

National Atlas of Russia: the present state and perspectives

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A projecting of National Atlas of Russia has started in 1995, when a concept of Atlas was developed by efforts of leading scientists and cartographers. Creation of the Atlas and its publication should be carried out as a next set of volumes: 1 – introductory (general geographic), 2 – “Natural environments and natural resources. Conservancy of nature and rational nature management”, 3 – “Population. Social life. Economics”, 4 – “History. Culture and national heritage”. In 1997 creation of first, General geography volume began. At present time works are opened in all structural parts of the first volume. It is supposed that in 2002 the Volume will be ready for edition. Works for digital version of the first volume is carried out in parallel way. The National Atlas of Russia can be designed and published to 2005 if the complete and timely financing will be fulfilled.

The designing of the National atlas of Russia (NAR) began in 1995, when under orders of the Federal service of geodesy and cartography of Russia the concept of the Atlas was designed by the forces of the leading scientists and specialists-cartographers of Russia. The project of the concept of the National atlas of Russia was published in 1996. The main purposes, task and range of application of the Atlas, structure, contents and its creation organizational problems are determined in the concept.

According to the concept the National atlas of Russia is the fundamental complex cartographic product destined to give integrated representation about the nature, population, economy, ecology, history and culture of Russia, the general national vault of the scientifically treated and mutually matched time-space information applicable in all branches of economics, control, science, formation and national defense. It was supposed, that the Atlas would be created in polygraphic, electronic and geoinformation versions and would consisted of 10 volumes: general geographic, 8 subject (“Nature and resources”, “Population and social life”, “Economics”, “Ecology”, “History”, “Culture and national heritage”, “Russia and space”, “Regions of Russia”) and summary. The format of the atlas is 45×57 cm.

The concept has received an admission and support of many scientists and specialists of country. However experience of the atlas designing and the work on its first volume have shown that it is impossible to create the atlas in bulk, scheduled by the concept, in difficult financial and economic conditions of a country. It was necessary to revise a concept of the atlas, refusing from 10-volume version for the benefit of 4-volume one.

But all key positions of the concept designed before are saved. The contraction of the information projected for 10 volumes, in bulk of 4 volume version of the smaller format and decreasing of map scales on territory of Russia as a whole in 1.5 times are supposed only. The main scale becomes 1:15 000 000 instead of 1:10 000 000.

Creation of the Atlas and its publication should be carried out as a next set of volumes:

- 1 – introductory (general geographic);
- 2 – “Natural environments and natural resources. Conservancy of nature and rational nature management”;
- 3 – “Population. Social life. Economics”;
- 4 – “History. Culture and national heritage”.

Each volume, as an elemental part of the National atlas of Russia, will be at the same time independent cartographic product having its own information and cognitive value.

The atlas as a whole and its separate volumes will include maps, text explanations to them, reference materials, indexes of geographic titles, names etc. Aerial- and space photographs will accompany each volume also with the summaries deepening

and explicating contents of the Atlas.

The scientific and reference character of the Atlas demands usage in it of enough large plotting map scales (plotting scale 1:15 000 000 is expedient for territory of Russia as a whole) and detailed information, supports on the authentic modern scientific concepts and knowledge, exploring researches. The scientific and reference type of the Atlas and main plotting scale of maps, included in it, will determine the format of the Atlas, which will become 29,5×43 cm.

The atlas will be created as a product printed on a paper by a polygraphic way and by way of electronic atlas on compact disks (CD-ROM), permitting operatively to visualize the information and to realize the elementary operations with maps. The creation of the geoinformation version of the Atlas enabling of miscellaneous usage of maps of the Atlas and the information taken up in them is possible in the long term.

The main issue of the Atlas will be realized in Russian. It is possible to issue a part of circulation in English and applications (brochures) with translation of headers of maps, legends and reference items of information into the most abundant languages of the subjects of Russian Federation and foreign ones.

The first volume of the National atlas of Russia is introductory one. It is created as a complex scientific and reference-information cartographic product. Its purpose is to give the main items of information on a geographic position of our country, a history of forming of its territory, contemporary state structure and geographic features of its territory. The first volume of the NAR is “a calling card” for all issue, in consequent volumes of which the vast material intended for more deep analysis of the nature, resources, population, economics, culture and history of Russia will be systematized.

The maps of volume should be served as a source for general analysis of territory of country, its natural environments, extent of development, federative device, i.e. should produce the physic-geographic and socio economic characteristics of territory of Russia and its separate regions. The maps of volume should also form the basis for subject volumes of NAR.

The first volume of NAR is purposed as a information-reference encyclopedic cartographic manual for the specialists of different areas of science, production and culture, employees of the State machinery, teachers and students of higher and mean special educational institutions, and also for broad strata of the population, both in our country, and abroad.

There are six chapters in the first volume:

– ***The introductory chapter*** contains the foreword to the volume and three maps: “Russia on a World map”, “Russia and contiguous countries”, “Map of time zones”;

– ***“Forming, study and mapping of Russia territory”***.

The chapter contains maps of main historical periods, on which dynamics of forming of territory and boundaries of the Russian state is imaged. The maps are accompanied by the texts uncovering this process, are supplemented by the items of information on geographic analysis and mapping of the territory of country. The most outstanding cartographic products are mentioned, the facsimile pictures of separate maps or their pieces are given. The chapter is ended by the chronological table of events, reflected in chapter.

– ***“The Federative division of Russia”***.

The contemporary state structure of Russian Federation is reflected in chapter. The map and table of the federative division of Russia are placed at the beginning of chapter. Then the maps of the subjects of Russian Federation in plotting scales 1:1 500 000, 1:2 000 000, 1:4 000 000, 1:6 000 000 (plotting scales 1:150 000 and 1:250 000 for Moscow and St.-Petersburg), arranged on pages of volume, taking into account the economical division of state into districts, that allows to show a geographic position and correlation between the subjects of Russian Federation.

The maps are supplemented by the reference items of information about date of formation of the subject, its area, amount of the population, ethnic composition and capital (center). The flag and emblem of the subject of Russian Federation, if they are available, are also placed in the reference data.

– ***“Geographic regions and seas of Russia”***.

The general geographic maps of Russia as a whole, of large geographic regions and districts, composing them, and maps of separate local territories also are placed in the chapter. The maps reflect the contemporary state and geographic features of terrain according to main physic-geographic and socio economic elements. The review general geographic map of Russia should be the first one in the chapter.

Three subsections: “The European part of Russia”, “The Asiatic part of Russia” and “The Russian Arctic Region” are included in the chapter.

Each of subsections contains review maps in plotting scales 1:7 500 000 and 1:2 500 000, completely coating territory of Russia, and also maps of separate territories, most significant in natural, economical, historical and cultural senses, in plotting scales 1:1 000 000 and 1:500 000.

Each of subsections contains maps of the seas surrounding territory of our country, including continental shelf and exclusive economic area of Russian Federation in plotting scales from 1:1 500 000 up to 1:5 000 000.

The maps of the chapter are supplemented by space photographs of separate territories and also photographs of characteristic landscapes.

– *The chapter “Reference geographic data”* contains the main data about the nature and natural resources, population and economics, science and culture of Russia. These data are presented in the text, tabular, cartographic and illustrative forms complementing one another;

– *The Index of geographic names* formed by way of the Russian alphabet, includes all names of geographic objects placed on maps of this volume.

The work on the first general geographic volume of the Atlas was begun in 1997. Its contents was determined, the computer technology of the editorial and compilation operations providing parallel creation of polygraphic and electronic versions of volume was designed. The operations with all structural parts of volume are now widely developed: cartographic, space-photos, illustrative, text, reference ones. It is expected, that the preparing of the volume to edition will be finished in 2002.

The electronic version of the first volume is simultaneously created. The same-vectored cartographic materials are used, which are the components of the polygraphic version, that allows to lower expenditures and to achieve identity of polygraphic and electronic versions. The appearance of the electronic version is planned in 2002.

The volume “Natural environments and natural resources. Conservancy of nature and rational nature management” should give general representation of contemporary natural environments and resources of country (their components, time-space hierarchy, correlations), history and tendencies of their forming, estimation of usage, protection and reproduction. The ecological maps of volume should describe an ecological situation in country and regions, conditions and factors of its definition, tendency of variation of an ecological situation, measures of reaching of the ecological balance. The contents of volume will give representation about operation of ecosystems as a result of anthropogenic influence on natural environment, will contain elements of prognosis and recommendations about optimization of ecological situation.

The entrails, relief, climate, water of a land and seas, freezing, grounds, vegetation, fauna, landscapes, physic-geographic districts are the objects of mapping. The evaluation is presented by the medicine-geographic, engineering-geologic, and agroclimatic maps. The complex of ecologic maps in volume will reflect natural conditions of an ecological situation forming, anthropogenic influence and variations of natural environment as a result of affecting of economy, ecological condition of natural environment (levels of contamination of separate components of the nature and their capacity to a self-cleaning), ecologic-demographic situation, economical and social consequences of deterioration of ecological situation, measures for ensuring of ecological safety of Russia.

It is supposed also to show in volume the achievements of Russia in the field of remote sensing of a planet and of the usage of space shoot materials in different areas of science and practical activity, to reflect a history of space studies in USSR and Russia; perspectives for the development of space studies of the Earth, to list the reference data on different kinds of shooting, on used devices, on space information treatment techniques etc., to show coating of the territory of Russia by different kinds of space shooting, appearance of Russia and its separate regions, as they are seen from space, to reflect the information (maps and schemes of deciphering) about the most important directions of usage of space study results: complex analysis and map-making of natural resources, ecological mapping, space monitoring (geologic environment, biotic and abiotic resources etc.), prognosis of unfavorable natural processes and phenomena, liquidation of consequences of extraordinary situations of natural character etc.

It is aimed in **volume “Population. Social life. Economics”** to reflect status and evolution of the population and its settling on territory of Russia, national and social characteristics and peculiarities of the population, its welfare, social and political life and system of its service, contemporary level of development and territorial organization of productive forces of country,

its economic relations, its place in global economics and information room.

The maps of allocation of the population and its density on the territory, types of settlements, national composition and ethnic allocation would be in the volume the basic and leading ones. The characteristics of the population should directly connected with problems of a social area, which one is revealed with the regard for public life peculiarities in national and interregional plans. Maps of social priorities, social interdependences, electoral geography, political parties, public organizations etc. would be included in the volume.

The maps of the economic chapter of volume reflect the miscellaneous characteristics of economics and its separate branches – power engineering, industry, building, agricultural and other aspects of economy, transport, communication, population service area, financial area etc. with greatest extent of a detail, possible for selected plotting scales. It is supposed also to place in volume absolutely new subject maps “Russia in global information room”, “Economic development levels”, “Investments in economics”, “New (“high”) technologies”, “Information (telecommunication) nets”, “Financial activity” and other ones. It is envisaged a broad representation of technical and economical characteristics and event dynamics.

It is supposed to reflect in the volume history and perspectives for the space study development of the socio economic phenomena, appearance of regions of Russia with different levels of economic developing and anthropogenic disturbance, as it is seen from space, to put the information (maps and schemes of deciphering) about usage of the space study results for the prognosis and liquidation of consequences of unfavorable anthropogenic processes and phenomena, extraordinary situations of anthropogenic nature etc.

It is aimed in **volume “History. Culture and national heritage”** to reveal sequentially a course and results of the historical process of development of territory of country, its economics, communications, culture and public life; to show political division, numerical and national compositions of the population, city development history; to give the contemporary information and knowledge about culture, cultural and natural heritage of Russia as national property, to show regularities and peculiarities of expansion and development of regional and national cultures, correlation and machinery of their interaction and also the ways of innovations in the field of culture and heritage, to present heritage as national property of all peoples of Russia in a cartographic aspect.

The history of Russia will be characterized by seven periods.

The most ancient settlements on territory of East Europe, great migration and settling of the peoples, the first state formations and joining them into the Old Russian state (the Kiev Russia), political and cultural centers of the Old Russian state, the struggle with exterior enemies, internal political events, disintegration on the separate princedoms, feudal division, struggle with mongol-tatars, feudal wars and rising of the Moscow principality, association of Russian state, building of the monasteries, origin of new cities-fortresses will be reflected in the volume.

History of existence of Russian state (XVI and XVII centuries) and Russian empire (XVIII – beginning of XX century) is illuminated by serials of maps on following directions: the population, industry, agriculture, wars and national movements, culture.

Soviet and post-soviet period is represented by the maps of population, economics, politics, war actions for main historical events and periods: October revolution of 1917, civil war, formation of the USSR, recovery of state economy in 20-th years, the first five-years, the Great Patriotic war of 1941–1945, post-war period, progress of country in 60–80 years, disintegration of the USSR, formation of Russian Federation as independent state and forming of new socio economical relations.

The maps of wars, national revolts and movements are accompanied by the schemes of deciding battles influencing on a course of war.

The national heritage and culture will be shown in five large chapters: Russia in global cultural room; conditions of cultural and natural heritage forming; cultural and natural heritage; contemporary culture; protection and usage of heritage and objects of culture.

The variations have concerned also of contents and technology of creation of atlas **electronic version**. It is supposed to set aside with financial difficulties for more late terms creation of the geoinformation version, to concentrate the efforts on the design of the electronic version, which is analog of the polygraphic one with some additional functions, which are permitted

by the electronic form of the information presentation.

The electronic version of NAR should be designed practically simultaneously with the conventional paper version according to the coordinated technology, it is permitted to low the both product cost. The first volume electronic maps will become a basis for following volume subject map creation, it will facilitate their composition and will provide conformity of maps.

The electronic version is issued on optical disks (CD-ROM). It can be used both as the independent product, and together with the conventional (paper) version.

It is possible in prospects to create *the geoinformation version* of the Atlas distinguishing from the electronic one by the vast database, the rather universal and developed program shell opening broad possibilities for usage and treatment of cartographic and other information.

The work with the atlas has obtained in 2000 year the national character. The government of Russia has charged to the Federal service of geodesy and cartography of Russia to organize work on creation of the National atlas of Russia with calling the organizations of different ministries and departments. The main ministries are determined for creation of all volumes of the atlas. It is organized the Major interdepartmental atlas editorial board. The Federal service of geodesy and cartography of Russia will fulfill the preparation for publication and issue of all volumes.

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