Integrated solutions for water management in Tajikistan

ABOUT THIS BRIEF

Water plays a key role in sustainable development constituting a certain "connector" for different sectors using water. The integrated approach to managing water resources is therefore crucial for the improvement of climate-resilient development.

This brief highlights the opportunities and challenges the water sector in Tajikistan is facing nowadays and the current legal basis for the successful implementation of integrated water resources management (hereafter IWRM). The brief also gives an overview of the enabling environment, institutions active in the water sector, management instruments as well as finances in Tajikistan.

This review was prepared by Professor Yarash Pulatov (Tajikistan Water Partnership), Dr Barbara Janusz-Pawletta (GWP Technical Committee) and Milena Oravcová (DKU CRS Fellow). This review was prepared as a summary of the key findings of previous multiple studies on Tajikistan.

RECOMMENDATIONS

The following recommendations[1] are foreseen for the successful implementation of IWRM in Tajikistan:

RECOMMENDATIONS ON IWRM IN TAJIKISTAN	
Enabling Environment	Recommendation 1 – Climate Change Adaptation **Increase natural disasters forecasting and preparedness mechanisms**
	Recommendation 2 – Hydro Energy **Modernise hydropower infrastructure used for multisectoral purposes to increase hydro energy efficiency**
	Recommendation 3 – Economy & Finances **Improve legal and administrative framework to ease private engagement in the water sector**
	Recommendation 4 – Agriculture **Introduce water-saving and protection economical instruments for irrigation infrastructure**
	Recommendation 5 – Industry **Increase the number of environmental engineering facilities for urban land and industrial water use**

[1] GWP Central Asia and the Caucasus (2020) Отчет о консультации с заинтересованными сторонами ЦУР 6.5.1. «Степень реализации ИУВР». Республика Таджикистан. p 6-7

	Recommendation 6 – Wastewater & Water Supply **Improve accounting and control over wastewater quality and quantity**
Institutions	Recommendation 7 **Strengthen basin management organisations at all levels of water management**
Management Instruments	Recommendation 8 **Adopt the National Water Strategy of the Republic of Tajikistan**
Finances	Recommendation 9 **Implement legal mechanisms for private investment into the water sector**

INTRODUCTION: WHY IS AN INTEGRATED APPROACH TO WATER MANAGEMENT IMPORTANT IN TAJIKISTAN?

Tajikistan, a landlocked country located in Central Asia, is rich in water resources, building a strong basis for the country's economic and social development. Tajikistan is not an exception when it comes to climate change and its negative impact on the country including extreme events exposure. Extreme events on natural resources make the country especially vulnerable to climate variability and climate change impacts. Water resources are in particular affected, mostly by natural disasters such as floods, and mudflows, which is further impacting agriculture and therefore the entire water sector. They´re still managed based on administrative and not hydrological boundaries which makes it difficult for districts to have a whole picture of the quality and quantity of water and subsequently, of the needs of water users as well as the environment.[2]

IWRM will help to improve the current situation in the country, by avoiding disconnected policies and sector-focused approaches to resource management as well as strengthening resource interlinkages, coexistence and the transboundary nature of water resources.[3] IWRM aims to create sustainable water security and promote the coordinated development and management of water. It has several benefits such as fostering economic growth of the country and sustainable agriculture, improving the participation of all in the governance, improving human health, and last, but not least, strengthening environmental protection.

However, the limited finances and management, old infrastructure, and others create challenges for the successful implementation of the principles of IWRM in Tajikistan.[4] The biggest window of opportunity constitutes the water-energy nexus which is critically important as hydropower energy represents the majority of electricity production and the basis for economic development and social

[2] The Swiss Agency for Development and Cooperation (SDC) (2022) National Water Resources Management Tajikistan. Also available at: https://www.eda.admin.ch/deza/en/home/countries/central-asia.olddesign.par2_projectfilter_page2.html/content/dezaprojects/SDC/en/2013/7F08523/phase2?oldPagePath=/content/deza/en/home/laender/asie-centrale.html

[3] Leck, H., Conway, D., Bradshaw, M., and Rees, J. (2015). Tracing the water-energy-food nexus: description, theory and practice. Geography Compass 9, 445–460

[4] ibid.

progress. Hence, the enhancement of the water management system is a top priority for national decision-makers, who are making great efforts in the application of IWRM throughout the country.

Effective water resources management is crucial for Tajikistan. Climate change significantly affects the country's economy, society, and environment, showing the important role of water in climate change adaptation and the 2030 Agenda for Sustainable Development, particularly goal 6.5.

According to the country's self-assessment, Tajikistan has a score of 46 for the 2020-21 round of data collection for SDG 6.5.1. indicator, showing that it has a medium-low status of IWRM implementation, see the table below.[5] This is a self-assessed score provided by the UN and its SDG Index. It is an assessment of each country's overall performance on the 17 SDGs, giving equal weight to each Goal. The score signifies a country's position between the worst possible outcome (score of 0) and the target (score of 100). Two-thirds of the data come from official statistics (typically UN custodian agencies) and one-third from non-traditional statistics, including research centers, universities, and non-governmental organisations.[6]

IWRM Score (SDG 6.5.1)	
IWRM Final Score	46
Enabling Environment	49
Institutions and Participation	43
Management Instruments	48
Financing	42

STATUS OF IMPLEMENTATION
Very high (91 to 100)
High (71 to 90)
Medium-high (51 to 70)
Medium-low (31 to 50)
Low (11 to 30)
Very low (0 to 10)

Water is also important for the agriculture sector providing jobs for around 45% of the population and contributing to up to 25% of the country´s GDP.[7]

The agricultural sector is water and energy extensive and there is a need for more coordinated actions between these two intertwined sectors. Water supply services in rural areas and sewerage coverage in many urban areas still must be expanded to more than three million people in Tajikistan.[8]

Considering the value of water resources and their practical, social and economic relevance, the government of Tajikistan has identified the following practices for improving water resource management[9]:

[5] GWP Toolbox IWRM Action Hub (2022) Country Profile. Tajikistan. Also available at: https://www.gwptoolbox.org/country-info/TJ

[6] SDG Index. Sustainable Development Report. Also available at: https://dashboards.sdgindex.org/chapters/part-2-the-sdg-index-and-dashboards

[7] World Bank (2022) Blog on Catalyzing water action and partnership in Tajikistan. Also available at: https://blogs.worldbank.org/europeandcentralasia/catalyzing-water-action-and-partnership-tajikistan

[8] ibid

[9] Ministry of Energy and Water Resources Republic of Tajikistan (2019) Transition Towards IWRM and Water Supply at Basin Level Republic of Tajikistan. Also available at: https://thedocs.worldbank.org/en/doc/765401574230281802-0080022019/related/1312Sharipov1212roach0at0basin0level.pdf

PRACTICAL RELEVANCE
➢ Favourable legal environment for widespread implementation of IWRM principles;
➢ Improving water resource management by strengthening institutional coordination and performance;
➢ Focus on water use efficiency and water saving;
➢ Involvement of different stakeholders in the decision-making process
SOCIAL RELEVANCE
➢ Communities and stakeholders are involved in the planning and decision-making process;
➢ Improved water use efficiency is beneficial for all;
➢ Environmental benefits;
➢ Coordinated water management reduces the likelihood of conflicts as water becomes less available;
➢ Transition to modern management practices, especially in agriculture
ECONOMIC RELEVANCE
➢ Water savings = cost savings for delivering water;
➢ Strengthening the capacity of the government to make more informed strategic decisions on investments in water infrastructure regarding costs and benefits in various economic sectors;
➢ Strengthening donor readiness to contribute to water management, water supply, and agriculture

CHALLENGE: WHAT MAKES IWRM TIMELY?

The vulnerability to climate change exposes Tajikistan and its water resources as well as all water-using sectors of the economy to a great challenge.

The energy sector is not an exception as it is the main source of electric power in the country. The gradually emerging changes in water flow could negatively affect hydropower infrastructure, impacting energy generation efficiency, reservoir management, and seasonal water availability, including for agriculture, which is a mainstay of the country´s economy. An integrated approach to the management of water sectors in all relevant sectors would offer the needed solution.

The depletion and degradation of Tajikistan's water resources are caused by multiple factors, including climate change, hydropower development, population growth, economic development, agriculture, wastewater, etc. Hence, addressing water management is currently the top priority in Tajikistan, where IWRM can help to effectively reduce the adverse impacts.[10]

[10] Душанбинский Водный Процесс 2-ая Международная конференция высокого уровня по Международному десятилетию действий «Вода для устойчивого развития», 2018-2028 6-9 июня 2022

Climate Change

In the last decades, climate change has impacted predominantly water resources and water bodies. Based on the data provided by the public institute – 'Tajik Hydromet,' if maintaining the existing rates of degradation of glaciation, many small glaciers will completely disappear in the country in the next 30-40 years.[11] The degradation of glaciation might significantly affect the water regime of rivers, in particular. Especially because glaciers and snow inventories are the main sources of irrigational water in Tajikistan. Also, the expected increase in maximum and minimum daily temperatures will result in an increase in potential evapotranspiration, likely an increase in annual rainfall, and a decrease in snowfall. The annual river flows are likely to rise, which will increase the frequency of extreme flood events. This will have an impact on the gradual shift in river flow seasonal distribution, with high flows earlier in the year due to early ice melting caused by higher temperatures.

Hydropower Development

The majority of electricity in the country is generated using water resources where the main hydropower potential is concentrated in the basins of the Vakhsh and Pyanj rivers. Energy security, however, requires sufficient investment into the technical and economic conditions of existing hydropower companies to be able to supply the population and national economy with a sufficient amount of energy.[12]

Economy and Demographic Growth

The population of Tajikistan experiences rapid growth which is one of the main factors that influence water supplies. There was an increase of 2.24% compared with the previous year. The current population exceeds 10 million people.[13] Only 55% have access to safely managed water supply services.[14]

Tajikistan has made progress in reducing poverty and growing its economy. Although the last year, it slowed down to 2%,[15] the country´s GDP grew rapidly in the two previous years, 9.2% in 2021 and 4.5% in 2020.[16] Unemployment still remains significant, leaving the economy vulnerable to external shocks. Therefore, the private sector should be given more opportunities, providing jobs to more people in the labour market, and the water sector could offer special opportunities.[17]

Fiscal deficiency, tariffs for utilities, and allocation of funds are one of the key problems for the water supply sector. These create obstacles for technical support and advancement of the water supply systems.

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[11] GWP Central Asia and Caucasus (2014) Национальные консультации по Повестке дня в области развития после 2015 года в Таджикистане. Also available at: https://www.gwp.org/ru-RU/-/1/---------2015---/

[12] Katarzyna Kosowska, Piotr Kosowski (2022) Energy Security of Hydropower Producing Countries—The Cases of Tajikistan and Kyrgyzstan. Also available at: file:///C:/Users/milen/Downloads/energies-15-07822-v2.pdf

[13] Country Meters (2023) Tajikistan Population Also available at: https://countrymeters.info/en/Tajikistan

[14] World Bank (2022) Tajikistan to Improve Access to Safe Drinking Water, with World Bank Support. Also available at: https://www.worldbank.org/en/news/press-release/2022/06/23/tajikistan-to-improve-access-to-safe-drinking-water-with-world-bank-support

[15] ibid

[16] Asian Development Bank (2022) Tajikistan's Economic Growth to Slow in 2022, Recover Slightly in 2023. Also available at: https://www.adb.org/news/tajikistan-economic-growth-slow-2022-recover-slightly-2023-adb

[17] World Bank (2021) Tajikistan: Overview Also available at: https://www.worldbank.org/en/country/tajikistan/overview

Wastewater Treatment

Access to sanitation remains a challenge in Tajikistan. Only 18.2 % per cent of the population in small towns have access to sewerage systems.[18] The sewerage and treatment facilities require renovation to improve wastewater treatment in the whole country and to limit 'on-site sanitation' systems.

Other Factors

Unwanted urbanisation caused by climate change, in particular, by natural disasters such as mudslides or floods, often causes great damage and therefore forces people to relocate to other places where they are establishing new towns and villages which creates also challenges, especially when it comes to water supplies.

Ineffective use of water contributes to water shortage in Tajikistan. There are significant amounts of wasted water, the instalment of dysfunctional water supply routes and equipment, as well as inconsiderate use of water by households.[19]

ENABLING ENVIRONMENT

Tajikistan has made good progress to address water-related issues in the country. The government of Tajikistan is also committed to continuing to support the water policy dialogue called Dushanbe Water Process as a part of the International Decade on Water for Sustainable Development.

The country has embarked on an ambitious water sector reform over the last few years. Tajikistan has approved a revised Water Code of the Republic of Tajikistan (hereafter Water Code) and enacted other laws on water-related issues. Moreover, there is noticeable progress in the development of water resources sector strategies as well. Although Tajikistan has a sufficient legal basis for the IWRM, its implementation still remains a challenge. The successful implementation of IWRM may significantly help in this regard, as it´s a certain "vehicle" for creating solutions for these challenges.

Below is an overview of the relevant policies by sectors that directly or indirectly contribute to the implementation of IWRM in the country.

POLICY STATEMENTS	
Sector	**Key Policy Statements (including laws, strategies, and plans)**
Cross-sectoral	National Development Strategy (2030)
Climate Change	National Strategy for Adaptation to Climate Change (NSACC) in the Republic of Tajikistan (2030)
Water	Program for Reforming the Water Sector of the Republic of Tajikistan for 2016-2025
	Water Code of the Republic of Tajikistan (2020)
	Law on Drinking Water Supply and Wastewater
	National Water Strategy from 2006

[18] Orkhan Ali (2022) Decentralised Sanitation Solutions In Tajikistan. Also available at: https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621378/lp-decentralised-sanitation-solutions-tajikistan-300522-en.pdf;jsessionid=1042EDFF5105005318B7812F66FFFD29?sequence=1 p 5

[19] ibid p 5

A number of state laws and policies directly or indirectly refer to IWRM and are based on this principle. The Program for Reforming the Water Sector of the Republic of Tajikistan for 2016-2025 defines the main goal, objectives, and principles of reforming the water sector in the country. The program defines guiding principles to implement IWRM.

The program is highlighting objectives[20] such as:

- transition from administrative-territorial management of water resources to management within hydrological and hydrographic zones
- a creation of a republican structure functioning in accordance with IWRM
- a creation of transparent management and accountability structures.

In 2020 Tajikistan revised the Water Code endorsing the IWRM and concurrently created river basin organisations. The main aim of the code is to regulate water relations in order to ensure sustainable management and the rational use of water. The code highlights the importance of implementation of state policy in the field of use, protection of water resources, and IWRM.

National Water Sector Strategy from 2006 creates also a sound basis for ensuring rational and efficient use of water resources with the maximum possible and balanced bathroom benefit for all water users with a minimal negative impact on the environment. Environmental protection for integrated water resources management is one of the main objectives of the strategy.

Currently, the National Water Strategy of the Republic of Tajikistan for the period up to 2030 is at the stage of approval.

Climate Change Adaptation

The National Development Strategy (2030) (hereafter NDS) address the changes that have occurred in Tajikistan and in the world in recent years to implement the country´s international commitments to Sustainable Development Goals as well. The natural disaster risk management system and the effective management of natural resources are an integral part of NDS. The strategy lists activities that should be undertaken as to address natural disasters which is key for the country´s climate-related activities supported by IWRM. **(see Recommendation 1)**

The National Strategy for Adaptation to Climate Change (NSACC) in the Republic of Tajikistan (2030) addresses issues connected with climate change and highlights the measures that are to be undertaken by the country in the next years. The strategy also considers the international obligations of the Republic of Tajikistan according to the Agenda for the 21st century and to the Sustainable Development Goals (SDG), including on IWRM. The NSACC underlined the reducing quantity of glacial zones that will have a significant effect on inventories of fresh water in the rivers such as Zarafshana, Kafernigana, Karataga, and Obikhingou.

Hydro Energy

The National Development Strategy highlights the importance of IWRM in the energy sector to ensure energy security and efficient use of energy. Hydro energy constitutes about 98% of the electricity in the country, making water the main source of energy.[21] The strategy does not, however, provide any specific

[20] ibid point 60

[21] Ministry of Energy and Water resources Republic of Tajikistan. About the Ministry. Also available at: https://www.mewr.tj/?page_id=2

measures to be carried out for the implementation of IWRM in the field of energy. **(see Recommendation 2)**

Economy & Finances

National Development Strategy considers IWRM as an advantage for further development of economic policy and institutional framework in Tajikistan. Expanding the mechanisms of IWRM is listed among the sources of economic growth. However, NDS does not focus on the role of the private sector engaged in water. The Water Code does so and does not prohibit the participation of individuals or private businesses in the water sector.[22] In practice, however, all water infrastructure is managed commonly by state and public organisations. **(see Recommendation 3)** The state provides comprehensive support for initiatives of the private sector and entrepreneurship, aimed at the elimination of administrative barriers and ensuring the transparency of legal norms in relation to business entities. Except for the Water Code, there is a number of other laws that reflect on the participation of the private sector and aim at the creation of the mechanisms in the water sector, including “Law on the public-private partnership, "Law on drinking water supply and sanitation," or the “Law on Water Users Association.”

Agriculture & Industry

The National Development Strategy refers to IWRM in many occasions, which needs some more specific solutions **(see Recommendation 4).** The low level of sustainable development of agriculture is in the NDS associated mainly with increased degradation of land and water resources, especially arable land due to erosion, pollution, salinisation, water logging, increased groundwater levels, reduction of forest areas, land withdrawal from agricultural use, as well as climate change factors. The inadequate management of water resources in the agrarian complex including IWRM is also shown as one of the main obstacles in the NDS.

The NDS refers to IWRM also when it comes to industry respectively, to the adequate management of water resources. **(see Recommendation 5)**

Wastewater & Water Supply

The Law on Drinking Water Supply and Wastewater enshrines the right to drinking water as a priority which is deeply linked to the IWRM concept. (**see Recommendation 6)** The main objectives include the establishment of legal guarantees and satisfaction of the needs of individuals and legal entities in drinking water; the establishment of economic bases of drinking water supply; establishment of state guarantees for the sustainability of drinking water supply and sanitation, and also grounds for bringing to responsibility for violation of the rules in the field of drinking water supply and drainage.

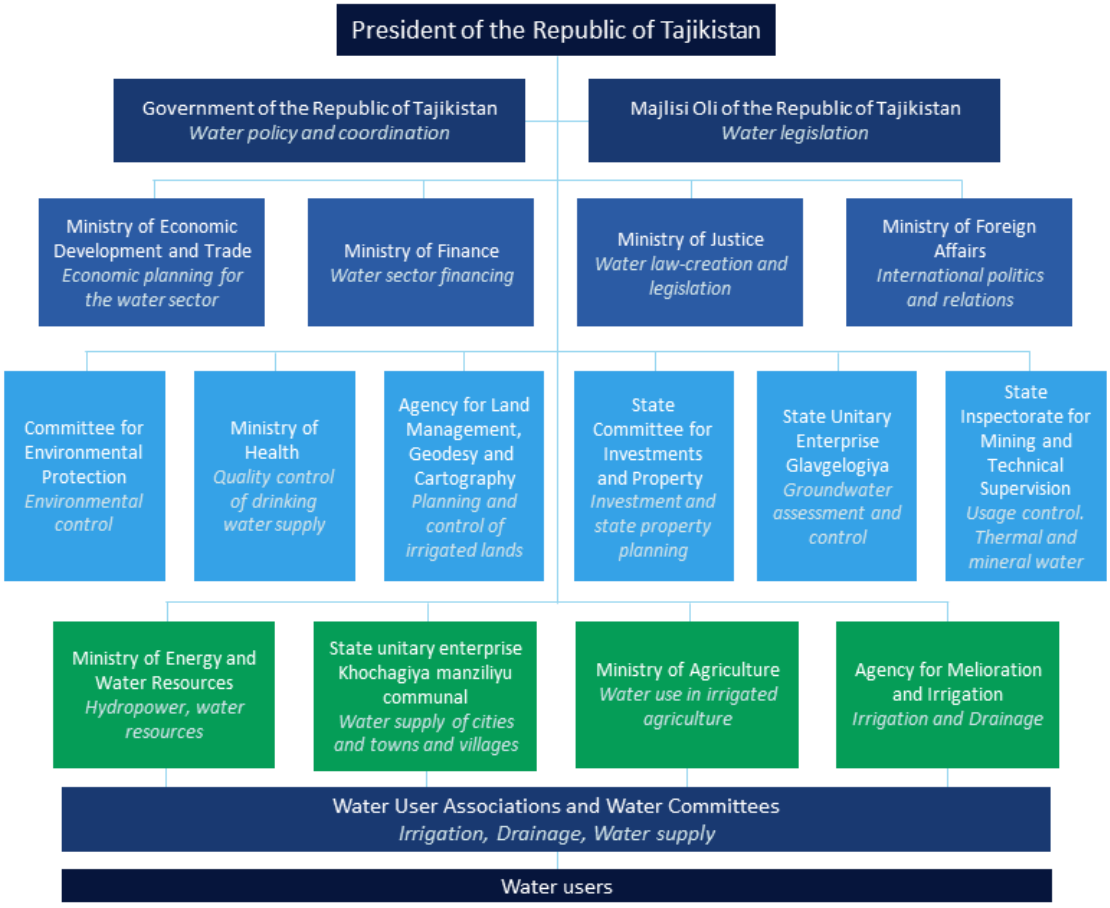
The legislative reforms have laid a foundation for an improved governance framework for the water sector. Increased coordination and cooperation among all stakeholders may significantly improve the situation.

[22] Water Code (2020) Also available at: http://greencentralasia.org/storage/upload/New%20Water%20Code%20Tajikistan_ENG.pdf art 9;10; 26

INSTITUTIONS

The involvement and participation of all key water "players" in the efforts towards IWRM are crucial. The government has a significant responsibility in this regard, as it might address the imbalances between the sectors and it can do so by ensuring that all stakeholders are engaged in the decision-making processes. This applies to all sectors using water where the competent bodies should work on the basis of cooperation, so as to achieve effective implementation of IWRM in practice.

The following scheme describes the water institutions engaged in the water sector in Tajikistan.



The Government of the Republic of Tajikistan regulates water relations at the state and interstate levels. Executive bodies that implement water policy, and manage the use and protection of water resources in the interests of the sectors of the economy, water consumers and the natural environment, are represented by ministries, state committees and institutions. It can be seen that the connection between water consumers and governing bodies is weak. There is a need to create an effective "bottom-up" approach to allow the government to quickly assess the effectiveness of the activities of authorised bodies and the possibility of influencing water consumer communities on decision-making. **(see Recommendation 7)**

Interdepartmental coordination of executive bodies is carried out through the government. Under the government, the Water and Energy Council and a Working Group of representatives of state institutions and organisations have been established. The competence of the Council is defined by the

National Water Sector Strategy which includes coordination of activities of the interested ministries, departments and other government agencies, river basin councils, water user associations, the private sector, as well as non-governmental organisations in IWRM.

As a result of the restructuring of water management, the "Ministry of Energy and Water Resources of the Republic of Tajikistan" and the "Agency for Melioration and Irrigation under the Government of the Republic of Tajikistan" were established. However, on some issues regarding management and leadership, there might appear to be intersectoral contradictions as well.

MANAGEMENT INSTRUMENTS

In Tajikistan, there is a complex structure with diverse functions in the field of use and protection of water resources (regulation, forecasting, use and protection, planning, analysis, policy, tactics, and strategy), as well as the diversified nature of water use and the variety of requirements for water resources according to quantity, quality, mode. Therefore, the management instruments need to be coordinated across sub-sectors to make efficient use of water.[23]

There is a need for more openness and transparency in water services like improving of databases at the national level and coordinated use of regional information systems like CAWater, the information system shared by riparian states of the Aral Sea basin, for collecting data on land and water resources and assessing diverse aspects of water use and its effectiveness.[24]

Irrigation and watering of pastures in Tajikistan have been transferred since 1996 to paid water use from relevant tariff regulations. Furthermore, penalties were introduced for irrational and unauthorised use of water. A law on energy saving has been adopted, which affects tariff regulation of water and energy consumption of the pumped irrigation zone.

In general, the acts of the government bodies in Tajikistan indicate that the transition to IWRM principles is a gradual and systematic process. **(see Recommendation 8)**

FINANCES

The gradual transformation of the water sector in Tajikistan to allow for integrated management of water resources requires financial sources coming from the state or external donors.

Annually, financial resources are allocated from the republican budget for water resources management, but they are not fully disclosed according to expected events. Allocated budgetary funds for the water sector have only general purposes but could focus more on the uses relevant from IWRM perspective. **(see Recommendation 9)**

The water sector, especially "melioration and irrigation", "drinking water supply", and "ecosystem support" need state support, investments, subsidies, and attraction of funds from international organisations and financial institutions.

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[23] UNDP. Проект Развития ООН. Аналитический обзор «Состояние и перспективы интегрированного управления водными ресурсами в Республике Таджикистан» (2012) Also available at: http://www.cawater-info.net/bk/iwrm/pdf/tj_iwrm_an_rev_rus.pdf p 26

[24] CAWater. Database. Also available at: http://www.cawater-info.net/bd/index_e.htm#is

Furthermore, discussions are ongoing around the need for a "Water Fund" to create accumulation and rational use of financial resources in the field of IWRM.

Partnerships with the global water community are important for knowledge and financial resources. There are a number of ongoing water-related projects in Tajikistan funded by the international development community. For instance, the government, with the financial support of the World Bank and the European Union, is developing a design for the "Tajikistan Strengthening Water and Irrigation Management Project" (SWIM) which aims to rehabilitate and modernise large-scale irrigation infrastructure and increase the resilience of smaller irrigation systems exposed to flood and mudflows. Last year the World Bank approved a $30 million IDA grant for this project co-funded by the European Union with a EUR 16.19 million grant.[25] Another project the World Bank supported was the "Second Project on Ensuring Employment for Sustainable Agriculture and Water Management Resources" (POZN-2) within the framework of which the basic principles of IWRM are being introduced in the Kafirnigan river basin.

Other partners actively support the water sector in Tajikistan. The Asian Development Bank is currently supporting a project on "Water Resources Management in the River Basin Pyanj." Another project on "Irrigation facilities in sub-basins have been rehabilitated in the Khodjabakirgan and Aksu rivers, including Disaster Risk Reduction and Watershed management" funded by the Swiss Agency for Development and Cooperation (SDC). The United Nations Development Programme (UNDP), Gesellschaft für Internationale Zusammenarbeit (GIZ), Helvetas, and the Agency for Technical Cooperation and Development (ACTED) supported the project for the "Water Plan for the Tajik part of the river basin Syrdarya for 2020-2025 and Isfara river basin" which has been already developed.

OTHER RECOMMENDATIONS ON IWRM IN TAJIKISTAN:
ENABLING ENVIRONMENT
Climate Change Adaptation **Recommendation 1 – Increase natural disasters forecasting and preparedness mechanisms**
Natural Disasters: Introduce modern methods of forecasting floods and mudflows; Conduct study and zoning of mudflow and flood hazardous zones, clear definition and marking of their boundaries on maps; Carry out systematic exercises with the local population and leadership to increase awareness and preparedness in case of natural disasters; Develop local Long-term Programs for the resettlement of the population from potential flood and mudflow zones; Increase interstate cooperation on prevention and joint control of floods and mudflows; Launch construction of engineering bank protection structures on coastal areas destroyed by floods and mudflows to prevent further development of erosion processes; Launch construction of new gauging stations in the necessary places to prevent floods

[25] World Bank. Tajikistan's Water Sector to Benefit from Additional World Bank Support. (2022) Also available at: https://www.worldbank.org/en/news/press-release/2022/06/23/tajikistans-water-sector-to-benefit-from-additional-world-bank-support

Hydro Energy **Recommendation 2 – Modernise hydropower infrastructure used for multisectoral purposes to increase hydro energy efficiency**
Ensure hydropower serves multiple goals such as electric power, irrigation, flood protection, fisheries, recreation, technical and domestic water supply; Increase the efficiency of using the generated electricity and focusing on own resources in the long-term investment policy; Modernise and reconstruct all existing hydroelectric power plants and energy system facilities; Strengthen the cooperation at regional and national levels in the development of water and energy resources in Tajikistan; Implement a policy that provides compensation for the services and losses associated with the regulation of flow for irrigation in Central Asia
Economy & Finances **Recommendation 3 – Improve legal and administrative framework to ease private engagement in the water sector**
Increase the engagement of the private sector in the water sector so as to provide them with more opportunities
Agriculture **Recommendation 4 – Introduce water-saving and protection economical instruments for irrigation infrastructure**
Irrigation and drainage: Develop a Long-term Strategy for the widespread introduction of water-saving irrigation technologies; Plan the construction of facilities for the production of water-saving technologies; Increase the efficiency of irrigation canals; Develop water-retaining technologies for soil cultivation; Cultivate low moisture-loving agricultural crops; Use snow retention techniques and water-charging irrigation in combination with deep ploughing; Introduce water-saving and soil-protective irrigation technologies (sprinkler, drip, tubular, etc.)
Industry **Recommendation 5 – Increase the number of environmental engineering facilities for urban land and industrial water use**
Use water circulation systems and environmental engineering facilities for better adaptation in the industry sector; Launch reconstruction and construction of environmental engineering facilities and municipal treatment facilities in industrial enterprises

Wastewater & Water Supply **Recommendation 6 – Improve accounting and control over wastewater quality and quantity**
Organise data for accounting and control over the quantity and quality of all waters, especially waste and collector-drainage waters; Launch rehabilitation of existing and new production laboratories for wastewater quality control; Develop and apply water quality criteria for various water users at the national and regional levels; Apply differentiated and stimulating tariffs for water supply to households; Maximally reduce water losses associated with leaks from the pipeline network; Decrease water supply rates; Implement the State program "Safe drinking water" and attract investments for the restoration and development of infrastructure; Strengthen the capacity of the sanitary and epidemiological service to control the quality of drinking water
INSTITUTIONS **Recommendation 7 – Strengthen basin management organisations at all levels of water management**
Deepen the institutional reform of the water sector; Continue work on the creation of basin organisations and the transition to the principles of IWRM; Continue transition from water management within administrative boundaries to the basin principle; Provide institutional changes which are ineffective without improved IWRM tools, in particular, without the development of financial mechanisms to ensure the financial viability of institutional structures (especially at the grassroots level, where water-based products are produced); Ensure that sub-national structures (basin departments of land reclamation and irrigation), responsible for the delivery of water to end users, work on a hydrographic basis to avoid administrative pressure from local authorities
MANAGEMENT INSTRUMENTS **Recommendation 8 – Adopt the National Water Strategy of the Republic of Tajikistan**
Ensure that all joint efforts will be focused on a clear understanding of the basic principles of IWRM (properly enshrined in policy/strategy, plans, and legislation) and their practical implementation in Tajikistan Adopt the National Water Strategy of the Republic of Tajikistan for the development of the water sector; Improve the national water policy, including its financial and economic aspects
FINANCES **Recommendation 9 – Implement legal mechanisms for private investment into the water sector**
Separate political and economic functions of water resources management; Enhance effective allocation of funds

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