

NATIONAL WATER STRATEGY OF THE REPUBLIC OF TAJIKISTAN FOR THE PERIOD UP TO 2040

1. GENERAL PROVISIONS

1. The National Water Strategy of the Republic of Tajikistan for the Period up to 2040 (hereinafter referred to as the National Water Strategy) has been formulated in alignment with the goals of the National Development Strategy of the Republic of Tajikistan for the Period up to 2030.

2. The National Water Strategy establishes the fundamental principles of state policy regarding the use and protection of water resources, outlining strategic guidelines for the long-term, comprehensive, and integrated management of water resources, delineating the primary areas of activity for the use and protection of water resources, considering the interests of all water users. Additionally, it considers the prospects for the economic development of Tajikistan and addresses protection measures against the negative impact of water in the face of a changing climate.

3. The National Water Strategy is designed to align with the objectives of the National Development Strategy of the Republic of Tajikistan for the period up to 2030, specifically targeting the achievement of Sustainable Development Goals. Furthermore, it seeks to fulfill the international commitments of the Republic of Tajikistan related to climate change adaptation within the water sector.

4. The National Water Strategy outlines plans for adopting and implementing decisions on various fronts, including the enhancement of existing water legislation, restructuring the institutional framework for water resources management, planning, and safeguarding of water resources in river basins. It also addresses water conservation, prevention of adverse water-related impacts, augmentation of investment activities and financing in the water sector, improvement of information support for the water sector, restoration and construction of water and sanitary infrastructure, elevation of safety standards for hydraulic structures, and the establishment of conditions conducive to effective collaboration among water diplomacy actors.

2. THE CURRENT STATE-OF-ART OF THE WATER SECTOR AND ITS MAIN PROBLEMS

§1. Water Resources

5. The average long-term runoff of rivers forming in Tajikistan is 64 km³ / year, with 62.9 km³ in the Amu Darya basin and 1.1 km³ in the Syr Darya basin.

6. Tajikistan boasts 14,509 glaciers covering a total area of 11,146 km², which constitutes approximately 8% of the country's territory. The cumulative ice reserve within these glaciers is estimated to be around 845 km³.

7. The water resources within 1,300 natural lakes in Tajikistan amount to 46.3 km³, with 20 km³ classified as fresh water. Additionally, the country features 11 reservoirs, collectively holding a total volume of 15.3 km³, and a usable volume (live storage) of approximately 7.63 km³.

8. As of 2023, the specific indicators of emerging surface water per capita in Tajikistan stand at approximately 6400 m³/person/year, a figure significantly higher than the recognized sufficiency threshold of 1700 m³/person/year. However, it is crucial to highlight that Tajikistan faces a limiting factor as regional agreements allocate only about 1400 m³/person/year to the country, hindering the potential for sufficient water utilization.

9. Tajikistan possesses potential groundwater reserves of 18.7 km³/year, with operational reserves estimated at 2.8 km³/year.

10. With over 200 registered sources of mineral waters across the country, Tajikistan boasts 86 natural outcrops of carbon dioxide and nitrogen waters, primarily found in areas with Paleozoic deposits and igneous rock formations. Approximately 70 of these outcrops are located in the Gorno-Badakhshan Autonomous Region. Notably, the Gissar Range hosts the most high-yielding springs, namely Obigarm and Khodzha-Obigarm. Overall, around 100 sources and deposits of geothermal waters have been explored.

§2. Water Resources and Their Utilization

11. The water resources in Tajikistan serve various purposes, primarily for drinking water supply, agriculture, hydropower, industry, fisheries, recreation, and environmental preservation. Among these, the priority type of water use is for drinking water supply.

12. Tajikistan utilizes 20% of the water resources formed within its borders. In the late 80s and early 90s, the total volume of water consumption in Tajikistan from surface sources and groundwater exceeded 14.0 billion m³/year. Presently, the annual utilization stands at about 13 billion m³, translating to a per capita

consumption of 1300 m³/person/year. The volume of return water is approximately 3.5-4.0 km³/year, with 3.0 km³ being drainage water from irrigated lands, and 0.5 km³ consisting of domestic and industrial wastewater.

13. In accordance with the Schemes for the integrated use and protection of water resources in the Amu Darya and Syr Darya river basins, as recognized by regional agreements, Tajikistan is subjected to a water withdrawal limit of 14.3 billion m³/year.

14. The primary water consumer in Tajikistan is agriculture, consuming roughly 85% of the water resources withdrawn from natural sources. Drinking water supply accounts for 5%, industry for 5%, and fisheries for 0.8-1.5% of the total water consumption. Notably, hydropower, recreation, and environmental uses do not lead to irreversible water resources consumption.

15. The Government of Tajikistan is actively involved in hydropower development, with ongoing construction at the Rogun Hydroelectric Power Plant (HPP) and the modernization of energy facilities; the ambitious goal is to double power generation by the year 2050. Currently, the total capacity of hydropower plants in the country stands at 5,403 MW, contributing to an average annual electricity production of 20 billion kWh.

16. The integrated reservoirs in the country play a multifaceted role, generating electricity and providing essential services such as drinking water, irrigation, and technical water; they contribute to reducing flood risks, mitigating the negative impacts of climate change, and fostering the development of recreational resources.

§3. Water Resources Utilization Efficiency

17. In Tajikistan, the mean water withdrawal per hectare of irrigated land ranges from 8.0 to 13.0 thousand cubic meters, with irrigation water losses in the systems reaching 40-50%.

18. The implementation of seepage-control measures and the introduction of new water-saving irrigation technologies in the country are still limited. The land area irrigated using water-saving technologies constitutes only approximately 2,500 hectares, accounting for about 0.35% of the total irrigated area. The primary responsibility for the increased adoption of water-saving technologies lies with the farmers themselves.

19. Inefficient technological and technical practices in water usage for irrigated agriculture contribute to rising groundwater levels, salinization, waterlogging, soil erosion, and desertification. Consequently, more than 60 thousand hectares of land remain in an unsatisfactory reclamation state.

20. The efficiency of water use in drinking water supply systems is alarmingly low, with losses reaching up to 60%. In the areas serviced by drinking water supply and wastewater utilities, the average water intake for one person stands at approximately 250 liters per capita a day (lcd). However, consumers typically receive only around half of this calculated volume. The current imbalance between water intake and residential consumption can be attributed to unregulated technical and commercial losses, as well as the lack of adequate metering systems.

21. Water reuse plays a crucial role in enhancing water use efficiency. Nevertheless, a mere 1% of the country's drainage and wastewater is currently repurposed for various applications.

22. In 2023, considering the annual volume of water consumption and the country's gross domestic product, water productivity stands for 11 TJS per 1 m³ of water consumed (about 1US\$ /m³). When broken down by sectors, this indicator stands at 2.5-3.1 TJS/m³ in agriculture, 92.0 TJS/m³ in industry, and 0.23 TJS/m³ in hydropower. Water productivity in our country is relatively low, especially when compared to the United States of America, where it averages about 800 TJS/m³. In Uzbekistan, this figure amounts to 15.4 TJS/m³.

23. An essential gauge of water use's economic productivity lies in the efficiency of various agricultural crops. Specifically, this metric stands at 0.74 TJS/m³ for cotton and 0.64 TJS/m³ for grain. Through an examination of historical data sourced from the UN Food and Agriculture Organization and the World Bank, it is observed that water productivity in both agriculture and industry has nearly doubled.

24. The low productivity or irrational use of water resources can be attributed to various factors, including:

- Use of outdated water-intensive production technologies;
- High level of water losses during transportation;
- Insufficiently equipped water intake facilities and consumers without metering systems;
- Obsolescence and physical deterioration of some water infrastructure facilities;
- Non-compliance by farmers with the established crop irrigation regimes;
- The absence of efficient economic mechanisms hampers efforts to incentivize water users and businesses in actively adopting progressive water-saving technologies, cultivating high-yielding crops, implementing recycling and water reuse systems, and reducing water losses.

§4. Water Scarcity

25. Water resource deficits in certain regions of the country primarily occur during low-water periods and can be attributed to the following factors:

- Uneven distribution of water resources across the territory of Tajikistan;
- The limited regulatory capacity of existing reservoirs and a shortage of reservoirs pose challenges in meeting the water demands of the population, agriculture, industry, and fisheries;
- Water losses stemming from deteriorated infrastructure contribute to a significant share of non-commercial losses;
- Changes in precipitation and temperature patterns caused by climate change, leading to an increased likelihood of reduced water runoff, decreased groundwater recharge, and alterations in irrigation regimes;
- The insufficient integration of water resources use at individual water management sites.

26. To eliminate or significantly mitigate water resource deficits for drinking water supply and agriculture in Sughd and Khatlon provinces, a viable strategy involves reducing water losses in water supply and irrigation systems, transitioning to water-saving irrigation technologies, and constructing additional reservoirs.

27. Addressing the existing water problems in the lower reaches of the Isfara, Khojabakirgan, Isfana, Daganasay, Kattasay, Kizilsu and Yakhsu rivers necessitates a comprehensive approach. This involves systematic reorganization and modernization of the water management complex, optimizing the integrated use of water resources for population water supply, agricultural and industrial production, water conservation, and the creation of small reservoirs for integrated use.

§5. Hydrometeorological Variability and Climate Change

28. Climate change is significantly affecting the availability of water resources in Tajikistan. Over the past decade, there has been an average temperature increase of 0.7-1.9°C in the country. This rise in temperature is causing the melting of glaciers, with anticipated consequences of decreased river water availability in the medium and long term. In light of these changes, it is crucial to incorporate the melting of glaciers, driven by climate change, into water planning processes, particularly at the river basin level.

29. From 1940 to 2020 in Tajikistan, there has been a consistent increase in air temperature, ranging from 0.1°C to 0.2°C for each decade within this period. The frequency of days with air temperatures reaching 40°C and above has risen. Particularly notable temperature increases were recorded in the Dangara district (4.2°C) and Bokhtar (2.3°C), with moderate increases of 0.3-0.5°C in mountainous

regions and 0.2-0.4°C in highlands. Latest data from 2001-2010 reveals that the average air temperature for each decade was 0.8°C higher compared to regions situated at 1000-2500 meters above sea level. Concurrently, there has been an increase in the number of rainy days, while the number of snow days has decreased.

30. In the long term, climate models anticipate shifts in precipitation patterns and an escalation in the frequency and potential magnitude of hydrometeorological events. Expert assessments of anticipated climatic changes predict an increase in evapotranspiration in Tajikistan, along with heightened vegetation evapotranspiration. While climate model projections for the strategy period do not indicate a significant alteration in water resources overall, they do foresee an increase in runoff during low-water periods and a decrease during flood periods. This, undoubtedly, may impact water withdrawals for irrigation, specifically affecting the timing, duration, and regimen of crop irrigation. The escalating temperatures leading to reduced surface and groundwater quality may also adversely affect water suitability for domestic and drinking purposes. The detrimental effects of climate change on water availability are already discernible in irrigation, drinking water supply, and industrial water supply.

31. According to climate change vulnerability assessment indicators, Tajikistan holds the top position among 28 countries in Central and Eastern Europe, the Caucasus, and Central Asia. The mountainous regions of central Tajikistan emerge as the most vulnerable areas. Densely populated mountainous regions in the south of the country, particularly in Khatlon province, as well as jamoats situated in the foothills on the northern side of the Zarafshan and Turkestan ranges in Sughd province, rank second in terms of vulnerability. The adverse effects are most keenly felt in rainfed agriculture and pastures.

32. The main consequences of global climate change are already visibly evident in Tajikistan through the following manifestations:

- floods and mudslides pose significant threats and cause extensive damage to infrastructure and civil structures in settlements in Tajikistan;
- elevated soil erosion in mountain valleys is intensifying, resulting in mudflows and rendering these areas uninhabitable in the medium term;
- wells are experiencing drying up due to a decline in the water table caused by insufficient groundwater recharge;
- a deficit of water for irrigation arises from reduced water levels in rivers during the growing season;
- crop failures are occurring as a result of drought conditions and insufficient irrigation water;
- there is a rise in illnesses and fatalities among the population linked to abnormal temperature increases, particularly notable in urban areas.

§6. Detrimental Effects of Water

33. The detrimental effects of water encompass a range of hydrological phenomena and processes that adversely affect the natural environment, population, social and economic facilities, and infrastructure. These impacts arise from both natural phenomena and human-made factors, constituting the majority of all natural disasters in the country. Over 70% of reported cases and more than 80% of the resulting damage are attributed to these water-induced disasters. For instance, in 1998, mudflows obliterated over 7,000 homes and claimed the lives of more than 130 individuals; in 2023, the death toll from mudflows was 21 people.

34. Tajikistan ranks among the top ten countries globally in terms of the annual toll from floods and mudflows, accounting for approximately 1.4% of its GDP. In 2020 alone, the country recorded 213 natural disasters, with 48% of them being mudflows. The total damage from these disasters in 2020 reached 58.91 million TJS. This resulted in the damage to 141 residential buildings, with 41 completely destroyed and 100 partially damaged. Other affected structures included 22 education establishments, 89 km of local roads, 14 bridges, 15 km of power lines, and 18,817 hectares of agricultural land. In dollar terms, the economic losses were \$4.4 million in 2017, \$3.6 million in 2018, \$3.2 million in 2019, and \$5.2 million in 2020. These substantial losses pose serious and detrimental implications for the country's economic development.

35. The mountain regions and valleys of Tajikistan face numerous vulnerabilities and threats, including intensive precipitation leading to mudflows and floods, avalanches, land erosion, drought, desertification, potential outbursts of high-altitude lakes (such as Lake Sarez), glacier movements that may block mountain rivers, and more. Many facilities and villages are situated in flood-prone areas. Deforestation in certain regions and construction along rivers, especially in urban areas, further elevate the potential for natural disasters.

36. In Tajikistan, there is a network of 1,386 km of bank protection structures and 710 mudflow protection structures, covering a total length of 503 km. However, over 50% of these structures have been damaged due to prolonged use and the impact of natural disasters. The remaining structures face continuous exposure to the severe impact of mudflows and floods. The annual requirement for substantial funds is necessary to rehabilitate and maintain these structures. Meeting these financial needs solely from the state budget poses a significant challenge.

37. Limited financial resources present a constraint on the construction of new infrastructure for disaster risk reduction in Tajikistan, including multi-purpose reservoirs designed for mudflow and flood protection. The favorable foothill terrain offers suitable conditions for construction of reservoirs in many locations across the country.

38. Protection from the adverse effects of water necessitates a multifaceted approach, encompassing the reduction of risks and mitigation of damages, ensuring the reliability of hydraulic structures, and regulating the economic use of territories. The pivotal element in this endeavor is the development of robust monitoring systems, incorporating forecasting and preventive measures to address hazardous hydrological phenomena effectively.

39. The monitoring of frequent failures in constructed bank protection structures highlights the importance of conducting research and development works. Designing and constructing reliable and sustainable bank protection structures necessitate a thorough understanding of the hydrological, geomorphological, and geotechnical conditions specific to the mountain rivers of Tajikistan. To achieve this, specialized hydraulic laboratories, skilled specialists, and appropriate resources are indispensable.

§7. Major Challenges Facing Water Industry

40. The provision of drinking water supply and sanitation holds paramount importance within the water sector, and its development stands as the top priority for the Government of the Republic of Tajikistan. Presently, approximately 41% of the country's population has access to drinking water supply systems operated by water utilities. While coverage of water supply services is high in large cities at 95%, peri-urban settlements show a coverage of 48%, and rural areas have a significantly lower coverage at 22%. In terms of wastewater services, coverage is relatively higher in large cities (64%) but notably lower in peri-urban settlements (10%) and rural areas (0.1%).

41. The infrastructure for drinking water supply and wastewater disposal in Tajikistan is currently in a deteriorated state. Without prompt and comprehensive measures, there is a risk of failures in both drinking water supply and wastewater disposal, including non-sanitation services, with potential negative consequences for public health—especially during abnormal temperature regimes and natural disasters. In urban areas, 32% of existing infrastructure is unusable, while in rural areas, this figure rises to about 60%. Water losses (non-revenue water) in municipal water supply networks can reach around 60%, while in medium and small towns, it is approximately 20%. The current level of investment in this sector is deemed insufficient and does not align with the pace of population growth and economic development. Tariffs for water supply and wastewater disposal services, as well as budget allocations, fall short for the modernization and development of the water supply sector, and they do not fully cover the costs associated with the operation and maintenance of existing facilities.

42. The chain of safe sanitation services, encompassing storage, disposal, transport, treatment, recycling, or reuse, exhibits variation across Tajikistan, involving both centralized and decentralized services. Limited information is available on wastewater transportation and treatment, particularly in cases of non-sewer or small sewer systems. Pit latrines and imperfect sewerage systems pose significant threats to drinking water quality, including groundwater contamination and the spread of waterborne diseases. These decentralized systems are often unregulated and inadequately monitored by local (community-based) water supply organizations. Non-compliance with sanitation regulations, coupled with the widespread unauthorized use of unprotected water sources (such as surface water and shallow standalone groundwater wells) for domestic and drinking purposes, can lead to outbreaks of communicable diseases. A systematic approach to providing a sanitation service chain is critical to ensure the safe management of drinking water and wastewater management services. Inadequate hygiene practices, especially those related to hand hygiene, inefficient pit latrines in rural areas, and inadequate solid waste management have implications for water quality and water resource management.

43. As of January 1, 2023, Tajikistan has a total land area suitable for irrigation estimated at 1.573 million hectares. However, the actual area of irrigated land in the country is more than 764 thousand hectares, of which 470.61 thousand hectares are irrigated cropland. Machine (pumping) irrigation covers 38% of the total irrigated land area in the country. The specific area of irrigated land per capita in Tajikistan, as of 2023, is approximately 0.074 hectares per person, which is notably less than in other Central Asian countries.

44. The primary challenges in the land reclamation and irrigation sector include the deterioration of irrigation and reclamation systems, inadequate financing, frequent accidents at pumping stations, a shortage of machinery and equipment, the deterioration of reclamation conditions leading to erosion of irrigated lands, resulting in the withdrawal of lands from agricultural turnover, and inefficiencies in the activities of water users' associations. In addition to the aforementioned challenges, the key factors influencing the deterioration of the situation in this strategically important sector of the country include: lack of proper water accounting, low efficiency of irrigation systems due to high water losses, low productivity of water use, lack of professional staff, tariffs that do not cover actual costs of maintenance and operation of irrigation and drainage systems (non-recovery tariffs), inefficient system of collecting payments for irrigation and drainage services, insufficient capital investments, lack of modernization of old irrigation and drainage systems.

45. Point-source and area pollution of surface and groundwater in Tajikistan, caused by agro-industry, untreated industrial and municipal (utility) wastewater,

discarded plastic, leaks from landfills, and the use of chemicals such as fertilizers, pesticides, and antibiotics, as well as cattle feces, are challenges that are common in many countries, including Tajikistan.

§8. National, regional and global-level water policy of the Republic of Tajikistan

46. Tajikistan formulates its water policy and engages in diplomatic efforts in alignment with regional and global trends. Concurrently, the water policy considers national interests and implements reforms in water resource management. These reforms are based on the principles of integrated and basin management, ensuring the consideration of the interests of all stakeholders.

47. Promoting water policy at the national level in Tajikistan is guided by several key principles: ensuring the right to safe drinking water and sanitation, guaranteeing provision of water for all water users, moving towards integrated water resources management (IWRM), inclusive and accessible water infrastructure, climate-resilient and adaptive water infrastructure, economically sustainable water resources management, and environmentally sound water resources management.

48. Promoting water policy at the national level in Tajikistan is guided by several key principles: ensuring the right and equal access of everyone to clean drinking water and sanitation, prioritizing drinking water supply, sanitation, and hygiene, adopting integrated water resources management based on river basin management, achieving economically sustainable and environmentally sound water resources management, embracing an inclusive approach to water policy.

49. Tajikistan, at the regional level, conducts water diplomacy in line with its chosen water policy, emphasizing principles such as preserving good neighborly relations, equality, and mutually beneficial cooperation. The country asserts its full right, as per the UN Charter and international law, to utilize its natural resources, including water resources, to ensure sustainable development and decent living conditions for its people. Tajikistan commits to exercising this right while considering common regional interests, guided by principles of good-neighborliness, mutual respect, and genuine consideration of shared interests. The nation pledges to engage in dialogue and cooperation to address emerging problems and, as the primary source of water resources in the Aral Sea basin, affirms its commitment to not creating obstacles for water supply in the region.

50. Tajikistan's pursuit of large regional projects, including the construction of Rogun Hydroelectric Power Plant (HPP) and CASA-1000, aligns with the principles mentioned above. These projects, coupled with Tajikistan's significant potential in constructing reservoirs and hydropower plants, play a crucial role in

addressing water and energy challenges in the region. Additionally, they contribute to advancing climate sustainability objectives in Central Asia.

51. Tajikistan, in line with its global water policy, actively engages on the international stage to address water-related challenges. The country has been a proactive participant in global initiatives such as the "International Year of Freshwater, 2003," "International Decade of Action 'Water for Life,' 2005-2015," "International Year of Water Cooperation, 2013," and "International Decade of Action 'Water for Sustainable Development,' 2018-2028." Tajikistan has also declared "2025 - International Year of Glacier Conservation." In this context, Tajikistan initiates and implements new proposals within regional and international organizations. The primary objective of these initiatives is to emphasize the necessity of collaborative efforts in addressing water problems, aiming to preserve life and promote sustainable development globally. These initiatives are designed to align both with Tajikistan's national interests and the shared aspirations of the international community.

52. Tajikistan remains committed to advocating for water-related issues both regionally and globally. This commitment reflects the nation's dedication to ensuring water security for future generations.

§9. State regulation and control in the field of water resources use and protection

53. The Water Code of the Republic of Tajikistan dated April 2, 2020, the Law of the Republic of Tajikistan "On Drinking Water Supply and Wastewater," dated July 19, 2019, the Law of the Republic of Tajikistan "On Water Users Association," dated January 2, 2020, and the Law of the Republic of Tajikistan "On Environmental Protection," dated June 8, 2022, have introduced significant changes to state regulation in the field of water resources use and protection.

54. During the recent phase of water sector reform implementation, a robust regulatory legal framework has been established to effectively enforce the provisions outlined in the Water Code of the Republic of Tajikistan and the Law of the Republic of Tajikistan "On Drinking Water Supply and Wastewater." This comprehensive legal framework is complemented by the establishment of a system of state authorities dedicated to regulating and overseeing the utilization and protection of water resources.

55. The state bodies responsible for regulating the use and protection of water resources, as outlined in the Water Code of the Republic of Tajikistan, include the Government of the Republic of Tajikistan, Ministry of Energy and Water Resources, the Ministry of Health and Social Protection of the Population, the Committee on Environmental Protection, the Agency for Land Reclamation and Irrigation, and the

Main Department of Geology, Service of the State Supervision of Safe Work in Industry and Mining under the Government of the Republic of Tajikistan, as well as local executive bodies of state power and self-government bodies of settlements and villages, as well as other concerned state bodies, In collaboration with these state entities, various organizations, such as water utilities and wastewater disposal organizations, water users' associations, and other public organizations, actively engage in service provision activities related to water.

56. The state's planning of water resources use and protection in river basins involves the development, approval, and implementation of basin plans for water resources management.

57. Basin water resources management plans are crafted for each river basin, encompassing a comprehensive compilation of information in textual, tabular, and graphical formats. These plans detail the condition and utilization of water bodies, derived from observations, studies, surveys, and pre-project and design efforts related to the planning and execution of water management and protection measures. Additionally, they include strategies to mitigate the risks associated with the detrimental impact of water.

58. Basin-level water resource management plans for basins are developed for a minimum period of 5 years, incorporating quantitative and qualitative indicators of water resource status and utilization parameters for river basins, sub-basins, aggregated subareas, and territories within the provinces, cities, and districts of Tajikistan.

59. As a component of the water sector reform within the Ministry of Energy and Water Resources of the Republic of Tajikistan, the National Water Information System was established. Its purpose is to collect, store, process, and disseminate information crucial for informing the development of state policies, forecasts, concepts, strategies, and development programs related to water resources. This system encompasses basin plans, projects, and activities associated with the management, utilization, and protection of water resources, facilitating strategic and operational decision-making, as well as enhancing public awareness in the realm of water resources.

60. The absence of established procedures for data exchange, particularly among executive bodies of state power, inadequate technical infrastructure, insufficient coordination in data processing and management across different domains, and limited management approaches hinder the effective maintenance of the National Water Information System. Consequently, the efficiency of utilizing data collected by government agencies through state budget funds remains significantly low.

61. Recent legislation has established the groundwork for implementing an effective state policy concerning the use and protection of water resources.

Nevertheless, the institutional structure, management system, and legal framework necessitate ongoing development and enhancement to optimize their effectiveness.

62. The priority direction for enhancing governance involves the:

- development and adoption of the Law of the Republic of Tajikistan "On Land Reclamation and Irrigation";

- development and adoption of by-laws and regulatory documents emanating from water legislation;

- separation of economic and operation functions in the field of water supply and sanitation. Additionally, it includes the identification of an authorized state body for drinking water supply and sanitation at the level of the central executive body of state power;

- strengthening the capacity of executive bodies of state power responsible for regulation and control in the field of use and protection of water resources;

- development of basin plans, considering all aspects of water resource use and protection. This includes addressing issues related to climate change and disaster risk reduction;

- development of standards for permissible impact on water bodies, considering regional characteristics and the individual attributes of water bodies;

- maintaining state monitoring of water bodies;

- improving norms and standards for drinking water supply and sanitation. This encompasses wastewater treatment and reuse, as well as targeted use and conservation of water resources and promoting the development of drinking water production, including the production of bottled mineral water;

- development of enhanced mechanisms and procedures to strengthen and maintain institutional capacity in the water supply and wastewater sector, including sanitation and hygiene;

- development of enhanced economic, financial, and management methods, along with the improvement and strengthening of institutional capacity in the field of land reclamation and irrigation;

- digitalization in the water sector, incorporating cutting-edge technologies. This includes utilizing the Internet of Things and artificial intelligence to enhance operational efficiency and maintenance, preserve infrastructure functionality, manage water quality, and reinforce the tracking of water intake and consumption. This aims to improve the effectiveness of water resources management, with consideration for security measures to guard against cyber threats and vulnerabilities;

- enhance the maintenance of a Unified National Water Information System.

63. Another important task is achieving close cooperation between river basin councils and the local authorities, ensuring their active participation in the

implementation of state policy in the field of water relations.

64. Increasing the effectiveness and coordination of activities among state bodies to achieve goals and fulfill tasks in the field of water relations requires further development. To optimize budget expenditures, it is essential to develop long-term measures focused on the integrated and rational use of water resources, ensuring high environmental standards of water bodies, preventing the negative impact of water, and enhancing the safety of hydraulic structures.

§10. Investment and financing in the water sector

65. In addition to government funding, substantial investments in the water sector come from loans and grants provided by development partners. On a global scale, it is estimated that achieving Sustainable Development Goal 6 by 2030 requires an annual investment of US\$112 billion. In the context of Tajikistan, specifically for the development of the drinking water supply and sanitation sector, an annual investment of about 220 million US dollars is deemed necessary; this amount considerably surpasses the current overall investment level in the water sector.

66. To ensure the sustainable and efficient operation of land reclamation and irrigation systems, substantial financing is essential. Annual expenditures of at least \$75 million are required to support their effective functioning. These funds are necessary for regular maintenance, the smooth operation of pumping stations, canal cleaning, water flow regulation, and other measures aimed at maintaining the system's working condition. Additionally, approximately \$50 million per year is needed for long-term infrastructure improvements and modernization. These funds are intended for major repairs, replacement of outdated equipment, adoption of new technologies to enhance water use efficiency, and the expansion of the system to cover new lands.

67. Over the past decades, water infrastructure has deteriorated both physically and operationally due to inadequate funding and irregular maintenance. Private investment in the water sector, excluding hydropower and a few small projects in land reclamation, irrigation, and drinking water supply, is virtually non-existent. Additionally, the contribution of water sector institutions to investments is minimal.

68. The presence of debts stands out as the primary factor contributing to the unsatisfactory and unstable financial situation of water sector institutions such as the Land Reclamation and Irrigation Agency, Committee for Housing and Utilities and other water utilities managed by municipal bodies. These organizations primarily address their financial challenges through user fees. Existing tariffs fall short of covering the costs associated with the maintenance and operation of infrastructure,

and state subsidies prove inadequate to cover the expenses incurred in providing services to state bodies. This naturally has a detrimental impact on service quality. There is a pressing need to enhance the payment system and the framework for both direct and indirect state subsidies to the water sector. This improvement is essential to create incentives for attracting commercial financing from the private sector.

§11. R&D and staffing support in the water sector

69. Scientific and technical advancements aimed at fostering the development of the water sector encompass a broad spectrum of issues, including strategic and operational management, planning of water management activities, design of structures and technologies, and modeling and forecasting the state of water resource.

70. The principal scientific objectives in establishing environmentally and economically sound management in the water sector are focused on:

- Enhancing existing and establishing new organizational management mechanisms within the water sector.

- Improving economic methods and mechanisms for the rational use of water.

- Enhancing the validity of decision-making in the integrated management of water systems by incorporating contemporary knowledge about technological processes and their environmental consequences.

- Developing the scientific foundation for the utilization of modern technologies and technical tools in monitoring water bodies.

71. Addressing the comprehensive challenge of ensuring control and management of water quality in water bodies demands a scientific approach, leveraging modern laboratory facilities, and harnessing information technology. It involves developing a scientific foundation for a standardization system that, based on new knowledge, enables the attainment of required water quality standards and the corresponding level of treatment and wastewater reuse.

72. Achieving solutions to scientific problems necessitates the capacity-building of research organizations and the establishment of conditions conducive to attracting young scientific personnel. This approach aims to support and foster the development of existing schools of sciences.

73. The shortage of young engineers, economists, managers, and other specialists with higher education in the water sector is approximately 300 people. A similar staffing situation has emerged in organizations within related sectors that support the country's water sector.

74. The primary tasks of staffing the water sector in Tajikistan include:

- Formation of modern mechanisms and tools for managing staffing in the water sector is crucial to meet the demand for relevant specialists;
- Modernization of the material and technical base of educational institutions and the creation of motivational incentives to attract young and talented teachers;
- formation of a system and technologies for increasing the professional competence of existing personnel to ensure innovative development of the water sector.

§12. State monitoring system of water bodies

75. The paramount role in the field of water resource use and protection involves the timely identification and forecasting of negative processes affecting the quantity and quality of water in water bodies. This includes their condition, the development, and implementation of measures to prevent adverse consequences, and the assessment of the effectiveness of protective measures. This critical function is assigned to state monitoring of water bodies—a system of observations, assessment, and forecasting of changes in the state of water bodies.

76. The state of the public observation network is crucial for the monitoring of water bodies. The current hydrological observation network managed by the Hydrometeorology Agency of the Committee for Environmental Protection under the Government of the Republic of Tajikistan consists of 96 gauging stations. Over the last 30 years, there has been a reduction in the hydrological observation network in Tajikistan, amounting to 35 percent.

77. The decrease in the number of gauging stations and observation programs, coupled with the utilization of an outdated methodological basis for forecasts, has resulted in a consistent trend of deteriorating quality in hydrological forecasts.

78. The state of the routine observation network for surface water pollution is marked by a decline in the number of hydro-chemical observation stations, water and bottom sediment samples taken, and analytical work conducted. The absence of automated and remote monitoring methods for water regime and quality, along with limited access to modern analytical laboratory equipment, contributes to the low quality of observations.

79. A significant challenge in state monitoring of water bodies is the limited availability of information regarding the findings of such monitoring.

80. Limited capacity for water quality diagnostics and management of both piped and non-piped systems, as well as wastewater recycling, is attributed to a shortage of qualified personnel, insufficient laboratory infrastructure, and an inadequate operating budget. Establishing a connection between the health information system and the water quality management system is crucial for early warning and prompt actions.

81. Groundwater monitoring is conducted by the Main Department of Geology under the Government of the Republic of Tajikistan and the Committee for Environmental Protection under the Government of the Republic of Tajikistan, as part of the state monitoring of the subsoil of Tajikistan. The state reference observation network is experiencing a reduction, and the existing state network does not offer sufficient assessments of the groundwater state in different regions of Tajikistan.

82. The objectives of state monitoring of water bodies include forming the optimal composition of the state observation network, enhancing its technical equipment, implementing modern forecasting methods for increased lead time and accuracy, and establishing a unified information system. This system aims to systematize and integrate data from state monitoring of water bodies, ensuring accessibility for government bodies, actors in the monitoring process, scientific organizations, and citizens.

3. STRATEGIC GOALS AND PRIORITIES OF THE WATER SECTOR UNTIL 2040

83. The development of the water sector in Tajikistan is a pivotal factor in ensuring economic development and social stability, safeguarding national security, and facilitating the realization of water users' rights to water.

84. The directions of development in the water sector of Tajikistan are aligned with the objectives outlined in the National Development Strategy of the Republic of Tajikistan for the period until 2030, Sustainable Development Goals, the National Action Plan for Climate Change, and the fulfillment of international commitments related to climate change adaptation in the water sector.

85. The systematization of the mentioned directions, considering the analysis of development strategies of economic sectors in provinces and districts, examining interrelations, and considering the current state and challenges of the water sector, allows the definition of strategic objectives for the country's water sector development. The strategic objectives of water sector development include:

- Ensure a reliable water supply to both the population and economic sectors;
- Improve the efficiency of water resource utilization;
- Address and eliminate water resource deficits;
- Provide the population of Tajikistan with access to quality drinking water and effective water disposal systems;
- Ensure the sustainable functioning and development of irrigation and drainage systems;
- Undertake measures for the protection and rehabilitation of water bodies;

- Implement strategies to protect against detrimental impacts on water resources.

§1. Ensure a reliable water supply to both the population and economic sectors

86. Ensuring reliable supply of water resources entails prioritizing solutions to issues related to providing the population of the Republic of Tajikistan with high-quality drinking water. This involves creating conditions for the harmonious socio-economic development of regions, promoting innovations that ensure resource conservation, and establishing prerequisites for realizing the competitive advantages of Tajikistan's water resource potential.

87. Meeting the needs of the population and economic sectors with water resources will be carried out on the basis of an integrated approach to managing the use and protection of water resources. This approach is grounded in identifying objective resource and environmental limitations, reducing the risks of water disasters, and considering all available surface and groundwater resources within river basins and their variability. Unconditional priority will be given to providing drinking and domestic water supply and sanitation services to the population. The process of planning and managing the use and protection of water resources will involve openness and active involvement from self-government bodies of towns and villages, river basin councils, water user associations, women's, youth, and other public organizations. Special emphasis must be given to the sustainable use and protection of groundwater through mapping, regular monitoring of its use and changes in reserves, and implementing regulated abstraction and replenishment measures for both drinking and irrigation purposes.

88. The anticipated demand for water resources, factoring in development scenarios and population and economic growth rates outlined in strategic planning documents, along with the potential impact of various crises on Tajikistan's economy, will be determined by the real growth rates of energy, industrial, and agricultural production. By 2040, there is a high likelihood that the predicted value will be around 14 km³.

89. To ensure sustainable economic growth through the most efficient use of water resources, it is imperative to facilitate the coordinated development of economic sectors. This approach should be grounded in considerations of water resource limitations and permissible environmental loads on water bodies. Integrated management of the use and protection of water resources is essential in this context.

90. The primary tool for ensuring integrated management of the use and protection of water resources is the development of basin water resource management plans. Currently, efforts are underway to create basin plans for the

period until 2030. Post this timeframe, plans will be either updated or new ones developed for subsequent five-year periods. In cases of basins with a strained water balance or facing emergency circumstances, the development of basin plans can be conducted on an extraordinary basis.

91. Priority regions for large new water-intensive industries, such as metallurgical and chemical industries, should be in areas with the highest water availability. In regions with lower water supply, the development of water-intensive industries should focus on the modernization and expansion of existing industrial capacities. Simultaneously, it is essential to introduce recycling and re-sequential water supply systems that facilitate the rational utilization of available water resources while reducing the anthropogenic load on water bodies.

92. The strategy for enhancing hydropower potential includes the construction of large, medium, and small hydroelectric power stations in the basins of the Vakhsh, Pyanj, Syrdarya, Zarafshon, and Kafirnigan rivers. Specifically, developing the hydropower potential in the Vakhsh River basin involves completing the Rogun hydroelectric power station and its reservoir. This initiative aims to fully meet the increasing domestic demand for power and facilitate an expansion in power exports to overseas countries.

93. Promising areas for the development of large-scale irrigated agriculture in Tajikistan include the Dangara Valley, lands associated with the Dangara irrigation system within Vakhsh Valley of Khatlon region, Asht, Mirzoravat, Kyzyli massifs, and lands in the Shakhirstan and Istaravshan districts, located, respectively, in the basins of the Vakhsh and Syr Darya rivers. Small tracts of foothill lands should be developed using water-saving and soil-protective irrigation technologies. The expansion of irrigated lands in the agro-industrial complex should prioritize the restoration and reconstruction of previously developed areas with modern water-saving technologies. Preparatory measures for large tracts of land in the Murgab region of the Gorno-Badakhshan Autonomous Region are also essential

94. Prospective areas for fisheries development include the expansion of pond fish farming and aquaculture. The basins of the Syrdarya, Kafirnigan, Vakhsh, and Pyanj rivers offer particularly favorable climatic conditions for the development of pond and cage fish farming.

95. Given the substantial fishery potential of the Syr Darya, Kafirnigan, Vakhsh, Zarafshon, and Pyandj rivers, along with the lakes situated in these basins, the augmentation of fishery productivity will be a pivotal focus for the development of the water management in the Direct Rule Districts, the Gorno-Badakhshan Autonomous Oblast, as well as the Soghd and Khatlon province.

§2. Improve the efficiency of water resource utilization

96. Ensuring the guaranteed provision of the economy's demand for water resources necessitates the unconditional rational use of resources. This involves reducing the water intensity of industrial and agricultural production and minimizing unproductive water losses.

97. This direction is particularly relevant for areas with a strained water balance. Reducing the scale of involvement of limited water resources in economic circulation in these regions is crucial to maintaining the sustainability of aquatic ecosystems.

98. Reducing the total volumes of water resources withdrawn and their use in the technological process leads to a proportional decrease in the volumes of wastewater treatment and the volume of pollutants entering water bodies.

99. The primary direction of rational water use involves implementing economic incentives to reduce specific water consumption, minimizing water losses at all levels, introducing water-saving technologies, and employing effective mechanisms for managing irrigation systems.

100. Achieving a guaranteed supply of water resources to the population and economic facilities will contribute to the balanced development of the country, maintaining a high level of food, industrial, and energy security.

§3. Address and eliminate water resource deficits

101. In regions of Tajikistan where water scarcity has developed due to natural and anthropogenic factors beyond national borders and cannot be mitigated solely by rationalizing and optimizing water use, it is essential to introduce water-saving technologies. Additionally, measures such as constructing reservoirs, reconstructing existing water management systems to reduce losses and enhance efficiency, building group water pipelines, promoting the use of low-water crops, and implementing other strategies should be pursued to increase the availability of water resources.

§4. Provide the population of Tajikistan with access to quality drinking water and effective water disposal systems

102. The resolution of the issue regarding the provision of the population with high-quality drinking water is planned to be executed through the State Program for Drinking Water Supply and Sanitation. This Program spans the period until 2032 and extends to subsequent programs. The fundamental principles of these programs include ensuring universal access to water supply and sanitation services, addressing

the causes of inconsistencies in water quality supplied to the population, adhering to hygienic standards, and differentiating approaches in selecting technological schemes for water supply to large and medium-sized cities, small towns, and villages

103. The State Program for Drinking Water Supply and Sanitation aims to guarantee the availability and accessibility of well-organized water supply and sanitation services at both household and institutional levels. The accomplishment of universal access for the population to these services is expected to enhance the overall quality of life and contribute to the reduction of water-borne diseases.

§5. Ensure the sustainable functioning and development of irrigation and drainage systems

104. The resolution of the issue concerning the sustainable functioning and development of irrigation and drainage systems is set to be addressed through sectorial strategies, the Program for the Development of Land Reclamation and Irrigation for 2024-2028 and subsequent programs where focus of these initiatives includes enhancing the efficiency of irrigation, introducing effective irrigation management mechanisms, optimizing water and land use productivity, improving energy efficiency in pumping stations, and implementing control automation systems. Additionally, new economic mechanisms will be introduced to increase the financial viability of the sector.

105. The attainment of sustainable operation and development of irrigation and drainage systems is expected to enhance water availability for agricultural crops, expand irrigated lands, and contribute to ensuring food security.

§6. Undertake measures for the protection and rehabilitation of water bodies

106. The protection and restoration of water bodies to a state that ensures environmentally favorable living conditions for the population entail addressing various challenges. These include reducing the anthropogenic load on water bodies, safeguarding groundwater from pollution, rehabilitating water bodies, and addressing accumulated environmental damage.

107. To alleviate the anthropogenic load on water bodies, it is crucial to implement a system of interconnected measures. Key among these measures is the practical enforcement of environmental regulation principles based on standards of permissible impact on water bodies. This should be done with due consideration for regional characteristics, individual features, and the intended purposes of water body use.

108. An integral part of the measures to diminish the anthropogenic load on water bodies is the development and implementation of enhanced technical regulations in the field of wastewater treatment.

109. Another approach to lessen the anthropogenic load on water bodies involves offering economic incentives to curtail the discharge of pollutants in wastewater.

110. A substantial proportion of pollutants enters water bodies through catchments as part of dispersed (diffuse) runoff. Consequently, there is a need to develop methods for assessing the volume and degree of the negative impact of dispersed (diffuse) runoff from economically developed areas.

111. Implementing measures to restrict the transboundary transfer of pollutants represents a significant strategy for reducing the anthropogenic load on water bodies.

112. In areas where the population resides in unfavorable water and environmental conditions, it is essential to restore water bodies, including small rivers, to eliminate accumulated environmental damage. Additionally, measures need to be implemented to protect against anthropogenic pollution of groundwater.

113. The implementation of the aforementioned measures aims to achieve high standards of living for the population by enhancing environmental quality and ecological conditions. The improvement of water quality in water bodies is a crucial factor in ensuring sanitary and epidemiological safety for the population, providing comfortable living conditions for both present and future generations of Tajikistan, preserving the nation's health, and safeguarding the natural habitat of aquatic biological resources

§7. Implement strategies to protect against detrimental impacts of water resources

114. Ensuring the protection of the population and economic facilities from floods and other adverse impacts of water involves reducing risks and minimizing damage from such impacts. This includes ensuring the reliability of hydraulic structures, regulating the economic use of areas subject to periodic flooding and other hydrological hazards, and developing monitoring technologies, including forecasting and warning systems for hydrological hazards.

115. Modern methods for mitigating damage from hazardous hydrological phenomena, including floods, necessitate a shift from a strategy of individually protecting objects to a comprehensive system of measures. This system should involve the assessment and management of all risks, relying on a comparative technical and economic evaluation of various protective measures and planning solutions.

116. The implementation of a comprehensive set of measures aimed at enhancing the protection of the population and economic facilities from hazardous hydrological phenomena is a crucial element in ensuring the stable economic development of Tajikistan. It plays a vital role in guaranteeing the safety of citizens' life activities and creating comfortable living conditions.

117. Accomplishing these strategic objectives will position Tajikistan at the forefront of addressing water resources use, protection, and management. This will be achieved through the development of scientific-technical and production-technological potential, increased adoption of innovative technological solutions in water management, and the acquisition of knowledge and experience in creating and managing modern water management systems.

4. INTERVENTIONS TO IMPLEMENT THE NATIONAL WATER STRATEGY

118. The set of interventions in this Strategy is aligned with its goals and objectives, encompassing actions to achieve strategic goals and ensure the effective implementation of the provisions. This includes enhancing the system of state regulation and control in water resource management, advancing the state monitoring system for water bodies, providing scientific, technical, and personnel support to the water sector, and fostering education and awareness initiatives.

§1. Interventions aimed to guarantee water supply to the population and industries

119. Further expansion of water infrastructure to reach more of the population and economic sectors with water supply should be coupled with efforts to enhance the efficiency of water utilization.

120. Reducing specific water consumption involves minimizing water losses in the water supply components of housing and communal services and the agro-industrial complex. This is accomplished through the reconstruction and modernization of hydraulic structures systems, the rehabilitation and lining of canals, the reconstruction of irrigation networks, and the adoption of modern, efficient technologies for drinking, irrigation, and wastewater management. Additionally, the implementation of water reuse systems, modern water-saving technologies, and equipment contributes to this reduction.

121. To achieve a reduction in the specific consumption of water resources in technological processes, there is a focus on expanding the utilization of recycling and re-sequential water supply systems. In the realm of irrigation, this reduction is pursued through the widespread adoption of water-saving technologies and the

modernization of infrastructure, incorporating automation, digitalization, and leveraging tools such as the Internet and artificial intelligence.

122. To this end, it is necessary to:

- implement a progressive scale of charges for exceeding the established norms of water consumption and wastewater discharge, creating a system where higher fees are applied for withdrawals and discharges beyond the set standards;
- implement preferential rates for the withdrawal of water resources specifically for the operation of recycling and re-sequential water supply systems;
- offer preferential financing for specific initiatives involving the construction, reconstruction, and modernization of recycling and re-sequential water supply systems, irrigation systems, and the adoption of innovative water-saving technologies. This can be achieved through reduced interest rates on credit, facilitated by subsidy mechanisms. Consider providing partial or full compensation of bank credit interest rates and a portion of its cost using budget funds, especially when the credits are utilized for acquiring modern technologies;
- facilitate the reconstruction and modernization of state-owned water infrastructure by incorporating cutting-edge technological solutions to minimize water losses and enhance planning and management efficiency. This involves the integration of automation, telemetry control, remote tools for water measurement and control, as well as leveraging Internet tools and artificial intelligence;
- execute a series of economic and administrative measures, including the differentiation of water tax and rates for the withdrawal of water resources. Encourage the use of instrument metering for water resources and advocate for the installation of water meters in residential buildings. Additionally, ensure that capital facilities under construction are equipped with water metering systems upon commissioning.

123. Implementing measures to develop rational approaches to water resource utilization will lead to a reduction in water intensity in Tajikistan's economy, ultimately enhancing national competitiveness.

124. Enhancing the efficiency of water resource utilization in reservoirs and water management systems will aid the adaptation of the water sector to operate effectively even during challenging conditions, such as extended periods of low water levels.

§2. Interventions aimed at addressing water resource deficits

125. In regions facing water scarcity, it is essential to undertake the construction and reconstruction of hydropower complexes to create additional regulating reservoir capacities and enhance water yield. Other necessary measures include the reconstruction of water management systems, the implementation of

water-saving technologies, exploration activities, state registration, and the utilization of fresh groundwater reserves in economic processes. Additionally, constructing group water pipelines and other initiatives within the water management complex are vital. Specifically, in areas with acute water shortages, reservoir construction on the rivers Isfara, Isfana, Kafirnigan, Kyzylsu, and small reservoirs on the right bank of the Syr Darya river in the Asht and Matcha regions, canal reconstruction with low efficiency, and modernization of the multipurpose water-resources scheme in the lower reaches of the Khojabakirgan, Isfara, Isfana, Daganasay, and Kattasay rivers in the Sughd region are crucial.

126. Eliminating water resource shortages will be implemented through design decisions guided by water use parameters established by basin water resource management plans and water balances.

127. The implementation of these measures will establish a solid foundation for ensuring the socio-economic development of water-scarce areas.

§3. Interventions aimed to provide the population with high-quality drinking water and sanitation

128. To ensure the population's access to high-quality drinking water and wastewater (sanitation), the state water supply and sanitation programs being developed should encompass a comprehensive set of measures. These measures should involve collaboration among central and local government bodies, self-government bodies of towns and villages, industrial organizations, the financial sector, and scientific institutions. The overarching goal is to guarantee a continuous and secure supply of safe drinking water and sanitation services to the population across the country

129. Programs should incorporate the establishment of an efficient management system for the water supply and wastewater sector, emphasizing sanitation and hygiene. Furthermore, there should be an emphasis on fostering a socially oriented business environment and a competitive market for water supply services. Accelerated development of innovative and technological potential is crucial, aiming to enhance the quality of drinking water supply to territories through the adoption of new technological solutions.

130. The programs will focus on accelerating the development of innovative and technological potential to enhance the quality of drinking water supply and environmentally friendly sanitation systems. This includes coverage of both sewer and non-sewage systems, leveraging new technological solutions. Importantly, climate resilience, adaptability, inclusion, and safety will be integral elements in the design and implementation of water and sanitation projects, standards, and regulations.

131. Given the high capital intensity and extended payback periods characteristic of the water supply and sanitation sector, the development of systems in medium and small settlements, as well as rural areas, will be facilitated through a combination of government, donor, private, and other investments.

132. Water supply and sanitation programs should encompass regulatory measures to ensure the population's access to safe drinking water and sanitation services. This involves establishing quality standards for drinking water, implementing climate-sensitive and water-efficient sanitation practices, adopting advanced technological systems and production processes for water supply and sanitation, with a specific focus on decentralized wastewater treatment. Furthermore, these programs should include provisions for information and analytical support, monitoring of implementation, and public awareness campaigns to inform the population about program achievements. Public awareness and education activities are essential to change behavior, reinforce understanding of the need for safe water and sanitation services, encourage willingness to pay, and ensure the sustainability of systems. Additionally, state programs should incorporate initiatives to encourage proper hand hygiene and the utilization of sanitation services, including facilities without access to water supply and sanitation systems.

§4. Interventions to ensure sustainable operation and development of irrigation and drainage systems

133. To ensure the sustainable functioning and development of the reclamation and irrigation sector, the developed state programs for reclamation and irrigation should include a set of interrelated measures carried out by state authorities, local governments, water user associations, and scientific organizations. These measures aim to ensure the sustainable supply of irrigation water to agriculture.

134. Programs should establish an effective management system for the land reclamation and irrigation sector, including automated control systems for major hydraulic structures. The measures should include rehabilitation, modernization, and construction of hydraulic structures, the introduction of energy-saving technologies at pumping stations, adoption of water-saving irrigation technologies, and the implementation of an effective investment and financial system.

135. Given the high capital intensity of the land reclamation and irrigation sector, as well as the long payback periods for investment projects, the development of land reclamation and irrigation systems will be ensured through public, donor, private, and other investments.

136. Programmes should also include legal and regulatory measures for the supply of irrigation water to farms, stockwater development and resting of pastures, as well as technical measures for the cultivation of stony soils.

§5. Interventions aimed at protection and restoration of water bodies

137. Improving the ecological condition of water bodies is possible by implementing measures to reduce the anthropogenic load on water bodies and their catchments, restoring water bodies, eliminating accumulated environmental damage, and implementing measures to protect against groundwater pollution.

138. The primary focus for mitigating the anthropogenic impact on water bodies involves a comprehensive approach. This encompasses reducing the discharge of pollutants into water bodies, specifically through the construction and renovation of treatment facilities in both industrial enterprises and communal services. Furthermore, the strategic measures include the effective management of surface runoff from industrial areas, the establishment of sanitary protection zones around sources of drinking and domestic water supply, the creation of water protection zones for various water bodies, and the implementation of anti-erosion measures on agricultural lands.

139. To mitigate the anthropogenic impact on water bodies, it is essential to implement the following measures:

- Implement a rationing system based on norms defining permissible impacts on water bodies, considering regional natural characteristics influencing the quantity and quality of surface and groundwater resources, prioritized objectives for water body use, and the existing overall anthropogenic load;
- Encourage the reduction of anthropogenic load on water bodies by implementing a progressive scale of payment for the negative impact on water bodies, particularly concerning the excessive discharge of pollutants in wastewater;
- Implement a mechanism for offsetting or refunding a portion of payments for the negative impact on water bodies when a water user invests in the construction, reconstruction, and technical upgrading of treatment facilities using technologies that guarantee normative wastewater treatment;
- Offer grants and preferential loans for initiatives involving the construction, reconstruction, and modernization of wastewater treatment facilities. This support should include the introduction of innovative technologies, with reduced interest rates for loans under specific conditions;
- Develop sanitary protection zones for water bodies, including underground, of drinking and domestic water supply sources. Ensure strict compliance with the regime of the relevant sanitary protection zones;
- Regulate non-sewerage systems, particularly through building designs and regulations, to overcome pollution. Additionally, ensure the safe disposal and transport of wastewater to prevent pollution of water bodies;

- Regulate the economic use of water protection zones and bank protective strips of water bodies to prevent pollution, littering, depletion, and ensure the preservation of the habitat of aquatic biological resources;
- Enhance groundwater protection from anthropogenic pollution by formulating guidelines for land use within groundwater deposit boundaries suitable for centralized drinking and domestic water supply. This involves ensuring the operational reliability of groundwater intakes, eliminating hydrogeological wells with unclear ownership, and reinforcing the accountability of well owners for adhering to groundwater exploitation and protection regulations

§6. Interventions aimed at protection against detrimental impacts of water

140. Ensure the protection of the population and economic facilities from floods and other adverse water-related impacts and reduce associated damages through the implementation of measures aimed at establishing effective flood prevention and protection systems within the boundaries of river basins.

141. To ensure protection from detrimental impact of waters it is essential:

- to create information and forecasting systems integrated with subsystems of hydrometeorological monitoring, forecasts, and warnings. This aims to ensure the adoption of situational decisions on the regulation of reservoir regimes, management of engineering structures, and other measures to prevent and mitigate the consequences of floods. Achieving this involves modernizing the hydrometeorological observation system, technical re-equipment, improving methods for operational forecasting of dangerous hydrological phenomena, and creating automated monitoring systems for rivers with flash floods and rivers flowing through areas with high population densities. The effectiveness of these systems relies on their integration with the National Water Information System and the information systems of Tajikistan's unified state system for emergency prevention and response;
- to regulate economic activity in areas prone to periodic floods and mudflows, including those located in the lower reaches (tailraces) of waterworks facilities, it is proposed to legislatively define flood-prone areas as territories with special conditions for urban planning. This involves establishing a procedure for zoning and forming a system of restrictions on economic activities in these areas;
- to encourage voluntary property insurance for citizens living in flood-prone areas that can help optimize budget expenditures related to compensation for damages from negative water impacts;
- to optimize the delimitation of powers of public authorities to organize dredging and channel straightening works for disaster risk reduction and

preparedness, as well as other activities related to the prevention of negative water impact, is crucial;

- improve the operational reliability and safety of hydraulic structures. Introducing a system for drafting safety declarations for the operation of relevant hydraulic structures should be implemented universally. A priority is to secure financing for the capital repair and reconstruction of potentially dangerous hydraulic structures in emergency conditions.

§7. Interventions aimed at the improvement of state regulation and control over the use and protection of water bodies

142. Improvement of the system of state regulation and control over the use and protection of water resources shall be carried out by means of:

- development and implementation of basin plans for water resources management;
- enhancement the efficiency of control over the standards of permissible impact on water bodies, considering regional peculiarities and individual characteristics;
- compliance with the rules of reservoir operation considering changes in their morphometric characteristics, inflow parameters, composition and needs of water sector users.

143. Improving mechanisms for regulating the use and protection of water bodies is associated with:

- rules for the installation of water management facilities;
- carrying out works on water bodies and in their water protection zones;
- making decisions on the construction of large water management systems and complex reservoirs requires a comprehensive assessment of various factors to ensure the balanced development of the water sector. This decision-making process involves evaluating the effectiveness of project implementation, considering long-term economic, social, and environmental aspects.

144. Establishing an effective management system for the water supply and sanitation sector involves addressing various critical issues:

- separation of policy and regulatory functions from operational activities in water supply and sanitation systems;
- assign the authorized state body in the field of drinking water supply and sanitation at the level of the central executive body of state power.

145. Improving mechanisms of coordination and interaction between state authorities, local executive bodies of state power, and water users can be achieved through several key measures:

- establishment of the National Water Council;

- phased strengthening of the status of basin councils as a coordinating platform that makes advisory decisions on the implementation of public policy within the basin zone, intersectoral integration and optimization of water management and water protection activities;
- enhancing the coordinating and monitoring role of basin zone water resource departments to ensure effective river basin management;
- roll out the National Water Information System, including centers for situational analysis and drafting recommendations on basin zones;
- development and implementation of national standards and norms for capacity-building in the water sector, including sanitation;
- water sector digitalization;

146. To strengthen Tajikistan's role in addressing global and regional challenges in the use and protection of water resources, following comprehensive set of measures can be implemented:

- strengthening Tajikistan's participation and position in international and regional organizations focused on water-related matters;
- Enhancing international cooperation in the realm of shared utilization and safeguarding of transboundary water bodies;
- hosting international conferences, forums, symposiums, and similar high-level events on water-related topics in Dushanbe;
- strengthening the activities of the Dushanbe Water Process Platform;
- participation in significant international and regional water and climate events, as well as promoting Tajikistan's initiatives on water-related issues;
- development of the New Vision for the Promotion of Global and Regional Water Initiatives proposed by Tajikistan.

§8. Interventions aimed at the development of the state monitoring system of water bodies

147. One of the key tasks of the National Water Strategy is to enhance the state monitoring system for water bodies, encompassing the development and modernization of the state observation network.

148. Elevating the technological standard of the state observation network involves incorporating automated multi-parameter measurement and information complexes, advanced wireless communications, new information technologies for processing and analyzing data from observation network posts, along with remote monitoring methods. This necessitates the integration of new high-tech technical and software products.

149. Developing the network of laboratories for water and bottom soil quality research, utilizing modern instrumentation and comprehensive methodological

support, should be coupled with advancing field research methods employing physical, chemical, and biological detectors and indicators. Simultaneously, reinforcing the laboratory network of water utilities, regional rural water supply departments, and state sanitary-epidemiological supervision services is essential for monitoring the quality and safety of water supplied through both piped and non-piped waterways.

150. Establishing a modern state monitoring system for water bodies necessitates guaranteeing access to water monitoring data at the intersectoral level. This involves addressing numerous applied and fundamental scientific challenges, creating new technologies, modifying existing ones, enhancing the methodological foundation, updating normative legal regulations, and constructing efficient systems for monitoring sediment load, the condition of water body bottoms and banks, as well as the status of water protection zones.

151. As part of the enhancement of groundwater monitoring, there are plans to establish an information-analytical system and automated tools for accounting groundwater reserves and quality. This includes optimizing the state reference observation network and updating the regulatory and methodological framework for monitoring subsurface conditions.

152. To ensure the accessibility of monitoring information, it is imperative to finalize the establishment of the National Water Information System. This involves facilitating the unhindered provision of new data by all participants in the National Water Information System, creating a monitoring data bank for basin zones, river basins, water management sites, and territories of Tajikistan at large. Additionally, efforts should be made to guarantee the accessibility of these data.

§9. Interventions aimed at the R&D support of the National Water Strategy

153. To execute the National Water Strategy, it is essential to ensure the innovative development of the scientific, technical, and technological foundation of the water sector by leveraging global advancements and technologies.

154. Research in the development of principles and mechanisms for an integrated approach to the management of water bodies, methods, and models for long-term forecasting of climate change and river water availability, as well as the planning and implementation of a comprehensive set of research and development activities, is to be conducted.

155. To ensure the supply of water resources, it is imperative to undertake activities in the following scientific direction:

- Creation of methodological and technological foundations for ecosystem water use.

- Assessment of surface and groundwater resources under changing climate and economic activity conditions.
- Improvement of technologies for preparing safe drinking water.
- Conducting comprehensive scientific research to enhance the efficiency of technological processes for water purification and conditioning in agricultural water supply systems.
- Study of the conditions for realizing the competitive advantages of Tajikistan's water resource potential, along with an analysis of the possibility of zoning and locating water-intensive industries in the country.

156. In order to preserve and restore water bodies, it is necessary to ensure:

- Formation of a list of the best existing technologies for systems and complexes of wastewater treatment facilities.
- Conducting scientific and development work on the development of innovative technologies for wastewater treatment.
- Development and evaluation of environmentally friendly, water-efficient, and accessible sanitation technologies and systems.
- Development of environmentally oriented standards for the quality and target state of water bodies, along with mechanisms for considering factors in the formation of the regional background state of water bodies.
- Development of methods for hydrological, hydro-chemical, and hydrobiological monitoring of water bodies.
- Development of scientific methods for assessing the volume and degree of negative impact of dispersed (diffuse) runoff from economically developed territories and proposing technological solutions to reduce it.
- Justification of the principles, approaches, and technologies for the restoration of water bodies, including underground water bodies that have lost the ability to self-purify and self-recover.

157. For the scientific support of the protection of socio-economic objects from the negative impact of water, the following tasks are to be addressed:

- Regular aggregation of hydrological monitoring data across the territory of Tajikistan in the form of reference publications and updated maps of calculated hydrological characteristics of water bodies.
- Development of methods and models for river flow formation aimed at improving the quality of forecast and early warning of dangerous hydrological phenomena.
- Development of methods for comparative economic and technical efficiency for making decisions on the construction or reconstruction of engineering protection facilities from the harmful effects of water.

- Development of effective designs for engineering protection from the harmful effects of water, establishment of experimental design and technological work to develop new effective designs of protective structures.
- Development of new scientific approaches and technologies for the design and construction of engineering protection facilities from the harmful effects of water.

§10. Interventions aimed at the staffing support of the National Water Strategy

158. Essential conditions for developing the human resources potential of the water sector include enhancing the personnel training management system, upgrading the educational and scientific laboratory facilities of educational institutions, establishing new fields and specialties, and developing and implementing new educational standards and training programs aligned with the evolving needs of the water sector. Simultaneously, measures should be implemented to shape professional culture and value orientations, along with creating incentives to attract and retain specialists with higher and secondary specialized education in the sector.

159. The system of training and retraining of personnel in the water sector of the country should, at the modern level, train highly qualified specialists, managers, and engineering and technical personnel for the following bodies and organization:

- bodies of state regulation and control in the field of use and protection of water bodies;
- organizations engaged in scientific activities and information and analytical support;
- organizations operating water management systems and hydraulic structures;
- institutions of specialized higher, secondary, and additional vocational education;
- organizations involved in surveying, design, and construction of water sector facilities.

160. To develop human resources, it is essential to fulfil the following tasks:

- Establishment of training centers for personnel retraining equipped with modern training systems.
- Preparation of training modules for the retraining of personnel at training centers.
- Integration of educational resources and programs into the system of continuous water education, ensuring the use of innovative technologies and methods to train specialists.

- Creating incentives to elevate the prestige of engineering and non-engineering specialties in the water sector, including quotas for training, internships, technical competitions, and hackathons. Additionally, fostering student exchange programs with other Higher Education Institutions (HEIs) in the region and beyond, coupled with educational and information campaigns targeting the public and students.

- Establishing conditions, opportunities, and incentives to enhance the representation of girls and young women in professional and managerial roles within water sector organizations and public bodies.

- Involving the private sector and academia in the development and implementation of training and retraining technologies for the country's water sector.

§11. Interventions aimed at the public outreach and awareness raising on the use and protection of water bodies

161. To enhance public awareness, education, and enlightenment regarding the primary directions of water sector development and the management decisions made by public authorities, a series of advocacy will be implemented. This will involve utilizing currently available and widespread public relations technologies and fostering a multilateral dialogue among all stakeholders

162. Achievement of the set strategic goals in the conditions of the modern information society is impossible without systematic work to educate and inform the population, including the fulfillment of the following tasks:

- Educating the younger generation in accordance with the principles of respect for aquatic ecosystems and rational use of water resources.

- Conducting educational and explanatory work with the population and business structures on the use and protection of water bodies via mass media.

- Supporting social projects (public works) aimed at improving the condition of water bodies.

- Raising public awareness about the repercussions of unsafe water sources, inadequate sanitation, and poor hygiene on the health and well-being of communities, particularly impacting children and women.

- Ensuring public awareness of the state of aquatic ecosystems and sources of their pollution, as well as understanding good hand hygiene practices and safe sanitary conditions in connection with infection prevention and control measures.

- Organizing technical competitions focused on fostering creative solutions within the water sector.

163. An essential task within this scope is to establish conditions that encourage public and community engagement in addressing issues related to the use and protection of water bodies.

164. Improving the effectiveness of information, education, and public awareness on water-related issues will be based on the following main principles:

- development and implementation of special educational programs and information projects to elevate the priority of information, education, and enlightenment.

- ensuring transparency and openness of information.

- conducting public information campaigns, promoting the strengthening of the role of social advertising, and organizing scientific conferences, seminars, exhibitions, cultural and educational events, along with developing and distributing information, educational materials, considering the coverage of various groups of the population.

- initiation and creation of national and regional public information and educational centers focusing on citizens' access to safe drinking water, the condition of water bodies, rational water use, and prevention and protection from the negative effects of water.

165. A set of information and communication measures on the efficiency of the use, protection, and conservation of water resources and facilities will be implemented with the involvement of the mass media, television and radio broadcasting, and news agencies in the following areas:

- broadcasting commercials and placing outdoor advertisements on the need for rational use and careful attitude toward water;

- holding mass sports and cultural and entertainment events with a focus on water and environmental awareness;

- Development of water and environmental education programs in educational establishments.

5. EXPECTED OUTCOMES OF THE NATIONAL WATER STRATEGY IMPLEMENTATION

166. The execution of the National Water Strategy is expected to play a pivotal role in fostering the balanced socio-economic development of Tajikistan. The strategy aims to enhance access to water supply and wastewater disposal systems for the population, uphold a robust level of food, industrial, and energy security, and uphold the constitutional rights of citizens to a favorable environment.

167. Implementing measures to mitigate the anthropogenic impact on water bodies is anticipated to result in achieving elevated environmental standards of living. This approach aims to preserve the health of citizens, enhance the state of aquatic ecosystems as a vital factor for restoring species diversity, and create conducive conditions for the reproduction of aquatic bioresources.

168. The implementation of interventions focused on the rationalization and integrated use of water resources is expected to result in a reduction of the water intensity of the economy. This approach aims to guarantee reliable drinking and domestic water supply and sanitation services to the population. Furthermore, it seeks to ensure sustainable water supply for agricultural production and create conducive conditions for the development of industry, energy, and agriculture through the efficient utilization of the country's water resource potential.

169. Implementing measures to reduce the detrimental impact of water and ensure the operational reliability and safety of hydraulic structures is crucial for safeguarding the population residing in areas prone to dangerous hydrological phenomena. This comprehensive approach also aims to ensure the sustainable functioning of relevant economic facilities.

170. Enhancing government regulation and control, along with advancing science and education, is pivotal for achieving a qualitative leap in the development and adoption of new technologies. This strategy aims to build scientific, technical, and human resource capabilities, expanding the realm of knowledge and understanding of hydrological phenomena and processes. By studying and implementing the latest approaches to managing the use and protection of water bodies, it sets the stage for international cooperation in water resource management.

171. To evaluate the success of the implementation of the National Water Strategy, a Results framework has been developed to monitor progress toward achieving strategic objectives at intermediate stages and to assess the effectiveness of specific mechanisms and interventions. (Indicators for achieving the objectives of the National Water Strategy of the Republic of Tajikistan for the period up to 2040 are provided in the Annex to the Strategy).

6. FINANCING OF THE NATIONAL WATER STRATEGY INTERVENTIONS

172. The implementation of the National Water Strategy will be funded through a multi-faceted approach, encompassing various sources of financing. These include budget allocations from relevant ministries and departments, funds from local executive bodies of state power, private investments, public-private partnerships, and financial support from international organizations in the form of loans and grants, while adhering to the country's legislation.

173. The Government of the Republic of Tajikistan aims to secure funding for the implementation of planned activities by adopting measures to augment both public and private investment in water infrastructure. A coordinated effort will be made to enhance government spending, which is anticipated to serve as a catalyst for heightened private investment. Additionally, the strategy envisions fostering public-private partnerships in the water sector and seeking increased international and donor support to ensure the successful realization of the proposed initiatives.

7. THE NATIONAL WATER STRATEGY PROGRESS MONITORING AND EVALUATION

174. Monitoring and evaluation of the National Water Strategy's progress will adhere to the legal framework established by the Law of the Republic of Tajikistan "On Strategic Planning and State Forecasting" dated 19 July 2022. Additionally, it will align with the guidelines outlined in the Decree of the Government of the Republic of Tajikistan dated 29 December 2018, No. 615, specifically addressing the rules for monitoring and evaluating the implementation of strategic documents at the national level, as well as sectoral and regional development programs within the Republic of Tajikistan

175. The Ministry of Energy and Water Resources of the Republic of Tajikistan shall carry out monitoring and coordinate the implementation of the National Water Strategy.

NATIONAL WATER STRATEGY OF
THE REPUBLIC OF TAJIKISTAN FOR
THE PERIOD UP TO 2040

RESULTS FRAMEWORK

#	Indicators	Unit	2023	2030	2035	2040
1	Total water withdrawal from surface and underground water sources	Billion m ³ /year	13,0	13,5	14,0	14,29
2	Total productivity of 1m ³ of water in Tajikistan (Water Intensity of Gross Domestic Product)	TJS/m ³ USD/m ³	11,0 (1,0)	16,5 (1,5)	21,6 (2,0)	34,9 (3,0)
3	Provision of population with water supply systems	%	41	60	75	90
4	Population with access to drinking water at the place of residence	%	60	80	90	100
5	Population with access to drinking water free of contaminants	%	74	80	90	100
6	Population with access to drinking water supply at least at the basic level	%	81	100		
7	Provision of population with wastewater disposal systems	%	15	25	35	50
8	Population using sanitation facilities not connected to sewerage networks that are not communal and are pitched and excreta/ sewage is transported and treated off-site	%	59	80	90	100
9	Population using sanitation facilities not connected to sewerage networks that are not communal and are not emptied and excrement/sewage safely disposed of on the site.	%	97	100		

#	Indicators	Unit	2023	2030	2035	2040
10	Population with sustainable access to basic indoor handwashing facilities equipped with water, soap, and other detergents	%	73	100		
11	Water losses in water supply systems (national average)	%	40-60	35	30	20
12	Total irrigated area	000 ha,	764	780	790	814
13	Area of irrigated lands with application of water-saving technologies and new irrigation methods	000 ha	2,5	10	50	100
14	Total area of lands with unsatisfactory meliorative condition	000 ha	37	28	18,5	8
15	Area of irrigated lands retired from agricultural turnover	000 ha	4.87	3.5	2.5	1
16	Energy saving in irrigation pumping stations from the total amount of electricity used (by 2023 level)	%	-	10	15	20
17	Water losses in irrigation systems	%	50	45	40	35
18	Installed capacity of HPPs	MW	5403	7000	9886	10951
19	Total volume of reservoirs including dead volume	km ³	15,6	22	28	29,2
20	Share of insufficiently treated wastewater discharge into water bodies (by 2023 level)	%	-	50	25	0
21	Degree of implementation of integrated water resources management	%	80	100		
22	Expansion of the share of protected areas exposed to water-related disasters	%	-	10	20	30

#	Indicators	Unit	2023	2030	2035	2040
23	Digitalization of the water sector	%	-	50	60	80

ABBREVIATIONS AND ACRONYMS

ALRI	Agency for Land Reclamation and Irrigation under the Government of the Republic of Tajikistan
BT	Barqi Tojik Open Joint Stock Company (OJSC)
CEP	Committee on Environmental Protection under the Government of the Republic of Tajikistan
CoES	Committee on Emergency Situations and Civil Defense under the Government of the Republic of Tajikistan
IMOGE	Institute of Water Problems, Hydropower and Ecology of the National Academy of Sciences of Tajikistan
LAs	Local Executive Authorities of State Power
MDG	Main Department of Geology under the Government of the Republic of Tajikistan
MEDT	Ministry of Economic Development and Trade of the Republic of Tajikistan
MEWR	Ministry of Energy and Water Resources of the Republic of Tajikistan
MFA	Ministry of Foreign Affairs of the Republic of Tajikistan
MoA	Ministry of Agriculture of the Republic of Tajikistan
MoC	Ministry of Culture of the Republic of Tajikistan
MoES	Ministry of Education and Science of the Republic of Tajikistan
MoF	Ministry of Finance of the Republic of Tajikistan
MoHSPP	Ministry of Health and Social Protection of the Population of the Republic of Tajikistan
NAS	National Academy of Sciences of Tajikistan
SCISPM	State Committee on Investments and State Property Management of the Republic of Tajikistan

2025-2027 ACTION PLAN

IN SUPPORT OF IMPLEMENTATION OF THE NATIONAL WATER STRATEGY OF THE REPUBLIC OF TAJIKISTAN FOR THE PERIOD UP TO 2040

№	Interventions	Implementing Agency	Timeframe (years)	Budget (in 1000' TJS)	Funding sources
I. IMPROVEMENT OF LEGAL AND REGULATORY FRAMEWORK					
1.	Adoption of the Law of the Republic of Tajikistan "On Land Reclamation and Irrigation"	ALRI, MEWR	2025	1253,6	Development partners
2.	Development and amendment of statutory instruments on creation of mechanisms for implementation of water legislation	MEWR, MoHSPP, CEP, ALRI	2025–2027	1617,6	Development partners
3.	The creation of mechanisms for economic incentives aimed at promoting the rational use of water, including the reduction of excessive withdrawal of water resources from water bodies, the introduction of recycling and reuse water supply systems, and the implementation of water metering systems	MEWR, MoF, CEP, ALRI	2026–2027	509,5	Development partners
4.	Development and adoption of procedures, rules, and regulations to establish norms for water consumption and water disposal	MEWR, CEP, ALRI,	2026–2027	606,6	Development partners

5.	Regulation of economic activities in areas subject to periodic flooding, including those located in the lower reaches of waterworks facilities	CoES, MEWR, CEP, ALRI	2025–2027	509,5	Within the limits of funds allocated from the state budget Development partners.
6.	Enhancing legislation related to the safety of hydraulic structures aimed to mitigate the risks associated with man-made emergencies and minimize the prevalence of hydraulic structures with unclear ownership	MEWR, CoES, ALRI	2025–2026	610,6	Development partners
II. IMPROVEMENT OF STATE REGULATION AND CONTROL OVER THE USE AND PROTECTION OF WATER BODIES					
7.	Establishment of the National Water Council	MEWR	2025	897,3	Development partners
8.	Establishment of a designated state body for drinking water supply and sanitation at the central executive level and reinforcement of its capabilities.	MEWR	2025	-	Within the limits of funds allocated from the state budget
9.	Enhancement of operations and reinforcement of human and technical capabilities for river basin organizations, water supply and sanitation service providers, as well as land reclamation and irrigation establishments	MEWR, ALRI	2025–2027	7015	Within the limits of funds allocated from the state budget Development partners.

10.	Improving the efficiency of exercising the powers in the field of water by authorized state bodies in the sphere of water resources use and protection, including the development and implementation of relevant measures	MEWR, CEP, ALRI	2025–2027	2426,4	Within the limits of funds allocated from the state budget Development partners.
11.	Formulation and development of basin management plans	MEWR, CEP, ALRI,	2025–2027	2717,6	Development partners
12.	Development, coordination, and approval of rules for the operation of reservoirs	MEWR, ALRI, BT	2025–2027	1727,9	Development partners
13.	Ensure effective workflow management at river basin councils	MEWR, CEP, CoES, ALRI, Local Executive Authorities of State Power	2025–2027	2020,5	Development partners
14.	Development and modernization of the state observation network, including the reference observation network for groundwater monitoring, is essential for the enhancement of the system of state monitoring of water bodies, encompassing the monitoring of subsurface conditions	MDG, MEWR, CEP	2025–2027	7150,8	Within the limits of funds allocated from the state budget Development partners.

5.	Enhancement of the National Water Information System	MEWR, CEP, ALRI,	2025–2027	1757,4	Development partners
6.	Formulation of the digitalization concept in Tajikistan's water sector	MEWR, CEP, ALRI	2025–2027	858,4	Development partners
7.	Enhancing international cooperation in the realm of water resources use and protection, especially through joint initiatives for the shared utilization and safeguarding of transboundary water bodies	MEWR, MFA,	2025–2027	1373,6	Within the limits of funds allocated from the state budget Development partners.
8.	Hosting international conferences, forums, symposiums, and similar high-level events on water-related topics in Dushanbe	MEWR, MFA, ALRI	2025–2027	3757,2	Within the limits of funds allocated from the state budget Development partners.
9.	Strengthening the activities of the Dushanbe Water Process Platform	MEWR, MFA	2025–2027	1050,4	Within the limits of funds allocated from the state budget Development partners.
0.	Strengthening Tajikistan's participation and position in international and regional organizations focused on water-related matters	MEWR, MFA, CEP, ALRI, MDAs	2025–2027	880	Development partners.
1.	Participation in significant international and regional water and climate events, as well as	MEWR, MFA, CEP, ALRI	2025–2027	2430	Development partners.

	promoting Tajikistan's initiatives on water-related issues				
2.	Development of the new vision for the Promotion of Global and Regional Water Initiatives proposed by Tajikistan	MEWR, MFA, CEP	2025–2026	200	Development partners.
III. PROVIDE THE POPULATION OF TAJIKISTAN WITH ACCESS TO QUALITY DRINKING WATER AND EFFECTIVE WATER DISPOSAL SYSTEMS					
23.	Adoption of the State Programme for Drinking Water Supply and Wastewater Disposal for the period up to 2032 and implementation of envisaged interventions	MEWR, Committee for Housing and Utilities, MoF, Local Executive Authorities of State Power	2025–2027	3 034 587	Within the framework of funds allocated from the state budget, private investments, public-private partnerships, loans and grants from international organizations, and other sources compliant with the legislation of the Republic of Tajikistan
24.	Development and enforcement of sanitary protection zones for water bodies, especially those serving as sources of drinking and domestic water supply	Local Executive Authorities of State Power, MoHSPP, MEWR, CEP	2025–2027	1747,0	Within the limits of funds allocated from the state budget Development partners.
25.	Digitalization of the water supply and wastewater sector	MEWR, CEP, Local Executive	2025–2027	2040,2	Development partners.

		Authorities of State Power			
IV. ENSURE THE SUSTAINABLE FUNCTIONING AND DEVELOPMENT OF IRRIGATION AND DRAINAGE SYSTEMS					
26.	Implementation of the Land Reclamation and Irrigation Development Program for 2024–2028	ALRI, MEWR, MEDT, MoF, Local Executive Authorities of State Power	2025–2027	187680,0	Within the framework of funds allocated from the state budget, loans and grants from international organizations, and other sources compliant with the legislation of the Republic of Tajikistan
27.	Enhancing water use efficiency in agriculture	ALRI, MEWR, Local Executive Authorities of State Power	2025–2027	6870,0	Development partners.
28.	Introduction of water-conservation technologies in agriculture	ALRI, MEWR, Local Executive Authorities of State Power	2024–2026	9880,0	Development partners.
29.	Development and implementation of measures to expand new irrigated lands, improve the reclamation condition of irrigated lands, and reduce the area of irrigated lands removed from agricultural use	ALRI, Local Executive Authorities of State Power	2 025–2027	563 100	Within the limits of funds allocated from the state budget Development partners.

30.	Reducing the energy intensity of irrigation systems through the modernization of existing pumping stations and improvements in the management of irrigation systems	ALRI, MEWR, Local Executive Authorities of State Power. MoA	2025–2027	401615,0	Within the framework of funds allocated from the state budget, loans and grants from international organizations, and other sources compliant with the legislation of the Republic of Tajikistan
31.	Construction, modernization, and restoration of infrastructure in the field of land reclamation and irrigation	ALRI, MEWR, Local Executive Authorities of State Power	2025–2027	70700,0	Within the framework of funds allocated from the state budget, loans and grants from international organizations, and other sources compliant with the legislation of the Republic of Tajikistan
32.	Digitalization of the land reclamation and irrigation sector		2025–2027	15150,0	Development partners.
V. USE AND PROTECTION OF WATER BODIES, PREVENTION OF DETRIMENTAL IMPACT OF WATER AND ENSURING SAFETY OF HYDRAULIC INSTALLATIONS					
33.	Continued construction of the Rogun Hydroelectric Power Plant (HPP)	MEWR, MEDT, MoF, SCISPM	2025–2027	8 418 000	Within the framework of funds allocated from the state budget, loans and grants from international organizations, and other sources compliant with the legislation of the Republic of Tajikistan

34.	Development and implementation of measures to prevent detrimental water impact and ensure the operational reliability and safety of hydraulic structures	CoES, ALRI, MEWR, Local Executive Authorities of State Power	2025–2027	6213,5	Within the framework of funds allocated from the state budget, loans and grants from international organizations, and other sources compliant with the legislation of the Republic of Tajikistan
35.	Development and implementation of state programs for bank protection works	ALRI, CoES, MEWR, Local Executive Authorities of State Power	2025–2027	372600	Within the framework of funds allocated from the state budget, loans and grants from international organizations, and other sources compliant with the legislation of the Republic of Tajikistan
36.	Identification, mapping and monitoring of areas prone to floods and other water-related disasters	CoES, MEWR, Local Executive Authorities of State Power	2025–2027	1163,5	Development partners.
37.	Carrying out a set of preventive mudflow and flood control interventions	CoES, ALRI, MEWR, Local Executive Authorities of State Power	2025–2027	81769,6	Within the limits of funds allocated from the state budget Development partners.

38.	Prospecting and registering reserves of fresh groundwater deposits on the state register	MDG, CEP, MEWR	2027	7189,2	Within the limits of funds allocated from the state budget Development partners.
39.	Restoration and ecological rehabilitation of water bodies, including small rivers	Local Executive Authorities of State Power, Committee of Housing and Utilities. ALRI	2025–2027	1212,0	Development partners.
40.	Implementation of projects aimed at reducing the negative impact on water bodies and rationalizing water use	CoES, ALRI, MEWR, Local Executive Authorities of State Power	2025–2027	4201,6	Development partners.
VI. R&D AND STAFFING SUPPORT OF THE WATER SECTOR, PUBLIC OUTREACH AND AWARENESS-RAISING ON THE USE AND PROTECTION OF WATER BODIES					
41.	Roll-out research and development activities in the water sector to address challenges, foster innovation, and promote sustainable water management practices.	NAS, The Institute of Water Problems, Hydropower and Ecology. MEWR, ALRI	2025–2027	3878,4	Within the limits of funds allocated from the state budget Development partners.

42.	Developing crop irrigation regimes in response to climate change threats posed to the Republic of Tajikistan	MEWR, NAS, Institute of Water Problems, Hydropower and Ecology, MoA	2025–2027	4241,6	Within the limits of funds allocated from the state budget Development partners.
43.	Research on glacier retreat in Tajikistan and its impact on the formation of river water resources.	NAS, The Institute of Water Problems, Hydropower and Ecology. MEWR	2025–2027	989,8	Within the limits of funds allocated from the state budget Development partners.
44.	Study of the risks associated with Sarez Lake and the potential for utilizing its waters.	NAS, The Institute of Water Problems, Hydropower and Ecology. MEWR	2025–2027	1070,6	Development partners.
45.	Implementing activities focused on public outreach and awareness raising on the use and protection of water bodies	MoES, MoC, MEWR, ALRI	2025–2027	3636,0	Within the limits of funds allocated from the state budget Development partners.
46.	Establishing qualification requirements for water sector employees that align with the strategic needs of water sector development, including improvement the system of human resources training and development	MoES, MEWR, ALRI	2025–2027	1090,8	Within the limits of funds allocated from the state budget

					Development partners.
47.	Implementing measures for the retraining and professional development of workers in the water sector, including transitioning to personalized accounting and financing systems, as well as adopting a modular organization for educational programs	MoES, MEWR, ALRI	2025–2027	2048,3	Within the limits of funds allocated from the state budget Development partners.
48.	Enhancing the educational, scientific, technical, and teaching capabilities of higher education establishments involved in training personnel for the water sector	MoES, MEWR, ALRI	2025–2027	1381,7	Within the limits of funds allocated from the state budget Development partners.
VII. MONITORING PROGRESS OF THE NATIONAL WATER STRATEGY OF THE REPUBLIC OF TAJIKISTAN FOR THE PERIOD UP TO 2040					
49.	Establishing a monitoring system for the implementation of the National Water Strategy	MEWR	2025	363,6	Development partners.
	Total (in 1000' TJS)			13 245 789.3	