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## Methodical aspects of determining the trajectories of global determinants of local markets crop production.

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### ABSTRACT

The article proposed and approved methodology phased development forecast scenarios for sustainable development of the local market crop production, based on a systematic approach and methods of modeling and extrapolation, which allows for multi-scenario forecasting the development of local markets crop production in the long term and optimize the strategic program of development of world economy.

**Keywords:** local market, crop, methods, development, forecasting.

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## INTRODUCTION

The process of global integration of economic relations is naturally complemented by a process of regional differentiation, that promotes the release in the total flow of the world market sets specific branches of the evolution of the local markets of various sizes, the level of development and the nature of the products traded on them. This circumstance is fully applicable to the development of local markets plant products of contemporary Russia, which are focused on meeting social needs in the products form the basis of nutrition of the population of the regions concerned. However, the sustainable development of these markets provides a solution a priority to ensure food security of Russia. Sustainable development of certain local markets in conditions of uncertainty and high risk requires the development of scientifically based methods of modeling and forecasting using formal methods to identify the main patterns of development and support trends that allow to objectively take into account the prevailing economic conditions and changes in market conditions. At the same time increase the role of scenario forecasting systems in the local market due to the global transformation of the external conditions of their existence, the adaptation of state regulation of market structures, further integration of these systems with other localizations, including those outside of AIC. Correct assessment of objective tendencies, study approaches to forecasting, development of aggregate forecast scenarios are very important for the local market crop production, which operate for a long time in a crisis situation, the consequences of which will be felt for a long time. However, these markets still have significant growth potential, because, since 2000, they show significant growth rates. In connection with this subject of this study it seems relevant and timely.

## MATERIALS AND METHODS

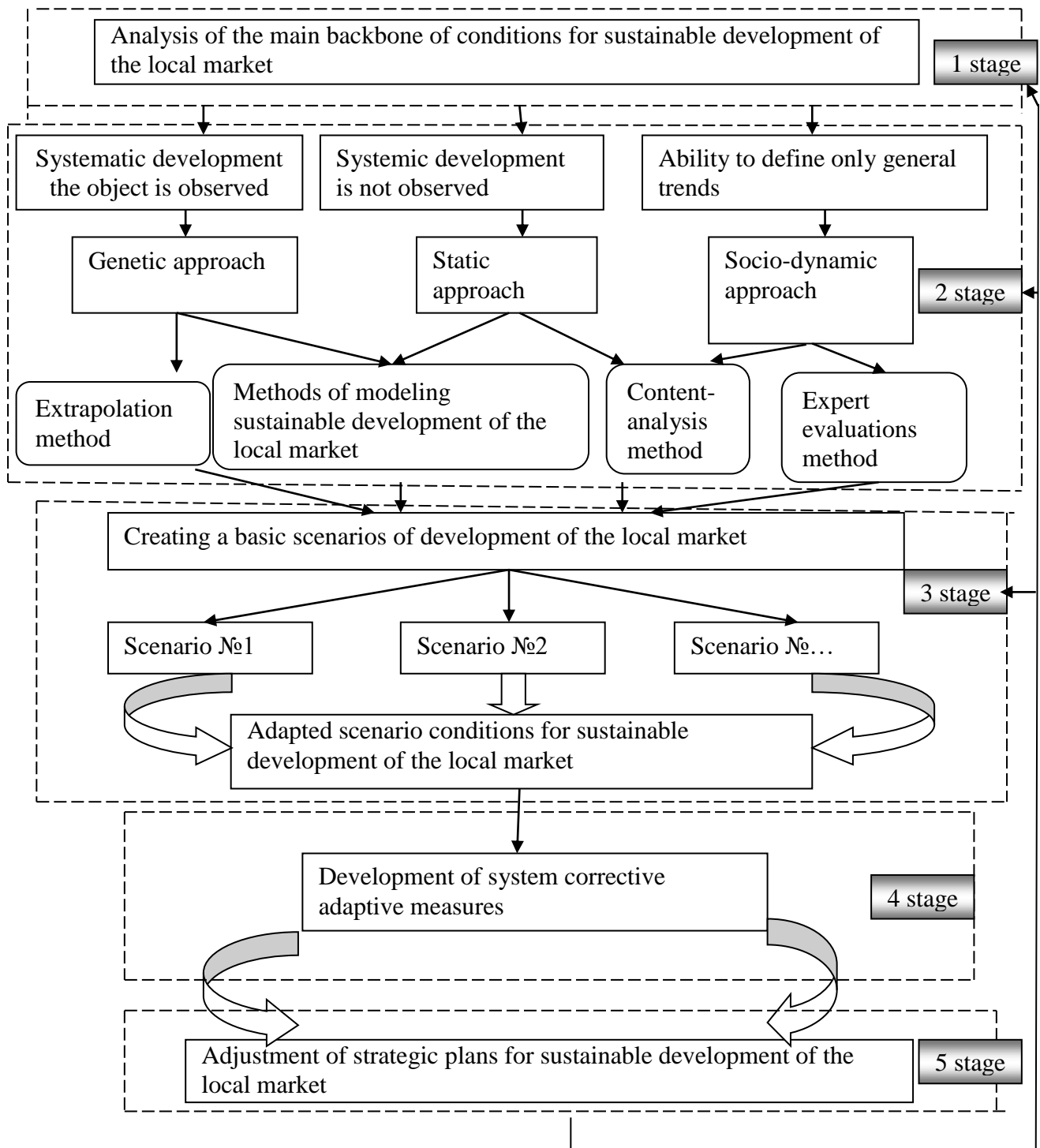
In the study of the determinants of global development of local markets crop production, in our opinion, it is necessary to use a method of long-term forecasting in order to adjust the strategic plans of development of the world economy. In our opinion, to justify the forecast scenarios of market development of sustainable crop production it is advisable to use the method of combining recurring multi-scenario development, which is caused by a different specialization of market structures (cereals, oilseeds, beet, etc.), as well as significant differences in terms of their development local regional markets.

The method of repeated association multi-scenario development is to produce a variant of scenarios for each local market on the basis of the territorial aspects have a significant impact on the production of exactly this type of product, and repeating the iterative process of coordinating scenarios of market development as a whole, taking into account every possible aspect and acceptable situations. The advantage of this method is more thorough analysis of the interaction between enterprises of different specialization in various aspects of development of the situation.

Method of multi-scenario forecasting the development is to produce a variant of scenarios for each of the local market on the basis of aspects that have a significant impact on the production of these products, and repeating the iterative process of harmonization of scenarios as a whole, taking into account different aspects (Figure 1).

The presented method gradual development of forecast scenarios for sustainable development of the local market crop production has a universal focus, may be used on both the global (world) and at the macro level (of a country) and regional levels (local regional market).

Modern research has led to the conclusion that the scenario modeling method can more fully and clearly define the prospects of development of a particular area, as in the build-up intensity of different degree of certainty the factors that influence the rate of its economic and social development, and in their state of stagnation. The main purpose of forecasting is the selection of economically viable and real management solutions. With forecasting possible to simulate the processes of market development can have an impact and that can actively be adjusted to that in the future.



**Figure 1: Methodic of the forecast scenarios for sustainable development of the local market crop production**

On the basis of the generated predicted scenarios should be made to develop strategic plans and the adjustment of crop production for sustainable development of the market, taking into account the results of the analysis of external and internal environment on the basis of selected indicators. The ability to predict the conditions for sustainable development of the local market crop production can be supported by modeling capabilities, which allows to realize the benefits of the mathematical approach to a multi-step process of information processing, use identical means of formulating and solving similar tasks, as well as computer technology capabilities. Application of methods scenario forecasting ensures a higher probability of formation

of effective solutions as part adopted by the market development strategy of crop production in situations where such decision-making is possible (quotas, investment support regional market participants and others).

The proposed multi-scenario approach to the study of sustainable development of local markets crop production allows the formation of an adequate mechanism for territorial control and justification of development strategy based on the development of these markets, comprehensive analysis and evaluation of the set of forecast scenarios, taking into account the repeatability factor of development options, different specializations of the object (cereals, oilseeds, beet, etc.), as well as significant regional variation in the conditions of its functioning and development.

### RESULTS AND DISCUSSION

Testing of the proposed methodology for developing predictive scenarios for sustainable development of the local market crop production was carried out by the example of the world market of the main products of plant growing.

Crop production plays an important role in world trade, but its share decreased - in 2014 it was about 17% of world exports, compared with 24% , in 2000. The underlying factors of the product development of the market is a natural resource factor, including land resources. The largest land resources per capita are concentrated in Australia, North America and New Zealand (respectively 671, 155 and 69 hectares per person employed in agriculture). In Western Europe, the corresponding figure does not exceed 12 hectares. Dynamics of the structure of production and crop production needs are presented in Table 1.

**Table 1: The dynamics of production and demand for crop production, by country groups, million tonnes**

Years	Developing countries		Industrialized countries		Countries with economies in transition	
	need	production	need	production	need	production
Roots						
2005-2007	5412	5342	81,2	85,6	95,7	96,8
2008-2010	5680	5742	80,9	85,9	97,1	97,2
2015	6728	6629	83,5	86,6	92,5	97,0
2030*	8190	8176	84,6	88,3	91,4	95,4
Green culture						
2005-2007	52,1	24,5	12,0	12,3	3,5	3,9
2008-2010	50,8	32,1	12,0	12,6	3,6	4,0
2015	51,9	41,0	12,0	12,8	3,5	3,9
2030*	63,5	62,4	12,6	13,4	3,7	4,2
Vegetable oils						
2005-2007	92,4	89,7	34,5	36,8	6,3	6,8
2008-2010	98,9	95,6	36,7	37,9	6,7	6,7
2015	105,7	109,0	40,9	40,4	7,4	7,2
2030*	134,5	155,6	51,4	52,0	7,5	7,8

At the same time, food reserves are declining in the developed world. Thus, during the 2002-2005 food supplies in the EU amounted to about 47.4 million tons, in 2007 - 37.6 million tons, in 2014 - 27.2 million tonnes. This reduction in reserves combined with an increase in crop losses in developing countries (global consequences of drought in Africa and Asia).

## CONCLUSION

In today's market development, development strategies and programs based on the use of forecasting methods. Among them, with respect to the prediction of conditions for the development of local markets crop production, can be applied with success a group of genetic-extrapolation methods, which focused on the extrapolation of the previous conditions of socio-economic processes in the coming period. As a result of the practical application of methods of phased development forecast scenarios for sustainable development of the local market crop production, it can be concluded that for the world market crop production have been observed following trends:

A. The growing crisis of climate nature, undermine further increase global crop production and food in general.

B. Growing limitations of land suitable for agriculture due to the high level of urbanization and the need to preserve forests.

C. Environmental constraints associated with the expansion of the area of land taken out of circulation, limited water resources, increased environmental regulation in many regions of the world.

D. Reducing financial support crop production, so that even in conditions of sufficient global production of these products to ensure food problems are acutely face the poorest countries.

E. The increase in demand for products of plant origin in mind the growth of alternative industrial demand.

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