

3.3. PROBLEMS OF IMPROVEMENT OF METHODS AND INSTRUMENTAL SUPPORT OF ECOLOGICAL DIAGNOSTICS

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In the solution of problems of environmental protection and protection of human community vital activity in conditions of ever increasing human intervention into the nature, influence of manmade and natural disasters, the role of ecological diagnostics and monitoring using physical methods and means increases immensely.

Russia with the vast variety of its natural and climatic zones, landscapes, water arteries, seas and oceans is featured by natural disasters of all types like earthquakes, volcanic explosions, floods, landslides and mudflows, tsunamis, storms, tornados and other dangerous natural phenomena. In combination with impacts of technogenic nature like pollution of atmosphere, aquatic medium and soil with radioactive, chemical, magnetic and other materials, they cause enormous damage to the human vital activity, result in significant human losses. Immensity of these phenomena, territorial remoteness of the different regions of country requires principally new policy and methodology during performance of ecological diagnostics.

Paper provides the review of methods and state of ecological diagnostics; problems of their improvement and instrumental support are discussed.

First of all, as it is noted correctly in [1], it is necessary to implement legal, as well as social and economic aspects (to create legislative framework, normative documents, system of population training in bases of safe vital activity, etc.; to elaborate and introduce in practice principles of executive authorities responding to forecasts and warnings on danger).

Solution of scientific and technical problems includes study of physical, chemical and analytical methods and creation of adequate means and systems of ecological diagnostics, elaboration of technology, designing of equipment, selection of delivery and communication means, creation of software and hardware for data acquisition, processing and recording, compilation of forecasts for natural disasters and evaluation of the service life of ecologically hazardous production facilities.

In opinion of authors, modernization of outdated equipment by means of development of new methods and application of informational technologies, recovery and development of ground-based seismic stations, systems of the remote sensing of the Earth, aerospace monitoring and creation of infrastructure for user access to satellite data ranges among problems of instrumental support of ecological diagnostics.

References

1. **Security** of Russia. Legal, social, economic, scientific and technical aspects. Ecological diagnostics: Encyclopedia / V.V. Klyuev, A.V. Kovalev, A.G. Shcherbakov et al. / Under general editorship of V.V. Klyuev. – M.: Mashinostroenie, 2000. – 496 p., ill.