

APPROACHES TO GENERATE A SYSTEM OF SOCIO- ECOLOGICAL AND ECONOMIC INDICATORS OF SUSTAINABLE WATER USE

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Beginning of the XXI century accompanied by a powerful expansion of global goods and services production which leads to a catastrophic depletion of the world's water resources. These processes make the international organizations in the field of environmental protection to raise the issue of sustainable water use-not exceeding the reduction and assimilation capabilities of water ecosystems. Economy and water quality problems is quite relevant for Ukraine due to uncontrolled use of water resources, a large part of water loss, industrial ecosystems pollution.

One of the implicit reserves to reduce water deficit is improving accounting processes of its consumption, diversion, pollution and recovery. Well-established monitoring system for water reserves quality and quantity is key to the safe water use. With this aim, first of all a coherent system of indicators, performing control and stimulating functions regarding saving and restoring the sources of "living water" (water, suitable for consumption by population) shall be formed.

Developed system of indicators should be aimed at achieving the following objectives:

1. to provide a comprehensive description of water use in the country;
2. to assess the trends of water use;
3. to identify the most important factors influencing the trends in water use.
4. Integrated system of indicators of sustainable (including safe) water use can be divided on several grounds:
 5. for the subsystem focus: environmental, social, economic, legal;
 6. for the territory scale: regional, basin, state, interstate, international;
 7. for the globality: indicators of rational water use, indicators of sustainable water use;
 8. for the areas of responsibility: hygiene, environmental, technical;
 9. for the direction of water use: water consumption (enterprises, population) and water use (water tourism, fishing, recreation, hydropower, etc.);
 10. for the subjects of water use: municipal enterprises, governmental organizations, industrial enterprises, population, state.

Attention should be also given to the methodological elaboration of integrated indicators of water use for the purpose of complex characteristics of water supply of the country.

Lets select the group of socio-economic indicators of water use, which most adequately characterize the state of water use of the territory (table 1).

Declared by Ukraine vector of European development requires appropriate reforms in all spheres of activity. The sphere of water use is not an exception. Processes of water use should meet European standards and norms, and indicators, calculated on the basis of national statistics should be comparable to EU figures. The first step is to ensure safe water use that would be key to healthy nation and would be an additional incentive to attraction of investments to the country.

Table 1 – Base socio-economic indicators of sustainable water use

Subsystem	Indicator
Economic	Water capacity of GDP, m ³ /UAH
	Economic damage from pollution of water sources, UAH
	Economic losses from morbidity of population due to consumption of low-quality water, UAH
	The share of investment to restore aquatic ecosystems (sources),%
	The share of the fee for water use in the tariff for water, %
	Share of irrevocable water consumption in the volume of water used, %;
Environmental	Percentage of freshwater reserves, %
	Annual consumption of fresh water, m ³
	Proportion of contaminated wastewater discharged without cleaning, %
	The annual selection of surface and groundwater, m ³
	Water track, m ³ / capita
Social	Freshwater reserves per capita, m ³ /capita
	Annual consumption of freshwater per capita, m ³
	Morbidity of population due to chemical pollution of water resources, cases/1000 people
	Morbidity of population due to bacteriological and viral contamination of water resources, cases/1000 people
	Proportion of population with access to safe drinking water sources, %
	Proportion of population with access to plumbing and sanitation, %
	Proportion of aqueducts without decontaminating systems, %

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