Republic of Tatarstan
KAZAN STATE AGRARIAN UNIVERSITY

Application to the FAO Competition nomination: Integrated Land, Soil and Water Management Solutions (presentation and photos)



Kazan 2025

«The issue of water is one of the priorities for the future. This is a strategically important resource - both for water supply, and as an energy carrier, and as transport for the activities of various sectors of the economy. The Republic of Tatarstan is one of the most high-water regions in the Volga Federal District. This is the wealth that we undoubtedly need to protect and preserve»

R.N. Minnikhanov, President of the Republic of Tatarstan,

Abstract to the application of FSBEI HE KAZAN STATE AGRARIAN UNIVERSITY for the FAO competition in the nomination "Integrated solutions for the management of land, soil and water resources«

Water resources and their effective use in the Republic of Tatarstan made it possible to form a reliable basis for the sustainable development of the agro-industrial complex of the region, significantly reduce the damage from repeated droughts. More than 880 ponds and hydraulic structures have been built in the republic, which are invaluable water and environmental facilities of the republic.

The geographical and climatic position of the Republic of Tatarstan has always dictated the need for the development of water management. The water resources of the republic are extremely unevenly distributed throughout its territory. Most rivers are snow-fed. The summer low-water period coincides with the period of maximum water consumption for irrigation purposes. The most radical way to eliminate the intra-annual, as well as long-term variability and territorial unevenness of river flow, to protect land from water erosion is to create large reservoirs for complex purposes and other types of GTS.

In the Republic of Tatarstan, GTS are the most common types of structures with very important functions that have a great impact on the economy, environmental and social sphere. Reservoirs and other pressure structures keep huge masses of water under high pressure, create a potential danger for national economy facilities and safe living of the population in the zone of influence of these structures. Destruction of their pressure front or forced discharge of water can lead to catastrophic floods. Therefore, the issue of safe and reliable operation of these structures acquires particular relevance.

In the process of economic development, a large number of water management structures were built in the republic. With the help of these facilities, water is supplied for the needs of agriculture, providing irrigation of farmland, for the supply of water for household, drinking, industrial and other needs.

In the Republic of Tatarstan, over the years, more than 880 GTS were built and commissioned. Water management systems are used to solve the following tasks:

watering of territories;

ensuring the supply of water for water supply to the rural population, for fire-fighting and production needs;

protection of the population, industrial facilities, as well as agricultural land from the harmful effects of water;

as a supply of water for watering cattle in pastures and summer camps;

on the territory of oil producing areas are used by oil workers for technological needs;

recreational and social significance, especially for residents of nearby villages.

A significant part of the GTS was built in the 60-80s of the last century. In perestroika times, the situation on many GTS worsened. Many GTS were in disrepair or required repair and restoration work. Coastal deformations and sometimes accidents occurred. Many HTS had defects that reduced their reliability and performance. This was due to the fact that the owners did not pay due attention, maintenance and current repairs were not carried out.

Since 2012, the Republic of Tatarstan has been carrying out systematic work to restore water bodies and hydraulic structures. This work is carried out on a software basis. The long-term target program for the restoration of hydraulic structures was developed by scientists and specialists of Kazan Agrarian University together with the Ministry of Agriculture and Food of the Republic of Tatarstan and has been successfully implemented for 10 years. (Resolution of the Cabinet of Ministers of the Republic of Tatarstan dated 04.08.2012 No. 664 "On approval of the long-term target program" Reclamation work on hydraulic structures in the Republic of Tatarstan 2010-2012, "Resolution of the CM of the Republic of Tatarstan dated April 8, 2013 No. 235" On approval of the State program "Development of agriculture and regulation of agricultural products, raw materials and food markets in the Republic of Tatarstan for 2013-2025")

Thanks to the work done, it was possible to improve the technical reliability and stability of GTS in a pre-emergency and emergency state, reduce the threat of emergencies at dams during the spring passage of flood waters through the GTS, and improve water protection zones for recreation.

Within the framework of the target State program for the effective involvement of agricultural land in circulation and the development of the reclamation complex of the Russian Federation (Decree of the Government of the Russian Federation of May 14, 2021 No. 731), a set of measures is being taken to restore the GTS to its standard state with further ongoing preventive maintenance of structures in good technical condition.

The set of measures for GTS restoration includes:

- a complete inventory of the technical condition of existing dams, anti-erosion and reclamation GTS with the subsequent analysis and assessment of the risk of accidents at GTS in a pre-emergency and emergency state (;

development and approval of estimate documentation for repair and restoration works at emergency facilities;

carrying out repair and restoration work, flood control measures, cleaning, deepening and arrangement of water bodies, restoration of the body of dams, as well as spillway and discharge structures, repair, restoration or replacement of valves and shutoff valves and other measures at HS and bringing them to the appropriate standards prescribed in safety declarations.

before repairs

after repair

Currently, in the republic, with the participation of specialists from Kazan Agrarian University, the following are being implemented:

Departmental program "Development of the reclamation complex of Russia";

Federal Targeted Investment Program;

Federal project "Export of agricultural products" (in terms of land reclamation).

Within the framework of the implemented federal programs for 20 years, federal investments in the land reclamation of Tatarstan in the amount of 2 billion rubles were attracted.

Large reclamation systems and GTS were reconstructed using resource-saving and water-saving technologies on an area of more than 10 thousand hectares, 122 units of state GTS were overhauled (Appendix 1).

In order to timely identify defects and adverse processes at the structure, plan repairs, prevent accidents, assess the safety of HS and the risk of accidents, the state of HS is monitored by organizing systematic observations of the nature of their impact on the environment.

before repairs


ГТС у с. Кыз. Ялан Чистопольского района

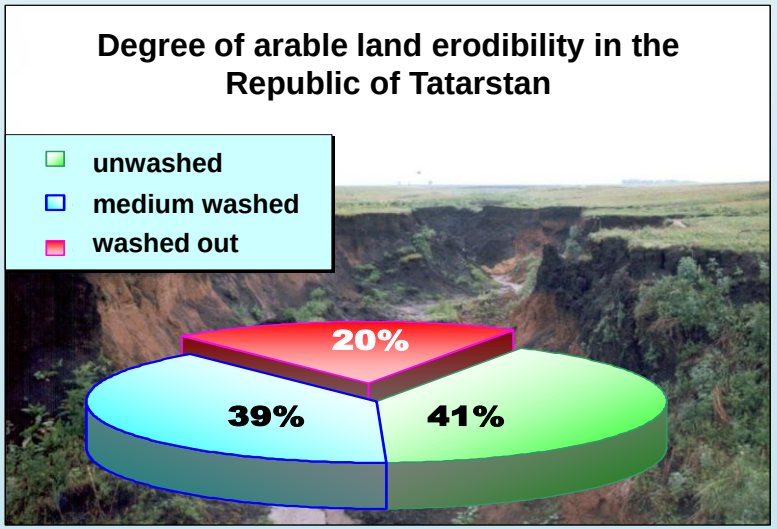

ГТС у с. В. Арняш Мамадышского района

after repair

Soil protection and improvement of water protection zones.

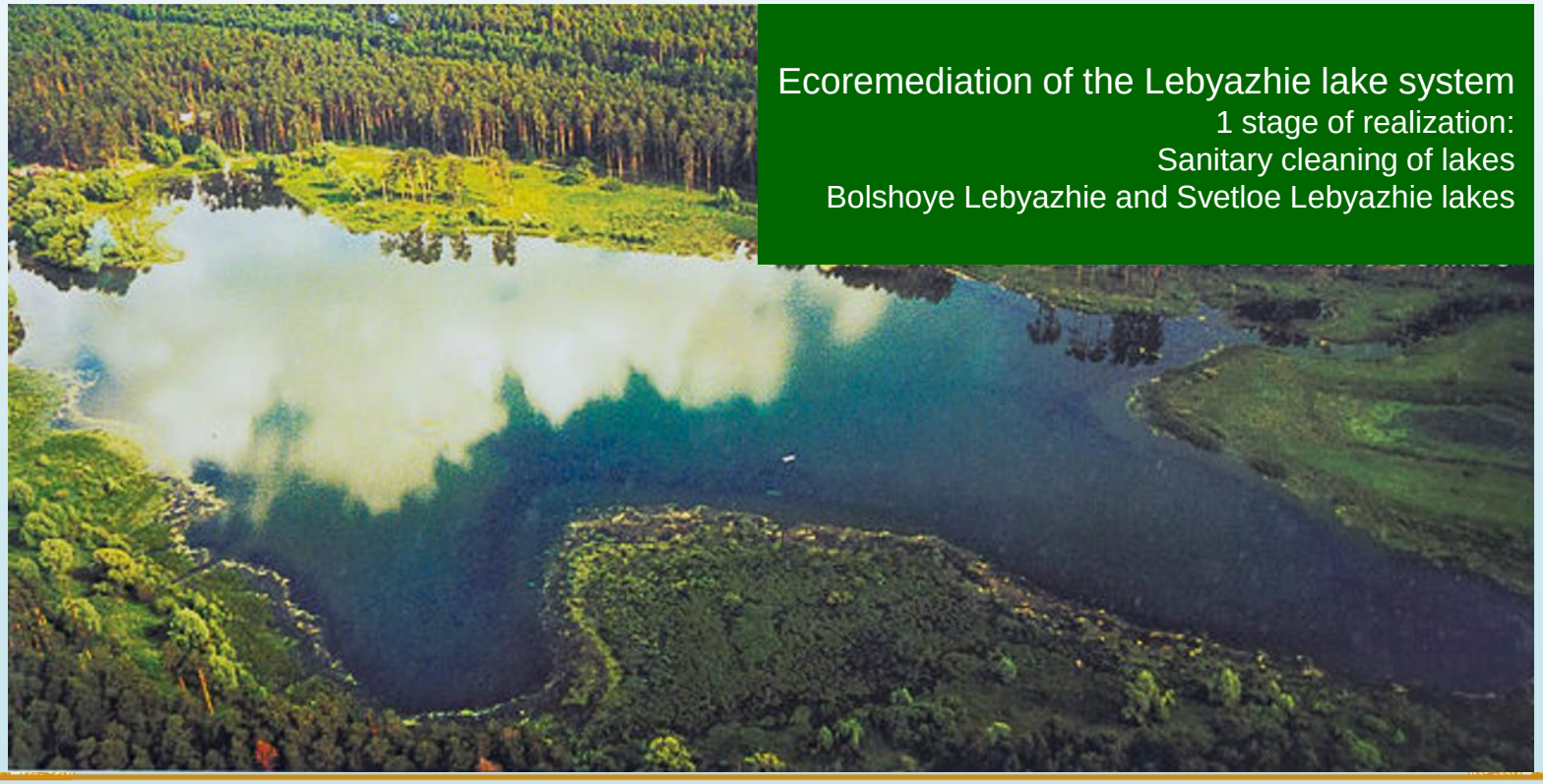
Arable land of Tatarstan is characterized by a high degree of plowing of farmland (76.6%) of the republic's territory with low arable land afforestation (3.5%) and an extremely low forest cover. Arable land afforestation, as one of the indicators of the sustainability of the ecological framework of the agrolandscape, although it has a slight upward trend, its pace cannot be recognized as sufficient. This circumstance also contributes to the accelerated development of water and wind erosion processes, accelerated siltation of existing water bodies.

To reduce erosion processes, within the framework of the implementation of targeted programs for the development of land reclamation developed by specialists of the Kazan GAU, agroforestry works are being carried out in the republic. More than 2.5 thousand hectares of protective strips are planted annually. Over the past 10 years alone, work has been carried out on an area of about 30 thousand hectares. in the amount of more than 1.5 billion rubles. Every year, within the framework of the reclamation development program, agroforestry works are carried out in the amount of 150-160 million rubles, afforestation of ravines and steep slopes located in the water area of the rivers is carried out.



The implementation of these measures not only ensures the preservation and restoration of rivers and reservoirs, but also contributes to the development of the agro-industrial complex and other sectors of the economy, ensuring an increase in soil fertility, a dynamic increase in agricultural products, a reduction in the disposal of agricultural land and the creation of new jobs.

Kazan Agrarian University has qualified personnel both for the development of high-quality projects in the field of land reclamation and water management construction, and a powerful scientific potential for conducting scientific research related to eco-rehabilitation of rivers and water bodies.



Ecoremediation of the Lebyazhie lake system
1 stage of realization:
Sanitary cleaning of lakes
Bolshoye Lebyazhie and Svetloe Lebyazhie lakes

The implementation of measures contributes to the development of not only the agro-industrial complex, but also other sectors of the economy, ensuring a long-term increase in soil fertility, a dynamic increase in agricultural products, a reduction in the disposal of agricultural land and the creation of new jobs. In particular, the following results are achieved:

in the adjacent territories of the GTS, soil fertility increases by 2-2.5 points, and on arable land - by 3.5-4 points;

reclamation work, creation of anti-erosion hydraulic structures, reclamation of disturbed lands ensure the restoration of 28,670 hectares of land, involving 3545 hectares of agricultural land in agricultural circulation;

an increase in agricultural products - by 4-5 centners per 1 hectare from the territories adjacent to the GTS.

The implementation of the Program significantly increases the yield of crops and, accordingly, the gross harvest of agricultural products, since the positive effect of the Program is ensured over a long period.

Agroforestry measures

More than 3 thousand hectares of forest belts are introduced annually in Tatarstan

The great social significance of the Program lies in the fact that water supply to the rural population and agricultural production will be improved due to irrigation and reclamation works. The implementation of the Program contributes to an overall improvement in the standard of living in the countryside.

Kazan Agrarian University is constantly recognized by the Ministry of Agriculture of Russia as one of the best in the country. In 2024, once again, KGAU scientists won gold medals at the main all-Russian agro-industrial exhibition "Golden Autumn - 2024."

KGAU works for the agro-industrial complex of Tatarstan and makes a great contribution to the development of agricultural production and the preservation of water resources.

AGROBIOTECHNOPARK - a platform for industrial practice and scientific research

501 million rubles.
Estimated cost

211 hectares.
Area

2024.
Facility handover

Involved:

54 graduate students

150 students

100 teachers

Seeded:

5000 plots

Tried and tested:

40 medications

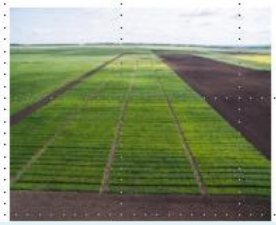
25 fertilizer

80 new varieties and hybrids

Concluded:

40 contracts with companies

Agrarian Science Day 2024



PURPOSE - creation of a favorable innovation environment for the development, testing and replication of competitive technologies in agriculture and sustainable development of rural areas to increase the well-being and quality of life of the population

- **Agrobiotechnopark - scientific and business center** with a high concentration of research and innovation activities aimed at solving the problems of coordinating the interaction of power, science and business, with a complex of infrastructure facilities necessary for the functioning of this center.
- Capacities and infrastructure provide for the organization and conduct of fundamental and applied research to develop theoretical foundations and practical application of innovations in technological processes of land reclamation, overcoming a significant lag in domestic agriculture based on optimization of agro-ecological parameters of reclaimed agro-landscapes, ensuring the most complete use of scientific and technological progress, natural, water, technogenic and labor resources, which will serve as a reliable basis for conducting a large-scale educational process, aimed at the education and training of highly qualified personnel, the development of new organizational principles and technological solutions for the modernization of irrigated agriculture.

AGROBIOTECHNOPARK includes 5 research centers:

1

Center for Agroecological Research

- Laboratory of product quality assessment and plant biochemistry
- Molecular Genetic Research Laboratory
- Agrotechnology Laboratory
- Laboratory of Agrochemistry and Agroecology
- Laboratory of Agricultural Microbiology and Phytopathology
- Laboratory of Plant Physiology

2

Agrotechnology Center

- Experimental fields for agrotechnological research (15 ha)
- Seed plot (10 ha)
- Variety test site (10 ha)
- Demonstration area (10 ha)
- Agricultural technologies of vegetable crops of open and closed soil (10 ha)
- Potato seed production (10 ha)
- Registration tests of pesticides and agrochemicals (10 ha)

AGROBIOTECHNOPARK includes 5 research centers:

3

Center for Biotechnology and Processing

- Grain and grain products processing department
- Potato and Fruit and Vegetable Processing Division
- Agricultural Biotechnology Division
- Product Storage Technology Department

4

Center for Digital technologies and robotization

- Monitoring Department
- GIS Technology Division
- Robotization Laboratory
- Precision Agriculture and Aerospace Research Division

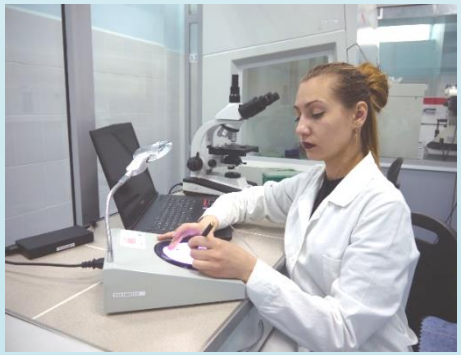
5

Practical Training Center

- Practical training of students (training ground)
- Professional development
- Retraining of specialists
- Information and consulting services

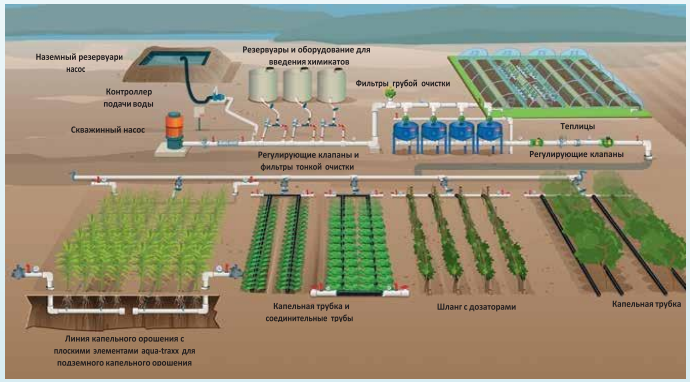
LABORATORY OF AGRICULTURAL MICROBIOLOGY AND PHYTOPATHOLOGY

- ✓ Diagnostics of diseases of seed material, plants based on microbiological studies.
- ✓ Identification and confirmation of phytopathogen species.
- ✓ Creation and replenishment of a collection of microorganism strains.
- ✓ Research on the search and selection of highly active strains of entomopathogenic microorganisms and the creation of microbiological preparations based on them.
- ✓ Study of the mechanism of action and spectrum of activity of microbial preparations against phytophages and phytopathogens, assessment of the effect on useful entomofauna and microflora.
- ✓ Determination of biological activity (phytotoxic, antibiotic, fungicidal, insecticidal) of microorganisms and their metabolites.
- ✓ Quality control of biologics.

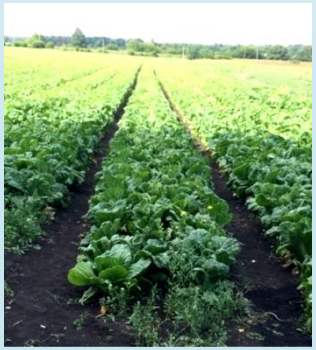

Development of water-saving irrigation methods in the Republic of Tatarstan

In recent years, drip irrigation of vegetable and fruit crops has been intensively developing in the Republic of Tatarstan, in which soil moistening is carried out in the zone of maximum development of the root system of plants, which ensures its good aeration. In this method, water is uniformly supplied by falling drops continuously to each plant throughout the growing season in an amount corresponding to water consumption of the given crop.



Benefits of drip irrigation

1. Rapid development of the root system, since water enters directly to the roots or in the immediate vicinity;
2. Plant protection, because when watering, water does not fall on the leaves of plants, does not burn in the scorching sun and does not wash off preparations from treated bushes, and the likelihood of diseases decreases;
3. Water saving up to 70 percent, because water goes directly to the roots and evaporates from above the soil;
4. Automation of irrigation processes and noticeable saving of resources - water, labor, time;
5. Allows you to harvest and cultivate plants in clean earth, because unlike sprinkling, the earth is wet only at the roots, the system functions without eroding the soil;
6. There is no waterlogging of the soil, due to which the root system has good ventilation throughout the growth of the plant;
7. Fewer weeds;
8. The drip irrigation system can be used not only to deliver water to plants, but also liquid fertilizers that will also penetrate immediately to the roots;
9. Irrigation water does not pollute groundwater and does not cause soil salinity.



Location of planted orchards in RT for 2014-2024.

2130 hectares of intensive orchards were planted

Cooperation between farmers for watering vegetable and fruit crops is also successfully developing within the framework of the Berry Valley and Vegetable Valley projects.

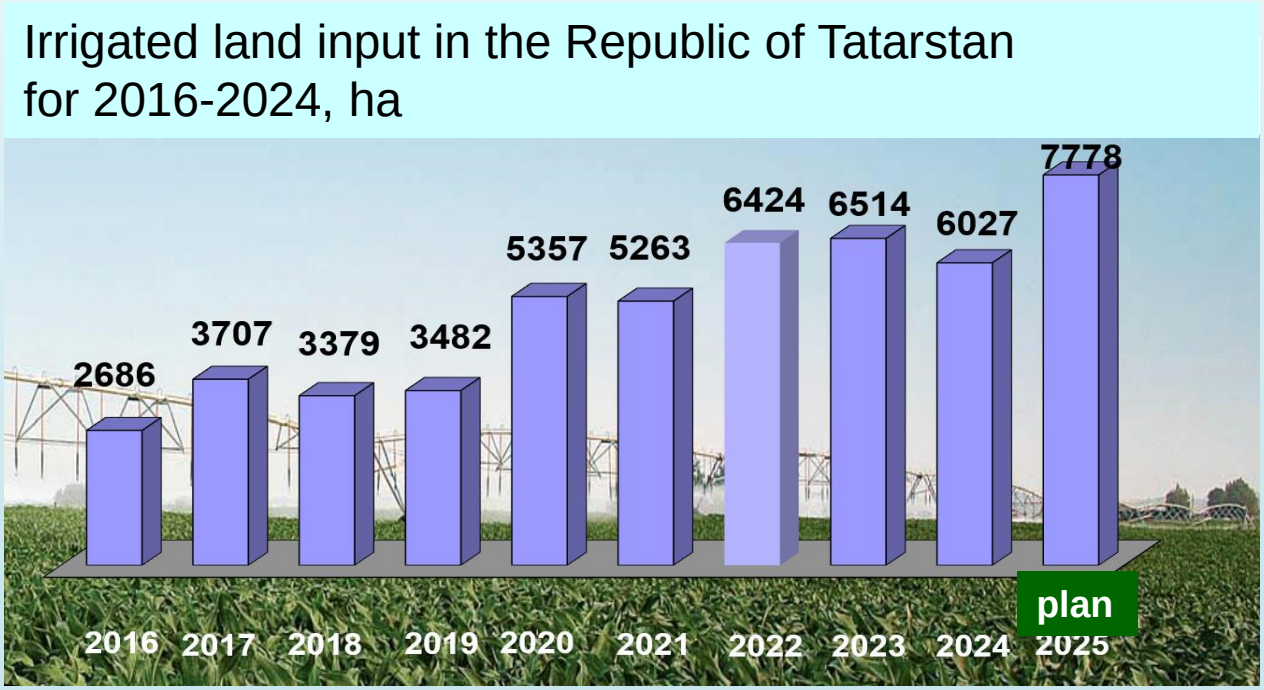
Filling of drip irrigation systems

Application of resource-saving and water-saving irrigation technologies

In the Republic of Tatarstan, priority is given to the development of land reclamation. In recent years, large-scale, both federal and purely regional programs for the development of land reclamation have been implemented.

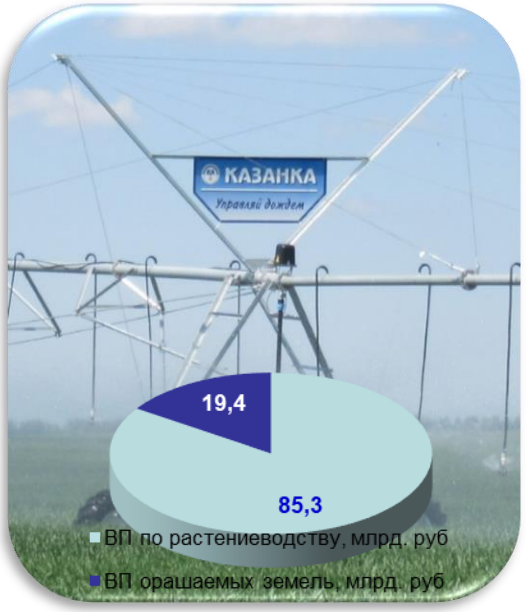
FSBI Management "Privolzhskmeliovodkhoz" is the coordinator of all federal and republican target programs for the development of land reclamation in the Republic of Tatarstan.

As a result of the implementation of reclamation programs over the past 10 years, 35 thousand hectares of irrigated land have been built, reconstructed and commissioned using resource-saving and water-saving irrigation technologies.



Gross output in tons and rubles from irrigated lands, including by types of products. (2021)

Cultures	Irrigated areas of FSBI, one thousand hectares	Gross output, billion rubles
Potatoes	5,0	1,7
Vegetables	11,9	7,5
Grain crops	2,8	0,14
Fruit and berry crops	6,2	9,7
Forage crops	12,0	0,38
Total	37,9	19,4
Total gross crop production, RUB bln	X	104,7
Share,%	X	18,5



Occupying 1.5% of the arable land area on irrigation is cultivated 18.5% of the value of gross crop production

Gross output from irrigated and rainfed lands for 5 years, billions of rubles

	2018 year	2019 year	2020 year	2021 year	2022 year	Total for 5 years
Shaft crop production	110,7	124,4	132,6	104,7	175,6	648
Including irrigation	14,7	13,9	16,8	19,4	23,5	88,4
Percentage of shaft. products	13,3	11,2	12,7	18,5	13,4	13,6

88,4 RUB billion shaft. products from irrigated lands for 5 years

Annual economic effect 23.5 billion rubles (2023)

REVIVAL OF WATER-SAVING SPRINKLER PRODUCTION TECHNICIANS IN THE REPUBLIC OF TATARSTAN

In 2016, the serial production of the KAZANKA circular sprinkler developed by scientists - designers of the Kazan GAU began. In total, 410 cars have been manufactured and installed in the fields of the Republic of Tatarstan since 2016. The production capacity of the plant allows the production of more than 200 sprinklers per year.

The use of the KAZANKA irrigation system in the agricultural sector ensures the optimization of the irrigation rate within a wide range, in almost any soil and climatic areas. The irrigation area ranges from 3.5 ha to 86 ha. Circular irrigation plant KAZANKA can be used for sprinkling of grain, melons, oils, industrial crops, vegetables, perennial herbs, as well as other crops including high-stem plants. It is possible to apply liquid fertilizers and plant protection products.

Модификация машины	Казанка-3	Казанка-4	Казанка-5	Казанка-6	Казанка-7	Казанка-8
Количество пролетов	3	4	5	6	7	8
Длина машины, м	204	264	324	384	444	504
Расход воды, л/с	18,6	28,9	40,9	55,6	73,2	90,9
Давление воды на входе в машину, кгс/см2	1,9	2,1	2,4	2,9	3,5	4
Площадь полива, Га	14,6	24,9	35,5	49,3	65,3	83,6
Радиус полива, м	216	276	336	396	456	516
Среднесуточная норма полива, мм	11	10,5	10,0	9,8	9,7	9,4
Минимальное время оборота, час	10,5	14	17,5	20,9	24,4	27,9
Минимальная норма полива за один оборот, м3/Га	48	60,9	72,7	85,4	98,9	110

Продукция завода соответствуют всем техническим и технологическим требованиям, предъявляемым к данному виду техники, не уступает по качеству и характеристикам импортным аналогам, по некоторым характеристикам **превосходит** импортные аналоги, а стоимость на 30 % ниже зарубежных.

Kazanka sprinklers save water resources by 30-35% compared to the previously used Fregat and Volzhanka sprinklers. Advantages of Kazanka sprinklers over import analogues

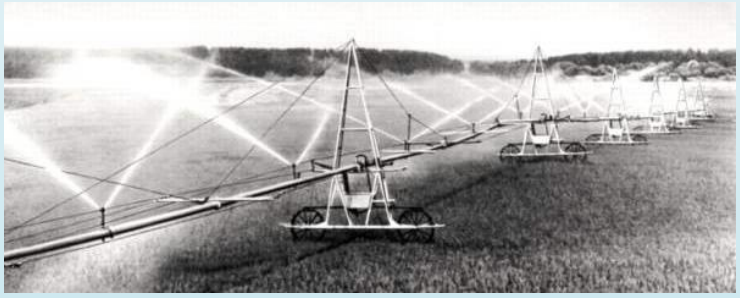
- The machine has a lower cost compared to machines from foreign manufacturers by 20-30%.
- It has lower operating costs - water consumption, electricity, maintenance.
- It has a shorter payback period compared to imported counterparts.
- With our own service desk, you can reduce spare parts delivery time as well as repair and maintenance time.
- Localization of production is more than 80%. The installation has reliability comparable to the best samples of world manufacturers.

Quality of rain when watering with sprinklers Kazanka and Fregat

- Provides soft, sparing watering of plants, due to the improved rain belt, allows you to achieve the most uniform artificial rain, in which soil compaction does not occur.

Kazanka

Frigate



- Allows you to apply fertilizers, livestock runoff.
- Online control and management of the operation and parameters of the machine.
- Sprinklers form finer droplets and high-quality rain, which can be reduced by 45%. Due to the improved rain belt, soft, gentle watering of plants is provided, it allows you to achieve the most uniform artificial rain, in which soil compaction does not occur.

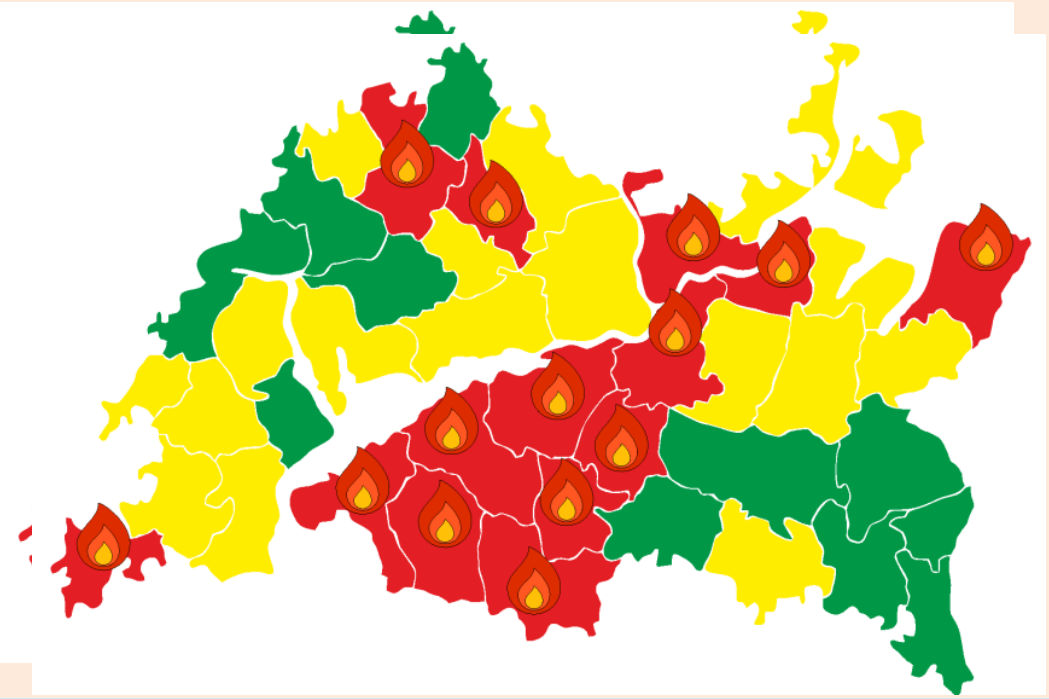
Development of soil erosion during irrigation with sprinklers Kazanka and Fregat

More than 850 ponds and GTS have been built in the Republic of Tatarstan

SOIL FERTILITY MANAGEMENT:
DEOXIDATION OF SOILS OF THE REPUBLIC OF TATARSTAN
TO IMPROVE THE DIGESTIBILITY OF ELEMENTS
NUTRITION AND ENABLING ENVIRONMENT
FOR PLANT DEVELOPMENT

REPUBLIC OF TATARSTAN - LEADER IN RUSSIA IN AGROCHEMICAL MELMORATION

Map of the regions of the Republic of Tatarstan by the presence of acidic soils



Presence of acid soils more than 50% of the arable area

Presence of acid soils from 30% to 50% of the arable area

As of 01.01.2020
in Tatarstan
1 310 thousand hectares of acidic soils

or

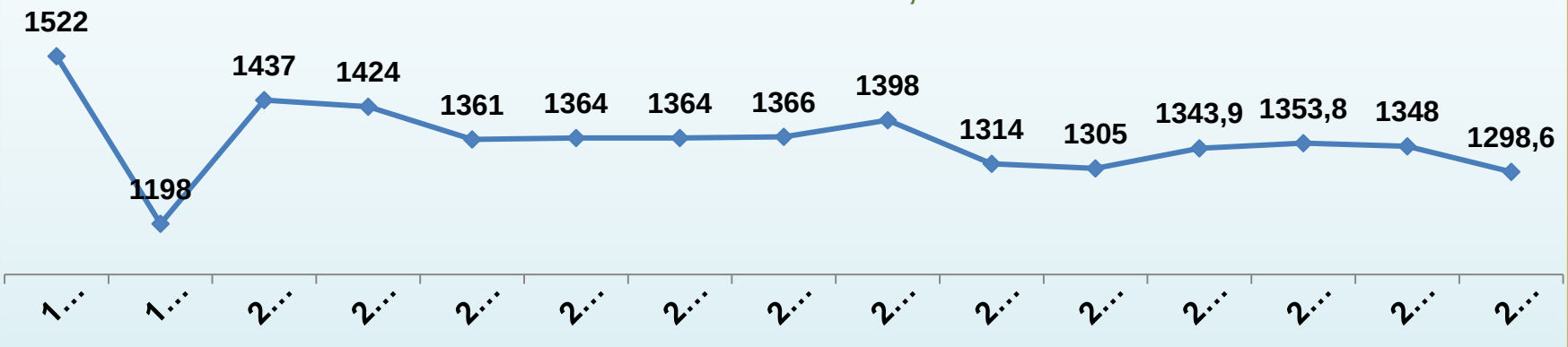
44%

Integrated fertility and soil management solutions

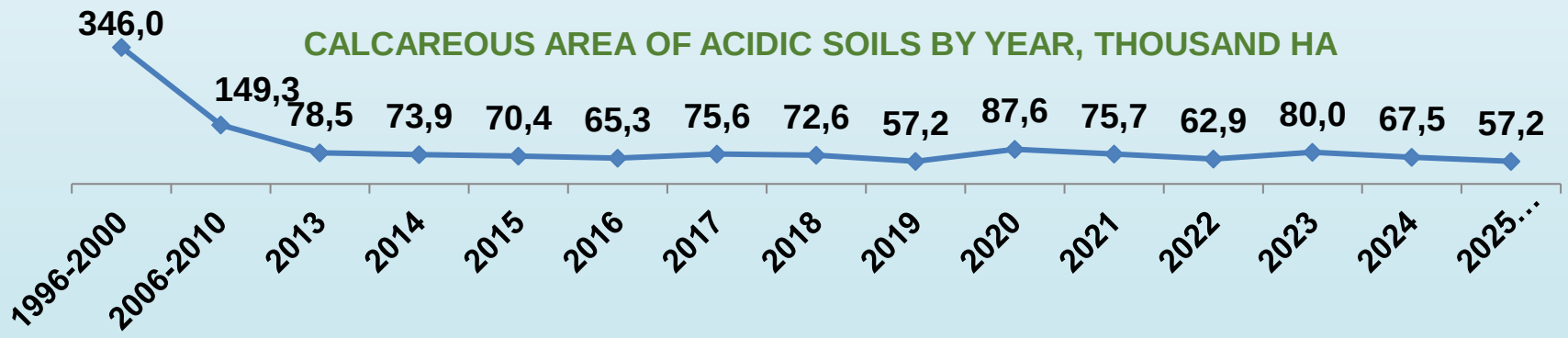
In the Republic of Tatarstan, an agrochemical survey of arable land is carried out annually on an area of 440 thousand hectares, which is a significant volume in the Russian Federation. In the Republic, a scientifically substantiated five-year cycle of agrochemical soil survey is observed. According to the republican program for liming acidic soils in the Republic of Tatarstan, liming is carried out annually on an area of about 90 thousand hectares, which is 40% of the volume of liming in the Russian Federation.

DYNAMICS OF LIMING OF ACIDIC SOILS

AREA OF ACIDIC SOILS IN THE REPUBLIC, THOUSAND HECTARES



CALCAREOUS AREA OF ACIDIC SOILS BY YEAR, THOUSAND HA



THE REPUBLIC OF TATARSTAN IS THE LEADER IN SOUR SOIL LIMING IN RUSSIA

Appendix 1

The volume of attracted investments from the budget of the Russian Federation for 2001-2024 (reconstruction of state reclamation systems and GTS)

			thousand rubles
Years	In total	Financing including:	
		irrigation	GTS
2001	66 972,00	40 510,00	26 462,00
2002	69 391,00	41 211,00	28 180,00
2003	61 713,00	42 705,00	19 008,00
2004	38 075,00	11 924,00	26 151,00
2005	39 450,00	18 887,00	20 563,00
2006	22 249,00	8 493,00	13 756,00
2007	23 871,00	7 857,00	16 014,00
2008	61 494,00	14 324,00	47 170,00
2009	71 529,00	35 634,00	35 895,00
2010	51 599,00	19 900,00	31 699,00
2011	50 966,00	22 000,00	28 966,00
2012	128 844,00	82 322,00	46 522,00
2013	36 057,00	3 100,00	32 957,00

Appendix 1 (continued)
The volume of attracted investments from the budget of the Russian Federation for 2001-2024
(reconstruction of state reclamation systems and GTS)

			thousand rubles
Years	In total	Financing	
		including:	
		Irrigation	GTS
2014	83 583,00	67 933,00	15 650,00
2015	119 302,00	100 303,00	18 999,00
2016	72 375,00	58 975,00	13 400,00
2017	117 321,00	90 641,00	26 680,00
2018	142 073,00	119 553,00	22 520,00
2019	89 446,00	77 715,00	11 731,00
2020	120425	103 332,00	17 093,00
2021	196626	182 900,00	13 726,00
2022	339 000	317 000	22000,00
2023	324 560,00	289 404,00	35 156,00
2024	434 518,00	434 518,00	-
TOTAL	2 761 439,00	2 191 141,00	570 298,00

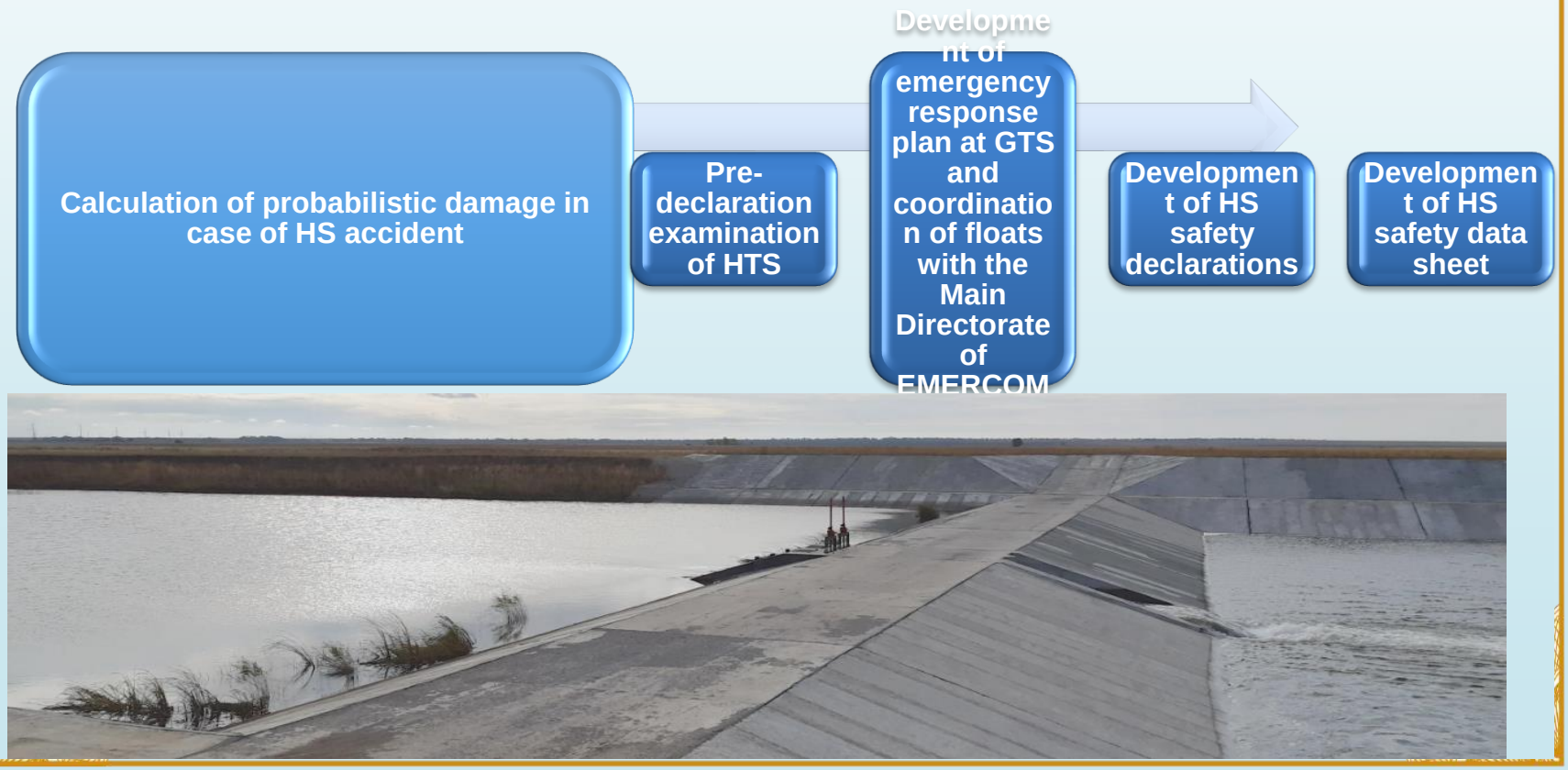
KSAU scientists are systematically working to declare the safety of hydraulic structures. For 5 years, safety declarations with the calculation of probable harm were developed in the prescribed manner for 86 hydraulic structures. For these purposes, funds were raised in the amount of more than 30 million rubles.

Information on the declaration of safety of federal-owned HS

Year of HS safety declaration	Number of declared HS	Amount spent on HS safety declaration
2019-2020	3	668 359,8
2020-2021	25	6525000
2021-2022	24	3880125
2022-2023	5	2209910
2023-2024	29	16964012,4
total	86	30247407,2

The safety declaration of a hydraulic structure is the main document that contains information on the compliance of a hydraulic structure with safety criteria.

The main areas of work carried out to declare the safety of HS



List of hydraulic structures for which safety declarations have been developed in accordance with the requirements of Federal Law No. 117-FKh of 21.07.1997 "On the Safety of Hydraulic Structures" for the last 5 years

Name of HS, location address
• Water-lifting dam RT, Arsky municipal district, Apazovskoye settlement 16:09:020704:76
• Hydraulic structures of the pond on the Urguda River, RT, Tukaevsky municipal district, Knyazevskoye s/p, Chershely village 16:39:030401:152
• Hydraulic structure of the Republic of Tatarstan, Menzelinsky municipal district, Yushadinskoye settlement, Upper Yushady 16:28:000000:1352
• Hydraulic structures of the pond on the Kirmyanka river, RT, Mamadysh municipal district, Malokirmenskoye village, Malye Kirmeni village 16:26:470101:235
• Hydraulic structure of the Republic of Tatarstan, Mamadyshsky municipal district, Verkhneoshminskoye settlement, with Alkino 16:26:000000:4085
• RT hydraulic structure, Mamadysh municipal district, Kryashcheno-Pakshinskoe settlement, Ferma-2
• Hydraulic structures of the pond on the Biznya River, RT, Rybno-Slobodsky Municipal District, Bolsheelginskoye settlement, Bolshaya Yelga village 16:34:050801:6
• Hydraulic structures of the pond at an unnamed spring flowing into the Karla River, RT, Buinsky municipal district, Entuganskoye village, Entugany village 16:14:180104:128
• Hydrotechnical structure of the Republic of Tatarstan, Drozhzhanovsky municipal district, Novoishlinskoye, Starodrozhanovskoye rural settlement 16:17:000000:616
• Hydraulic structures of the pond, RT, Buinsky municipal district, Yashevskoye s/p, s. Yashevka, operated in isolation, flows into the river. Kiyatka 16:14:000000:1165
• Hydraulic structure RT, Baltasinsky municipal district, Srednekushketskoye settlement, with Tunter 16:12:130601:112
• Hydraulic structure of the Republic of Tatarstan, Baltasinsky municipal district, Pizhmarskoye settlement, with Sardek 16:12:100604:51
• Hydraulic structure of the Republic of Tatarstan, Baltasinsky municipal district, Kugunurskoye settlement, from Shuda 16:12:050902:40пальный, с/п Кугунурское, с Шуда 16:12:050902:40
• Hydraulic structures of the pond on an unnamed spring flowing into the Arborka River, RT, Baltasinsky municipal district, Tsyplinskoye s/p, s. Arbor 16:12:150902:214
• Hydraulic structure of the Republic of Tatarstan, Mamadyshsky municipal district, Krasnogorskoye settlement 16:26:000000:4242

16	Hydraulic structure of the Republic of Tatarstan, Mamadysh municipal district, Otarskoe settlement, village of Otarka 16:26:550201:722
17	Hydraulic structures of the pond on the Saltanka River, RT, Rybno-Slobodsky Municipal District, Bolshesaltanskoye settlement, Bolshoy Saltan village 16:34:000000:1465
18	Гидротехнические сооружения пруда на роднике без названия впадающем в реку Безня, РТ, Рыбно – Слободский муниципальный район, с/п Большеелгинское, д. Сабакаево 16:34:051401:26
19	Hydraulic structures of the pond on an unnamed spring flowing into the Beznya river, RT, Rybno - Slobodsky municipal district, Bolsheelginskoye settlement, Sabakaevo village 16:34:051401:26
20	Hydraulic structure RT, Spassky municipal district, Sredneyurtkulskoye settlement, Podlesny Yurtkul 16:37:130601:105
21	Hydraulic structures of the pond at the spring without name, RT, Buinsky municipal district, Novotinchalskoe village, village of N. Tinchali 16:14:220101:88
22	Hydraulic structures of the pond on the spring without a name, flowing into the Bula River, RT, Buinsky municipal district, Bik-Uteevskoye settlement, Kambrod village 16:14:030203:160
23	Hydraulic structures of the pond on the Tsilna River, RT, Drozhzhanovsky municipal district, Staroe Ilmovo village 16:17:130301:421
24	Hydraulic structures of the pond on the Unysh River, RT, Baltasinsky municipal district, Sosnovskoye village, Nizhnyaya Sosna village 16:12:120202:22
25	Hydraulic structures of the pond on an unnamed spring flowing into the Norma River, RT, Baltasinsky municipal district, Kuyuk village 16:12:000000:539
26	Hydraulic structures of the pond on the Kutesh River, RT, Baltasinsky municipal district, Srednekushetskoye s/p, n.p. Tunter 16:12:130602:49
27	Hydraulic structure of the Republic of Tatarstan, Baltasinsky municipal district, Verkhnesubashskoye settlement, from Verkhny Subash 16:12:000000:538
28	Hydrotechnical structure RT, Baltasinsky municipal district, Norminskoye settlement, Normabash 16:12:080703:15
29	Hydraulic structures of the pond on the river Ura, RT, Arsky municipal district, Surda village 16:09:000000:1128
30	Hydraulic structure RT, Arsky municipal district, Apazovskoye settlement, from Apazovo 16:09:000000:1127
31	Complex GTS "Druzhba" near the village. Uryum, Tetyushsky municipal district RT 16:38:140401:201
32	GTS complex near Koshchakovo village, Pestrechinsky municipal district, RT 16:33:000000:2571
33	Hydraulic structure RT, Sabinsky municipal district, Izminskoye settlement 16:35:000000:981
34	Hydraulic structure RT, Sabinsky municipal district, Michanskoye settlement 16:35:000000:911
35	Hydraulic structure RT, Alekseevsky municipal district, Srednetiganskoye settlement, with Srednyye Tigany 16:180101:785
36	GTS complex near the village of Podlesnaya Shentala, Alekseevsky municipal district, RT 16:05:140101:581

37	GTS pond complex near the village of Mamysh, Atninsky municipal district, RT 16:10:000000:318
38	GTS pond complex near Kunger village, Atninsky municipal district, RT 16:10:000000:320
39	GTS pond complex near the village of Kubyan, Atninsky municipal district, RT 16:10:020801:185
40	Hydraulic structure RT, Atninsky municipal district, Novoshashinskoye settlement, Novye Shashi 16:10:060604:85
41	GTS pond complex near the village of Tyuryush, Muslyumovsky municipal district RT 16:29:150801:20
42	GTS pond complex near the village of Shuganka, Muslyumovsky municipal district RT 16:29:170502:49
43	GTS pond complex near Staroe Isakovo village, Bugulma municipal district, RT 16:13:000000:2164
44	Hydraulic structure RT, Bugulminsky municipal district, village Zelenoroshchinskoye, d Zelenaya Roshcha 16:13:040724:192
45	GTS pond complex near the village of Yanalif, Bugulma municipal district, RT 16:13:040728:74
46	GTS pond complex near the village of Staroe Sumarokovo, Bugulma municipal district, RT 16:13:140826:213
47	Hydraulic structure of the Republic of Tatarstan, Bugulminsky municipal district, Akbash settlement, Akbash railway station settlement 16:13:010402:36
48	GTS pond complex near Stary Kirlay village, Arsky municipal district, RT 16:09:000000:1027
49	Hydraulic structure RT, Arsky municipal district, Sizinskoye settlement 16:09:000000:1397
50	GTS pond complex near the village of Guryevka, Mamadysh municipal district, RT 16:26:420501:88
51	GTS pond complex in the Yakinsky rural settlement of the Mamadysh municipal district of the Republic of Tatarstan (Digitli) 16:26:670101:37
52	GTS pond complex in the village. Su-Yelga, village Malokirmenskoye, Mamadyshsky municipal district RT 16:26:000000:4236
53	GTS pond complex in Srednekirmenskoye settlement of Mamadysh municipal district RT 16:26:590301:240
54	Hydraulic structure (dam) of the Republic of Tatarstan, Mamadyshsky municipal district, Malokirmenskoye settlement 16:26:000000:4059
55	GTS pond complex in Krasnogorskoye settlement of Mamadyshsky municipal district RT 16:26:430101:102
56	GTS complex (dam) RT, Sarmanovsky municipal district, Kavziyakovsky rural settlement, with Kavziyakovo 16:36:000000:1339
57	GTS complex (Tukaya dam) RT, Sarmanovsky municipal district, s/p Saklov-Bashskoye, with Saklov-Bash 16:36:000000:1423
58	GTS RT complex, Kukmorsky municipal district, Tuembash settlement, with Tuembash 16:23:280301:60
59	GTS complex of the Tumutuk irrigation system of the Republic of Tatarstan, Aznakaevsky municipal district, "Tumutuk" 16:02:000000:4488

60	GTS complex of the Muslyumovskaya irrigation system of the Republic of Tatarstan, Muslyumovsky municipal district, Mitryaevsky rural settlement, Mitryaevsky SMS, d Olgino, 0.5 km south of 16:29:040601:160
61	GTS complex (Yakty-Kon dam) RT, Sarmanovsky municipal district, Almetyevskoye settlement, with Almetyevo 16:36:010302:94
62	GTS complex on the Bavar river of the Alkeevsky irrigation system of the Republic of Tatarstan, Alkeevsky municipal district, Starokhuradinskoye settlement, with Sikterme-Khuzangaevo 16:06:000000:745
63	GTS complex of the Mamadysh irrigation system of the Republic of Tatarstan, Mamadysh municipal district, Nizhneoshminskoye settlement 16:26:000000:4097
64	GTS RT complex, Mamadyshsky municipal district, Verkhneoshminskoye settlement 16:26:000000:4093
65	GTS RT complex, Kukmorsky municipal district, with Yanyl 16:23:000000:1240
66	Complex GTS RT, Nurlatsky municipal district, Staroalmetyevskoe rural settlement, d Novoe Almetyevo 16:32:180401:356
67	GTS RT complex, Apastovsky municipal district, Cheremshanskoye settlement, with Bagishevo 16:08:200402:204
68	GTS RT complex, Baltasinsky municipal district, Malolyzinskoye settlement, Srednyaya Ushma settlement 16:12:010503:266
69	GTS complex of the Mamadysh irrigation system of the Republic of Tatarstan, Mamadysh municipal district, Nizhneoshminskoye settlement 16:26:520102:334
70	GTS complex of the Mamadysh irrigation system of the Republic of Tatarstan, Mamadysh municipal district, Nizhneoshminskoye settlement 16:26:520102:335
71	GTS complex of the Alkeevsky irrigation system of the Republic of Tatarstan, Alkeevsky municipal district, Starokhuradinskoye settlement 16:06:140302:18
72	GTS RT complex, Alkeevsky municipal district, Starokhuradinsky rural settlement 16:06:140301:105 16:06:140301:113 16:06:140301:114
73	GTS RT complex, Menzelinsky municipal district, Verkhnetakermenskoye settlement, with Upper Takermen 16:28:000000:1315
74	Hydraulic structure of the Republic of Tatarstan, Mamadyshsky municipal district, Urazbakhtinsky rural settlement 16:26:000000:4237
75	Hydrotechnical structure (dam) of the Republic of Tatarstan, Mamadyshsky municipal district, Sunskoye settlement 16:26:370201:377
76	Hydraulic structure of the irrigation system "Pyatiletka" RT, Mamadyshsky municipal district, Otarsky rural settlement (Dorozhnikov settlement) 16:26:000000:4063
77	Hydraulic structure of the Republic of Tatarstan, Mamadyshsky municipal district, Verkhneoshminskoye settlement (Art.Zavod) 16:26:000000:4238
78	Hydraulic structure of the Republic of Tatarstan, Mamadyshsky municipal district, Urazbakhtinskoye settlement, with Urazbakhtino 16:26:000000:4066
79	Hydraulic structure (dam), RT, Mamadyshsky municipal district, Yakinskoye settlement (Bukeni village) 16:26:320201:26

List of hydraulic structures, reconstructed and overhauled for 2018-2024

№	Facility name	CIW cost, mln. rubles
	2018 year	
1	Flood control measures at the hydraulic structure near Tumutuk settlement of Aznakaevsky MP RT	2 686,6
2	Flood Control Measures at the Water-Lifting Dam of Khasanshaikh Settlement of the Arsky Republic of Tatarstan	1 282,3
3	Flood control measures at the hydraulic structure near the village of Old Sumarokovo, Bugulminsky MR RT	1 024,0
4	Flood control measures at the hydraulic structure near Akbash settlement, Bugulminsky Republic of Tatarstan	1 500,0
5	Flood control measures at the hydraulic structure near Novoye Drozhzhanoye settlement of Drozhzhanovskiy MP RT	1 871,5
6	Flood control measures at the hydraulic structure near Narmonk settlement of Laishevsky Republic of Tatarstan	1 786,2
7	Flood prevention measures at the hydraulic structure near the settlement Digitli Mamadysh MR RT	4 114,2
8	Flood prevention measures at the hydraulic structure near the settlement New Almetyevo Nurlatsky MR RT	6 228,9
9	Flood control measures at the hydraulic structure near Uryum settlement, Tetyushsky Republic of Tatarstan	2 026,1
	Total:	22 520,00
	2019 year	
1	Flood prevention measures at the hydraulic structure near the settlement Surda Arsky MR RT	719,3
2	Flood prevention measures at the hydraulic structure near the railway station Akbash of Bugulminsky MR RT (stage 2)	1 810,9
3	Flood prevention measures at the hydraulic structure near the settlement Yashevka Buinsky MR RT	1 461,3
4	Flood prevention measures at the hydraulic structure near the settlement Entugany Buinsky MR RT	237,4
5	Flood prevention measures at the hydraulic structure near the settlement Tuembash Kukmorsky MR RT	1 550,9

6	**Flood prevention measures at the hydraulic structure near the settlement Alkino, Mamadysh MR RT**	**1 501,2**
7	Flood prevention measures at the hydraulic structure near the settlement Tyuryush Muslyumovsky MR RT	1 890,7
8	Flood prevention measures at the hydraulic structure near the settlement Big Saltan Rybno-Slobodsky MR RT	2 559,3
	Total 2019 year	11 731,0
	2020 year	
1	Flood control measures at the hydraulic structure near the village of Yanyl, Kukmorsky MP RT	2 003,4
2	Flood control measures at the hydraulic structure near Olgino village, Muslyumovskogo MR RT	7 443,7
3	Flood control measures at the hydraulic structure near the village of Sabakaevo, Rybno-Slobodsky MR RT	5 000,0
4	Flood control measures at the hydraulic structure near Bolshaya Yelga village, Rybno-Slobodsky MR RT	2 646,2
	Total 2020 year	17 093,3
	2021 year	
1	Flood control measures at the hydraulic structure near the village of Bagishevo, Apastovsky MP RT	2 492,2
2	Flood control measures at the hydraulic structure near the village of Old Isakovo, Bugulminsky MR RT	4 068,7
3	Flood control measures at the hydraulic structure near the village of Yanyl, Kukmorsky MP RT	1 357,4
4	Flood control measures at the hydraulic structure near the village of Alkino, Mamadyshsky MR RT	1 233,9
5	Flood control measures at the hydraulic structure near Bolshoy Saltan village, Rybno-Slobodsky Republic of Tatarstan	2 761,7
6	Flood control measures at the hydraulic structure near the village of Saklov-Bash, Sarmanovsky MR RT	856,9
7	Flood control measures at the hydraulic structure near the village of Chershela, Tukaevsky MP RT	1 272,1
	Total 2021 year	14 042,9

	2022 year	
1	Flood control measures at GTS of Tumutuk irrigation system of Aznakaevsky MR of RT	8 487,5
2	Flood control measures at the GTS near the village of Novye Shashi, Atninsky MR RT	234,8
3	Flood control measures at the GTS near the village of Yanyl, Kukmorsky irrigation system, Kukmorsky MR RT	1 776,1
4	Flood control measures at the water intake of the pumping station of the inter-farm irrigation system near the village of Panovo, Laishevsky MP RT	4 566,8
5	Overhaul of the hydraulic structure near the village of Russian Kirmeni, Mamadysh MR RT	21 727,4
	Total 2022 year	36 792,60

	2023 year	
1	Hydraulic structures near the village of Kavziyakovo, Sarmanovsky municipal district of the Republic of Tatarstan	9 616,8
2	Hydraulic structures near the village of Podlesny Yurtkul, Spassky municipal district of the Republic of Tatarstan	3 654,1
3	Hydraulic structures near the village of Old Ilmovo, Drozhzhanovsky municipal district of the Republic of Tatarstan	1 794,14
4	Overhaul of the GTS pond near the settlement Urazbakhtino of the Mamadysh municipal district of the Republic of Tatarstan	50 158,5
5	Overhaul of the trunk pipeline near Betki village, Tukaevsky municipal district of the Republic of Tatarstan	7 209,0
6	Overhaul of the trunk pipeline near the village of Karaduli, Laishevsky municipal district of the Republic of Tatarstan	137 338,0
	Total 2023 year	209 770,80

	2024 year	
1	Flood control measures at the GTS near the village of Kavziyakovo, Sarmanovsky MR RT	3 099,4
2	Flood control measures on an artificially open water conduit in an earthen excavation (supply channel) of the inter-farm irrigation network near the village of Panovo, Laishevsky MP RT	11 836,4
3	Flood prevention measures at the water intake from a closed water intake (birching, including digging) near the village of Betki, Tukaevsky MR RT	13 047,9
4	Overhaul of the head pumping station and irrigation system of the Sukharevsky section No. 2 of the Nizhnekamsk MR RT	61 415,6
5	Overhaul of the main pipeline of the southern section of the inter-farm irrigation network near the village of Panovo, Laishevsky MP RT (stage 1)	33 629,6
	Total 2024 year	123 029,08

Since 2018, 38 federal hydraulic structures have been overhauled for a total of 434.5 million rubles.

INFORMATION
for overhaul of GTS and flood control measures of the Federal Target Program for 2018-2022
thousand rubles

P/N No.	Years	Number of HS	Financed	Number of objects entered
1	2018	9	22 520,00	9
2	2019	8	11 731,00	8
3	2020	4	17 093,30	4
4	2021	7	14 042,90	7
5	2022	5	36 792,60	5
6	2023	4	209 338,07	4
7	2024	1	123 029,08	1
	TOTAL:	38	434 546,95	38

INFORMATION

reconstruction of the GTS under the Federal Target Program for 2018-2024

thousand rubles

№ п/п	Years	Number of HS	Financed	Number of objects entered
1	2018		15 000,00	
2	2019		28 000,00	
3	2020	6	46 394,59	6
4	2021	1	8 064,28	1
5	2022	2	35 000,00	
6	2023	1	35 156,00	1
7	2024	-	-	-
	ИТОГО:	10	167 614,87	8

INFORMATION

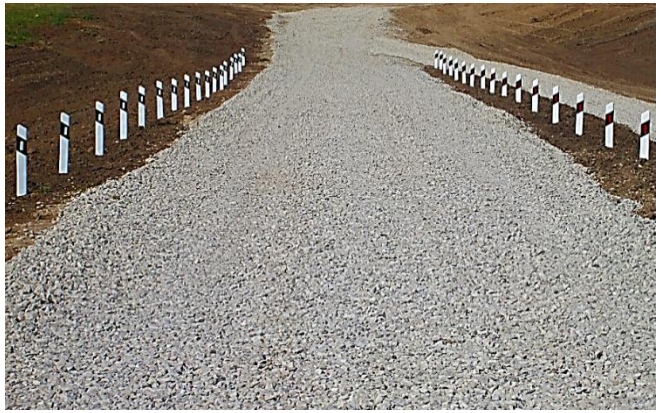
on overhaul of the GTS Republican target program for 2018-2022 thousand rubles

P/N No.	Years	Number of HS	Financed	Number of objects entered
1	2018	37	106 657,40	25
2	2019	21	57 238,40	14
3	2020	22	138 127,90	16
4	2021	16	153 836,70	8
5	2022	9	120 281,60	9
6	2023	7	248 060,20	5
7	2024	7	114 608,60	6
	ИТОГО:	119	938 710,80	83

In total, over the past 7 years, the presidential program for the overhaul of ponds has been restored
more than 550 GTS.

The restored ponds accumulate 89 million cubic meters of water

Reconstruction of Arsky irrigation system, Arsky district, Republic of Tatarstan



Reconstruction of Kutyuk irrigation system, Arsky district, Republic of Tatarstan

Reconstruction of Sabinsky irrigation system, Sabinsky district, Republic of Tatarstan

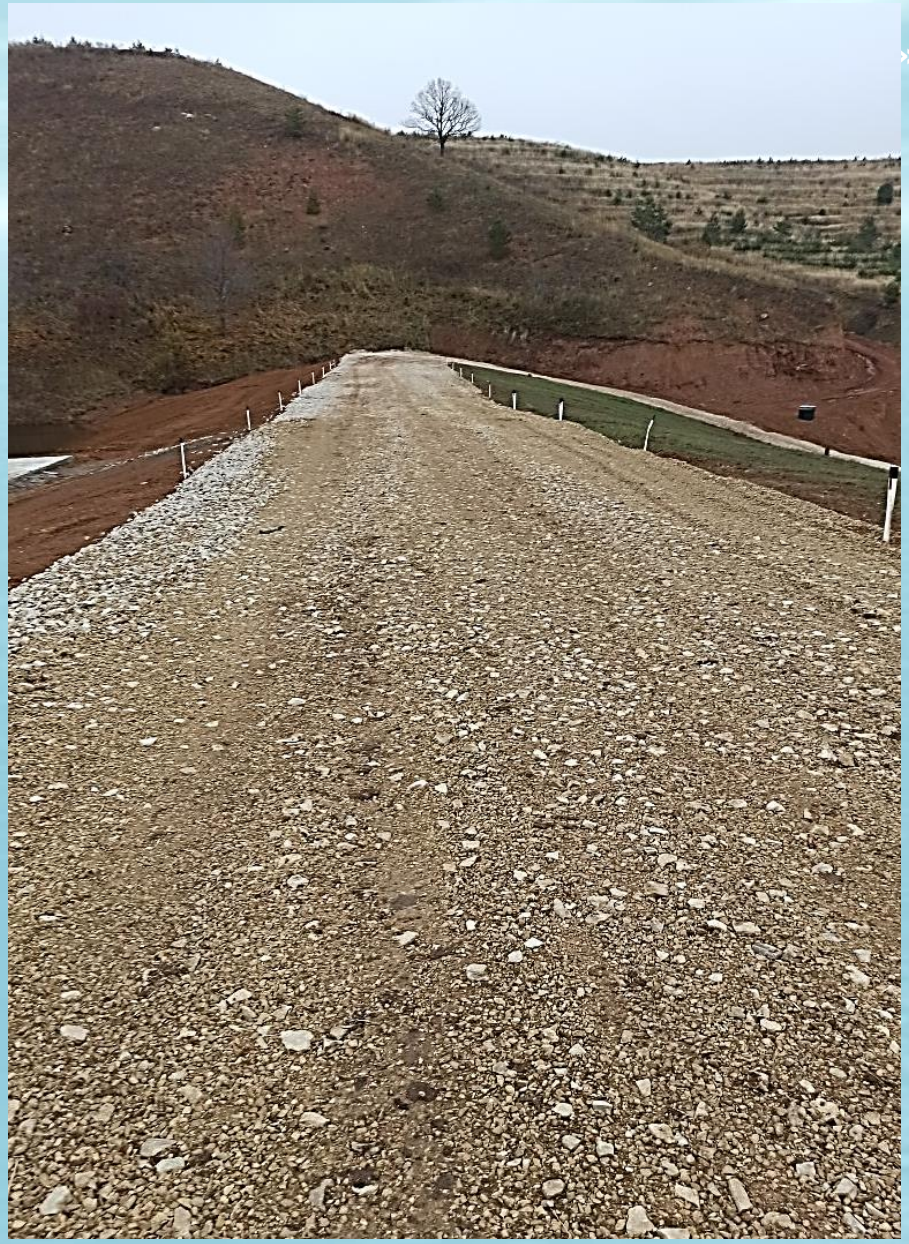
Reconstruction of Kukmorskiy irrigation system, Kukmorskiy district, Republic of Tatarstan

Reconstruction of the irrigation system Narmonsky, Laishevsky district, Republic of Tatarstan

Reconstruction of Alkeevsky irrigation system, Alkeevsky district, Republic of Tatarstan

Reconstruction of Baltasinka irrigation system, Baltasinsky district, Republic of Tatarstan

Reconstruction of Mamadysh irrigation system, Mamadysh district, Republic of Tatarstan



Reconstruction of the hydraulic structure near Bagishevo settlement, Apastovsky district, Republic of Tatarstan

Flood control measures at the hydraulic structure near Zelenaya Roshcha settlement, Bugulma district, Republic of Tatarstan

Flood control measures at the hydraulic structure near Karaduli settlement, Laishevsky district, Republic of Tatarstan

Flood control measures at the hydraulic structure near Entugany settlement, Buinsky district, Republic of Tatarstan

Flood control measures at the hydraulic structure near Chershely settlement, Tukaevsky district, Republic of Tatarstan

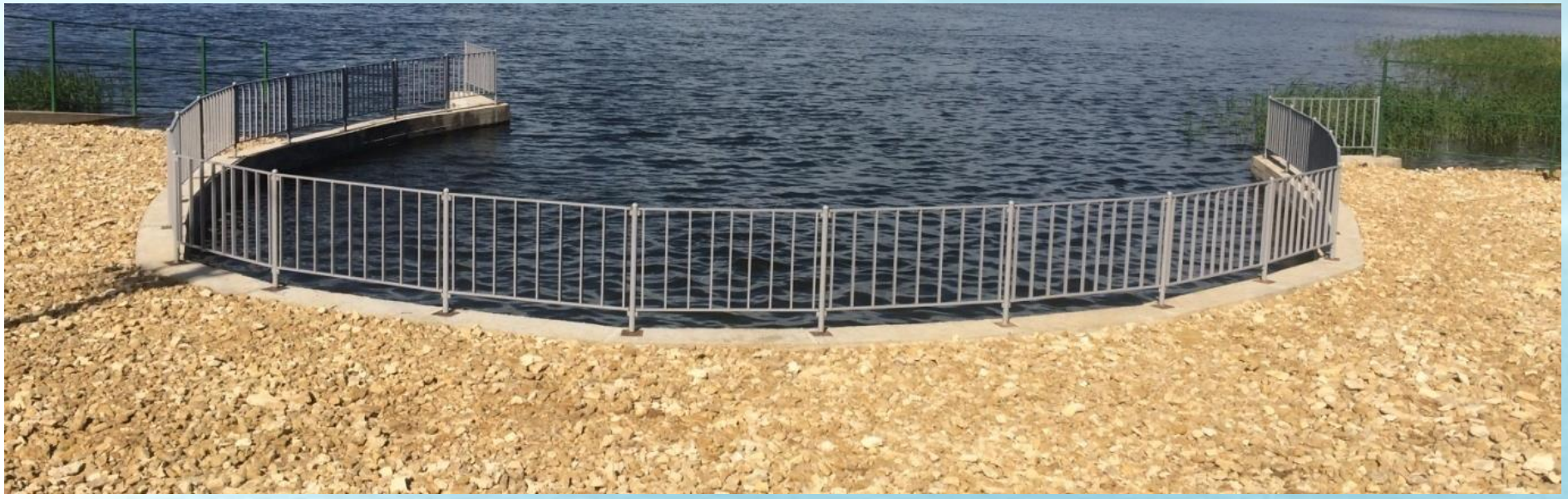
Flood control measures at the hydraulic structure near the settlement of Srednye Tigany, Alekseevsky District, Republic of Tatarstan

Flood control measures at the hydraulic structure near Nizhnyaya Sosna settlement, Baltasinsky district, Republic of Tatarstan

Flood control measures at the hydraulic structure near Novoye Almetyevo settlement, Nurlatsky district, Republic of Tatarstan

Flood control measures at the hydraulic structure near Verkhny Takermen settlement, Menzelinsky district, Republic of Tatarstan

Flood control measures of the pumping station "Narmonsky" near the village of Panovo, Laishevsky district of the Republic of Tatarstan



Flood control measures at the hydraulic structure near Novoye Drozhzhanoye settlement, Drozhzhanovsky district, Republic of Tatarstan

Flood control measures at the hydraulic structure near Uryum settlement, Tetyushsky district, Republic of Tatarstan

Flood control measures at the hydraulic structure near Tuembash settlement, Kukmorsky district of the Republic of Tatarstan

Flood control measures at the hydraulic structure near Tyuryush settlement, Muslyumovsky district of the Republic of Tatarstan

МИНИСТЕРСТВО
СКОГО ХОЗЯЙСТВА
РОССИЙСКОЙ ФЕДЕРАЦИИ

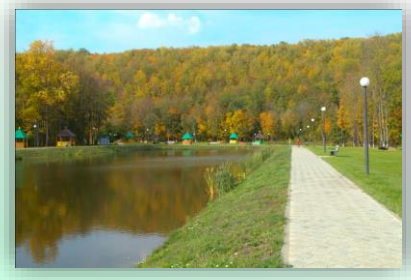
Flood control measures at the hydraulic structure near Staroe Isakovo settlement, Bugulma district, Republic of Tatarstan

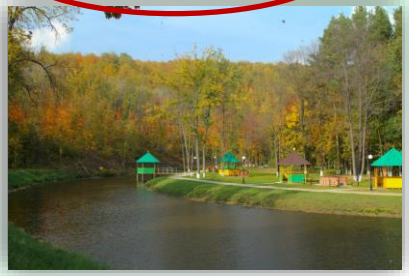
Improvement work water protection zones

Republican programs for the development of the water management complex in 2016

1. RCP for the improvement of parks and squares
Amount of financing 1 billion rubles

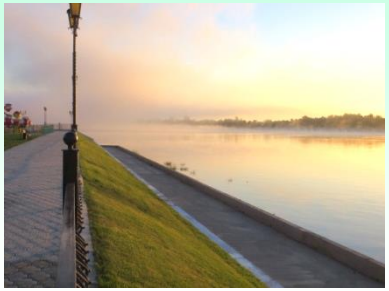
2. RCP for the improvement of water protection zones.
Amount of financing 1 billion rubles





In 2016, in Tatarstan, under the Parks and Squares program, it is planned to equip 52 facilities in 45 municipalities, and under the program for the improvement of water protection zones - 21 facilities in 19 municipalities.

Facilities implemented under the water protection zones improvement program



Improvement work water protection zones

Aznakaevsky district

Объект: набережная р. Черная, г. Азнакаево
сметная стоимость: 20,40 млн. ₽

Aktanyshsky district

Объект: городской пруд в сквере, с. Актаныш
сметная стоимость: 30,54 млн. ₽

Alekseevsky district

Объект: водоем, ул. 8 Марта, пгт. Алексеевское
сметная стоимость: 10,00 млн. ₽

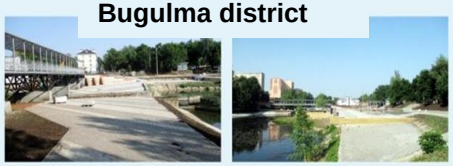
Almetyevsky district

Объект: городское озеро, ул.Шевченко, г.Альметьевск
сметная стоимость: 163,69 млн. ₽

Arsky district

Объект: береговая линия р.Казанки, г.Арск
сметная стоимость: 37,75 млн. ₽

Bugulma district

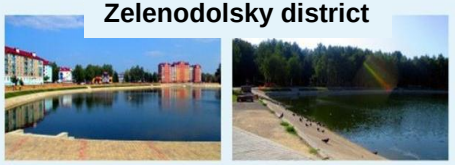


Объект: центральный водоем, ул. Гашека, г. Бугульма
сметная стоимость: 48,42 млн. ₽

Zainsky district

Объект: берег. л. р.Кармалка в парке им. Р.Ш.Фардиева,
г. Заинск, сметная стоимость: 48,42 млн. ₽

Zelenodolsky district



Объект: городское озеро в парке «Авангард»
г. Зеленодольск, сметная стоимость: 57,75 млн. ₽

Kukmor district

Объект: набережная р. Нурминка, г. Кукмор
сметная стоимость: 20,40 млн. ₽

Leninogorsk district

Объект: Озеро Нижнее, ул. Набережная, г. Лениногорск
сметная стоимость: 47,75 млн. ₽

Mamadysh district

Объект: набережная р. Ошма у сквера Яшьлек,
г. Мамадыш, сметная стоимость: 27,40 млн. ₽

Muslyumovsky district

Объект: береговая линия р. Ик, с. Муслюмово
сметная стоимость: 30,40 млн. ₽

Rybno-Slobodsky district

Объект: набережная р. Кама, пгт. Рыбная Слобода
сметная стоимость: 27,82 млн. ₽

Sabinsky district

Объект: береговая линия р. Сабинка, пгт. Богатые Сабы
сметная стоимость: 20,40 млн. ₽

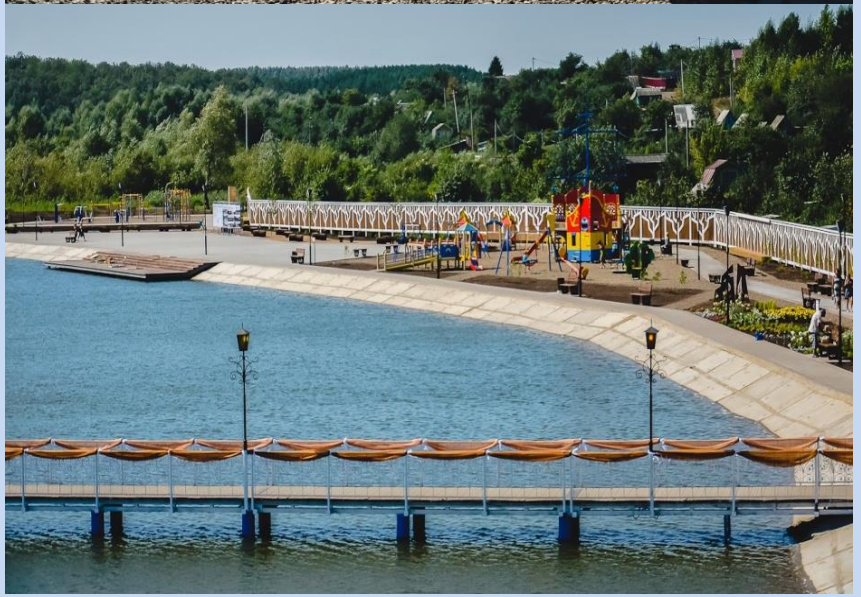
Sarmanovsky district

Объект: береговая линия р. Татарская Илек
сметная стоимость: 18,50 млн. ₽

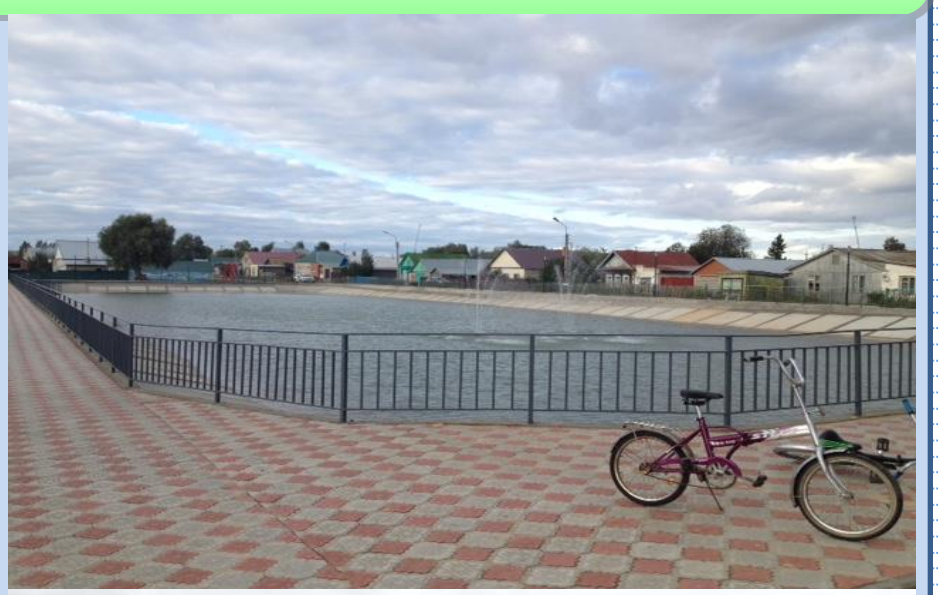
Tyulyachinsky district

Объект: береговая линия р. Тюлячка, с. Тюлячи
сметная стоимость: 27,77 млн. ₽

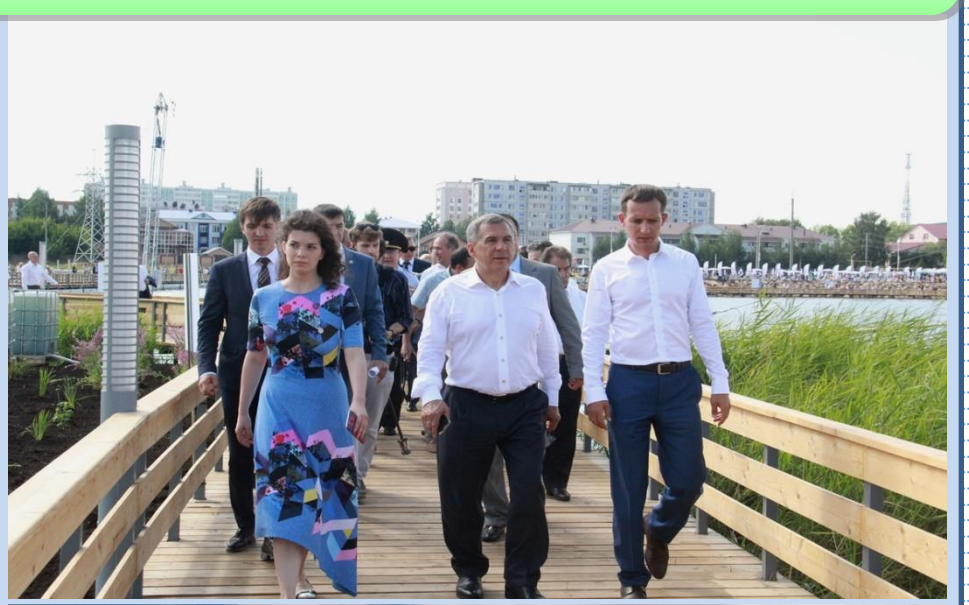
City pond in the park, s. Aktanysh estimated cost: 30.54 million rubles.



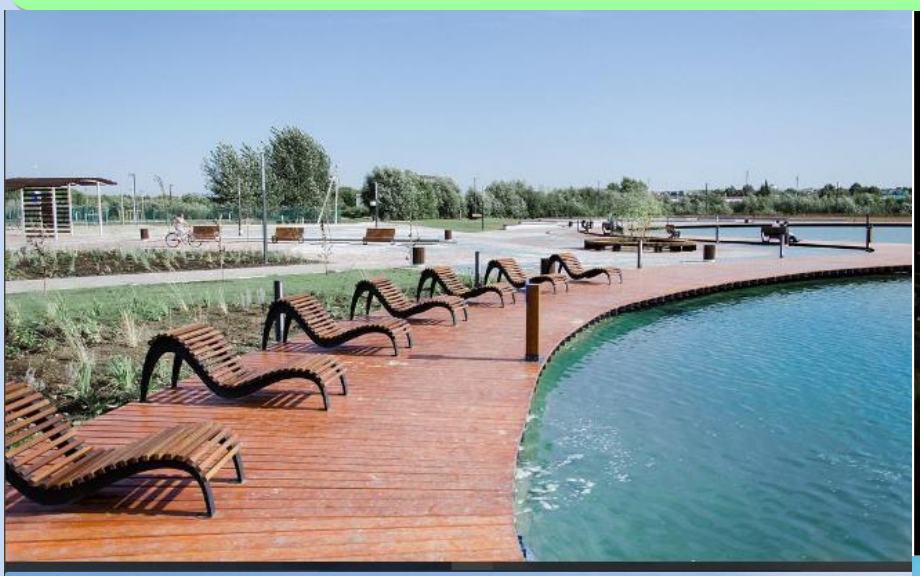
Reservoir, st. March 8, town. Alekseevskoe estimated cost: 10 million rubles.

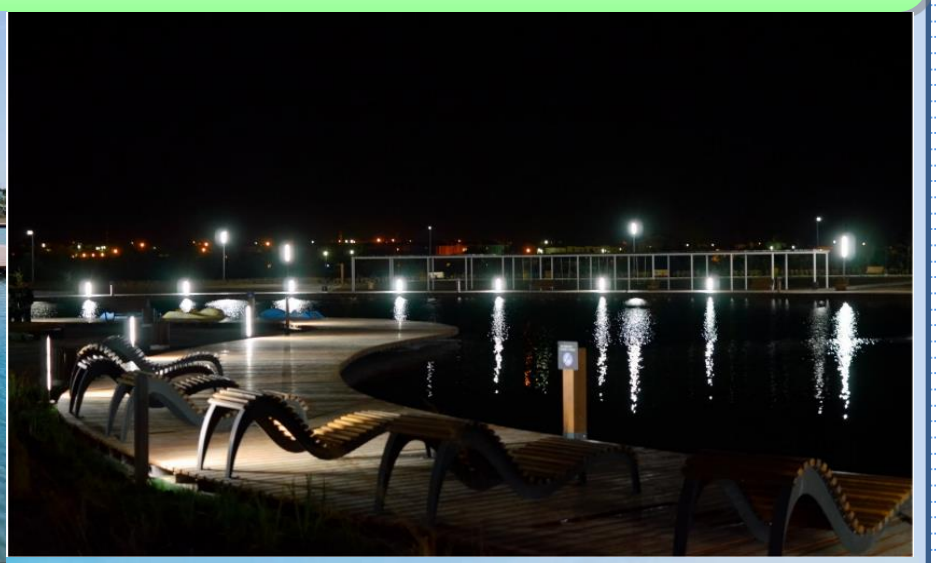


City lake, st. Shevchenko, Almetyevsk estimated cost: 163.69 million rubles.



Coastline of the river. Kazanka, Arsk estimated cost: 37.75 million rubles.





Shore. L. R. Karmalka in the park named after R.Sh. Fardiev, Zainsk, estimated cost: 48.42 million rubles.

City lake in the Avangard park in Zelenodolsk, estimated cost: 57.75 million rubles.

Embankment of the river. Nurminka, Kukmor
estimated cost: 20.40 million rubles.

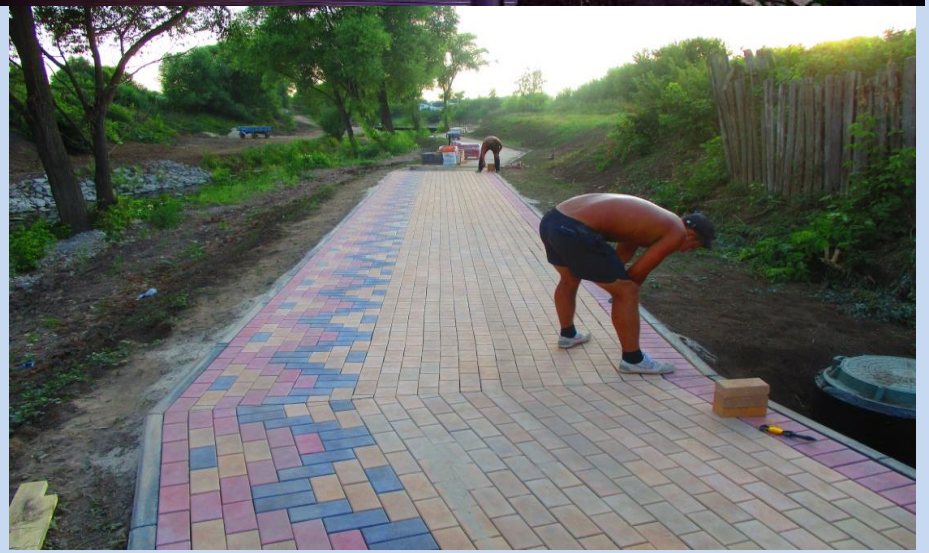
Lake Lower, ul. Embankment, Leninogorsk
estimated cost: 47.75 million rubles.

Embankment of the river. Oshma near the Yashlek square, Mamadysh, estimated cost: 27.40 million rubles.

Coastline of the river. Ik, s. Muslyumovo
estimated cost: 30.40 million rubles.

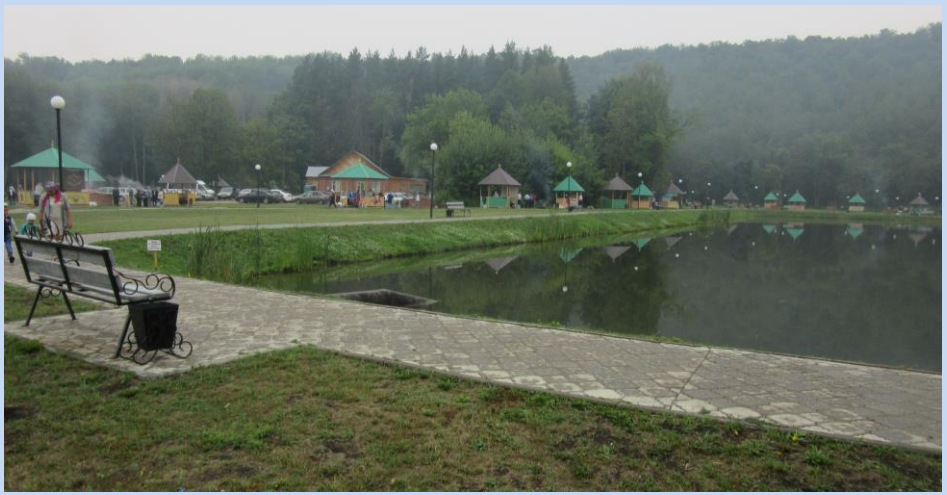
Embankment of the river. Kama, town. Rybnaya Sloboda
estimated cost: 27.82 million rubles.

The coastline of the Tyulyachka river, s. Tyulyachi
estimated cost: 27.77 million rubles.



Work on improvement of water protection zones

Improvement of the territory of the Bilyar State Historical and Archaeological Museum of the Reserve



Work on improvement of water protection zones

Work on improvement of water protection zones Embankment of Mamadysh.

Work on ecology and water management complex

a) Construction and overhaul of hydraulic structures (43 HS were rehabilitated);

b) Clearing, straightening of river channels, river bank stabilization, cleaning and improvement of water bodies;

c) Improvement of springs (in Atninsky, Aksubaevsky, Aznakaevsky, Baltasinsky, Bugulma, Sabinsky, Sarmanovsky, Muslyumovsky, Novoshishminsky, Novoshishminsky and Tyulyachinsky districts);

d) Recultivation of land and solid waste dumps (in Almetyevsky, Zelenodolsky, Kaibitsky, Muslyumovsky districts);

e) Improvement of parks, public gardens and construction of sports grounds (in Alekseevsky, Apastovsky, Sabinsky, Sarmanovsky districts);

“Only by maximizing the use of reclamation will we be able to have a competitive agriculture”

President of the Republic of Tatarstan R.N. Minnikhanov



Reclamation - a guarantee of efficiency and high yields in any weather!