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## TERRITORIAL DEVELOPMENT AND ECOLOGICAL AGRICULTURE: COMMON PERSPECTIVES

### ABSTRACT

The territory, defined as a space forged by history, culture, social relations and structures, is placed in a multiple correlation relation with ecological agriculture. The territorial development is determined, as tendency and content, by the nature of agricultural practices, and, in its turn, generates the favorable frames for using and amplifying the methods specific to ecological agriculture. The aim of this study is to identify, at the subjective ecology level, the meeting points, both for the ecological agriculture and for territorial development. In this paper, the approach to ecological subjectivity was based on Q methodology, which is both a qualitative and statistical research method. The study was conducted in Dornelor Basin, Suceava county, an area characterized by ecological concerns and farming practices, and it identified four major types of subjective configurations built on the basis of the impact of adopting environment-friendly farming practices on the territorial development.

**Key words:** territorial development, ecological subjectivity, Q method.

JEL Classification: Z13, D91, Q15.

### 1. INTRODUCTION

The analysis of the joints, connections between territorial development and ecological agriculture can turn to the theoretical and methodological framework, elaborated within the theories regarding territorial development, ecological agriculture and subjective ecology. The pathway of this interdisciplinary endeavour started with the existing complex relations between regional and territorial development.

The regional development can be analysed through territorial approaches, based on the particularities of local spaces and territorial capital, focused on the ways in which the territory, as a social construction, is defined and consolidated.

If we adopt the systemic definition of the territory – “In general terms, a territorial local system, before being understood as a defined and delimited

territorial entity, is an aggregate of actors involved in reciprocal interaction, in which the actors, as a function of the specific relationships they maintain with a particular local environment or milieu, behave as a collective actor (Dematteis, 1994; 2001)” (Governa, Salone, 2004); then we also have to take into account the fact that “The territorial local system is not a territorial system already existing and functioning as a collective territorial actor, but a series of attitudes, developed experiences, subjective and objective preconditions, which, when highlighted, gives some indications of processes that are only partly predictable” (Governa, Salone, 2004).

## 2. STATE OF KNOWLEDGE

The scientific endeavours are cautiously elaborated, avoiding any generalization: “The study of territorial local systems will not provide absolute certainties about what exists now, nor about further developments. However, it indicates one possible articulation of the territory, in which the collected evidence indicates that a form of governance directed towards territorial development will prove more effective than other articulations that fail to take into account the territorial distribution of subjects’ capacities for self-organization and their interactions with all forms of local territorial potential that are solidly place bound thus immovable, nor easily found elsewhere or at least not with the same qualities that cannot be produced at will in a short time.” (Governa, Salone, 2014).

This perspective allows the theoretical repositioning of territorial development and rethinking the reports between regional and territorial development: “territorial development offers much more than any other way of making understandable the realities of regional and local development at different scales, it is a paradigm change in regional development studies” (Bruno, 2015).

Territorial development allows knowingness of the way in which structures are rearticulated, rural space functions reshaped, creating a new social construction where the ecological manner of practicing agriculture becomes one of the fundamental elements. In this development logic, ecological agriculture is one of the most important factors of unities territorial development, participating at accomplishing a new rural governance, occurrence of rural multifunctionality. In another projection, the actors involved in ecological productive processes can participate in the elaboration of rural/agro-environmental policy, supported by their learning and assimilating capacity, and by the endogenous capacity or rural communities to develop (Bruno, 2015).

The engagement in elaborating and implementing the agro-environmental policies can take place only if the behaviours, opinions, attitudes, all types of subjective configurations regarding ecology are known: “...policy reports at both national and international levels, as well as the recent inclusion of behavioural evidence in the background documents of the European Union’s Common

Agricultural Policy (CAP) reform and in the related impact assessment, have acknowledged the relevance of understanding behavioural factors for agricultural policy.” (Dessart *et al.*, 2019).

In the case of ecological agriculture, the scientific identification of subjective resorts, behaviours, pre-ecological evaluations can be achieved with the help of Q methodology, a novel mix of statistical and qualitative methods: “Of fundamental importance to Q is that it combines quantitative and qualitative data and analytical techniques” (Zabala *et al.*, 2018). A method used for examining subjectivity, it can highlight answer patterns based on which efficient inductive rationales can be elaborated: it is a distinct methodology, it entails a specific ontological stance, a philosophy and a method, which are quite distinct from other methodologies (Ramlo, Newman, 2011, Ramlo, 2015).

It has many qualitative aspects and uses statistical analysis to unravel peoples’ preferences, and has a different ontological basis according to some (Ramlo, 2015), compared to other methods. Ramlo and Newman explain that some call it a constructivist (or a qualitative) method, and some call it a positivist method (or a quantitative method) (Molenveld, 2020). The subjective ecology studies chose this method due to its intrinsic validity and fiability: the method demonstrates a way forward in ecological economics to better capture representative values and perspectives in ecosystem service management and help design climate and environmental policies with greater acceptance (Grimsrud *et al.*, 2020).

### 3. MATERIAL AND METHODS

The present study was conducted in Dornelor Basin, located in the south-western part of Suceava county, overlapping, from territorial perspective, the Dornelor Depression, an area characterized by a rippled relief, with an average altitude of 800 m, delimited all around the cardinal points by mountain ridges. It includes 12 administrative units, out of which 2 urban centres (Vatra Dornei Municipality and Broșteni town) and 10 communes (Cârlibaba, Ciocănești, Coșna, Crucea, Dorna Arini, Dorna Candrenilor, Iacobeni, Panaci, Poiana Stampei and Șaru Dornei).

In terms of agricultural activities, pastures and natural grassland represent more than 90% of the region’s agricultural area, favouring the livestock sector, mainly cattle raising. A constant presence in the region, with a tendency of development over the next years, is ecological farming: the ecologically certified agricultural areas represented 6.3% of the total utilized agricultural area (UAA) in 2019 (MADR). This translated into 3,289.6 hectares, the communes with the largest ecologically certified agricultural areas being Dorna Candrenilor, Panaci and Șaru Dornei. At the same temporal mark, there were 3,911 ecologically certified cattle in the region, most of them found in the previously mentioned communes.



Source: Mihai Alexandru Chițea, 2019

Figure 1. Landscape from Dornelor Basin

The subjective study of the evaluation of the future of organic agriculture was made with the help of:

i) group (R-set) consisting of 20 rural stakeholders – experts, farmers that use ecofriendly practices, informed persons involved in ecological farming issues. The group of respondents was characterized by: prevalence of women (70% in total participants), persons with consolidated/significant experience (the share of persons with 5–20 years of experience in practical or theoretical ecological issues was 90%).

ii) Q-set consisting of statements regarding the hypothetical effects of using ecological practices on the territorial capital. In our study we have turned to the following definition of the territorial capital: “assembly of elements at the disposal of a territory, material and immaterial, that can constitute strong points or restraints. This notion of capital is dynamic. It corresponds to actors’ perception regarding the territory” (Chevalier, Pola, 2014, 2015). It was considered that the way in which they are designed – time interval of 10 years – the ecological agriculture and ecosystem services can limit the impact on the territorial capital.

*Table 1*  
Participants' characteristics

CS area – Suceava, Romania		Number of participants
Gender	Male	6
	Female	14
	Other	0
	Prefer not to say	0
Work experience	<5 years	0
	5–10 years	9
	10–20 years	9
	>20 years	2
Area of experience*	Researcher	0
	Civil servant	10
	Extension officer (both public or private)	1
	Farmer (other than representative of farmers)	10
	Input supplier	0
	Food processor	1
	Wholesaler	0
	Retailer	0
	Land agent	3
Non-governmental organisation	0	

*Note:* Participants were permitted to respond to multiple categories to reflect their work experience

*Source:* Own processing of authors

According to the literature, we considered that R-set represents “observations” while Q-set represents “variables” (Grimsrud *et al.*, 2020). The evaluations were ranked on a scale from –4, totally disagree to +4, totally agree. All questions received valid responses. The “pyramid-shaped matrix” was used.

The steps taken in using the Q method approach were those recommended by Method, a statistical program dedicated to this type of study. In this sense, the factor analysis was used for the analysis of interactions; a correlation matrix was constructed between the number of respondents and the number of Q-sorts. “The number of eigenvalues above one, produced at the correlation matrix stage (or all factors containing more than one Q-sort) can be used as heuristics to inform the number of factors” (Thomas, Watson, 2002).

All possible factors were established, the factors representing “groups of persons with similar response patterns during sorting, while loading a certain respondent on a certain factor indicates the level of agreement or disagreement” (Thomas, Watson, 2002). In this stage of the analysis, only 2 non-rotated factors were retained, statistically significant, the cumulated variation of own values being 50% (eigenvalues). The centroid method was used to extract the non-rotated factors. The quantification made it possible to establish 4 factors, by which we grouped and segmented the opinions/ subjective evaluations of the 20 respondents. By factorizing individuals, we captured and analyzed the existing subjective similitudes, in relation to the common variation by investigated subjects. By



The next step was to clip and retain the significant statements regarding the perception of territorial economy reshaping, considering the fact that the evaluations of ecosystem services and rural economy from the perspective of a decade are the most significant in perceiving the territorial's economy evolution. In the case of "ecosystem services" only the following evaluations were selected: water quality will improve, there will be little change in the landscape appearance of rural areas, little change will happen to soil quality, there will be no change in the number and/or size of hedgerows.

For the "rural economy", the selected evaluations referred to: 50% of farms will adopt ecological farming practices, 10% of farms in the case study area will adopt ecological farming practices, ecological farms will form clusters of closely connected farms within the case study area, the wider rural economy will become more resilient, farmers will cooperate more with the neighbouring farmers and farms close to them, consumers will not buy a lot more of their food locally.

#### 4.1. EVALUATIONS SPECIFIC TO FACTORS

The strongly negative opinions and/or attitudes, assessments (subjective positioning of respondent at -4 on the scale) were identified in the following areas: a) multiplication of ecological farms – the motivational arguments are based on the difficulty of such a process: "I believe that the target of 50% of farms in the area adopting ecological farming practices in the next 10 years cannot be reached" (R.18); b) rural economy resilience – perceived in terms of permanent decrease: "The Romanian village will no longer be as resilient" (R.15).

In case of the increase by 10% of the number of ecological farms, in the next 10 years, the opinions are strongly positive (+4). The reason lies with the specificity of the investigated area: "In the next ten years, I believe that at least 10% of farms in the study area will adopt ecological practices, Suceava county being among the top counties in terms of ecological potential (large High Nature Value areas)" (R.20).

Factor 1 – Pragmatic with economic attitudes, normative ecological tendencies, is that of respondents with clear opinions that the number of ecological farms will increase – "10% of farms in the case study area will adopt ecological farming practices," (value +4).

Factor 2 – Pragmatic with economic and ecological attitudes – the use of ecological practices will have a well-targeted impact, "water quality will improve" (value +3), the rural areas will be not significantly affected – "The rural areas will become no more attractive for residents and users" (value -3).

Factor 3 – Pragmatic ecological, with economic tendencies – respondents perceive that there will be an increase in the number of ecological farms: "10% of farms in the case study area will adopt ecological farming practices", (value +3) but there will be no relationship between them, "Ecological farms will form clusters of closely connected farms" (value -3). The changes triggered by the wider use of ecological farming practices will not have a significant impact on the space for

using the ecosystem services, “The rural areas will become no more attractive for residents and users”, (value  $-4$ ), but they will bear an influence on rural economy, because “Consumers will not buy a lot more of their food locally” (value  $-3$ ).

Factor 4 – Pragmatic economic – bring together the opinions of those who fully disagree with the statement “The wider rural economy will be more resilient” (value  $-4$ ); their opinion is that “10% of farms in the case study area will adopt ecological farming practices,” (value  $+4$ ), but they will not be organized “Ecological farms will form clusters of closely connected farms” (value  $-3$ ). “The rural areas will become no more attractive for residents and users”, (value  $+3$ ).

#### 4.2. CHARACTERISTICS OF FACTORS

The z-score values are not high, indicating a moderate attachment of the 4 perspectives to the items: Factor 2 – Pragmatic with economic, ecological attitudes – the strongest perspective is on items referring to the provision of ecosystem services, more precisely on the ecological aspects: “There will be a tight certification to define farms as ecological”, z score: 1.960, “Water quality will improve”, z score: 1.608, “The rural areas will become no more attractive for residents and users”, z score:  $-1.297$ . Factor 3 – Pragmatic ecological – attachment to items referring to the provision of ecosystem services: “The rural areas will become no more attractive for residents and users”, z score:  $-1.758$ , “Water quality will improve”, z score: 1.164. Factor 4 – Pragmatic economic stands out by the z scores obtained by item focusing on rural economy – “The wider rural economy will be more resilient”, z score:  $-1.745$ .

The calculation of z scores and of differences between them in particular allowed for a more accurate identification of subjective perspectives between Factor 1, Pragmatic with economic attitudes, ecological tendencies and Factor 2 Pragmatic with economic, ecological attitudes, there is consensus for the item “Little change will happen to soil quality”, the difference is 0.041; there are striking differences for item “10% of farms in the case study area will adopt ecological farming practices”, the difference is 3.048. Some significant differences were identified in the case of Factor 4 – Pragmatic economic: for example, the difference between this and Factor 2 – Pragmatic with economic and ecological attitudes, regarding the statement “Water quality will improve” is 2.233 and in the case of “50% of farms will adopt ecological agricultural practices” the difference is 2.058. A higher difference is visible when looking at “10% of farms in the case study area will adopt ecological farming practices” ( $-3.204$ ) and “The rural areas will become no more attractive for residents and users” ( $-3.043$ ).

The result of comparing the four factors led to identifying similar opinions as well as to determining the subjective distance, expressed by disagreement. The existence of zero scores indicates the lack of importance that respondents attach to these items; the values assigned to statements reflect the importance of one aspect



or another of the investigated issues. In this sense, we think that the presence of 0 score denotes indifference or strong disinterest in one aspect or another (Table 2).

Table 2

Consensus versus disagreement

Category	Statements	Factor 1	Factor 2	Factor 3	Factor 4
Ecosystem services	Water quality will improve	2	3	2	-1
	There will be little change in the landscape appearance of rural areas	1	2	1	2
	Little change will happen to soil quality	1	1	1	1
	There will be no change in the number and/or size of hedgerows	0	-2	0	-1
Rural economy	50% of farms will adopt ecological farming practices	0	2	-1	-2
	10% of farms in the case study area will adopt ecological farming practices	4	-3	3	4
	Ecological farms will form clusters of closely connected farms within the case study area	-1	1	0	-3
	The wider rural economy will be more resilient	-1	-2	0	-4
	Farmers will cooperate more with neighbouring farmers and farms close to them	-3	1	1	0
	Consumers will not buy a lot more of their food locally	1	0	-3	-1
Labor market	Employment opportunities in farming will increase	1	0	-1	-3
	The need for labor work of an individual farmer will be spread throughout the year	-1	1	-2	-2
	Farmers will need to increase their level of skills	3	3	2	2
Working conditions	The farmer's daily routine will become more varied	-2	0	-2	1
	The nature of the work on farms will be more physically demanding	-3	0	-1	0

Source: Own processing of authors

## 5. CONCLUSIONS

It is obvious that the perception regarding future changes on territorial economy is done in the specific terms of some slow evolutions. The economic landscape of a territory adequate to the use of ecological practices will slowly transform, the areas' attractivity will follow a slowed down trend, the multiplication of ecological farms will have the look of a moderate process. The construction of social relations, existing between key actors, will be a delayed process. These

characteristics are present mainly in the case of the subjective micro-universes with economic tendencies (Factor 3) and pragmatic economic attitudes (Factor 4).

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