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Enhancing Agricultural Productivity Through Effective Water Resource Distribution and Governance

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Abstract. The article studies and analyzes the activities of water consumer associations. The existence of problems and shortcomings during their activity was determined and SWOT-analysis was conducted by the author. On the basis of the conducted research, the tasks of the special service of water management established by the government decision in order to ensure fair management of water resources, timely supply of water and its monitoring to water consumers are given as a basis. Consequently, suggestions and recommendations were developed by the author in order to eliminate the problems and shortcomings of WCA.

INTRODUCTION

The limiting factor for the development of irrigated agriculture in Uzbekistan is the growing shortage of water resources. There are two main reasons for the scarcity of water resources. First of all, the water resources of Amudarya and Syrdarya are not distributed rationally in the Central Asian region. Various disagreements between the water management organizations of the countries located in the upper reaches of the rivers (Kyrgyzstan, Tajikistan) and the countries located in the lower reaches (Turkmenistan, Uzbekistan, Kazakhstan) have caused flooding in some areas and lack of water during the growing season. The second is water losses in all irrigation and drainage systems, from the irrigation source to the canals at various levels. It should be noted that the wastage of irrigation water depends on the type of water structure, the presence of surface coating of channels and other organizational, economic and legal factors. Currently, about 20% of irrigation water is lost in inter-farm irrigation systems. Losses in the household network are high in absolute and relative terms and, according to expert estimates, make up 40-50% of the delivered water. An additional 10% of water is lost in temporary ditches. In addition to technical reasons related to imperfect engineering structures of hydro melioration systems, wear and tear of systems due to long-term use without repair, there are also organizational reasons related to agricultural producers' lack of understanding of the need to use water resources sparingly.

It is known that on December 25, 2009, amendments and additions were introduced to the Law of the Republic of Uzbekistan "On Water and Water Use" adopted on May 6, 1993. Pursuant to Article 2 of this Law, the water users' association was replaced by the water users' association [1].

MATERIALS AND METHODS

In this article, the decrees of the President of the Republic of Uzbekistan, government decisions, normative legal documents of ministries, state committees and agencies, and local state authorities, as well as the information of Amu-

Kashkadarya ISBD were used. Logical thinking, comparative analysis, statistical data analysis, and SWOT analysis methods were used to cover the article.

RESULTS AND DISCUSSION

The association of water consumers is a non-governmental, non-profit organization established on a voluntary basis by water consumers who are legal entities to coordinate their activities in the field of water relations, as well as to represent and protect their common interests. based on the contract with the subjects, it is carried out at the expense of the funds paid for water supply services.

The legal basis of water consumers is a set of various legal documents consisting of laws and decisions adopted by the parliament, presidential decrees, government decisions, ministries, state committees and agencies, and regulatory legal documents of local state authorities. However, to date, there is no Law on WCAs in Uzbekistan, but the organization and management of WCAs is regulated directly on the basis of the above-mentioned laws and regulations. It is known from world experience that on March 15, 2002, the Kyrgyz Republic adopted Law No. 38 "On the Association of Water Users" and was amended by the Kyrgyz Republic Law No. 46 of March 30, 2013. By the decision of the Government of the Kyrgyz Republic No. 358 of June 3, 2002, the functions of state regulation and control of the activities of SFUs were assigned to the Water Management Department of the Ministry of Agriculture, Water Management and Processing Industry.

The sources of income of SFU can be contributions from members of SFU, income received from non-members of SFU for contractual supply of irrigation water, interest on bank accounts, donations and grants from the state and other sources, as well as all sources that do not contradict the legislation of the Kyrgyz Republic.

Resolution No. 137 of the Government of the Kyrgyz Republic dated March 22, 2016 provides for the establishment of a uniform tariff for water resources throughout the country, regardless of the payment basin and the type of water use for the use of water as a natural resource. On April 5, 2019, "On Amendments to Certain Legislative Documents of the Kyrgyz Republic, namely the Water Code, the Law on Water" was adopted. These laws established a system of payment for the use of water to solve the problem. The law established the procedure and conditions for collection of fees, as well as fees for water bodies and water use, as well as benefits.

Therefore, in the conditions of today's water shortage, it is necessary to establish a payment system for water use in our country and to adopt the "Water Code" in order to use water wisely.

It is known that in the following years, large-scale reforms are being implemented in terms of modernization and technological re-equipment of the water management infrastructure and improvement of the management system of the water management sector.

At the same time, water user associations, farmers' and peasant farms, cluster organizations and other water users' irrigation networks, the technical condition of their hydrotechnical structures and water intakes, as well as mutual water management relations, water accounting and efficient use of water, are in an unsatisfactory situation. and the following systemic deficiencies were found:

- firstly, the activities of associations are not organized in proportion to the tasks assigned to them. The executive bodies of the associations are not provided with qualified leaders and specialists in the field. The leaders of the associations were assigned agriculture and other related tasks, and the main tasks of water management were neglected;
- secondly, the contractual relations of associations with water consumers on water consumption were not established according to the level of demand, systematic control over the execution of contractual obligations was not carried out. Payments for services provided by associations were not made on time and in full. As a result, the financial situation of the unions worsened, and it was found that their debts for salaries, budget and extra-budget funds, electricity and other mandatory payments are high;
- thirdly, providing associations with buildings, strengthening their material and technical base, and other organizational issues related to effective organization of activities have been neglected by local governments and official organizations;
- fourthly, no attention was paid to equipping water consumers with water management and accounting tools, to repair irrigation networks and hydrotechnical structures in them, and to widely introduce water-saving technologies, as a result of which water accounting fell into an unsatisfactory state.

Taking into account the problems listed above, that is, the existence of systemic deficiencies in the work of water consumer associations in the following years, on December 11, 2019, the Cabinet of Ministers of the Republic of Uzbekistan adopted the decision VM-982 "On measures to improve the activities of water consumer associations".

In accordance with this decision, the following were defined as the priorities of the activities of the newly established water consumer associations [2]:

- regulation of mutual water management relations between farmers and peasant farms, homestead land owners, cluster organizations and other water consumers and establishment of contractual relations on water consumption;
- together with water management and agricultural organizations and local executive authorities, develop and approve water consumption plans and water intake limits of water consumers in the prescribed manner, supply water within the allocated limit, carry out its calculation and systematic monitoring;
- together with water management organizations, to equip the association and its hydro-districts with qualified personnel and effectively organize their activities;
- together with local executive authorities, repair and restore irrigation networks and hydrotechnical structures in them at their own expense, equip the water intake points of water consumers with water management and accounting tools, and organize repair and restoration of their internal irrigation networks;
- reconstruction and construction of the irrigation network together with water management organizations, organization of improvement of the melioration of irrigated lands in the prescribed manner;
- purposeful use of water management facilities at own expense, keeping them in technical condition;
- implementation of innovative methods of water management together with water management organizations and local executive authorities, organizing the introduction of drip irrigation and other water-saving technologies by water consumers.

From January 1, 2020, it was decided that at least 1% of the total amount of loans allocated to agricultural enterprises for the purpose of financing the costs of growing grain will be used to pay for the association's water management service, and at least 2% of the loans for the cultivation of raw cotton. It was determined that these funds will be paid by water consumers for the services provided by associations.

As of April 1, 2019, the debt repayment period for electricity, tax and other mandatory payments of the associations was extended until 2022 and fully paid by December 31, 2024.

In 2020, a total of 1,503 WCAs were operating across the republic, and according to the decision of VM-982, one association was established on the basis of existing associations, and this figure was 158, and in 2021, the number of WCAs across the republic increased by 3 to 161.

Now we will directly consider and analyze the issues related to the activity of WCAs in Kashkadarya region (Table 1).

TABLE 1. Analytical information on the activities of water consumers' associations of Kashkadarya region

Years	WCA's number unity	Contract value million soum	The service rendered, million soum	Service provided in relation to the contract. in %	Amount collected, million soum	The amount charged for the provided service is in %.
2005	134	1399.1	1399.1	100	657.0	47
2010	172	1650.0	1650.0	100	478.5	29
2015	152	1500.0	1500.0	100	352.5	23
2016	152	2400.0	2400.0	100	450.8	19
2017	152	3200.0	3200.0	100	384.5	12
2018	152	5800.0	4500.0	77.5	412.5	9
2019	152	10150.0	7000.0	69.0	655.0	9
2020	13	19140.0	11300.0	59.0	2100.0	19
2021	13	31050.0	19240.0	62.0	3300.0	17
Change in 2021 compared to 2005 (+; -)	-121	29650.9	17840.9	-38	2643	-30

Author's development based on the data of the Amu-Kashkadarya Irrigation Systems Basin Department.

The results of the conducted monographic research showed that the activity of WCAs decreased by 121 in 2021 compared to 2005 when studied during 2010-2021. Services provided under the contract decreased by 38%, and the

amount collected for services provided was only 17% in 2021, compared to 9% in 2018-2019. We can see from the table data analysis that this situation is really sad.

Based on the decision of the Cabinet of Ministers No. 982 [3], instead of 152 Water Consumer Unions, 13 new WCAs were established in Kashkadarya region. All 13 elected chairmen of the Water Consumers Association have higher education. 10 of them are hydrotechnical engineers, 2 are agricultural and 1 are economists. Of these, 5 employees are under 30 years old, 5 are under 40 years old, 2 are under 50 years old, and 1 is under 60 years old.

The region's Water Consumers Association provides services on 414,000 hectares of irrigated land, and the length of internal irrigation networks in the regions is 20,449 km. Of this, 10,735 km are covered with soil, 3,756 km are covered with concrete, 5,440 km are channels and 463 km are closed irrigation networks.

At present, WCAs have been provided with separate rooms and facilities for conducting activities from district irrigation departments, and 29 computers, 22 printers, 212 (tables, chairs, cabinets) and other types of equipment have been provided to organize work activities.

Also, 5365 "Water Use and Water Consumption" contracts were signed between WCAs and water consumers.

In Kashkadarya region, we consider the services provided by WCAs in the cultivation of agricultural products to farmers, peasant farms and cluster enterprises in 2010-2021 and express them in Table 3.29.

The 2010-2021 indicators of the irrigated area attached to WCAs and the area corresponding to 1 WCA, the amount of water provided for irrigation of irrigated lands, the average amount of water provided per complex hectare and the amount of water used in excess of the norm are analyzed in Table 2 below.

TABLE 2. Effectiveness of using services provided by water consumer associations of Kashkadarya region

Indicators	Unit of measure	2010	2015	2016	2017	2018	2019	2020	2021
Number of water consumer associations	unity	172	152	152	152	152	152	13	13
Water users attached to associations of water users.	thousand ha	514	514	417	417	417	417	358.7	358.7
Average area per WCU	hectares	2988	3382	2743	2743	2743	2743	27592	27592
The value of the service specified in the contract	thousand UZS	650	1500	2400	3200	5800	10150	19140	31050
Amount of water supplied	mln.m3	3840.1	3550.8	3615.7	3550.6	3780.2	3450.5	3598.8	3450.8
The amount of water given to one hectare of land	mln/ha	7471	6908	8671	8515	9065	8275	10033	9620
The average amount of water supplied per complex hectare	thousand m3	16.0	16.4	16.2	15.5	16.2	15.9	15.53	14.5
The cost of 1 m3 of water (with operating costs)	UZS/m3	36.0	79.3	90.4	117.1	180	196.2	205	282
The cost of water supplied per complex hectare	thousand UZS/ha	576	1300.5	1464.5	1815.1	2916	3119.6	3183.7	4089
The amount of water used in excess of the norm	1ha/m3	300	300	300	250	320	288	253	150

Author's development based on the data of the Amu-Kashkadarya Irrigation Systems Basin Department.

From the analysis of Table 2, it can be seen that in 2010, 3840.1 million m3 of water was used to irrigate 514 thousand ha of land, and by 2021, 3450.8 million m3 of water was used to irrigate 358.7 thousand ha of land. The cost of 1 m3 of water has been increasing year by year due to operational costs. In 2010, the cost of 1 m3 of water was

36.0 UZS, and by 2021 it will be 282.0 UZS, which is 7.8 times higher than in 2010. In 2010, 300 m³ of excess water was consumed per hectare, and in 2021, this figure will be 15 m³. Therefore, we can see from the table data analysis that water consumption has decreased by 2 times in the compared years.

The amount of water provided per hectare was 7471 m³ in 2010, and it was equal to 9620 m³ in 2021. We can see that the WCAs are lagging behind in this regard, as evidenced by the fact that they are not able to properly implement water-saving technologies, and financial deficiencies in the maintenance and rehabilitation of irrigation systems are hindering them.

From this point of view, we believe that it is appropriate to conduct a SWOT analysis aimed at eliminating the problems in the activities of WCAs.

Through SWOT-analysis, it is possible to make a decision on stopping or developing the activities of WCAs after studying the strengths and weaknesses, as well as opportunities and threats.

SWOT-analysis of problems in the activity of WCAs of Kashkadarya region and their elimination is presented below (Fig. 1).

In recent years, in order to mitigate the negative impact of water scarcity observed as a result of global climate change, large-scale reforms are being implemented in our country regarding the management of water resources, their accounting and reporting, as well as further improvement of water relations, as well as economical and efficient use of water.

TABLE 3. SWOT analysis of problems in the activities of water consumers' associations of Kashkadarya region and their elimination

S	W	O	T
The fact that it is the only type of service in supplying water to water consumers: – Regulation of mutual water management relations and establishing contractual relations on water consumption between farmers and peasant households, homestead land owners, cluster organizations and other water consumers; – Opportunities to repair and restore irrigation networks and hydrotechnical structures on their own account together with local executive authorities, equip water consumers with water management and accounting tools at water intake points, and organize repair and restoration of internal irrigation networks.	limited economic opportunities: – being established as a non-governmental, non-profit organization; – Absence of the law on organization and management of WCAs; – Outdated material and technical base of WCAs; – Non-organization of separate buildings for WCAs; – lack of qualified personnel in managing the activities of WCAs; – Problems with the withdrawal of funds for the service provided by consumers for the delivered water, etc.	Development of water consumption plans and water intake limits of water consumers together with water management and agricultural organizations and local executive authorities and approval in the prescribed manner, water supply within the allocated limit, its calculation and systematic monitoring: – Together with water management organizations, they are working hard to equip the association and its hydro-districts with qualified personnel and effectively organize their activities; – Reforms aimed at developing the activities of water consumers' unions (WCAs) are being carried out and decisions and decrees are being adopted from the legal side.	The fact that the established clusters are being established on the basis of public-private partnership in the use and management of water facilities and the implementation of current maintenance works: – The fact that our government is quickly making changes and additions to decisions and decrees; – The fact that the water shortage is increasing and injustices are occurring in the provision of water based on the limit; – Lack of qualified personnel in promoting the introduction of water-saving technologies, etc.

Resolution VM-196 of the Cabinet of Ministers of the Republic of Uzbekistan dated April 19, 2022 was adopted for the purpose of effective management of water resources, full accounting and reporting, improvement of relations between water consumers and wide involvement of the private sector in these processes.

According to this decision, a non-legal entity "special service" was established within district irrigation departments to organize water supply to water consumers, use of inter-farm irrigation networks, their repair and restoration and other water management services [4].

In accordance with the Regulation on the procedure for payment of fees for water supply and other water management services provided by the special service of the Ministry of Water Management of the Republic of Uzbekistan and the procedure for using funds from the provision of these services, the special service of water management is defined as follows. The special service of water management is a service that operates within the user organizations of water management without having the status of a legal entity and is organized for the provision of water supply and other water management services on the basis of a contract concluded between water management organizations and water consumers [5].

Water management user organizations include irrigation departments of districts (Kuvasan city) using water management facilities, irrigation system departments, main canals (systems) departments, pumping stations and power engineering departments, reclamation expeditions, departments for using water reservoirs and large hydrotechnical facilities, the Ministry of Water Management of the Republic of Karakalpakstan, includes irrigation systems basin departments under the Ministry of Water Management of the Republic of Uzbekistan [5].

We will perform a comparative analysis of the performance of the following tasks assigned to WCAs and the special service of water management in the effective management of water resources (Table 3).

TABLE 4. Comparative analysis of tasks of WCA's and special service of water management in effective management of water resources

Duties of water consumer associations	Tasks of the special service of water management
It is a non-governmental and non-profit organization with legal status	A service that does not have the status of a legal entity within the user organizations of water management
Planning the use of water resources within a specific area.	Water supply to water consumers and financing from the proceeds of the provided water management services.
Taking water from the state water management organizations in the prescribed manner, that is, within the limits, and distributing it among the members of the association.	Provision of other water management services according to the order of water consumers.
To control the reclamation of agricultural land in the territory of the Union and to prevent land degradation.	Equipping the main water intake points of water consumers with water management and accounting tools and organizing digitalization of water accounting and reporting.
Attracting the funds of the members of the association and other consumers for the repair and cleaning of internal irrigation and reclamation networks under the control of the association.	Implementation of inter-farm irrigation and collector-drainage networks serving two or more water consumers, as well as main and internal water intake works, provided to the district irrigation departments in the prescribed manner.
Control the purposeful and effective use of water resources and implement measures to remove ditches and wastewater from the area of cultivated fields within the framework of the association.	Carrying out permanent and purposeful use of other structures (pump units, irrigation and monitoring wells), as well as repair and restoration works
Monitoring of water resources received and distributed according to the limit and carrying out calculations on them.	Delivery of water within the limit of water intake allocated to water consumers, keeping its accounts and reports in the prescribed manner.

Author development based on research

In this table 3, the costs of water supply by the special service of water management include the costs of maintaining the special service of water management, the reliable management of inter-farm irrigation networks and other water management facilities, the costs of their repair and restoration, and the main water intake based on the order form of the water consumer. equipment of water management and accounting facilities, digitalization of water monitoring, accounting and reporting, as well as other specified water management services are included.

In the decision PQ-5 of the President of the Republic of Uzbekistan "On measures to improve the water resources management system in the lower reaches and increase the efficiency of water resources use" "The concept of "water

is free" formed in the mind of the population by increasing the efficiency of water resources use and raising the culture of water use special attention was paid to the issue of abandoning and introducing water-saving irrigation technologies in an expanded manner. Also, on the basis of the district (Kuyasoy city) irrigation departments and special services of the Ministry of Water Management, the organization of state institutions "Water Supply Service" and the volume of water used for irrigation of agricultural land and breeding (growing) of fish, including for farms and agriculture the tax rate for the use of water resources for individuals who own land was set at 100 UZS per 1 cubic meter of water [6].

Also, according to the Regulation on the procedure for payment of water supply and other water management services provided by the special service of the Ministry of Water Management of the Republic of Uzbekistan and the procedure for using funds from the provision of these services, by the formula of the tariff for the delivery of one cubic meter of water according to the volume of water received by water consumers definition is defined [7]:

$$X_T = \frac{T_c}{W} \quad (1)$$

T_c – the amount of annual accounting expenses for water supply to water consumers in its service area and reliable management of inter-farm irrigation and other water management facilities, their repair and restoration by the special service of water management, (UZS)

W – multi-year average calculated water intake limit allocated by the special service of water management to water consumers in its service area, (m³)

According to the conducted analysis, water pricing is an extremely complex process, and cost-based pricing for some districts, basins, and water management entities does not reflect the objective situation. In our opinion, when calculating the price of water, it is appropriate to set it on the basis of real average annual costs for the region or region.

It should be noted that the use of natural resources has led to the reduction of natural units that are conveniently located, that is, the costs of developing additional land for agriculture have increased sharply, and the problem of water shortages is occurring in a number of regions of our country [20]. Water limits are increasing year by year, and as a result, the costs of using water resources are constantly increasing. Practical experience shows that in recent years, the problem of water shortage in the regions located in the Aral Sea basin is becoming acute. Such cases prove that using water as a "free" or "free" natural resource is absolutely impossible in today's water scarcity conditions.

The new Constitution of the Republic of Uzbekistan states that "Land, underground resources, water, flora and fauna and other natural resources are national wealth, they must be used wisely and are under state protection" [8, 13].

Therefore, the use of natural resources, especially water resources, requires efficient and rational use not only in years of low water, but also in years of high water.

The concept of cost requires a more positive approach to the problem than the ideas about the freeness of natural resources. That is, it is assumed that the monetary value of natural resources should be calculated on the basis of the price determined in labor costs [14, 15].

Researches show that since water contribution payments are made by WCAs in an unsatisfactory manner, we believe that it is appropriate to pay for water based on market principles in the conditions of a market economy, and one of the tasks of the special service of the newly established water industry is to pay for every 1m³ of water consumed [16]. It is desirable that the payment system should be implemented.

It is recommended to set a water tariff for the volume of supplied water, taking into account that the irrigation works in the areas of the irrigation systems that belong to the Amu-Kashkadarya Irrigation Systems Basin Administration, where we are conducting research, are mainly carried out by pumps or by running water. In this case, the monetary expression of the services specified in the contract plus the payments of the water company to the social fund plus the interest amount of the amount specified in the contract for the specified service is added [17], and the amount of these costs is determined by dividing the amount of water delivered based on the document. We proposed a formula for determining the cost of 1 m³ of water, and it looks like this:

$$C_t = \frac{SH_x + IFT + K}{CM} \quad (2)$$

Here: C_t – cost of 1 m³ of water, UZS;

SH_x – the amount of total costs specified in the contract, thousand UZS;

IFT – allocations to the social fund (12%), thousand UZS;

K – percentage payment of the rendered services (when watering without a pump - 20 percent, with the help of pumps - 80 percent), UZS;

CM – volume of water delivered according to the document, thousand m³.

9839.1 million in 2022 by the special service of water management in Kashkadarya region. Soum services are provided, the service area is 375.4 thousand hectares, and the volume of water supplied according to the document is 1546.9 million m³, the cost of 1 m³ of water is determined as follows:

$$C_t = \frac{9839,1+2459,8+1967,8}{1546,9} = 9,22 \text{ UZS}$$

As we know, Karshi Main Canal Irrigation Systems Department (ISD) and Mirishkor ISDs mainly draw water from Amudarya through pumps to irrigate agricultural crops. In this case, a sharp increase in electricity costs is reflected in the calculation of the cost of 1 m³ of water-to-water consumers in these systems. That is, an additional fee of 80% of the contract value is set for the provided services, and it is possible to cover the electricity costs. We also determine the cost of 1 m³ of water as follows:

$$C_t = \frac{9839,1+2459,8+7871,3}{1546,9} = 13,04 \text{ UZS}$$

In the above table 3.23, the indicators of the cost of 1 m³ of water in Kashkadarya region, taking into account the operating costs, were analyzed by year. In 2021, it was 282 UZS, and in 2022, this indicator was equal to 400 UZS. It can be seen that if water users are charged 400 UZS for 1 m³ of water used for their cultivated products, none of the farmers or peasants and cluster organizations will be able to cover these costs. Therefore, if the method we proposed above is used, i.e. the method of calculating the cost of 1 m³ of water, the amount of expenses for water users will not increase, and in the distribution of water-to-water consumers, it will be necessary and necessary to install water measuring devices at the water intake points [18, 19]. The amount of water cost calculated above varies from year to year, because the value of the provided services changes over the years and it is necessarily proportional to the calculation of the cost of water.

CONCLUSIONS

To sum up, one of the tasks of the special service of water management is to equip the main water intake points of water consumers with means of water management and accounting, and to organize digitalization of water accounting and reporting. This requires that the only way to maximize and rational use of water at the moment, that is, in the conditions of water scarcity, is through digitization. In addition, the establishment of a special service of water management without a legal entity status to organize water supply to water consumers, use of inter-farm irrigation networks, their repair and restoration and other water management services within district irrigation departments is one of the types of services that must be established at this time. and the future performance of this type of service will certainly depend on the performance of the water consumers it serves in making timely payments for water.

Improving water resources management requires the development and implementation of effective strategies, policies and practices aimed at improving the management of water use, protection and distribution. This is especially important in the face of climate change and increasing pressure on water resources.

There are several methods and principles for improving water resources management, including:

An integrated approach: foster collaboration between different sectors and stakeholders (including government agencies, the private sector, NGOs and the public) to develop and implement integrated water resources management strategies.

Sustainable use: striving for a balance between water consumption and renewal to ensure long-term sustainability in the use of water resources.

Efficient use of resources: application of technologies and methods aimed at reducing water consumption and improving its use in various sectors such as agriculture, industry and urban development.

Water demand management: implementing tools and policies such as water tariffs, effective agricultural development planning and education companies to reduce water consumption.

Ecosystem protection: consider the ecological needs of aquatic ecosystems when developing water management strategies to support biodiversity and ecological sustainability.

International cooperation: joint management of transboundary watersheds to resolve conflicts and ensure sustainable use and protection of water resources.

Leveraging Innovation: Applying new technologies such as remote sensing, artificial intelligence and cloud computing for more accurate monitoring, forecasting and management of water resources.

Improving water resources management requires the joint efforts of governments, the private sector and the public to ensure sustainable and efficient use of water for present and future generations and to use water sparingly.

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