T.N. Borovska, Dr. of Sc., docent, I.S. Kolesnik, PhD, docent, P.V. Severilov, A.B. Panasiuk

MODEL OF OPTIMAL DEVELOPMENT REGIONAL SYSTEMS BASED ON OPTIMAL AGGREGATION METHODOLOGY

Today the specialization of production reached the level of the individual States. There are cost effective States, specialized on bananas, financial services, and tourism. Such specialization of regional structures affects the volume and structure of jobs, and then the on the social structure. Among the publications on problems of sustainable development of socio-technical and ecological systems (STES) is dominated by the declarative or based on noneffective mathematical models. In this paper, we investigate new environmental optimization model STES components is a cost-effective recycling agriculture. Novelty models on prototypes [1] – statement and solving problems of optimal aggregation for K types of wastes and L types recycling technologies.

Methods of optimal aggregation feature - algebraization: the original data for the optimization task - "cost function, release" and features resource links the elements and sub-systems of the production system (PS), and the decision of the "optimal equivalent cost function, issue" (OEPF) for PS. The peculiarity of this work is to ensure (optimization, risk analysis, management) specific projects greening regional structures. The purpose of scientific-practical work - greening projects yield. In Fig. 1 presents the sequence of operations and meet the challenge of optimizing the system for integrated treatment of waste. This is the main part of the process of addressing new tasks based on the methodology for the optimal aggregation. Software implementation of operators the optimum aggregation-specific task. Solution of optimal aggregation-algebraic routine.
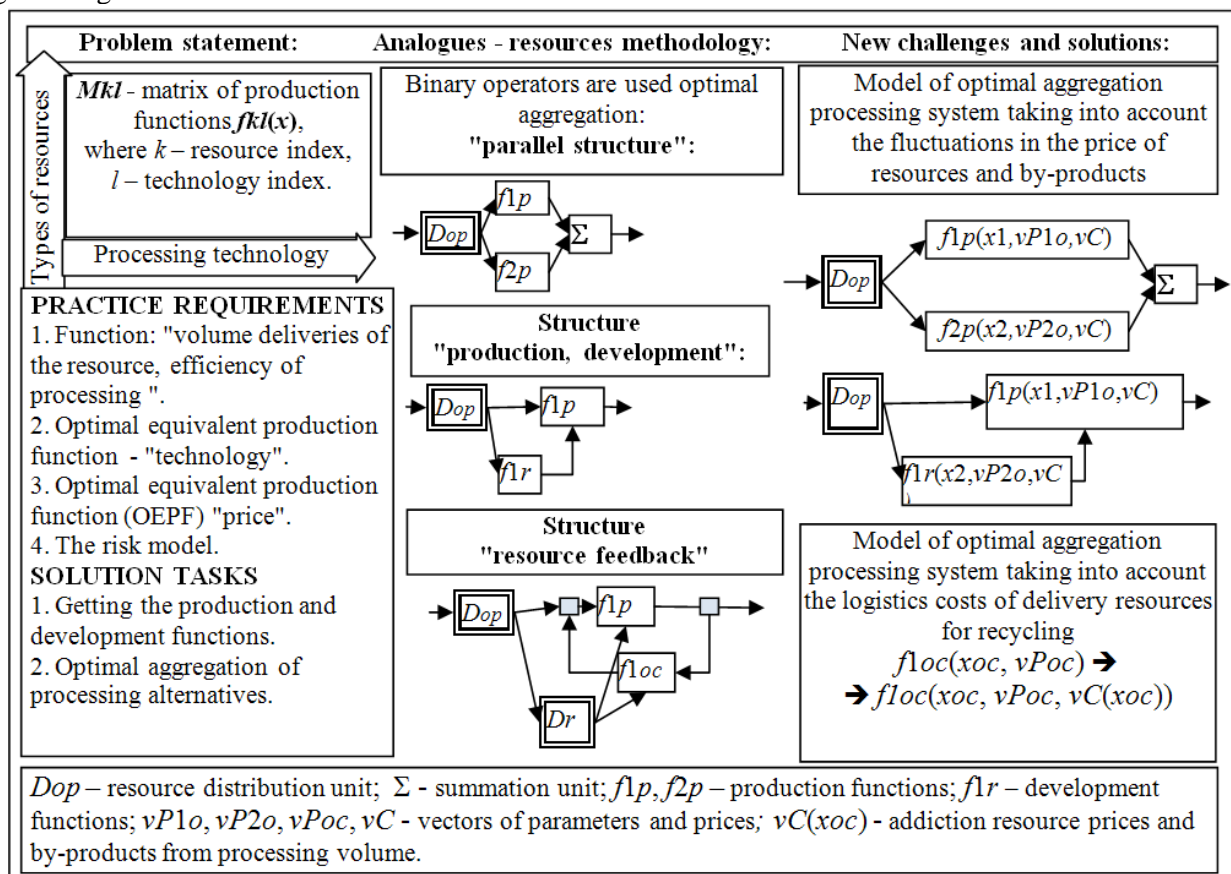

Fig. 1. Examples of optimization simulation of functioning and development of basic tasks

Designed parameterized operators optimal aggregation. Analysis of simulation results, conditions the profitability of the systems for integrated treatment of waste.

References

1. Borovska, T. N. (2014). Optimal aggregation of production systems with parametric connections. Eastern-European Journal of Enterprise Technologies, 4(11(70)), 9-19. DOI: 10.15587/1729-4061.2014.26306.