

## THE RESILIENCE OF THE GEOGRAPHICAL REGION

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**ABSTRACT** - This paper relies on the concept of “resilience” understood as “the ability of a system to adapt and persist,” and it uses, for the first time, this feature in the study of the geographical region – a territorial system of great complexity. The factors relating to the geographical region’s resilience are *climate changes, resource management, anthropic pressure, interregional competition, the new development strategies, and globalization.*

**Key words:** resilience, region, system, adaptation.

As the geographical region is a highly complex functional system from the point of view of its structure and articulations, the analysis of its features has a great theoretical and practical importance. Firstly, it individualizes the territorial entity, namely, it shows its spatial delimitation, it defines its typology, and it identifies its functional parameters and their relations to the neighbouring systems.

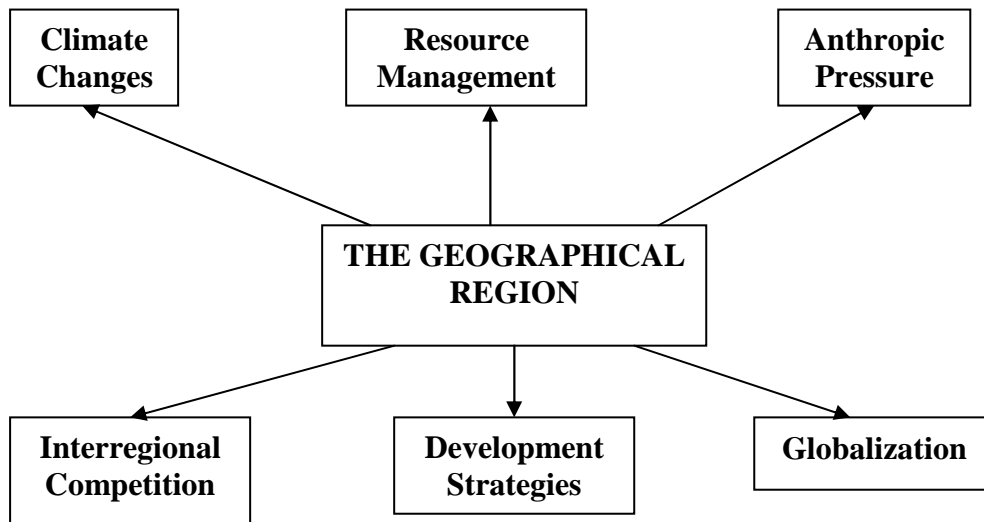
In this study we intend to point to a new feature of the geographical region as a territorial system. This new feature is resilience. The term was introduced by Carl Folke at the 10<sup>th</sup> meeting of the Scientific Committee of IHDP (International Human Dimensions Programme) in Bonn, in March 2002. This new term refers to *the capacity of the social-ecological systems (SES) to persist and to adapt.* Therefore, it is to be noticed that the promoters of the concept did not apply it to the geographical region, but to natural ecosystems and to socio-systems starting from the needs of these systems to ensure their own sustainability. Thus, according to A. Quinlan (2003), the resilience of the socio-ecological systems is defined by the following features: (1) a certain tolerance to change so that the system maintains its structure, functions, identity, and the feed-back between its structure and its functions; (2) the degree up to which each system is capable of self-organization, and (3) the degree up to which each system is able to learn and to adapt. Are these features true for the geographical region as a territorial system, too?

Analyzing the region in detail, we may consider, without any doubt, that the region does not only have all the fundamental characteristics of “resilience,” but it also enriches the concept of “resilience” with several new and peculiar aspects. Thus, as it is the human factor that takes the decisions, the regional system has a unique learning, innovating, and adapting potential, unequalled by other less complex systems. Unlike the ecosystems that evolve inertially, *the geographical region is aware and made aware of.* This is why it may adjust itself rapidly and efficiently to change.

In order to better understand the concept of “resilience,” we have to mention an aspect that belongs to the most intimate level of the adaptation phenomenon itself. Exactly as plant and animal species appeared under certain environmental conditions, the geographical region, which is a living territorial organism, is conditioned by specific natural and/or anthropic activity conditions (economic, social, and political).

Its structure and functions will be influenced by the initial conditions. The dialectic change of the factors that have led to the genesis and the development of the region also trigger its inevitable adaptation. This is how the structural, the functional, the physiognomic, and even the dimensional metamorphosis of this type of systemic unit appear. As it has certain systemic features, the geographical region is part of the incidence field of the resilience. Like ecosystems and socio-systems, the regional system can adapt and, consequently, endure. (One should not mistake resilience with self-adjustment. The latter means that the system can adjust its functions according to the specific input and output. On the contrary, resilience requires *the control* and, if need be, the reorientation of the input and the output so that the system would adapt and persist.

Which are the maximum impact factors to which the regional system has to adapt? They are represented in the following model (fig. 1).



*Fig. 1. The decisive factors of resilience*

the changing parameters of the meteorological elements, climate brings about transformations of the other natural factors (the flora, the fauna, the soil, the relief), and transformations of the habitat, the economy, and human behaviour, which influence the population.

The extending desertification process in the subtropical areas, El Niño, the more and more frequent extreme climate phenomena attest today's climate changes. In order to endure, regional systems have but one choice: adaptation. Even though this adaptation requires that we give up certain trophic chains of living and production and we replace them with others (non-irrigated with irrigated agriculture; changing crops or the number of livestock, preference for the species that resist in an arid climate; timetable changes for the day-time activities, etc).

**2. Adaptation to the Requirements of the Sustenance Basis.** The production basis of a region is the local and the foreign resources to which the system initially had access. The resource management restrictions that appeared because some resources dwindled or got depreciated, prices rose, there were prohibitive measures disturb the functioning of certain systemic links. In this case, adaptation means accessing some unexploited resources, but especially the substitution and reconversion of those productive branches. A revealing example is the adaptation of many industrial regions to the oil shock in the 1970's through developing off-shore exploitation, resuming the consumption of oil as fuel, and also increasing investments in alternative energy sources (atomic, geothermic, solar energy, etc). This process is very similar to the post-iron and steel reconversion of some regions well known for their metal works (New England, the central area of Great Britain, Ruhr etc).

**3. Adaptation to Anthropic Pressure.** It is well known that every regional system has to cope with an increasing anthropic pressure as it becomes more efficient and more productive. The regional system itself is an attractive centre for the population in the neighbouring or more remote areas and it generates genuine exoduses univocally oriented toward its functional nucleus. The case of the metropolis is revealing. The economically developed regions in Europe and North America are the targets of an increasing flow of immigrants from the Third World countries. The result is an anthropic pressure whose intensity is superior to the adaptation rhythm of the system and this generates very serious social dysfunctions. The scarcity of

housing facilities, jobs, the increasing crime rate and pollution accompany this phenomenon. Under these circumstances, adaptation would mean either eliminating the disparities that generate the exodus (an ample process regardless of the regional decision factors, and extended for a long period of time), or the adjustment of the fluxes through administrative, economic, or social means.

Anthropic pressure manifests not only in the increase of the population, but also in the multiplication and diversification of the population's needs. The amplification of the technical infrastructure of the territory (by taking out of the natural circuit more and more territories), the sprawl of urbanization, and environmental degradation (through artificiality and pollution), all these are threats to which the system has to adapt functionally. *Why* is easy to imagine, *how* is difficult to discover. The difficulty comes from the fact that the element at the origin of the system's instability – man and his needs – is in the paradoxical position that he has to intervene to counter the consequences of his own initiatives (not always understood, not always easy to accept). (A revealing example is the urban pollution because of the traffic. Even though the inhabitant of the region is aware of the situation, solutions are slow to appear because they go against the inhabitant's interests at that specific moment, etc). In these cases, solutions envisaging the system's adaptation are, undoubtedly, looked for by innovating and the human being has proved to have specific innovating capacity in the long run of its evolution.

**4. Adaptation to Interregional Competition.** This is a highly necessary feature, its absence may be endangering the endurance of the region. It manifests by valorizing the relevant characteristics of the region; consolidating its specificity; preserving the optimal interrelations with the neighbouring regions; the quick reconversions of the regions in decline; the permanent tendency to lead the macro-regional development. In this case, adaptation partially means innovation, a process meant to maintain the far-reaching development of the regional system.

**5. Adaptation to the Change of the Development Strategies** is a process with a spasmodic evolution, which often depends on the political and social evolution. The political changes (from capitalism to socialism, from socialism to capitalism) within the last half a century in Romania, the changes of political orientation within the same democratic regime (social-democracy with liberalism, the left with the political right – in the democratic countries), the adaptation to the development strategies constructed by foreigners (the integration of Romania into the European Union) are very influential events for each regional system. A revealing example is the Petroșani Basin, a well-individualized region, whose production basis was coal under the Communist regime. The collapse of the planned economy and the appearance of the capitalist free-market economy after 1990 led to the destruction of the old economic structure and to several serious social problems (high unemployment rate, poverty, and crime). Replacing the planned economy (while offering social security in order to reduce social tensions) with an economy based on services, developing tourism will ensure the continuity of the territorial organism.

On the other hand, changing development strategies increases the importance of the political factor in the process of delimiting the regions. Political commandments usually become structural and functional changes of the regional systems. EU integration has obliged the political factors in the accession countries to delimit several “development regions” apparently similar those in Western European as to their surface, population, GNP, or development potential. This is how the seven development regions of Romania, each made up of five to six counties, plus the metropolitan region of Bucharest came into being. Thus, the counties, as territorial entities, focus on their internal development, which is the local component, and on their superior and regional integration. Resilience consists in the flexibility of the connections and the degree up to which the local resources contribute to the construction of a functional region.

**6. Adaptation to the Requirements of Globalization** is a contemporary phenomenon generated by the obvious evolution to internationalization, to the generalization of most human activities. It is evident that no terrestrial system can disregard this process, which involves energies, tendencies, and decisive interests. Accepting the co-existence of both terms, with everything that they both mean, can only solve the globalization-regionalization dichotomy. So the future presence and development of the region as a living reality calls for the rigorous and subtle adaptation to the new economic, social, political, and strategic evolution, and especially to the evolution of mentality. In a restricted environment, often determined by the existence of borders, the region could be delimited regardless of the realities in the neighbouring countries

(territories). Nowadays, when globalisation makes borders irrelevant, the region can only survive through its specific (unique) features and by satisfying some new requirements imposed by globalisation itself. Therefore, in the global age, in order to maintain their importance, regions have to facilitate, through their own functions, the improvement, the optimisation and the increased efficiency of territorial relations as wide and complex as possible.

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