Institutional and Economic Mechanisms of Water Management in Transboundary River Basins

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Introduction

Quality conditions of Russian water bodies cause an anxiety not only of population and territorial water management authorities. This problem becomes more and more interesting for the governments of the Russian Federation constituents that must finance the water problems solution. The role of Federal authority of water management increased since the instrument of economical regulation (budget financing) had been lost. The reformation of Federal authorities requires the organisational changes in the territorial authorities of the Ministry of Natural Resources.

The conceptual basis of water management that have been carried out in RosNIIVKh should be adapted to the new political and economical conditions by virtue of the above mentioned aspects.

The concept "transboundary river basins" in the present contribution means not only the international rivers but the rivers that cross the boundaries of several constituents of the Russian Federation.

Water management mechanism

The approach of basin system management presents an optimal combination of all functions: water resources registration and control of their utilisation; water use regulation and setting up of standards of harmful effects on water bodies; guaranteeing of water organisations activity, etc.

Realisation of these functions is usually carried out by means of the organisational-legal and economical instruments.
The system of these management functions in water economy realised on three management levels is given in Table 1.

The mechanism of transboundary river basin management has its own features both in the organisational-legal and economical aspects.

**Organisational-legal mechanism of management**

The organisational structure of management system is presented in the form of the chain: Ministry of Natural Resources (Federal body) – Basin Water Board (basin body) – Committee on Water Economy (territorial body, authorising to manage the water system of the river on behalf of the Government and the Russian Federation constituent). Territorial Committee on Water Management (TCWM) is the last link of this chain for the ordinary water system, but in the case of the transboundary watercourses the last link of it is the Basin Coordinating Council (BCC). It includes the representatives of the working groups acting in the constituents of the Russian Federation (or in neighbouring countries). The territorial working group includes the representatives of the government environmental authorities, the representatives of public and of the government bodies of the Russian Federation constituents.

An intergovernmental commission takes part in the management of international river basins. The example of the similar commission activity is presented in detail in the paper of the Urals Basin Water Board (Chelyabinsk) (fig. 1).

Table 1.

**Scheme of management functions realised on different levels of water management**

<table>
<thead>
<tr>
<th>NATIONAL LEVEL</th>
<th>Legal</th>
<th>Organisational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• price policy</td>
<td>• formulating of laws, decrees, standards</td>
<td>• carrying out of the policy and water programmes</td>
</tr>
<tr>
<td>• investments regulation</td>
<td>• concluding of the basin agreements</td>
<td>• registration and control of water utilisation</td>
</tr>
<tr>
<td><strong>• economical stimulating</strong></td>
<td><strong>• legal regulation</strong></td>
<td><strong>• interaction with other fields of water utilisation</strong></td>
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<td>--------------------------------</td>
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<tr>
<td><strong>• payments, taxes, subsidies</strong></td>
<td></td>
<td><strong>• researches</strong></td>
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<tr>
<td></td>
<td></td>
<td><strong>• ecological education</strong></td>
</tr>
<tr>
<td><strong>BASIN LEVEL</strong></td>
<td></td>
<td><strong>• coordination of target basin water programmes</strong></td>
</tr>
<tr>
<td><strong>• coordinating of licensing in water utilisation</strong></td>
<td><strong>• setting up of the standards of maximum permissible effects on the basin</strong></td>
<td><strong>• regulation of transboundary water relationships</strong></td>
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<tr>
<td><strong>• differentiation of tariffs, payments, market of quotas</strong></td>
<td><strong>• formulating of the basin agreements and bilateral contracts</strong></td>
<td><strong>• implementation of State water policy in the basin</strong></td>
</tr>
<tr>
<td><strong>TERRITORIAL LEVEL</strong></td>
<td></td>
<td><strong>• making the Water Cadastre</strong></td>
</tr>
<tr>
<td><strong>• payment for the water utilisation</strong></td>
<td><strong>• formulating of the regional water legislation</strong></td>
<td><strong>• control of water utilisation and protection</strong></td>
</tr>
<tr>
<td><strong>• using of restoration and protection of water bodies fund</strong></td>
<td><strong>• concluding of bilateral agreements</strong></td>
<td><strong>• carrying out and implementation of territorial programmes</strong></td>
</tr>
<tr>
<td><strong>• differentiation of payments for water utilisation</strong></td>
<td><strong>• licensing and concluding of contracts concerning water utilisation</strong></td>
<td><strong>• monitoring of water bodies</strong></td>
</tr>
<tr>
<td></td>
<td><strong>• implementation of ecological expertise concerning water resources</strong></td>
<td></td>
</tr>
</tbody>
</table>

Fig. 1. Organisational structure of management system

**WS** - water system

**MNR** - Ministry of Natural Resources

**IC** - International Commission
BWB - Basin Water Board

TCWM - Territorial Committee on Water Management

A - Administrations of the Russian Federation constituents

BCC - Basin Coordinating Council

WG - working group of the Basin conciliatory commission

This management scheme is regulated by the Law of environment protection of the Russian Federation and Water Code of the Russian Federation and by the basin agreements, concluded in accordance with them, and bilateral contracts concerning the transboundary rivers utilisation and protection.

Water bodies, that are located on the territory of the Russian Federation constituent and at the same time that are the State property, are under the joint power of the Russian Federation constituent and the Russian Federation. In order to divide powers concerning utilisation of the water bodies, located at the territory of the Russian Federation constituent, it is suggested concluding an agreement between the Russian Federation, represented by the Ministry of Natural Resources, and the Government of the Russian Federation constituent. This agreement allows to adjust the functions of the Government of the Russian Federation constituent and of the special authorising governmental territorial water management body, it forms the legal opportunities, for example, to set the requiring payment for the water use on the base of the Government decree in accordance with the Water Code of the Russian Federation before its implementation in whole Russia.

Target Basin Programme as organisational mechanism

The subject of the basin agreement should be, in our opinion, a basin action programme concerning restoration, utilisation and protection of water resources.

On the base of the general State Water Policy and the general approach to the scientific provision, the basin programme can be implemented in various forms. For instance, the basin programme on the river Volga was formed as the complex programme of the whole region restoration. Water objectives are its integral parts. The basin programme on the river Ob is organised as the water protection
programme solved the problems of restoration, utilisation and protection of the basin water resources.

Today it is obvious that the formal conclusion of the Ob agreement between the constituents of the Russian Federation has not had any results. The basin conciliatory commission have not worked, since the real subject of its activity have been absent. Present programme working out for the river Ob basin began to form by the individual constituents of the Russian Federation located in the basin. Territorial programmes were formulated according to the single scheme: there were considered general objectives (drinking water supply, water bodies restoration, rational water use, flood protection, catchment restoration, wastewater treatment and utilisation, monitoring) taking into account the territorial features.

There are all reasons to form the general basin programme on the Ob, the preparatory works have mainly fulfilled. The Basin Coordinating Council (or the coordinating centre) has the very important and complex task:

- to formulate the strategy directions of water activity in the basin;
- to coordinate the territorial objectives, to establish an order of the key basin measures implementation;
- to designate the sources of the programme financing, part and directions of budget investments;
- to specify the programme targets for its participants in the form of the objectives for the financing stages.

There is a number of problems that make difficulties to the process implementation:

- difficult economic situation in several basin regions;
- lack of the concerted methodical basis to formulate the allowable values of harmful effects on the river Ob basin;
- delay of the paid water use system implementation according to the water Code of the Russian Federation.

**Bilateral agreements and contracts**

**on joint water resources utilisation**

Since the Basin Councils did not act and the current tasks (concerning the regulation of the regimes of water reservoirs that are used by the
adjacent constituents) required their solutions, taking into account the
necessity to coordinate the conditions of the drafts from reservoirs and
to cope with the emergency situations consequences, so the adjacent
constituents of the Russian Federation began to conclude the bilateral
agreements. The initiator and the coordinator of this activity in the
river Tobol basin is the Urals Basin Water Board (in Chelyabinsk).

The effect of these agreements is obvious. The interaction between
parties as regards various water question enables them to avoid
accidents during the floods, to exchange of information and
experiences. An example of such valid agreements is the interaction
between the Chelyabinskaya (Russia) and Kustanaiskaya (Kazakhstan)
Oblasts, between the Chelyabinskaya and Kurganskaya Oblasts. At
present the agreement concerning the utilisation of the flow of the
Chelyabinskaya Oblasts rivers to the Sverdlovskaya Oblasts water
supply is carrying out.

**Economical mechanism**

Basin agreement has consolidated the responsibility of territories for
their economical activity, that’s why the relationships between the
territories should be regulated by the economical instruments. The
economical responsibility comes from the general principle of
relationships between the society and the nature: "the polluter pays".

The economical responsibility comes after the water bodies damaging.
The basic incentive for the economical responsibility is the financial
interest in reducing and removing of the environment damage.

The legislation and the basin agreement designate the following types
of the economical responsibility: payment of the parties for the
standard and over-standard transboundary discharges of pollutants to
the water bodies, for the harmful wastes disposal; payment for the
water use in industry. Such compensation for doing damage, first of all,
is the instrument to stimulate the activity aimed at the environment
protection, but it is not the mean to replenish funds. The experience
shows that the lack of the similar incentives leads to the environment
deterioration, and even to the ecological catastrophes.

The financial relationships between the territories concerning the
payments, compensations, share holding in the basin water protection
programmes are carrying out through the territorial administrations
interaction and are expressed in the single price policy, fulfilling of the
common criteria of setting up of the water activity ecological standards.
A perspective approach to the economical regulation is considered the distribution of emissions (discharges) quotas between the regions and the organisation of the further economical relationships between them concerning these quotas applying.

If the territory gets the right to designate the permissible level of the anthropogenic impact on water bodies independently, it will be possible to organise the redistribution of pollution quotas in the basin. For all this:

- it is necessary to ensure the minimum ecological safety for all participants of the agreement;
- it is obligatory to keep to the requirements of the international conventions and agreements concerning the environment protection;
- the choice of the action strategy should depend on the ecological situation in the basin regions.

Practically this approach is realised by means of the licensing of the water users polluted the transboundary water bodies and the organising of the trade of these licences. In this case the ecological funds could be the mediators.

**Conclusions**

The experience of the relationships between the Russian Federation constituents concerning the transboundary water bodies utilisation allows to draw the following conclusions:

- the basin agreements concerning the big river basins of the Russian Federation, concluded formally, do not operate in practice;
- the legislation of the Russian Federation valid ensures the legal opportunities to conclude and implement the various agreements both between the Russian Federation constituents and between the states;
- organisational structure of transboundary water relationships is based on the territorial working groups activity, represented in the Coordinating Basin Council;
- the basin target action programme presents the organisational-legal mechanism through which all forms of water relationships between the territories are carried out;
- the experience of the economical instruments appliance in the transboundary water relationships is very small. It is
obvious that the economical instruments mentioned in this contribution will be chosen in the process of the agreements (basin programmes) implementation.