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CONTENTS

A. VAISHAR
 PREFACE.....5

J. BAŃSKI
 REGIONAL EFFECT OF THE TRANSITION IN POLAND'S RURAL AREAS.....6

Z. BIELEC BAKOWSKA, E. ŁUPIKASZA
 THE WEATHER TYPES OVER THE UPPER SILESIA REGION12

G. CSÜLLÖG
 THE CHANGES OF THE SPATIAL STRUCTURE IN THE CARPATHIAN BASIN.....20

L. DÁVID:
 AFTER-USE OF DESERTED QUARRIES IN TOURISM AND REGIONAL
 DEVELOPMENT26

Z. DŁUGOSZ
 THE AGEING OF THE POPULATION OF EUROPE AT THE TURN OF THE CENTURY.30

D. A. GILLMOR
 REGIONAL DEVELOPMENT POLICY AND SPATIAL STRATEGY IN THE REPUBLIC
 OF IRELAND37

B. GREER-WOOTTEN
 RADICAL ALTERITY AND THE CONCEPT OF REGIONAL IDENTITY44

D. HAASE, T. WEICHEL, M. VOLK
 APPROACHES TOWARDS THE ANALYSIS AND ASSESSMENT OF THE DISASTROUS
 FLOOD IN GERMANY IN AUGUST 2002 AND CONSEQUENCES FOR LAND USE AND
 RETENTION AREAS.....51

G. HORVÁTH
 LANDSCAPE AND HUMAN EFFECT: RECENT CHANGES IN THE MEDVES
 AREA, NORTH HUNGARY.60

M. HRÁDEK
 MAN-INDUCED TRANSFORMATION OF BRAIDED RIVER PATTERNS IN THE
 MINING INDUSTRIAL REGION OF OSTRAVA (CZECHIA)66

P. KLUSÁČEK
 THE ISSUE OF PUBLIC ADMINISTRATION REFORM AND NEW TERRITORIAL
 DIVISION OF THE CZECH REPUBLIC AS EXAMPLED ON THE MORAVIAN-SILESIA
 REGION75

B. KOLIBOVÁ, O. MIKULÍK
 CHANGES OF SOCIAL CLIMATE IN THE OSTRAVA REGION83

D. KOVÁCS
 ROLE OF NATIONAL PARKS IN REGIONAL DEVELOPMENT AND RURAL
 EQUALISATION IN HUNGARY91

S. KUREK
 CHANGES IN THE AGE STRUCTURE OF POLISH POPULATION IN THE YEARS 1988-
 199898

S. MARTINÁT
 SPATIAL DIFFERENTIATION OF CHOSEN PARLIAMENTARY ELECTION RESULTS
 IN RURAL AREAS OF THE MORAVIAN-SILESIA REGION109

O. MIKULÍK – A. VAISHAR FRENŠTÁT POD RADHOŠTĚM: THE TOWN OF MINING OR THE TOWN OF TOURISM?.....	118
J. MUNZAR – S. ONDRÁČEK EXTREME PRECIPITATION AND DISASTROUS FLOODS IN CENTRAL EUROPE IN JULY 1903 AND THEIR IMPACTS.....	128
J. NAVRÁTIL HAS SPORT FISHING A REGIONALLY-GEOGRAPHICAL DIMENSION? – THEORETICAL SOLUTIONS	135
M. NEKULA QUALITY OF SURFACE WATERS IN SMALL CATCHMENTS EXEMPLIFIED BY THE JAVORNICE RIVER BASIN	141
F. POKLUDA REGIONAL IDENTITY OF INHABITANTS IN SOME SMALL MORAVIAN TOWNS ...	148
A. RAFAJOVÁ THE IMPORTANCE OF WETLAND BIOTOPES IN THE RESTORATION OF A DISTURBED LANDSCAPE IN THE OSTRAVA REGION	155
Z. ŠAFÁŘOVÁ DEVELOPMENT OF AIR POLLUTION IN THE MORAVIAN-SILESIA BESKIDS MTS. IN 1986 – 2001	161
T. TINER TOWARDS A MOBILE INFORMATION SOCIETY: REGIONAL DISPARITIES IN HUNGARY	169
F. TULLA, A. VERA, M. PALLARES-BARBERA LOCAL DEVELOPMENT, SOCIOECONOMIC AND NATURAL EXTERNALITIES IN MOUNTAIN AREAS	178
K. VINTAR SUSTAINABLE REGIONAL DEVELOPMENT – A NEW CHALLENGE OF SLOVENIAN REGIONAL POLICY	186
M. K. WERNER REGIONAL GEOGRAPHY IN HIGHER EDUCATION – A NECESSITY IN A GLOBALISED AND XENOPHOBIC WORLD	191
J. ZAPLETALOVÁ EUROREGIONS IN THE CZECH REPUBLIC	194

LOCAL DEVELOPMENT, SOCIOECONOMIC AND NATURAL EXTERNALITIES IN MOUNTAIN AREAS

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ABSTRACT

In the mountainous areas of Europe, local development can be explained by the existence of comparative advantages with regard to the more heavily populated areas. When applied to the Catalan Pyrenees, the revision of the theory of comparative advantage within the framework of the centre-periphery model and the use of the territorial embeddedness theory of economic activities enables us to demonstrate that in the future, short term analysis will have to be replaced by long term analysis that also takes into account environmental, social and cultural externalities.

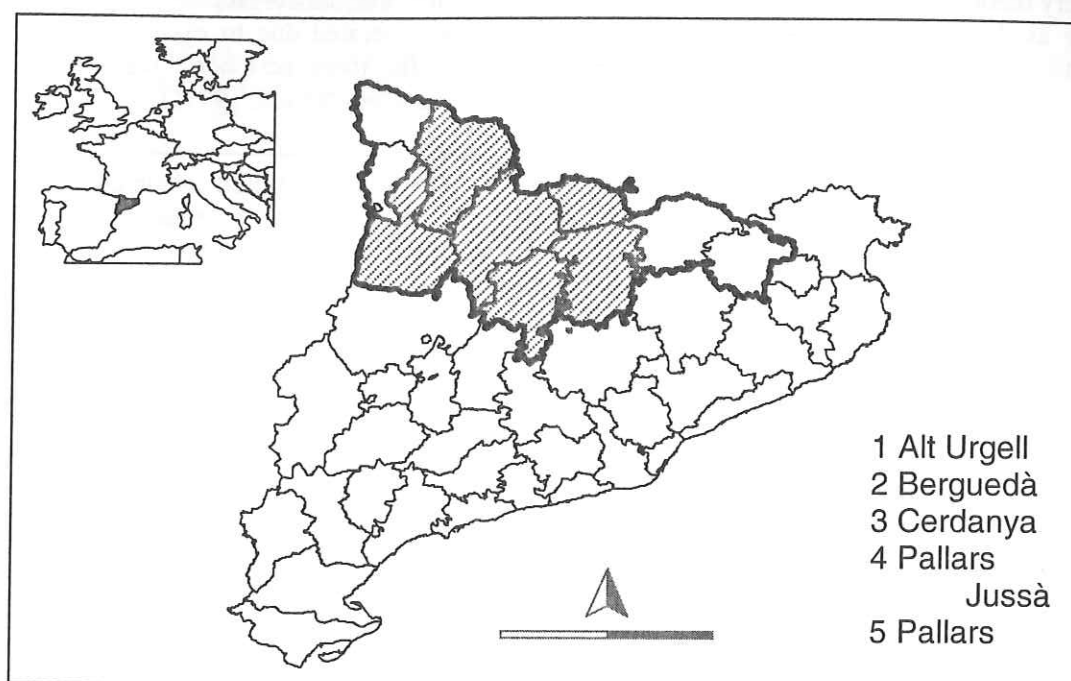
1. INTRODUCTION

In Europe, the mountainous areas are quantitatively unimportant with respect to population. Nonetheless, they are important because of the size of the area they cover and the recognition of the value of their landscape for both, the indigenous population and outsiders. For this reason, these areas' local development should not just take into account economic factors but also social, environmental and territorial factors that contribute to creating the determining factors for local development. The high population density throughout Europe needs a distribution of activities and land uses that allows each territory to pursue the optimal economic activity that each area can offer. These should be the best of all possible activities for a given area, despite the fact that these uses might also be optimal for other areas as well. In the future, not only the pure economic profitability of activities should be considered, but also the social optimal use of a given territory.

Within this framework, local development can be explained on the basis of a reinterpretation of the principle of the comparative advantage that was developed by traditional economists in the 18th and 19th centuries. Within the framework of neo-liberal economics, it is necessary to revise the company's criteria for profitability, bearing in mind diverse external elements. The inclusion of externalities in firm's optimal benefit analysis requires the business's economic behaviour to be related to actions of outside agents. External economies can also modify costs and profits due to conditions in the natural, social and economic environment. Businesses' territorial embeddedness emphasises the network of institutions and socio-cultural elements that allow them to develop strategies to foster loyalty to a given territory among both suppliers and clients. Within the framework of the centre-periphery model, the urban "core" plays counterpoint to the rural mountain "periphery". Thus, in a balanced territory, the most beneficial activities for each area must be preserved and promoted.

Our research was carried out in the counties located in the Pyrenees. This territory occupies an area of 9,560 km² and had a population of 188,255 in the year 2001 (Fig. 1). It is characterised by valleys, some of them originating from the glaciers and others through erosion caused by rivers, and the peaks range from 400 m to 3,143 m at La Pica d'Estats, with the main habitats found between 400 m and 1,000 m and especially in flat areas, around tectonic pits or where rivers converge. The active agrarian population constituted 9.43% of the total active population in 1999, although it was 23.18% in 1970. In certain counties, the industrial and mining traditions have been quite strong, accounting for almost 50% of the labour force. Currently, in addition to traditional residual activities in all sectors, both industrial renewal and the development of the service sector, basically all aspects of tourism, are worth noting. Farms and certain industries involving agrarian transformation have also been renewed, both of them organised into co-operatives and thus maintaining a highly dynamic sector (Tulla, Soriano, Pallares-Barbera, Vera, 2003).

Fig. 1. Planning as a base for sustainable development in mountain areas



In the year 2001, the GDP of these mountainous areas made up 2.85% of Catalonia's total, while the population made up 2.97% of the total and the area 29.97%. When broken down by sectors, the GDP in the mountainous regions (as compared to Catalonia, in brackets) are distributed with 4% (1.7%) in the primary sector, 32.4% (31.3%) in industry, 13.6% (7.2%) in construction, and 50% (59.8%) in services. We can thus see that the figures, in mountain regions and Catalonia, are similar for industry, while that the mountainous regions have more agrarian and construction activity and fewer service activities. The mountainous counties such as El Berguedà that are closest to the centre of the Barcelona metropolitan area are between 90 and 100 km away, while those located the farthest are between 200 and 250 km away, and the middle counties including l'Art Urgell and La Cerdanya are between 125 and 175 km from Barcelona, although the transport networks and communications in all the counties are worse than in the rest of the country.

2. THE TRADITIONAL THEORY OF COMPARATIVE ADVANTAGE

Comparative advantage is a theory that was developed within the context of traditional economics. Briefly, it posits that each country specialises in those goods and services which it is most capable of providing as opposed to producing the goods and services that it needs. This leads to territorial specialisation in the production of goods and services, thus promoting intense international trade. David Ricardo founded in 1817 the theory of comparative costs among the different regions in accordance with their natural or historical conditions (Ricardo, 1950). The relationship between the costs of two types of merchandise in a certain country is the same as the relationship between the price of them under the assumption of perfect competition. Henrich von Thünen (1826) added the costs of location to the anterior analysis, and thus the cost of transporting goods and services, under the assumption of a homogeneous landscape.

In 1933, the Heckscher-Ohlin model introduced different characteristics of productive factors in each region, produced by geographical variations. A country will export more goods and services that require intensive factors of which it has the greatest supply, and import goods and services that require intensive factors of which it has the least supply. It is assumed to be extremely difficult to alter the organisation of each country's intensive factors in a short period of time. Among these factors, education, the capacity for innovation and technology are considered highly important. In 1971 Earling Olsen claimed that for all regions there is a "relative advantage" in comparative advantage,

which can be measured from the standpoint of the cost of opportunity, if they specialise in the production of the goods and services for which they are best endowed. This is based on the centre-periphery theory developed by Gunnar Myrdal (1957) in which unequal development tends to increase as long as diseconomies or other negative effects are not generated due to excessive growth and congestion in the more developed regions. If this occurs, the more peripheral regions are given opportunities for economic localisation with comparative advantages (Olsen, 1971; Peet and Hartwick, 1999).

This dilemma between balanced development and the polarisation of unequal regional development suggests the possibility of some peripheral regions having a "relative" comparative advantage for certain goods and services. We have carried out various research projects in the Catalan Pyrenees along these lines, the locations of which are shown in Fig. 1. Antoni Tulla (1984) applied this theory to the production of cow milk products in certain counties in the Catalan Pyrenees. Likewise, Montserrat Pallares-Barbera and Ana Vera (2001) demonstrated that El Berguedà, one of the counties in the Pyrenees, is undergoing an economic renewal in industry and services due to the comparative advantages of a network of innovative small and medium enterprises (SMEs).

3. THE ASSUMPTIONS OF THE CENTRE-PERIPHERY MODEL IN MOUNTAINOUS AREAS

Human settlements and activities have existed since time immemorial and thus its mountainous areas have problems that should be considered along with the regional reality as a whole. The urban "core" and the rural mountainous "periphery" are highly interrelated territories, each with its own strong characteristics. Along these lines, four basic premises should be taken into account: I) limitations on the space available for certain uses; II) the most beneficial activities for each area must be preserved or promoted in a balanced territory; III) the mountains, both nature and society, are part of our human heritage. Finally, IV) the existence of a double market for land invalidates open competition as the sole policy and makes territorial planning advisable.

The transformation of cow milk products, as analysed Antoni Tulla's study (1984), allows a "relative" comparative advantage, and it suggested that there is an extremely limited amount of space available in the mountainous areas to maintain this activity. In order to be minimally competitive, more flat, irrigated spaces closer to communication networks are needed. Since there is also little land for developing and building infrastructures, territorial planning decisions must be taken in order to delimit areas for each use instead of leaving decisions to open competition. In order to maintain a balanced use of the territory in a region, an analysis must be made of which activities are most appropriate for each area, thus avoiding spatial congestion and conserving the human and natural heritage. The mountains are a kind of human heritage and must be viewed as "capital" and not as a "replenishable resource". In this sense, we must avoid aiming for immediate results and instead make long-term economic planning a priority. The demand for land for each use constitutes a series of different markets since a housing promoter can pay much more than an industrialist, who in turn can pay more than a livestock farmer. The needs for a certain type of land can be an excluding factor, since second homes can be located on sloped lots, while certain agrarian activities require flat land. Thus, what is needed is territorial planning based on the "second best option" method.

4. COMPARATIVE ADVANTAGE AND "THE SECOND BEST OPTION"

The principle of comparative advantage, when applied using the "second best option" method, is based on two assumptions: space is a scarce resource which obligates us to be discriminating when locating activities, and there can always be a second most optimal placement when distributing activities among different areas. Let us imagine a scenario in which there are three regions (A, B and C) and four land uses or activities to be assigned to a location in these regions, as presented in Fig. 2. These uses can include, for example, a protected natural area, a housing development for second homes, a dam and reservoir, and an agrarian training school along with its experimental fields and forests. The determination of the suitability of a use for each region will be made taking into account a series of parameters, each with a "weight" value that has been decided in advance, such as the

creation of workplaces, environmental impact, social use, biological characteristics, accessibility, and so forth. Thus, each use will obtain a certain value for each region, which is expressed as a percentage. The higher the percentage, the more ideal the value.

In our example, two technical assumptions are posited. The first is that all the regions are approximately the same size; and the second is that all the uses would occupy the same surface area. The best use for each region is chosen regardless of whether another region might have better conditions for that use. Thus, in Fig. 2, the protected natural area will be located in region A (70%), despite the fact that B has better conditions (80%), since the other uses in region A have values of less than 70%. The housing development will be located in region B because it has the highest value of all the possible uses in B, and in this case it is also the region where the housing development has the highest value. The dam and reservoir will be located in region C because it has the highest value (50%) among all the uses of this region, despite the fact that the dam and reservoir obtained a value of 70% in region B. Thus, all the regions will have the most highly valued use of land among all the possible uses in each region, even though this use may be more highly valued in a different region. In the second round of assignments, since there are more uses than regions such as the example in Fig. 2, the agrarian training school will also be located in region B since it has the highest value there (75%) and the other regions have already been assigned uses.

If the principle of comparative advantage along with "the second best option" is not taken into account, the most likely outcome would be to choose the location of an activity based solely on the lowest costs or obtaining the highest value on a scale such as in our example. Thus, region B would attract the location of all four uses, leaving regions A and C with nothing, leading to the desertification of some regions and the congestion of others. In order to avoid this, the theory of comparative advantage operates using relative criteria and taking into account the best option for each region, even if this option is the second, third or n^{th} option among all the regions for a certain use. If we move to the terminology of costs, we are suggesting a location based on relative cost units instead of total costs for a given activity (Smith, 1981). If we link up with Olsen's formulation, which was based on Myrdal's theory of unequal development which we have applied to the Catalan Pyrenees, we can then state that the transformation of dairy products (Tulla, 1991) or industrial embeddedness (Pallares-Barbera, Vera, 2000) demonstrate the theory of centre-peripheral comparative advantage.

5. TERRITORIAL EMBEDDEDNESS AS LOCAL DEVELOPMENT FOR MOUNTAINOUS AREAS

The concept of territorial embeddedness is defined within the dynamic incorporation of SMEs in a given area, where institutional organizations, local networks of economic activity and social collectives generate an economic space, which constitutes a favourable bed for establishing industrial enterprises. Territorial Embeddedness refers to the enmeshing of economic and cultural relationships within broad social structures, which can be used to provide the basis for local economic policies (Pallares-Barbera and Vera, 2002).

In counties like El Berguedà, which has remained on the sidelines of the economic development generated by the Barcelona metropolitan area, there is frequently to answer to questions about the nature of its development. It is believed that textile colonies and lignite mining are activities in crisis, yet all the economic and demographic indicators show clear recovery of the whole county. From our research, we can conclude that this county is turning into a "container" (Dicken, 2000; Porter, 1990), which encompasses local institutions, and practices that help to produce particular types of businesses. Despite the fact that business competition is global and remote regions thus appear less competitive, the role of the "container regions" appears to be stronger than ever. This is only possible, however, if they are able to recover their productive structures by differentiating them from national structures through local values, cultures, institutions and history, becoming "glocal" (Swyngedouw, 2000), as is the case of El Berguedà.

The businesses interviewed were developed with local capital, and the management and employees live in the county. Still, the fact that this business network has its roots in the place where it began is not only due to the fact that the employees and capital are local. The local socio-cultural

“milieu” is also responsible for spinning the network that “captures” businesses for the territory, and in many ways it tacitly obligates them to include “local” elements in their production, thus differentiating them from others. This is also a factor in their global competitiveness. This is not a case of cultural determinism (Dicken et al., 1994), in which all the businesses interviewed are similar or follow similar strategies. The businesses interviewed are all different, despite the fact that they have certain characteristics in common. The differentiation of the business systems depends on their integrated or separated natures, in accordance with the context in which they operate (Whitley, 1992). A business’s greater or lesser degree of cohesion with the territory is the result of the distinctive configuration of the social, political, financial and educational institutions and the organisation of work. There are always different degrees of territorial embeddedness depending on the county, but it is always sustained through a network of family SMEs with local capital. The management and employees constitute the channels through which the socio-cultural framework and local knowledge circulate to the business and embed it in the territory.

El Berguedà can be distinguished from the neo-Marshallian industrial district, as reinterpreted by Becattini (1990), due to its low sector-based concentration and the low level of economic participation among businesses in the county. That is, one local business does not necessarily act as the supplier for another. While in a neo-Marshallian district, tacit knowledge makes information flow through direct contacts among businesses within a sector, constituting one of the decisive factors in competitiveness, in “embedded industrial districts”, direct action between businesses does not exist. They do not form part of the same network, or process, of value added. However, they do, share the existence of agglomeration economies, even though these may only be cultural, historical and social in the “embedded industrial district”, which serves to differentiate them. The concentration of many small businesses in El Berguedà characterises its territorial embeddedness and its significant variance from Perroux’s model (1970), in which the engines of regional development are large businesses that produce regional multipliers.

6. COMPARATIVE ADVANTAGE AND MOUNTAINOUS AREAS

Our studies have generated many different results that highlight the importance of comparative advantage in promoting sustainable development in mountainous areas:

a) The analysis of comparative costs of the different activities. In rural mountainous areas, costs are frequently calculated on the basis of the acquisition of external factors for farming or small businesses, which are mainly family-owned, not taking into account all the hours worked or remuneration of the land factor, due to traditional rural culture (Tulla, 1991; Servolin, 1972). In certain counties in the Pyrenees, specialising in producing cow milk has become the most profitable activity because the farmers have received an average yearly price per kilo of milk that is 18.06% higher than the average for Spain (1985-2002) and 10.53% higher than the average in France (1986-2002). This is possible because it is a highly dynamic co-operative that produces high quality cheese and butter with value added in the transformation processing, and it exports 50% of its production. At the same time, the production factors acquired during the period 1985-2001 by another co-operative, La Pirenaica, show an average price of 26.80% lower than the Spanish average, but 10.78% higher than the French average. There are also other advantages, such as activities that reduce the use of the individual work factor (Tulla, Pallares-Barbera, 2003). This process of specialisation has been undertaken in three phases. The first (1920s – 1960s) consisted of the decision to produce cow milk; the second (1960s – 1980s) was the decision to specialise only in producing milk for high quality transformation with value added; and the third (1980s – 2000s) was to improve the training, facilities, quality of the bovine breeds and manufacturing and distributing organisation in order to compete within the EU. Carrying out multiple activities also favours cost competitiveness as well as income in retired persons’ family units due to the proximity to small urban and tourist centres.

b) The evaluation of negative and positive externalities of each activity or land use describes different aspects. First, an analysis must be made of which activities generate negative externalities, such as industrial pollution or the process of building second homes. Then, maintaining a well planned urban and natural environmental space with an attractive landscape generates positive externalities. Thus, if costs are calculated for the medium- and long-term and not just the short-term, we can plan

which activities and land uses are most beneficial to sustainable development. For example, the promotion of hotels and tourist residences which will be occupied on a regular basis (hot beds) might be more desirable than an excess of second homes which will only be occupied periodically (cold beds), an average of 18 days per year in the Pyrenees (Martinez-Alier, 1984).

c) The consideration of the external economy for certain activities or land uses. It is a fact that many businesses, both industrial and in the service sector, are beginning to more highly value the quality of the landscape when deciding on their location. Thus, the extensive use of land, the existence of a high level of agrarian activity and the use of natural areas for non-damaging leisure activities can more easily integrate into the landscape and become a positive externality (Claval, 1998).

d) The use of non-monetary units to calculate efficiency in the production of goods and services. The energy balance, for example, can more clearly demonstrate the advantages of extensive agrarian activities compared to intensive ones. Economic efficiency can also be compared to ecological efficiency. This can be more closely related not only to the quality of the natural landscape, but also to the possibility of maintaining a minimum population threshold needed to conserve this landscape. There are various methods available to compare or refute the merely economic methods (Martínez-Alier, 1984).

e) Limitations on the amount of useful land available needs a co-ordinated specialisation in land uses based on the best relative situation of each location, as was explained using "the second best option" method (Fig. 2).

Fig. 2. Comparative advantage and the "Best Second Option"

LAND USES AND ACTIVITIES	REGIONS		
	Region 1	Region 2	Region 3
PROTECTED NATURAL AREA	70%	80%	20%
EXTENSIVE SECOND HOMES	50%	90%	40%
DAM AND RESERVOIR	40%	70%	50%
AGRARIAN TRAINING	60%	75%	30%

The percentage shows the maxim value that would obtain a specific area, with the location of one of this uses or activities (Solutions are acquired using different methodologies).

7. CONCLUSIONS

In this article we have demonstrated, based on our research, that local development can be explained on the basis of a reinterpretation of the principle of comparative advantage. If we start from the principle that the European countries are very densely populated, then available land is becoming more and more scarce. Given this, the location of activities must be made a priority, not only because of business's internal costs but also because of both the positive and negative externalities generated, and because of external economies and diseconomies. Some of the problems of the economic feasibility of activities in mountainous areas are the result of a partial, incomplete calculation of the

cost of activities other than intensive land use. In the comparative advantage of the dairy specialisation, the leadership of the two co-operatives mentioned, which have recently formed an alliance with others in Catalonia, have accentuated the degree of specialisation, quality and technology of the farms as well as investments (Tulla, 1984). Territorial embeddedness is also a model of local development that can strengthen these "relative" comparative advantages.

The industrial tradition in the embedded district of El Berguedà is highly competitive in the labour market, especially because of the transmission of tacit knowledge about industrial discipline acquired through the incorporation of the system of industrial colonies. Commercialisation involves a reduction in location costs for companies in El Berguedà, such that this county is becoming an attractive centre for new investment without any added costs, in order to build and encourage the labour market that on other occasions could be a barrier for entry. Thus, an overall network of embedded institutions and socio-cultural elements is created in a territory to include territorial differentiation based on historical factors and cultural adaptation, in order to analyse the particular features of every place.

REFERENCES

- BECATTINI, G. (1990): El distrito industrial marshalliano como concepto socioeconómico. In: Pyke, F.; Becattini, G. i Sengenberger, W. (eds.): Los distritos industriales y las pequeñas empresas. 1 Distritos industriales y cooperación interempresarial en Italia. Madrid: Ministerio de Trabajo y Seguridad Social; p. 61-79.
- CLAVAL, P. (1998): An introduction to Regional Geography. Oxford: Blackwell Publications; 299 pp..
- DICKEN, P. et. al. (1994). The local embeddedness of transnational corporation. Globalization institutions, and regional development Europe. In: Amin, A. and Thirft, N. (eds.): Globalization, institutions and regional development in Europe. Oxford: Oxford university press; p. 23-45.
- DICKEN, E. (2000): Places and follows: situating international investment. In: Clark, G., Feldman, M. and Gertler, M. (eds.): The Oxford handbook of Economic Geography. Oxford: Oxford University Press; p. 275-292.
- MARTÍNEZ-ALIER, J. (1984): L'ecologisme i l'ecologia. Barcelona: Edicions 62; 318 pp.
- MYRDAL, G. (1957): Economic Theory and Under-Developed Regions. London: Gerald Duckworth & Co Ltd; 317 pp.
- OLSEN, E. (1971): Internationa Trade, Theory and Regional Income Differences. Amsterdam: North-Holland; 236 pp.
- PALLARES-BARBERA, M. (2002): Enterprise embeddedness and industrial innovation in Spain: An Overview. In: Taylor, M. and Leonard, S. (eds.): Embeddedness enterprise and social capital. Aldershot (UK): Ashgate Publications; p. 113-125.
- PALLARES-BARBERA, M. and VERA, A. (2000): Incrustación industrial y medio innovador en la comarca del Berguedà. In: Alonso, J.L. and Méndez, R. (Coor.): Innovación, pequeña empresa y desarrollo local en España. Col. Economía. Madrid: Civitas; p. 195-210.
- PALLARES-BARBERA, M. and VERA, A. (2001): Espais economics i milieus innovatius industrials a la comarca del Berguedà. Documents d'Anàlisi Geogràfica, 38; p. 33-53.
- PEET, R. and HARTWICK, E. (1999): Theories of development. New York: The Guilford Press; 234 pp..
- PERROUX, F. (1970): Note on the concept of growth poles. In: Mckee, D.; Dean, R. and Leathy, W. (eds.): Regional economics: theory and practice. Nova York: The Free Press; p. 93-103.
- PORTER, M. (1990): The competitive advantage of nations. New York: The Free Press. 855 pp.
- RICARDO, D. (1950). On the principles of political economy and taxation. Cambridge: Cambridge University Press; 345 pp.
- SERVOLIN, C. (1972): L'absortion de l'agriculture dans le monde de production capitaliste. L'universe politique des paysans. Paris: A.Colin; p. 108-132.
- SMITH, D.M. (1981): Industrial location: on economic geographical analysis. New York: John Wiley. 287 pp.
- SWYNGEDOUW, E. (2000): Elite power, global forces, and the political economic of 'Glocal' development. In: Clark, G.; Feldman, M. and Gertler, M. (eds): The Oxford handbook of Economic Geography. Oxford: Oxford University Press; p. 541-559.

- THÜNEN, J.H.V. (1826): Der Isolierte Staat in Beziehung auf Landwirtschaft und National o Konomze. Rostock (German version). In: Peter, H. (ed.), (1966): Von Thünen's isolated state. Oxford: Pergamon Press; 303 pp. (Italian version, English translation).
- TULLA, A. F. (1984): L'avantatge comparatiu en àrees rurals de muntanya. *Recerques*, 16; p. 51-70.
- TULLA, A.F. (1991): Women and Family Farms in Catalonia. *Iberian Studies*. 20, (1 and 2). University of Keele (UK); p.62-80.
- TULLA, A.F. (1993): Procés de transformació agrària en àrees de muntanya. Barcelona: Generalitat de Catalunya. Departament d'Obres Públiques. Institut Cartogràfic de Catalunya; 672 pp.
- TULLA, A.F. and PALLARES-BARBERA, M. (Coor.) (2003): El món rural al segle XXI. Un compromís entre la cultura rural, les infraestructures de comunicació, les noves tecnologies i la iniciativa local. Barcelona: Castellet del Foix; 471. pp.
- TULLA, A. F. - SORIANO, J. M. - PALLARES-BARBERA, M. and VERA, A. (2003): La transformació del model agrari en àrees de muntanya. *ESPAIS* 49, Primavera 2003; p. 82-97.
- WHITLEY, R. D. (1992): Business systems in East Asia: firms, markets and societies. London: Sage; 288 pp.

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