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## Methodological basis of forecasting of sustainable development of economic system

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### Abstract

Since the adoption of the Rio-Declaration in 1992 the concept of sustainable development is raising more and more awareness in public perception. The concept requires the integration of economic, environment and social considerations into all decision-making, fostering intra-generational equity through the alleviation of poverty by concentrating the benefits of development in lesser developed areas and considering the needs of future generations to ensure that inter-generated equity exists. The implementation of sustainable development concept requires certain means. One major instrument is forecasting of development by using sustainable development indicators. In this article the problems of methodological basis of forecasting of sustainable development of economic system are considered. The authors investigate these problems on an example of Republic of Kazakhstan.

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World experience shows that formed in the range of countries, type of industrial society oriented on mass production and consumption isn't sustainable. High development level has been achieved at the point of resource limit to which developed countries came first by these or those reasons. High consumption level has been achieved by too expensive price: irreplaceable natural resources are being spent; human potential is used irrationally, one-sided; balance between society and natural environment is violated; societies are in conflict with each other.

Negative components of the civilization are many-sided. It's proved that if the world tried to live on consumption standards of developed countries, without changing technologies, then natural resources wouldn't be enough. Even territorially limited distribution of "consumption society" leads to permanent crisis—ecologic, energetic, raw materials, structural, food demographic, etc.

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In the economy of developed countries, presenting mostly economy of post-industrial type, prevail tendencies of material production portion shortening and corresponding increase of portion of non-material wealth creation, absolute shortening of labor mass, busy with production of material portion, at the extension of its and qualitative structure increase. On the one hand, material basis for the population's well-being increase, all-round man's development, is created, society, without prejudice to people's material needs satisfaction, gets the opportunity to direct the most mass and portion of resources at the increase of non-material wealth, expansion and perfection of different services, development and more entire disclosing of human potential. On this basis, during comparatively short period, in the developed countries new quality of wide section of population's life occurs. On the other hand, creation and new type economic development wouldn't be possible without reorientation on all-sided human factor increase, education and culture of people, their creative possibilities and stimulus. Resource investments into human capital increase become most necessary and effective, with the only difference that their economic impact is revealed not at once but with some lag.

Attempt to approach standard consumption realization, presented in the developed countries, can rapidly lead to absolute resources limits and put the world community before direct and irreplaceable destruction of live and lifeless nature. It is impossible not to consider the threat of world's overpopulation. Great population explosion, caused by the contact of the developed world with achievements of science, techniques, stimulates population increase, without creating adequate regulations of this growth.

Very complicates is the process of finding optimal combination of general trends of post-industrialism with national specifics of certain countries, with the peculiarities of theirs historical traditions and mentality.

Many scientists mention urgent need of revision of theoretic-methodological base of the model of modern economies functioning. Actuality of a new paradigm production is growing according economic processes globalization; sharpening of ecologic problems, rise in the modern society forces, able to affect the way of social and economic processes. Former economy is turning into many-sided social–economic system, where, together with material elements of wealth, non-material elements play considerable role.

In the last 20–25 years dramatically increased economic load on natural complexes arose a sharp problem of environment protection from excessive anthropogenic press. Consequences of global changes of atmosphere increased ultra-violet radiation intensity on the surface of Earth, extension of desert area, the World Ocean level increase, acid rains, animal world death, population sickness rate rise.

Many investigators tried to glance into future—to reveal tendencies of social–economic development and possible ecologic consequences for both separate regions and for the whole world. Within the framework of these tendencies global and regional models of development are being worked out. In further global modeling three basic directions were formed, oriented on determination of possible depletion time for this or that type of non-renewable raw material, population numbers determination, whom the Earth can “feed”, population numbers dynamics, revel in the world, in the separate countries and regions as the competent of the system. In 70–80s on the initiative of the Roman club members there was carried out a large cycle of works on mathematical modeling of the world system, analysis and forecast of social, economic and ecologic processes in it. Global models became the method of complex forecast of large problems. With their help there was revealed sharpness of demographic tension in the world, threatening whole biosphere stability, was underlined necessity of review of the value system that follows mankind, certain countries and regions. Methodological basis of global modeling became the whole spectrum of modern directions in mathematics and computer-system dynamics of G. Forrester, theory of multi-level hierarchic systems of M. Mesarovich, inter-regional inter-branch approach “expenses-outcome” of V. Leontjev, mathematics

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