

SYNERGETIC EFFECTS OF ECOLOGICAL-ECONOMIC SYSTEMS

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Modern character of ecological-economic relations needs new approaches to long-term and short-term strategies of territorial development. For ecological-economic efficiency we need to incorporate not only internal results of economic subjects, but also external results, that appear as a result of economic subject's activity in other spheres.

Integrally these two kinds of effects – internal and external form the integral synergetic effects of ecological-economic systems functioning. External effects can be both positive and negative.

In case of positive effects thanks to the activity of a given subject in other spheres of economic activity we have the increase of results with the same costs.

In case of negative external effects efficiency of economic activity in other spheres decreases. This can cause due to environmental pollution. Modern assessment of external effects allows correcting economic mechanism, and increasing the number of subjects with positive externalities. This leads to efficiency increase and helps to develop territorial attractiveness of the region. This is one of the ways to reach sustainable development.

For assessment of synergetic effects we need correcting coefficients [1]: increasing and decreasing. Increasing coefficients (according to kinds of economic activity) are:

- forestry – 5,0–6,0;
- land reclamation through forest planting – 3,5–4,5;
- conservation of natural lands (protected areas creation) – 1,7–3,2;
- recreation – 1,3–1,5;
- beekeeping – 12,0–16,0;
- resource and energy-saving – 4,0–5,0.

Decreasing coefficients are:

- metallurgy and metal processing – 0,8–0,9;
- machine and equipment production – 0,9–1,0;
- coke and raw oil processing – 0,8–0,9;
- chemical, rubber and plastic production – 0,8–0,9;
- non-energetic materials extracting – 0,7–0,8;
- electrical engineering, gas, heat and water delivery – 0,6–0,7.

The use of these coefficients increases the efficiency of economic decision making and development of national ecological-economic relations on regional and national levels.

For example, expansion of specially protected lands and territories might lead to region's ecological attractiveness increase. In such a case there is a real possibility to get SE that can substantially grow.

In particular, a trans-border conserved (protected) natural territory “Bryansky and Starogutsky Forests” can further be given the status of a biosphere reserve. It can become one of the directions for getting SE in Sumy region (Ukraine). Such activity is conducted in the framework of Russian-Ukraine nature protection cooperation and trans-border ecological net creation in the Desna River basin. This task can be realized due to unique natural resources of Desnyansko-Starogutsky National Natural Park, which territory is more that 16.000 ha. Realization of such project can increase external effects from environmental functions – air sustainability, water protection, regulation and cleaning functions, land protection functions, resource reserving, biodiversity preserving functions; scientific – research conduction; recreation functions – rest, fishing, hunting; aesthetic – moral satisfaction from enjoying ecologically clean territory. As a result, SE will increase.

We can suggest assessment of ecological territory attractiveness; assessment of ecosystems ecological functions; distinguishing and development of economic activities that produce positive external effects; development of investment projects, that will increase territories ecological rating; development of instruments stimulating environmentally safe economic activity; creation of environmentally sound and human friendly infrastructure; increase of ecological thinking for the sake of synergetic effects realization.

SE and ecological attractiveness of a region increase as a result of the mentioned measures (directions). Consequently, environmental conditions of regional natural systems become better and economic outputs increase.

References

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