GLOBAL PROBLEM OF THE SWEET WATER SHORTAGE

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In the present article we attempt to touch upon some ecological and economic aspects of the increase in the lack of sweet water. The over-use of sweet water sources, the violation of natural processes of its reproduction have led to the fact that water resources have lost to a great extent their ability of regeneration in a quantitative and qualitative aspects. The orientation towards extensive use of water inevitably leads to its shortage; so the approach to the growth limit caused by this lack is perceived more and more sharply. However, before the growth limit in the economic aspect will be reached, we may confront the ecological limit of the destruction of natural mechanisms that provide sustainability of hydrologic system.

The sweet water shortage becomes a typical external effect, an externality for a market system whose spontaneous action is not only incapable to overcome this lack but, on the contrary, contributes to its strengthening, as market prices do not take into consideration the real value of water for an economy in the long-run aspect. The known methods of internalization of external effects in this case are insufficient, as the problem goes beyond the national boundaries, threatening with political destabilization at the regional scale and the emergence of local armed conflicts to settle the controversy concerning the trans-boundary waters.

The forecasts show that by 2020–2025 practically all available water resources in the world will be involved in the economy; only the rivers of Asian part of Russia, the northern rivers of Canada, perhaps the Amazon and ground waters of Australia may remain used in an incomplete way. However, the necessity of developing the water usage will increase at least till the second half of the 21st century, when the stabilization of population of the Earth is expected. However, the direct water-trading meets quite a serious restriction: the transport capacity of water sharply increases if a water supply source moves from the consumer's basin into the other one. Just for this reason, the global market of water like that of the oil is impossible, as water markets will always be restricted by the boundaries of basins (with rare and insignificant exceptions on a global scale). The role of the world market in overcoming the global water lack will consist in the development of other sectors of water-retaining products (*i.e*. the goods requiring a considerable amount of sweet water for their production) and water-saving, as well as water-guarding technologies. The inevitable rapid growth of these sectors of the world market already by 2020 will trigger the process of a considerable reorganization of world economy structure both in branch and territorial aspects and will give a powerful stimulus for the development of economy in the countries that are rich in water resources.

Russia possesses not only great sweet water resources but also other resources, required for the development of different water-retaining branches of industry: hydrocarbon materials for thermal power industry and polymer chemistry, woods for pulp and paper industry, ore deposits for black metallurgy and some branches of non-ferrous metallurgy, uranium deposits for nuclear-power engineering, as well as considerable spaces of lands useful enough for agriculture. All these industries in a sense are traditional for Russian economy; there are rich technological experience of their development, skilled staff, and expert systems in the country. The country has a remarkable chance to turn from the ‘oil’ period to the ‘water’ one not only without losses, but considerably reinforcing its economic positions.