

INTEGRATED USE OF GROUND WATER IN AGRICULTURE

Isaeva S.D., VNIIGiM of. A.N. Kostyakov, Moscow, <u>isaevasofia@gmail.com</u> Bondarik I.G., VNIIGiM of. A.N. Kostyakov, Moscow, <u>ruscid@mail.ru</u>

Water resources availability is an essential requirement of intensive economic and social development of a country. As a whole Russia is provided with water resources but water shortages occur in some regions of the country. Insufficient provision with water is observed in the southern regions of the European part of the country, in the Povolgye, where population, industry and agriculture are concentrated. Situation may be improved on the base of integrated use of surface and ground water as well as more efficient use of water resources.

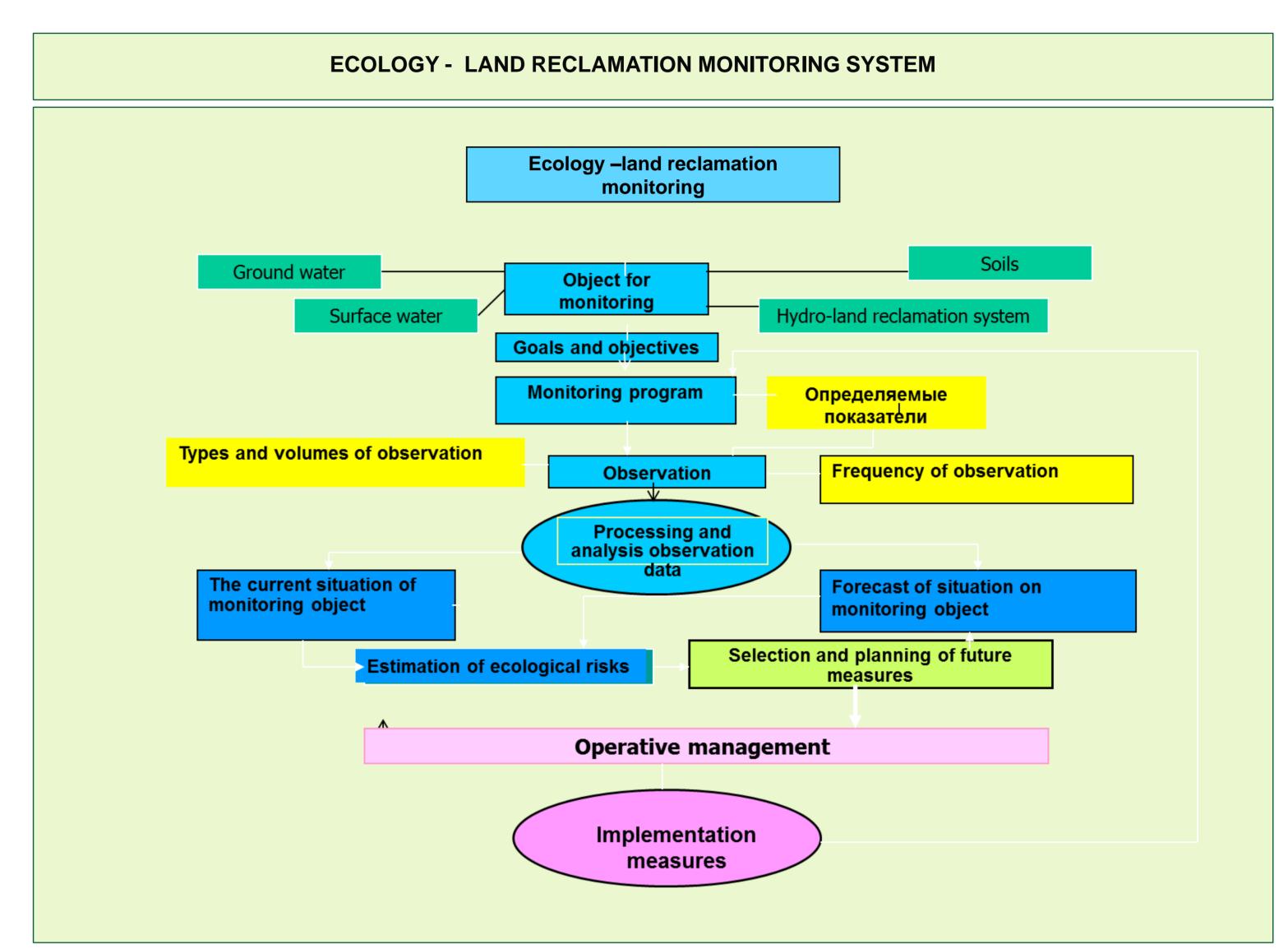
Nowadays probability with water resources and actual water consumption in agriculture of Russia is considerably below the goal. (the required level) To provide food security and the development of agriculture in the near-term outlook it is required to raise food production including meat and milk, to increase yield of cereals and fodder crops due to both increase in crop productivity and cultivation area.

Federal district	2014 год			2020 год
	Rural population, mln. people.	Groundwater resource potential, mln. m3 / day.	Provision of groundwater for drinking water supply for rural population,%	The needs to use groundwater for the drinking water supply for rural population mln. m3 / day.
Russian	38,0	869,05	84	6,58
Federation				
Central Federal District	7,5	74,05	80	1,30
North-West Federal District	2,4	117,7	92	0,41
South Federal District	9,6	39,85	76	1,66
Volga Federal District	9,0	84,75	80	1,56
Urals Federal District	2,3	142,57	83	0,40
Sibirian Federal District	5,7	250,90	100	0,99
North East Federal District	1,5	159,23	100	0,26

For increasing the role of groundwater in the integrated water re-sources management system (including rural water supply) must be done:

- Check the actual reserves of ground water in the subsurface areas for which the term of the protocol of the State (territorial) Reserves Com-mittee expired;
- Revising explored deposits taking into account the changes in the requirements for water quality, and the introduction of land private owner-ship;
- Carrying out of audit of existing water intakes to develop a plan to repair them or liquidation, assessment of sanitary protection zones;
- Prospecting and exploration of new ground water deposits;
- Introduction water treatment plants, including individual water treatment device;
- Use permanent mathematical models for simulation natural and economic conditions;
- Separate the water supply for drinking and industrial goals;

- Improving legal, regulatory and methodological framework in water supply branch;
- Development of ecology-reclamation monitoring.



To support decision making on water resources management water-resources assessments on integrated surface and ground water use and water protection are developed with the river basin. On the base of IWRM measures are planned in the frame of federal addressed investment program, federal, regional, departmental targeted, as well as regional and municipal programs (plans) on water economy and water protection measures.

