their farms with the Regulatory Council of Organic Farming in Catalonia in the last ten years.

The second question continued in the same vein, although on a different level, asking how the environmental status of the district as a whole had evolved over the last ten years. In this instance, there was a clear prevalence of negative perspectives: only three respondents

considered that environmental conditions in the district had improved over the past ten years.

The third and fourth questions were similar to the previous two. Whilst well aware that some of the interviewees could not possibly have such a long historical perspective, they were nevertheless asked how the environmental conditions on their farms, and in the district as a whole, respectively, had evolved over the past fifty years. In order to correct any age-related bias, respondents under fifty were asked to think of their childhood memories or of comments and experiences recounted by family members who had been alive then. At farm level, the most frequent response was that it was not possible to say whether there had been a positive or negative evolution. However, when the perspective was broadened to include the district as a whole, responses were categorically negative: only one interviewee felt that such evolution had been positive, whilst another felt that the situation in 1960 and today was similar.

5. Conclusions

Landscape can be studied from many different perspectives, since it is a polysemic concept which has been completely assimilated into everyday language. It is the combination of natural and cultural landscapes in the rural environment that has engendered the need to interpret these landscapes, which both condition and are dependent on agricultural activity. Organic farming is essentially a productive method which is more respectful to the environment; consequently, it is assumed to be better than conventional farming in terms of maintaining quality landscapes. In keeping with this premise, the present study, conducted with a sample of organic farmers in the Alt Empordà district (Catalonia), has demonstrated their high level of interest in the subject of the study.

Most of the organic farmers interviewed defined a good landscape as one containing balanced, diverse lands which conserved traditional structures, and in the specific case of agricultural landscapes, these needed to be spaces full of life, spaces where agricultural activity which respected the surroundings prevailed. At the same time, they identified numerous potentially attractive landscape features on their own farms and in the district as a whole, whilst also identifying possible threats on both levels.

To conclude, the aim of this study was to contribute to the geographical knowledge of an area which, due to those responsible for land use planning is under great pressure, by giving a voice to a group which, although small numerically, has an important role to play in the management of the area and the landscape.

6. Acknowledgements

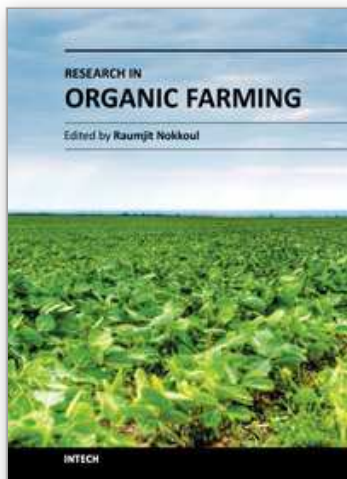
This research forms part of project CSO2008-01346/GEOG funded by the Spanish Ministry of Science and Innovation.

7. References

- Armesto-López, X. A. (2007). El concepto de agricultura ecológica y su idoneidad para fomentar el desarrollo rural sostenible. *Boletín de la Asociación de Geógrafos Españoles*, No. 43, (July 2007), pp. 155-172, ISSN 0212-9426

- Armesto-López, X. A. (2008). Organic farming in Spain - Two case studies. *Journal of Sustainable Agriculture*, Vol. 31, No. 4, (November 2008), pp. 29-55, ISSN 1540-7578
- Baldock, D. (2004). Agricultural policies sustaining the European countryside. In: *Cultural landscapes and land use*, M. Dieterich & J. Van der Straaten (Eds.), pp. 147-161, Kluwer Academic Publ., ISBN 1-4020-2104-6, Dordrecht, The Netherlands
- Berendse, F. & Kleijn, D. (2004). The effectiveness of agri-environment schemes as a tool to restore biodiversity in Dutch agricultural landscapes. . In: *Cultural landscapes and land use*, M. Dieterich & J. Van der Straaten (Eds.), pp. 183-192, Kluwer Academic Publ., ISBN 1-4020-2104-6, Dordrecht, The Netherlands
- Burel, F. & Baudry, J. (2001). *Ecología del Paisaje. Conceptos, métodos y aplicaciones*. Mundiprensa, ISBN 84-8476-014-6, Madrid, Spain.
- Consejo de Europa (2000). Convenio Europeo del Paisaje, (07/13/2011), Available from <<http://www.coe.int/t/dg4/cultureheritage/heritage/landscapeVersionsConventions/S>>
- Fernández-Alés, R. & Leiva-Morales, M^a J. (2003). *Ecología para la agricultura*. Mundiprensa, ISBN 84-8476-085-5, Madrid, Spain
- García-Asensio, J. M. & Cañas-Guerrero, I. (2002). La valoración del paisaje, In: *Gestión de paisajes rurales: Técnicas e ingeniería*, Ayuga-Téllez, F., (Ed.), pp. 33-51, Fundación Alfonso Martín Escudero, ISBN 84-7114-985-0, Madrid, Spain
- García-Ruiz, J. M. (1988). La evolución de la agricultura de montaña y sus efectos sobre la dinámica del paisaje. *Revista de Estudios Agrosociales*, No. 146, (October-December 1988), pp. 7-37, ISSN 0034-8155
- Gastó, J.; Vieli, L. & Vera, L. (2006). De la silva al ager. Paisaje cultural. *Agronomía y Forestal*, No.28, pp. 29-33
- Gliessman, F. J.; Rosado-May, F. J.; Guadarrama-Zugasti, J.; Jedlicka, J.; Cohn, A.; Méndez, V.E.; Cohen, R.; Trujillo, L. Bacon, C. & Jaffe, R. (2007). *Agroecología: promoviendo una transición hacia la sostenibilidad*. Ecosistemas, Vol.16, No.1 (January 2007), pp. 13-23, ISSN 1697-2473
- González de Molina, M.; Alonso, A. M. & Guzmán, G. (2007). La agricultura ecológica en España desde una perspectiva agroecológica. *Revista Española de estudios agrosociales y pesqueros*, No. 214 (May-August 2007), pp. 47-73, ISSN 1575-1198
- Guzmán-Casado, G.; González de Molina, M. & Sevilla-Guzmán, E. (2000). *Introducción a la agroecología como desarrollo rural sostenible*, Mundiprensa, 84-7114-870-6, Madrid, Spain
- Hendriks, K.; Stobelaar, D. J. & Van Mansvelt, J. D. (1997). Some criteria for landscape quality applied on an organic goat farm in Gelderland, the Netherlands. *Agriculture, Ecosystems & Environment*, Vol. 63, No. 2-3 (June 1997), pp. 185-200, ISSN 0167-8809
- Hernández-Laguna, E.; López-Bermúdez, F.; Alonso-Sarría, F.; Conesa-García, C. & Álvarez-Rogel, Y. (2004). La huella ecológica del cultivo del olivo en España y su aplicabilidad como indicador de agricultura sostenible. *Papeles de Geografía*, Vol.39 (June 2004), pp. 141-155, ISSN 0213-1781
- Küster, H. (2004). Cultural landscapes: An Introduction. In: *Cultural landscapes and land use*, M. Dieterich & J. Van der Straaten (Eds.), pp. 1-11, Kluwer Academic Publ., ISBN 1-4020-2104-6, Dordrecht, The Netherlands

- Levin, G. (2007). Relationship between Danish organic farming and landscape composition. *Agriculture, Ecosystems & Environment*, Vol. 120, No. 2-4 (May 2007), pp. 330-344, ISSN 0167-8809
- Llausàs, A.; Ribas, A.; Varga, D. & Vila, J. (2009). The evolution of agrarian practices and its effects on the structure of enclosure landscapes in the Alt Empordà (Catalonia, Spain), 1957-2001. *Agriculture, Ecosystems and Environment*, Vol. 129, No. 1-3, (January 2009), pp. 73-82, ISSN 0167-8809
- MARM (2010). Estadísticas 2009. Agricultura Ecológica. España, In: *La agricultura ecológica en España Documentos de interés*, 2011-07-18, Available from <http://www.marm.es/es/alimentacion/temas/la-agricultura-ecologica/INFORME_NACIONAL_2009_V_14_tcm7-8092.pdf>
- Merriam, G. (1988). Landscape dynamics in farmland. *Trends in ecology and evolution*, Vol.3, No.1 (January 1988), pp. 16-20, ISSN 0169-5347
- Observatori del Paisatge de Catalunya (2010). Catàleg del paisatge de les comarques gironines, In: *Catàlegs del Paisatge*, 2011-07-18, Available from <http://www.catpaisatge.net/cat/cataleg_presentats_cg.php>
- Ortega-Valcárcel, J. (2000). *Los horizontes de la Geografía*, Ariel, ISBN 84-344-3464-4, Barcelona, Spain
- Payraudeau, S. & Van der Werf, H. M. G. (2005). Environmental impact assessment for a farming region: a review of methods. *Agriculture, Ecosystems & Environment*, Vol. 107, No. 1 (May 2005), pp.1-19, ISSN 0167-8809
- Pretty, J. (2001). *Agri-Culture: reconnecting people, land and nature*, Earthscan, ISBN 85-383-925-6, London
- Rossi, R.; Nota, D. & Fossi, F. (1997). Landscape and nature production capacity of organic types of Agriculture: examples of organic farms in two Tuscan landscapes. *Agriculture, Ecosystems & Environment*, Vol. 63, No. 2-3 (June 1997), pp. 159-171, ISSN 0167-8809
- Schmitzberger, I.; Wrba, Th.; Steurer, B.; Aschenbrenner, G.; Peterseil, J. & Zechmeister, H. G. (2005). How farming styles influence biodiversity maintenance in Austrian agricultural landscapes. *Agriculture, Ecosystems & Environment*, Vol. 108, No. 3 (June 2005), pp. 274-290, ISSN 0167-8809
- Vélez-Restrepo, L. A. & Gómez-Sal, A. (2008). Un marco conceptual y analítico para estimar la integridad ecológica a escala de paisaje. *Arbor. Ciencia, Pensamiento y Cultura*, Vol. 184, No. 729, (January-February 2008), pp.31-44, ISSN 0210-1963
- Vereijken, J. F. H. M.; Van Gelder, T. & Baars, T. (1997). Nature and landscape development on organic farms. *Agriculture, Ecosystems & Environment*, Vol. 63, No. 2-3 (June 1997), pp. 201-220, ISSN 0167-8809
- Von Meyer, H. (1996). Agricultura, medio ambiente y PAC. Problemas y perspectivas, In: *Revista española de economía agraria*, Vol.176-177, pp. 193-214, ISSN 1135-6138



Research in Organic Farming

Edited by Dr. Raumjit Nokkoul

ISBN 978-953-307-381-1

Hard cover, 186 pages

Publisher InTech

Published online 16, December, 2011

Published in print edition December, 2011

This book has emerged as a consequence of the difficulties we experienced in finding information when we first started researching. The goal was to produce a book where as many existing studies as possible could be presented in a single volume, making it easy for the reader to compare methods, results and conclusions. As a result, studies from countries such as Thailand, Spain, Sweden, Lithuania, Czech, Mexico, etc. have been brought together as individual chapters, and references to studies from other countries have been included in the overview chapters where possible. We believe that this opportunity to compare results from different countries will open a new perspective on the subject, allowing the typical characteristics of Organic Agriculture and Organic Food to be seen more clearly. Finally, we would like to thank the contributing authors and the staff at InTech for their efforts and cooperation during the course of publication. I sincerely hope that this book will help researchers and students all over the world to reach new results in the field of Organic Agriculture and Organic Food.

How to reference

In order to correctly reference this scholarly work, feel free to copy and paste the following:

Xosé A. Armesto – López (2011). Organic Farming and Landscape: Experiences and Perceptions in Alt Empordà (Catalonia, NE Spain), Research in Organic Farming, Dr. Raumjit Nokkoul (Ed.), ISBN: 978-953-307-381-1, InTech, Available from: <http://www.intechopen.com/books/research-in-organic-farming/organic-farming-and-landscape-experiences-and-perceptions-in-alt-emporda-catalonia-ne-spain->

INTeCH
open science | open minds

InTech Europe

University Campus STeP Ri
Slavka Krautzeka 83/A
51000 Rijeka, Croatia
Phone: +385 (51) 770 447
Fax: +385 (51) 686 166
www.intechopen.com

InTech China

Unit 405, Office Block, Hotel Equatorial Shanghai
No.65, Yan An Road (West), Shanghai, 200040, China
中国上海市延安西路65号上海国际贵都大饭店办公楼405单元
Phone: +86-21-62489820
Fax: +86-21-62489821

© 2011 The Author(s). Licensee IntechOpen. This is an open access article distributed under the terms of the [Creative Commons Attribution 3.0 License](https://creativecommons.org/licenses/by/3.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

IntechOpen

IntechOpen