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THE REPORT

Working out of methodology of definition of "flashpoints" of pollution of pool of Lake Baikal

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Content

The list of references

Methodology of definition of "flashpoints" of pollution of pool of lake Baikal.

1. General provisions.

Working out of a system and reliable method of revealing and estimation of set of potential "hot" points demanded acceptance of more exact and detailed definition of the term "flashpoints".

For the given project as "hot" points pollution/infection sources will be considered only. Those sources of pollution ("hot" points) which could be characterized by national experts as "hot" points by means of quantity indicators, will be subjected for estimation and prioritization on the basis of the offered methodology. As to those revealed sources of pollution which could not be characterized by national experts as "hot" points by means of quantity indicators they can be presented by corresponding qualitative description.

Objects and the zones falling under definition **of "hot" points**

"The hot"points which are subject of quantitative assessment

Those objects which are direct sources of pollution of a surface water in pool of lake Baikal, i.e. "direct pollutants" which carry out dump of sewage (including economic-household, technological and storm drains) in superficial water objects through sewer water releases should be carried to "hot" points first of all. Besides, there are "indirect pollutants", i.e. those sources from which polluting substances arrive in superficial water objects not as result of direct dump of sewage, in summary migrations of the polluted underground waters or a filtrate (for example, ranges of a waste), or as a result of sedimentation of the pollution arriving in other components of environment by any other ways (for example, as a part of atmospheric emissions). Such sources are necessary for considering only in the event that are available actual that acknowledgement that their influence is comparable on scale and degree to the influence rendered by direct pollutants, and also in the presence of the quantitative information characterizing these sources (for example, the data about volume, concentration and loadings).

It is necessary to carry treatment facilities of the municipal and industrial enterprises, industrial complexes and manufacturing enterprises, the enterprises of extracting branch, large cattle-breeding complexes and high populated territories (cities and other large settlements) to number of direct pollutants. Sources of pollution of this type are characterized by presence of the data which can be used for their quantitative analysis and estimation. These revealed sources of pollution ("hot" points) will be subjected for estimation and the quantitative analysis according to the offered methodology.

"The hot" points which are subject to a quantitative estimation, as a rule, represent dot sources of pollution. Not dot (diffusive) pollution sources, such as the large agricultural complexes, the polluted farmlands and industrial platforms, military bases etc., also should be considered as a part of "the hot" points which are subject to a quantitative estimation when they can be equal to dot sources on volume of the available data necessary for performance of a quantitative estimation according to accepted procedure.

"The hot"<u>points which are subject to the qualitative description</u>

In pool of lake Baikal there is a separate group of considerable sources of pollution, in which relation, on those or to other reasons, there is no sufficient volume of the data necessary for performance of their quantitative estimation.

The most typical representatives of the given group of sources of pollution of a steel "indirect pollutants" - not dot sources which could not be subjected a quantitative estimation on a level with dot sources - for example, ranges of a waste and a *zone of ecological degradation* (which number many military bases concern), large waste areas of mineral exploitation, occupying the big space and consequently difficultly giving in to a quantitative estimation. In this connection the data "hot" points will be subjected not to a quantitative estimation, but to a qualitative description.

Other example of the "hot" points which are subject to the qualitative description are the objects of the raised risk (potential sources of considerable

influences) which could not be considered as operating "hot" points, for example are:

- Oil storages and oil pipelines:
- Waste storages and the water reservoirs located lengthways or in immediate proximity from coast of water objects or its inflows in which the water level is higher, than in the river (unless on these objects there are operating points of dump of sewage);
- Nonfunctioning objects: earlier operating points of the dumps taken out of service or closed objects (unless on these objects there are operating points of dump of sewage).

These objects also will be defined by national experts of each of the countries of pool of lake Baikal on the basis of a method of an expert estimation.

Objects and the zones which are not falling under definition **of "hot" points**

Completely admitting that fact that zones of the raised threat for a biodiversity represent the important sites demanding studying within the limits of given research, it is necessary to consider that they are accepting objects, instead of pollution sources. For this reason within the limits of the given research of a zone of the raised threat for a biodiversity were not considered as "hot" points. On the other hand, it is expedient to consider the given aspect in process of prioritization of "hot" points. In this connection it is offered to allocate specified below group of sites which should be considered as «Zones of the raised threat for a biodiversity», representing potential accepting objects. The offered methodology provided possibility of inclusion of additional categories of zones of the raised threat for a biodiversity under the recommendation of national experts about "hot" points.

- Naturalreserves (protectedterritories);
- sites representing considerable habitats (vodno-bolotk Grounds and habitats of land kinds);
- Considerable ecosystems, the specific complexes needing preservation (for example, zones of spawning, migration and rest).

Stations of water preparation concern number of other important accepting objects and water fences of the industrial enterprises (which sources of water supply the pool rivers are), recreational zones and zones of trade fishery.

One more restriction, is offered for the purpose of specification of definition of "hot" points, concerns those sources of considerable influences on environment which demand special variants of decisions on To decrease in level of these influences which do not concern a category of the potential investment projects which identification is one of the problems put within the limits of given research. Kinds of activity or objects for which the circle of potential variants of decisions on decrease in level of influences rendered by them mainly includes actions for working out of additional acts, improvement of institutional base, change of practical methods of activity, training and improvement of professional skill concern such sources. In spite of the fact that these actions can be an important component of any project directed on decrease of level of influences on environment, from the point of view of the financial organisations which are engaged in financing of nature protection investments, the project will not be considered as investment in the event that it includes only the above-stated actions. Examples of such kinds of activity and connected with them Influences the following is:

- Updating of coastal lines of the rivers: loss of habitats;

- Agriculture (plant growing): erosion of soils, carrying out of fertilizers and pesticides with a superficial drain from agricultural grounds;

- Forestry: erosion of soils, infringement of a mode of a superficial drain;

- Building: erosionofsoils.

For the given project, the following kinds of "hot" points defined taking into account their arrangement within pool will be allocated:

The local "hot" point - the pollution source, which influence leads to excess of the corresponding established national specifications of pollution / values of maximum-permissible concentration of polluting substances in superficial water

objects within one Administrative unit (area, area) therefore zones of the raised risk for health of the person and a biodiversity and-or a zone of ecological danger are formed.

The national "hot" point - the pollution source, which influence leads to excess of the corresponding established national specifications of pollution / values of maximum-permissible concentration of polluting substances in superficial water objects within one country therefore zones of the raised risk for health of the person and a biodiversity and-or a zone of ecological danger are formed.

The transboundary "hot" point - the pollution source, which influence leads to excess of the established national specifications of pollution / values of maximum-permissible concentration of polluting substances in water objects of the adjacent states. This group also includes transboundary sites of pool on which as a result of industrial, agricultural and household activity zones of the raised risk for health of the person and a biodiversity, and also a zone of ecological danger are formed.

2. The short description of the methodological approach

The given methodology represents the formalized and systematised approach to the analysis of a great number of the potential "hot" points existing in pool of lake Baikal, developed taking into account restrictions in time, allocated to national experts for performance of the problems assigned to them. The given approach also provides sufficient degree of the flexibility, allowing to modify certain criteria for the purpose of reception of number of "hot" points sufficient and giving in to processing for their subsequent detailed estimation.

The river drain acts as the major integrated component of functioning бассейновой systems, and any change of its quality, Pollution can be fixed systems of the monitoring formed according to бассейновой by the organisation of wildlife management. (Damask steels, Igenbaeva, 2010).

Integrating properties of a water stream the pool as allows to consider complete system formation not only from positions of a hydrology, geomorphology, биогеоценологии, landscape geochemistry, but from positions of

complex physical geography - as natural geographical system (geosystem). The pool is considered, how special natural object - natural geosystem of high degree of the integrity, combining абиогенную a basis with specific numbers of functioning биоты. Pool - the most suitable object for all-round application of the system approach. Thus the pool possesses the borders of watersheds accurately allocated for districts and on a card. It represents the most objective natural basis of the decision of any problems and problems in wildlife management sphere (Korytnyj, 2001).

The river pool, despite discrepancy to traditional administrative borders, is unique integral geographical unit for realisation of a joint ecological policy of the adjacent countries in transboundary territory.

Thus, the major principle of maintenance of ecological safety transboundary territories is use principle geosistemno-bassejnovogo theapproach in a control system of wildlife management and preservation of the environment.

The offered methodological approach provides performance of following stages:

Stage 1 Coordination of the parties of water economic units of the made on the basis of hydrographic and water economic division into districts

Stage 2 Estimation of territories of the allocated water economic units

Stage 3 Estimation of background pollution

Этап4Prioretizatsija of water economic units on the basis of an estimation of an actual ecological condition concerning regional background indicators

Stage 5   Identification and preliminary selection of "hot" points

Stage 6   Detailed estimation of the "hot" point which have passed preliminary selection

Stage 7   Prioritization of "hot" points

Stage 8   Identification of actions for decrease in influence of "hot" points on environment and the expenses connected with their realisation

Stage 9   Preparation of reports

In following sections the short description of each stage is presented.

Stage 1. At this stage the coordination of the parties on allocation of water economic sites (units) of the made on the basis of hydrographic and water economic division into districts is necessary.

The centre of the Register and Cadastre of Federal agency of water resources of Ministry of Natural Resources of Russia has executed water economic division into districts of the Russian Federation.

According to this division into districts pools of the rivers of a southern part of the lake Baikal are united in one water economic site including about 130 rivers in length more 10 km which are grouped in 9 sub sites.

Pools of the rivers of average and northern part of the lake Baikal are divided into two water economic sites:

1.The basins of the rivers from eastern frontier of pool of the river Angara to northwest border of pool of the river Barguzin.

2. Pools from northwest border of pool of the river Barguzin to northern border of pool of the river Selenga.

One is allocated for territories of the Irkutsk region sub site in which parts of Irkutsk and Olkhon areas have entered.

Other territory of pools of the rivers of northern and average part of the lake Baikal concerns Republic of Buryatiya where it is allocated 5 sub sites.

According to the accepted water economic division into districts in pool of the river Selenga (the Russian part) 6 water economic sites are allocated:

- Dzhida (the Russian part of pool);

-Chikoi (the Russian part of pool);

-Khilok

-Uda

-Selenga from border of the Russian Federation with Mongolia to Ulan-Ude without the rivers Dzhida, Chikoi, Khilok, Uda;

- Selenga from Ulan-Ude to a mouth.

Water economic sites Chikoi and Khilok, located within Republic Buryatiya and Transbaikalian edge are in addition divided on sub sites within each subject of

the Russian Federation. It is besides allocated in подучасток lake pool Goose and the river of Kjahtinka. Total of considered water economic sites and poduchastkov-10.

In territory of Mongolia water economic division into districts according to the law of Mongolia «About Water» is executed. According to division into districts in pool of the river Selenga (the Mongolian part) it is allocated – water economic sites:

Stage 2. At this stage it is made estimations of territory of the allocated water economic sites.

Data gathering about water object and its water modular area within the allocated site, the kinds of economic activities influencing water object, definition of kinds of influence.

The estimation of social and economic conditions in territory of the allocated sites, influence sources on environment, on water objects is made. The collected information is analyzed and the information on the sites representing the greatest danger to environment and for health of people is allocated.

Stage 3 - an estimation of background pollution. It is necessary for reception of "basic" level of pollution concerning which there will be a comparison with existing level of anthropogenous pollution.

For definition of background level it is necessary to carry out the retrospective analysis of results of existing monitoring on hydrobiological and абиотическим (hydrochemical, etc.) to indicators. Definition of a range regional абиотических background indicators or typical indicators (for natural water objects which as a result of human activity have undergone to the physical changes which have led to essential change of their basic characteristics (hydrological, морфометрических, hydrochemical, etc.). In the absence of monitoring under hydrobiological characteristics the specified background indicators or typical indicators of a condition are accepted on sites with the least anthropogenous loading or special natural researches for specification of indicators of quality of water and a condition of ecological systems can be organised;

Stage 4 - приоритезация water economic units on the basis of an estimation of an actual ecological condition of a site concerning regional background indicators and maximum permissible concentration of chemical and other substances for the priority purposes of use;

The preliminary establishment of the danger proceeding from sources of pollution on the given site is made on the basis of the analysis of results of monitoring in comparison with regional background indicators (for substances of double genesis) and-or with maximum permissible concentration of chemical and other substances (for highly hazardous substances and substances of an artificial origin).

It is necessary to spend ranging of polluting substances on degree of danger and the importance for ecological system of a site, to distribution within the allocated site. In the presence of the dangerous Manufactures on the water modular area the expanded researches for revealing of the most dangerous components are possible;

The revealed indicators ecologically dangers on the allocated sites allows to define borders of local sites of pollution, to make prioritization sites in pool of lake Baikal on degree of ecological trouble of territories. The list of ecologically safe sites allows to define results of the analysis of the fourth stage also and to exclude their subsequent investigation phases of "flashpoints" of pollution.

Research of this stage includes definition of degree of ecological trouble of local sites of pollution. Signs of degree of trouble are:

- Concerning surrounding environment – a deviation of certain parametres, factors characterizing a state of environment from their established (optimum, admissible) values;

- Concerning a state of health of the population-deviation of a state of health of the population from average values;

- Concerning natural ecosystems-ecological balance disruptions of environment, in particular structures биотических communities, their kinds and population.

Detailed studying of an existing condition of local sites of pollution - huge a problem calculated for many long years. For specification of some questions it is required to carry out a number of additional design workings out and researches on specific themes. The organisations responsible for preparation of the given document, should have financial and manpower resources for reception and the analysis of the necessary information.

The report on degree of ecological trouble of local sites of pollution - the base on which basis the subsequent are built Planning - documents should be to "developing" documents which prepares originally on the basis of generalisation of knowledge and the information which we directly have, and gradually supplemented with the new information and the data. The general diagnostics in the initial document is substantially sufficient to define a problem, to develop strategy and to allocate priority scopes, and also to have an opportunity to start operative actions in the necessary direction.

Stage 5.Identification and preliminary selection of "hot" points.

Within the limits of the Stage 5 national experts on "hot" will prepare the full list of "hot" points on each country on the basis of available information. Then this list will undergo procedure of selection for the purpose of its reduction and to a floor of such number of "hot" points which gives in to processing. If the number of the "hot" points which have undergone procedure of selection, is too big or too small, criteria of selection are corrected by appropriate amount as a result to receive number of "hot" points sufficient and giving in to processing for the further detailed estimation within the limits of the Stage 6.

On each country the list of "hot" points are formed by national experts on the basis of the definition accepted for the given project. The choice of concrete "hot" points is carried out on the basis of the existing official data of ecological monitoring which are available in each country, and also taking into account practical experience and the knowledge which has been saved up by national experts.

Reduction of the general list of "hot" points for the purpose of reception of such number which would give in to processing at a stage of the detailed analysis, is an important element of work of experts taking into account restrictions in time and the resources provided for performance of given research. Quantity of the "hot" points which have been selected on each country for objectives of this research, the following:

- Mongolia: 30 - 50 "hot" points

- Russia: 30 - 50 "hot" points

For preliminary selection of "hot" points and reception of the list accessible to the subsequent detailed estimation, numerical criteria (such as loading on the pollution arriving from "a hot" point), and also experience and knowledge of experts have been used. Numerical criteria are corrected for the purpose of reception of corresponding number and get out so that to provide their conformity to a format and to volume of the fact sheet which is available on each country. The parametres used as indicators, also get out taking into account presence of the corresponding data. For example, on the majority of objects of clearing of sewer drains regular gaugings of such indicator as biochemical consumption of oxygen (БПК) in dumped sewage in this connection the given indicator gets out for the analysis and selection of such objects are carried out. Thus for the analysis and selection of industrial targets as an indicator what-or - level of the maintenance from heavy metals is used.

For realisation of preliminary selection the method of "effective weight of polluting substance», developed for definition of characteristics of various dumps (their quantity and toxicity) and based on concept of "a toxic equivalent» is used. For reception of more detailed information on a definition technique of "effective weight of polluting substance» it is necessary to address to V.K.Papisova's monograph (1989). Value of "effective weight of polluting substance», calculated for a dump point, has been used for comparison purposes various points of dump of the polluted sewage containing set of various polluting substances, "hot" points with the highest values of "effective weight of polluting substance» should be

selected for the further analysis and a detailed estimation within the limits of the Stage 6.

The given method has allowed to use existing settlement values of loading on the pollution, reflected in the data of the state statistical reporting under the form "2tp - vodkhoz» from 2010 for 2012 which are available for the majority of the objects which are carrying out dump of sewage in the countries of pool of lake Baikal.

Calculation of value of effective weight of polluting substance for "flashpoint X" (Mx) was carried out on the basis of two indicators: weights of the dumped polluting substance "i" (mi) and relative toxicity of polluting substance "i" defined on value of factor of toxicity And. Value of factor of toxicity Aj was expressed through toxicity of sulphate of ammonium for which value of maximum permissible concentration (maximum concentration limit) is established at level of 1 mg/l*:

$$A_i = \frac{ПДКсульфата \quad аммония(мг / л)}{ПДК(мг / лл)}$$

For example,

для формальдегида: $A_j = 4$, поскольку ПДК$_{формальдегид}$ = 0.25 мг/л*,

для перхлората аммония: $A_i = 125$, поскольку ПДК$_{перхлорат\,аммония}$ = 0.008 мг/л*.

The note:

* The state specifications of quality of a surface water for рыбохозяйственных the water objects, established in all three countries of pool. The calculation formula "effective weight of polluting substance i", containing in the dumped waste oxen, looks as follows:

Mi (tons/years) = And, (dimensionless size) хгп| (tons "year.)

Fact sheet about weight of the various polluting substances containing as a part of sewage, arriving from each officially registered source of dump (rtii), is stored in a database of the statistical reporting under the form "2тп - водхоз". Values it is limiting -Admissible concentration (maximum concentration limit;)

various polluting substances are defined by the corresponding statutory acts establishing the state specifications of quality of a surface water for рыбохозяйственных of water objects.

Total value of effective weight of the dumped polluting substances for "flashpoint X" (MX) paid off as the sum of individual values of effective weight of each of the dumped polluting substances:

$$M_x = \sum M_i,$$

Values of Mh for separate "hot" points were used as estimated points in the course of preliminary selection and preliminary ranging of all "hot" points, i.e. represent a basis for a choice of those "hot" points which should be subjected the detailed analysis within the limits of the Stage 6.

In case of plural sources of pollution, such as large industrialcomplexes or settlements, value of effective weight of polluting substance paid off on the basis of the following formula, allowing to summarise plural dot sources:

$$\sum^n M_i = M_1 + M_2 + ... + M_n$$

The decision on expediency of similar summation of values of effective weight of polluting substances for plural sources are accepted by national experts and partially depends on possibility of realisation of complex decisions on decrease in influences on the environment, sources covering at once some, and also identification of the corresponding nature protection project which will be attractive and comprehensible to potential investors.

At use of such simple procedure of the selection based on numerical criteria, can the considerable sources of pollution known to national experts on "hot" points are missed. For the purpose of the decision of this problem the technique of preliminary selection described above It is added by inclusion of the additional criteria, intended to provide inclusion in the total list of "hot" points for a detailed estimation of those objects which represent the basic branches of economy of the countries of pool of lake Baikal, and also sufficient degree of flexibility for use of expert estimations for selection of separate "hot" points. The expediency of such approach is caused by that fact that some large "hot" points do not correspond to

the numerical criteria initially established for procedure of preliminary selection. The additional criteria used for a choice of "hot" points for the further detailed analysis within the limits of the Stage 6, are presented more low (Table 1).

Table 1 - Criteria of preliminary selection of "hot" points for the subsequent analysis

Branch	the Factor	Numerical критерий*
The Housing-and-municipal Economy	M. 1 General annual loading on weight [kg/year]. Notes ** concerning an indicator choice See	> 2 % of the general annual loading on pool
	M. of 2 Obshaja the annual hydraulic Loading [km3/year]	> 1 % of the general annual бассейнового a drain
The industry	1.1 General annual loading on weight [kg/year]. Notes ** concerning an indicator choice See	> 2 % sheathe annual loading on pool
	1.2 Largest enterprises of key industries of the industry in each country	On the conclusions of the national Experts
Agriculture	And. 1 largest cattle-breeding complexes in each country on an equivalent of a livestock of cattle (instead of on the area) ***	
Others (Poweretc.)	ОЛ the Importance from the point of view of influences on health of people and environment	On the conclusions of national experts

* Actual numerical values can are corrected taking into account presence of the data, "pool" is defined as a reservoir within the separate country of pool because national experts of each country carry out selection of "hot" points independently.

** Selection of objects of housing and communal services is spent on the basis of values of loading on БПК and to the general phosphorus which served for display of levels of the maintenance of other polluting substances in sewer drains. For selection of industrial targets indicators on which there are full enough data files in pool scales are used.

*** The basic attention is given to cattle-breeding activity as problems of carrying out of fertilizers and pesticides with a superficial drain from agricultural grounds can be solved by introduction of advanced practical methods of their application.

Stage 6.A detailed estimation of the "hot" point which have passed preview.

The detailed estimation of "hot" points is carried out on the basis of applied estimated tables. Such estimated tables and substantiations are developed for each of following categories of the questions connected with "hot" points:

- Quality of water and health of the person
- Pollutioncontrol
- Environmentandbiodiversity
- Economy

The filled work sheets on each category of questions, together with substantiations and estimated tables, are presented in the Appendix. In substantiations explanatories concerning a choice of the offered criteria and their relative importance are resulted.

The detailed estimation is carried out with use of a technique of exhibiting of points. Within the limits of the given estimated technique four key directions, received the name of the Category which, in turn, are divided into the subcategories including set of questions (Indicators) are allocated. The exposed points are transferred to the Summary estimated table in which calculation of the

total point appropriated to each "hot" point taking into account weight factors was carried out.

With use of a technique of exhibiting of points the choice of the corresponding weight factors reflecting the relative importance of each indicator should precede performance of procedure of an estimation. The choice of weight factors was carried out at three levels (for categories, subcategories and indicators). Comparison of weight factors probably only between indicators in one subcategory, between subcategories in one category, and between categories. Such approach provides relative simplicity of performance of procedure of a choice of weight factors and, in case of need, their updating. Application of this approach allows to exclude possibility of overweight which can arise at comparison of the total estimations exposed on categories and-or subcategories with a considerable quantity of indicators, and to those categories and-or subcategories which have a small number of indicators.

Estimation is carried out on a scale from 0 to 5 points. At desire the range of estimations could be changed (for example, from 0 to 100 points) on purpose Increases of degree of accuracy of results of estimation (at the expense of more detailed differentiation of criteria). The scale from 0 to 5 points is considered enough detailed from the point of view of maintenance of necessary level of differentiation of individual estimations.

Estimated tables with the offered weight factors it is accompanied by methodical instructions on their filling. One of the first problems of national experts consists in study and specification of the offered values of weight factors. Estimated tables are filled with national experts on the basis of the data of the statistical reporting which is available at national and regional level on each of "hot" points, undergone procedure of preliminary selection and included in the total list. In the course of filling of tables with national experts the estimation of quality of the data which is available in each country which results are used at performance of the analysis of sensitivity of a technique of an estimation is carried out.

The exposed points are transferred to the Summary estimated table in which calculation of the total points appropriated to each "hot" point taking into account weight factors is carried out.

Stage 7. Prioritization of "hot" points

Prioritization of "hot" points it was carried out on the basis of the points appropriated by it at the previous stage (the Stage 6), and higher point means higher level приоритетности. Certain freedom in application of enough flexible approach to formation of the definitive list of the "hot" points demanding urgentrealisation of nature protection actions, i.e. the list for which predesigns of expenses and definition of the list of projects for financing subsequently will be executed is given national experts. Thus inclusion possibility in the definitive list of "hot" points of enough of the largest industrial is provided Theobjects located in territory of each of the countries of pool of lake Baikal.

Prioritization of "the hot" points included in the total list, it is carried out by national experts with use of results of the detailed estimation received in frameworks, the Stage 7. Thus "the hot" points which are subject to the analysis within the limits of the Stage 8 will be defined. On each country are selected number of "hot" points, including treatment facilities and the industrial enterprises which are subject to consideration at a following Stage 8.

Stage 8. Identification of actions for decrease in influence of "hot" points on environment and the expenses connected with their realisation.

For each of the selected "hot" points it is necessary to offer actions for decrease in their influence on environment and to execute calculation of the expenses connected with their realisation. The basic part of this work is carried out by national experts on control of pollution and economic problems. Projects can be included in the list of the offered actions on introduction of technologies of clearing, and improvement of practice of operation, and also concerning acceptance of a new nature protection policy, the legislation and advanced management methods. It is recommended to make the analysis of expenses and the benefits connected with offered actions, for the selected "hot" points.

Stage 9. Preparation of reports

The results received on each of described above stages, it is necessary to generalise and present in the form of Reports on decrease in levels of the pollution prepared on each country of pool of lake Baikal. National experts on "the hot" points, representing each of the project countries-participants, carry out preparation of the National report on decrease in levels of pollution in which frameworks the analysis is made Situations in the country from the point of view of definition and the analysis of sources of the pollution Located within pool of lake Baikal. Subsequently two National reports on decrease in levels of pollution ' will be integrated in the form of the Final regional report on offered actions for decrease in Levels of environmental contamination in pool of lake Baikal.

THE REPORT ON CONSIDERATION AND AGREEMENT OF THE PROJECT OF METHODOLOGY OF DEFINITION OF "FLASHPOINTS" OF POOL OF LAKE BAIKAL POLLUTION

The joint commission in structure:

From the Mongolian side:

Ts.Badrah – the Secretary of National Water Committee of Mongolia, the Chief of Service of Water Committee of Mongolia,

G.Monh-Erdem - the Chief of department of water monitoring and cjjrdination of Ministry of Environment and Green Development,

J.Erdenebajar – the Chief Specialist of environment laboratory,

G.Davaa - the Chief of water sector of Institute of meteorology and environment of Mongolia,

Ja. Tsedenbalzhir – the Specialist of the Ministry of Environment and Green Development,

D. Norovzhav - the engineer-economist on a water management.

From the Russian side:

V.S.Molotov – Depute of the Head - Chief of department of a water management on Republic Buryatia of Yeniseisky basin water management service,

V.N. Pronin – the Head of the Buryat centre of Zabaikalsky management service "Federal Hydrometereology and Environmental Monitoring Service",

K.G.Dremov - the Chief of the department on Republic Buryatiya "Rosprirodnadzor",

O.P.Kolomeets - the Chief specialist of department of a water management on Republic Buryatia of Yeniseisky basin water management service,

S.S.Hanhareev - the Chief of the department on Republic Buryatiya of "Rospotrebnadzor"

Having considered the Project of Methodology of definition of "flashpoints" of pool of Lake Baikal pollution developed by O.V.Molotova the joint commission agreed on following positions.

1. The major principle of maintenance of ecological safety of transboundary territories is use the principle geosystem-basin approach in a control system of wildlife management and preservation of the environment.

2. To co-ordinate the offered methodological approach of definition of "flashpoints" of pollution providing performance of following stages:

I.   Stage 1. Coordination by parts of water-economic Units developed on the basis of hydrographic and water economic division into districts.

II.   Stage 2. Estimation of territories of the allocated water-economic units.

III.   Stage 3. Estimation of background pollution.

IV.   Stage 4. Prioritization of water-economic units on the basis of an estimation of an actual ecological condition concerning regional background indicators.

V.   Stage 5. Identification and preliminary selection of "hot" points.

VI. Stage 6. Detailed estimation of the "hot" point which have passed preliminary selection.

VII.   Stage 7. Prioritization of "hot" points.

VIII.   Stage 8. Identification of actions for decrease of influences of "hot" points on environment and the expenses connected with their realization.

IX. Stage 9. Preparation of reports

3. To co-ordinate quantity and   borders of water-economic units (pool of the Rivers) in territory of Mongolia and the Russian Federation in pool of lake Baikal (the map is applied).

4. The estimation of background pollution is necessary for reception of "basic" level of pollution, concerning which there will be a comparison with

existing level of anthropogenous pollution.

5. Necessity of prioritization of water-economic units on a basis of estimations of an actual ecological condition of a site concerning regional background indicators and maximum permissible concentration of chemical and other substances for the priority purposes of use.

6. With a view of identification and preliminary selection of "hot" points on each country the list of "hot" points are formed by national experts on the basis of the definition accepted for the given project. The choice of concrete "hot" points is carried out on the basis of the existing official data of ecological monitoring which are available in each country, and also taking into account practical experience and the knowledge which has been saved up by national experts.

Reduction of the general list of "hot" points for the purpose of reception of such number which would give in to processing at a stage of the detailed analysis is an important element of work of experts. Quantity of the "hot" points which have been selected on each country for objectives of this research, the following:

- Mongolia: 30-50 "hot" points

- Russia: 30 - 50 "hot" points

7. The stage of a detailed estimation of "hot" points is carried out on the basis of applied estimated tables. To assume as a basis estimated tables for each of following categories of the questions connected with "hot" points:

- Quality of water and health of population

- Pollution control

- Environment and biodiversity

- Economy

8. It is necessary to generalize and present the results received on each of stages of methodology in the form of Reports on decrease in levels of the pollution prepared on each country of pool of Lake Baikal. National experts on "the hot" points, representing each of the project countries-participants, carry out preparation of the National report on decrease in levels of pollution in which frameworks the situation analysis in the country from the point of view of definition and the analysis of sources of pollution is made. Subsequently two National reports on

decrease in levels of pollution will be integrated in the form of the Final regional report on offered actions for decrease in levels of environmental contamination in pool of Lake Baikal.

The report is signed

On February, 21st, 2014 in Ulaanbaatar