38th European Regional Science Association - Congress - 1998 August 28 - September 1 Vienna - Austria

Trofimov A.M., Kashbrasiev R.V., Piyanova O.V. Department of Economical Geography and Regional Analysis. Kazan State University. Kazan. Republic of Tatarstan. Russia.

SOCIAL - ECONOMICAL SITUATIONAL CONCEPT.

1998

Abstract.

Social - economical situations with different scales always follow a society's life and under certain conditions are able to alter its spatial configuration.

The geosituational concept, which we suggest, explains the spatial - temporal structure by means of the analysis of socio - ecologo - economical situations. The situations are movable formations. They are easy for alterations than stable geosystems. Thus the geosituational concept is the governing aspect of the environment modeling.

The analysis of socio - ecologo - economical situations may be a primary weighty reason to make governing decision.

#### 1. Introduction.

Modern geography considers the elements of space in their complicated interaction. Social, economical, infrastructural and other types of space are overlapped forming zones with different degree of stability.

Social - economical situation with different scales always follow a society's life and under certain conditions are able to alter its spatial configuration (Blayo,1997; Trofimov,1997).

There exist two concepts to explain the processes of spatial - temporal localization of geosituations (Thisse,1996). The equilibrium concept considers negligible in scale social - economical situations and explains their appearance under the action of factors of competition and demand. The external concept provides that technological and many factors influence on appearance and development of large scale situations. Social - economical space is formed in the struggle of these contrary factors.

The geosituational conception, which we suggest, explains the spatial - temporal structure by means of the analysis of socio - ecologo - economical situations. The situations are movable formations. They are easy for alterations than stable geosystems. Thus the geosituational concept is the governing aspect of the environment modelling.

## 2. Conceptual representation of the geosituations.

Existence of any geographical system is realized in the series of its momental conditions, each of them, in turn, is realized in single events, happening in the given moment of time t [ T in some point p [ P of the geosituational space. In that meaning the condition of the geosystem is fully defines by the events distribution on the whole area of the geographical space, occupied by the system. Function F, setting to any point <t, p> 7å 0 PT the event F(t,p) happening in the point p at the moment t, forms the geographical area (field); limitation Fs of the area (field) F to the area of existence of the system S defines field of events of the system S. In terms of the geographical area (field), conditions of the system S in the moment t0 [ T is defined as a function Fs(t0,p), setting to each point p, occupied by the system S event Fs(t0,p), happening at that point at the moment t0. Trajectory of the system S is defined as a function which sets to any moment of time t [ T state s(t) of the system S at the time t. The system state is the sum of Fs for all p occupied by S for a given t.

Thus the geographical field fully defines the events field for all geographical systems, and vice versa. In turn, the events field of the geosystem S fully defines the momentary states and the trajectory of the system. This suggest a conceptual framework for examining system trajectories based on spatial properties of geosystems.

The limitation of the state of S at moment t to the base of its forecast forms the geographical situation of S relative to the forecast for the period [t1,t2] fully and causally defines the trajectory of S for that period.

- 3. Analysis of socio economical situations.
- 3.1. Some information about the economic of the RT.

Among the Russian Federation region of the Tatarstan Republic has a peculiar position. Many social - economical problems are being solved here more effectively. The reason is that the Territorial - Production Complex of the RT was formed within the borders of the autonomous republic. As an economical - geographical system it possessed virtues of unity: unified government system, variety of strengthening within - the - republic interbranch connection, etc. That's why the RT finds little difficulty in solving such economical problems as economical independence, regional sovereignty, formation of self - dependent regional resource base for social - economical development, ecological stability and other conditions for steady regional development.

However, there is a number of problems as well. The political, juridical, national, ethnic and social problems are not yet solved. That's why the problem of structural industrial reconstruction remains actual.

The problems of complex economical, social and ecologo - economical development gain utmost importance. During the process of formation of market relations the complex development can be ensured by balanced development of industrial, non - productive sphere and infrastructure, rational utilization of territorial potential; providing of favourable conditions for functioning of industrial subjects; providing of effective employment for population; rational regional combination of market and non - market structures, etc.

The complex ecologo - economical and social regional development is based on objectives regional aspects of social regeneration. The methodological principles of regional development investigations gain the leading role. They are based on the real socio - ecologo - economical situations.

# 3.2. Method. Approach. Results.

For study the socio - economical situations of the RT in the territory there were singled out 300 operational - territorial units (OTU) of an equal area. While investigating 59 indicators amalgamated into 17 groups were picked out.

There groups contained information about:

- 1) demography processes;
- 2) population setting system;
- 3) industrial enterprises amount;
- 4) agricultural enterprises amount;
- 5) major construction work;

- 6) housing fund;
- 7) social infrastructure;
- 8) trade;
- 9) transport complex;
- 10) road building;
- 11) education system;
- 12) communication system;
- 13) health system;
- 14) privatization rate;
- 15) small business;
- 16) family's budget;
- 17) environment protection measures.

Initial information was organized into the matrix with the size 300 \* 59. With the help of statistical methods every element of the given matrix was exposed to a rate setting. As a result of this procedure the initial matrix become a matrix of sizeless value.

To distinguish social - economical situations in the territory of the RT to the matrix of sizeless indicators was applied the method of Self - Reflexive Neural Networks (Kazakov, 1979; Buscema, 1996) which allowed to distinguish five special diagnostic types of social - economic situation in the territory (social - economical syndrom of the territory) (Trofimov, Piyanova, 1997).

The basis of this map is the map-sheme of complex potential of the territory (Trofimov, Khuseev, Rubtsov, 1998).

1. "The social - economic situation of depressive agricultural regions with uncertain tendency of a further development".

Such a situation is typical to the majority of the Pre - Volga economic regions which are the more backward regions of the RT. The social - economical situation is characterized by the following peculiarities:

- the economics of the territory is oriented to agriculture;
- the industry is mainly connected with agriculture;
- the level of industrialization of economy is extremely low and has not dear tendencies to growth;
- unfavourable demographic processes: many years negative population growths, a constans outflow of the population to the more propitious regions.

Perspectives for development of the situations are unclear and depend upon the influence of inner factors (for instance, upon a regional policy orientation, upon investment to the development industries and so on).

2. "The socio - economical situation of a "stable" depression (agro - industrial depressive situation)". It is typical, mainly, to the Trans - Kama economical region and some other ones.

The main signs of the given situation are as follows:

- low rate of production growth;
- limited amount of industrial enterprises;
- use of traditional, in many cases outdated, technologies;
- absence of progressive development tendencies;
- satisfactory ecology state.

3. "The socio - economical situation of depressive agricultural regions" which have indistinct tendency to industrialization. This situation is typical to a number of regions of Pre - Kama economical region which form an integral agricultural area.

The main signs of the given situation:

- agrarian orientation of economy;
- availability only a small number of industrial enterprises;
- industrial enterprises as a rule have a small output;
- a low level of social infrastructure development;
- comparatively favourable ecology state.
- 4. "The socio economical situation of stable industrial development" which in a number cases did not reach its limits.

The given situation takes place in the North-West (Prikazanski) economic region whose advantageous geographical location give certain possibilities to further economical development. Serious state of ecology being deterrent demands to make efficient decisions.

5. "The critical social - economical situation " which is caused by the intensive industry development is typical for the majority of regions in the South - East of the RT.

Such a situation is accompanied by the extremely unfavourable state of ecology, and in some cases by the exhaustion of natural resources.

For the given situation a number of negative social - economical processes are typical: availability of superlarge enterprises for which is difficult to meet the needs of a market, deterioration of the surroundings, including the conditions for the population rest, unemployment's increase and so on.

From this analysis we have the "Conceptual Models of the Regional Development" for the RT.

## 4. Conclusion.

The concept of balanced socio-economical regional development comes to the forefront as far as the states with special status within Russia concerned. The main principles of its realization are:

- adequate interconnection between social, economical, ecological development programs in all levels;
- evaluation of correlation between the demands of society and industry and the capabilities of natural environment and the shaped condition of social infrastructure.

These principles orient one towards the investigation of the regional policy peculiarities (socio - ecologo - economical regulation, development, government and informational activity of the society), and projects of reseach in the sphere of integral territorial potential. The latter characteristics present a qualitatively new formation and includes such aspects as planning and environmental (education, politics, agglomeration, reconstruction, etc.), quality of life and its change in postreconstruction regions, regeneration of peripheral regions, etc.

The analysis of socio - ecologo - economical situations may be a primary weight reason to make governing decision.

And finally: this work is the special order from a number of Banks of the RT.

### References.

Blayo F. Application of Self - Organizing Maps to the Analysis of Economic Situation // IOP Publishing Ltd and Oxford University Press, 1997. - Gb. 1:1 - Gb. 1:5.

Buscema M. The Neural Vision of a Competitive City: an Exploration on the Urban Winning Assets in the Europian Context // Simeon - Centro Ricerche di Scienze della Comunicazione. Viale di Val Fiorita, 86, 1996. - 00144 Roma. - 24 p.

Kazakov A.I. O mere sformirovannosti podmnozestv v neiropodobnih setiah // Neiropodobni seti v robototechnike. Kiev: Inst. Ciberneniky, 1979. - p. 43 -51 (in Russian).

Thisse J-F. Economics Matter for Geographers . . . and Vise Versa // Universite de Paris I-Sorbonne and CERAS - ENPC (URA 2036 - CNRC), 1995. - 22 p.

Trofimov A.M. Geosystem modelling (conseptual aspect). - Kazan: Ecocentre, 1997. - 146 p. (in Russian).

Trofimov A.M., Piyanova O.V. Social - Economical Analysis // 10th Europ. Colloq. on Theoretical and Quantitative Geogr. Sept., 6 - 10, 97. Rostock. Germany. Inst. of Regional Geography. Leipzig, 1997. - p.86.

Trofimov A.M., Khuzeev R.G., Rubtsov V.A. Dynamic Models of Economical - Ecological Development of the Region Conceptual Approach to Regional Analysis of Potential of the Republic of Tatarstan // Environ. Radioecol. and Appl. Ecology: Vol. 4, No. 1, - 1998. - p.3-12.