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ENVIRONMENTAL PROTECTION
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REPUBLIC OF UZBEKISTAN



AGRICULTURE SECTOR IN UZBEKISTAN AND KARAKALPAKSTAN

Legal & Political Framework Review

GGGI Uzbekistan. Insight Brief 1. Green Rehabilitation Investment Project for Karakalpakstan Republic to address impacts of the Aral Sea Crisis (Aral Sea GRIP)

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Objective

This Insight Brief presents a review of the legal and policy framework for the agriculture sector in the Republic of Uzbekistan and the autonomous Republic of Karakalpakstan. The main objective of this document is to provide an overview of the institutional environment that has been set by the government in order to support the development and growth of the agriculture sector.

Background

Uzbekistan has been undergoing an enormous transformation since 2017. The administration of President Mirziyoyev has ambitiously reformed the heavy regulation of the country's economic and social system, and has recognized the UN's Sustainable Development Goals (SDGs) to be a key element of this transformation. This includes the understanding of the role of sustainable resource use and the avoidance of environmental problems in contributing to an increased standard of living (GoU 2020). This transformation has been reflected in the agriculture sector, transitioning away from cotton and wheat towards more valuable crop types, and supporting the increase of agricultural output as a result of crop diversification efforts (UNECE 2020).

Even before 2017, the beginning of this transition was starting to take shape. Changes at the legal and policy level were and have been key for setting this new direction, as well as the identification of strategies and targets aligned with the conjunctural conditions of the country and the autonomous Republic of Karakalpakstan. However, and as highlighted in the Third Environmental Performance Review of Uzbekistan (2020), this ambition has translated into multiple decrees and resolutions over the past few years with very short time frames for implementation. For sectoral stakeholders, especially for those outside the governmental structure, these changes have been hard to follow and connect.

Introduction

Independence from the USSR in 1991 shifted the focus of agricultural policy in two main ways. First, it was deemed critical that financially lucrative cotton production be maintained. Second, food self-sufficiency needed to be established (Couetil 2020). Agricultural structures were reorganized during this period, as collective and state-owned farms transitioned to community and independent farms (Worbes, et al. 2006; Ilkhamov 1998).

All-in-all, between 1996 and 2016, average agricultural labor productivity saw a relatively high annual growth rate of 1.5%, yet this largely occurred due to a decline in the agricultural labor force (from 43% of the total labor force in 1996 down to 30% in 2016), rather than a considerable increase in the value of agricultural output. The inability of farm restructuring to enable job creation in either primary agriculture or the secondary food and textile industries - dependent on the product of primary agriculture - resulted in the growth being labelled “jobless” (Zorya, Djanibekov and Petrick 2019).

As is apparent by this jobless growth, Uzbekistan has struggled to find an effective agricultural model in the post-socialist era¹. The small plots of dehkan farms² have been found to be suboptimal, while private farms³, mainly designated for wheat and cotton and exceeding a size of 30-40 ha, have provided diminishing returns. These issues provided the drive for the prevalence of family-owned farms and placed a spotlight on the need for greater individual incentives to bolster farm efficiency (Zorya, Djanibekov and Petrick 2019). Moreover, ineffective land

management practices, particularly in the form of crop rotation such that wheat is sown after cotton, has reduced soil fertility and consequently reduced cotton yields (Zorya, Djanibekov and Petrick 2019).

Cotton was and remains as one of the most important crops cultivated in Uzbekistan. Yet, unsustainable water withdrawals to irrigate cotton fields since pre-Soviet times has been one of the major causes of the Aral Sea desiccation and the environmental and social repercussions associated with it, especially affecting the Republic of Karakalpakstan. Further (and no less impactful) issues from Soviet-era agricultural management include the incursion of salt and minerals into the soil and surface water due to rising water tables, further land and soil degradation as a result of it, and the contamination of lands and soil by liberal use of agricultural chemicals (White 2014).

In response to these issues, President Mirziyoyev started in 2017 a massive transformation of the agricultural sector through multiple governmental decrees and resolutions setting sustainability and modernization as the new direction. Currently, sustainability forms a key element of the nation's governmental, social and economic transformation. New plans seek changes balancing ecological, social, governmental and economic needs - something reflected on the latest policies and strategies for the agriculture sector, as well as on the management of key resources in support of the agriculture sector.



¹ In Uzbekistan, land (including agricultural land) is owned by the State and is leased to farmers (if fulfil the basic conditions, on a permanent basis).

² Small-scale family farm that produces and sells agricultural products based on the personal labor of

family members on a household plot of land granted to the head of the family for life as an inherited possession.

³ An independent economic entity that conducts commercial agricultural production using land plots that are leased.

Legal & Policy Review

The agricultural sector has been the target of reforms by government decisions and by legislative acts, mainly in the form of decrees and resolutions passed by the President of the Republic of Uzbekistan and Cabinet of Ministers of the Republic of Uzbekistan. The institutional changes most relevant to the agricultural sector are summarized in **Table 1**, and those most recent (2017 onwards) are briefly explained below. Overall, these broad work programs and reforms have aimed to:

- 1) Improve the public administration system, strengthen the legal framework for relations between entities producing, processing and selling agricultural products, and bolster the capacity of agricultural producers by providing them with modern equipment;
- 2) Support multi-approach reformation and transformation to improve the use and sustainable management of land, water and agricultural resources, and introduce resource-saving technologies; and
- 3) Introduce market relations and attract investments in the agricultural sector.

Table 1. The main legal acts in the sphere of agricultural development

Documents	Content
LAW	
“Land Code of the Republic of Uzbekistan” (July 1 st , 1998)	Legal frameworks for broad agricultural reforms, including the overhaul of production rules, the enhancement of agricultural economic and labor relations, a hastening in enabling real property ownership, and the formation and operationalization of new agro-economic entities.
Law “On farms” (No. 662-II, August 26 th , 2004)	
Law “On guarantees of freedom of entrepreneurial activity” (No. 328, May 2 nd , 2012)	
Law “On dehkan farm” (No. 680, April 1 st , 2021)	
Law “On tomorka farm” (No. 681, April 1 st , 2021)	
Law “On amendments and additions to some legislative acts of the Republic of Uzbekistan in connection with the deepening of economic reforms in agriculture and water management” (2009)	Determination of the legal basis for further economic reforms in agriculture and water management, as well as the improvement of the mechanism for the effective use of acreage in agriculture.
Law “On amendments and additions to some legislative acts of the Republic of Uzbekistan in connection with the improvement of the mechanism for the effective use of acreage in agriculture” (2018)	

<p>Law “On the use of renewable energy sources” (No. 539, May 21st, 2019)</p>	<p>A legal framework on the use of renewable energy sources, and energy efficiency and conservation improvements in key sectors of the economy, including the agricultural sector, to reduce the sources and volumes of greenhouse gas emissions.</p>
<p>Law “On pastures” (No. 539, May 20th, 2019)</p>	<p>Legal foundations for the rational use of pasture potential in the Republic of Uzbekistan.</p>
<p>DECREE OF THE PRESIDENT OF THE REPUBLIC OF UZBEKISTAN</p>	
<p>Decree of the President No. 2933 (September 7th, 2001) “On measures for state support of personal subsidiary and dehqan farms and strengthening their role in the food supply of the country”</p>	<p>Increasing the economic independence and financial stability of personal subsidiary farms, assisting farmers in their rational use of land and water resources, and increasing the level of mechanization and productivity through the introduction of advanced technologies. In addition, provisions were made for the creation and development of new enterprises and services in rural areas, and further improvements of the organization of activities and development of farming in Uzbekistan.</p>
<p>Decree of the President No. 842 (April 21st, 2008) “On additional measures to increase the number of livestock population in households, private and dehqan farms and expansion of livestock production”</p>	<p>This decree focused on conditions surrounding cattle farming, notably including the increase in the population of cattle to ensure employment opportunities and food security, and changes to lending, tax, credit and customs arrangements to provide greater benefits.</p>
<p>Decree of the President No. 4478 (October 22nd, 2012) “On measures for further improvement activities and development of private farming in Uzbekistan”</p>	<p>Aims for greater levels of economic independence and financial stability for private farms. Measures designed to facilitate the achievement of this goal include: supporting farmers in their rational use of land and water resources; the introduction of advanced technologies to increase mechanization levels and profitability; and the development of new rural enterprises and services.</p>
<p>Decree of President No. 2460 (December 29th, 2015) “On measures for further improvement reformation and development of agriculture for period 2016-2020”</p>	<p>With a greater focus on food crops, it was decreed that, between 2016 and 2020, the land area used for the cultivation of cotton and cereals be decreased by 170,500 ha and 50,000 ha, respectively. Provisions were also made for the introduction of the more advanced agricultural technologies for irrigation and crop selection and diversification, as well as to better enable horticultural development.</p>
<p>Decree of President No. 2520 (April 12th, 2016) “On measures for further improvement of system for procurement and use of horticultural products, potatoes and melons”</p>	<p>This decree provisions for an integrated approach to the horticultural value chain and the procurement of horticultural products, upscaling of the export potential of these products, and state mandated procurement of, among other thing, melons, potatoes and grapes.</p>

<p>Decree of the President No. 4947 (February 7th, 2017) "On the action strategy for the further development of the Republic of Uzbekistan"</p>	<p>Plan to take systematic measures to mitigate the negative impacts of climate change and the desiccated Aral Sea on the development of agriculture and the livelihoods of the population.</p>
<p>Decree of the President No. 5199 (November 9th, 2017) "On measures to radically improve the system of protection of the rights and legitimate interests of farmers, dehqan farms and owners of household lands, effective use of agricultural acreage"</p>	<p>Improvement of the system for the protection of rights and legitimate interests of farmers, dehqan farms and owners of household lands. In addition, the need to use agricultural acreage effectively is noted.</p>
<p>Decree of the President No. 5330 (February 12th, 2018) "On measures to radically improve the system of agriculture and water sector governance"</p>	
<p>Decree of the President No. 5418 (April 17th, 2018) "On measures to radically improve the system of state management of agriculture and water management"</p>	<p>The legal basis for further improvement of the system of state management of agriculture and water was created.</p>
<p>Decree of the President No. 5708 (April 17th, 2019) "On measures to improve the system of public administration in the sphere of agriculture"</p>	
<p>Decree of the President No. 5853 (October 23rd, 2019) "On approval of the Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030"</p>	
<p>Decree of President No. 5863 (October 30th, 2019) "On approval of the concept of Environmental protection of the Republic of Uzbekistan until 2030"</p>	<p>The concept of environmental protection of the Republic of Uzbekistan until 2030 was approved.</p>
<p>Decree of President No. 6159 (February 3rd, 2021) "On further improvement of the knowledge and innovation system, as well as the provision of modern services in agriculture"</p>	<p>The legal basis for further improvement of the knowledge and innovation system, as well as the provision of modern services in agriculture.</p>
<p>Decree of the President No. 60 (January 28th, 2022) "About the Development Strategy of New Uzbekistan for 2022-2026"</p>	<p>Includes, additional green transition programming, strengthened property rights, the increased export potential of goods, substantial agricultural revenue, output and innovative agro-tech increases, water resources management reforms, forest expansion, ecological and environmental protection, and further partnerships with international development partners and funding sources.</p>

RESOLUTION OF THE PRESIDENT OF THE REPUBLIC OF UZBEKISTAN

<p>Resolution of the President No. 4477 (October 4th, 2019) “About approval of Strategy for transition of the Republic of Uzbekistan to ‘green’ economy for 2019 – 2030”</p>	<p>The strategy for the transition of the Republic of Uzbekistan to a “green” economy for 2019 – 2030 was approved. It sets out the rationalization of the use of natural resources, creation of green jobs, and the adaptation and mitigation of the impacts of climate change. It also specifically addresses tackling the environmental problems of Aral Sea region.</p>
<p>Resolution of the President No. 4919 (December 11th, 2020) “On measures to further accelerate the organization of the introduction of water-saving technologies in agriculture”</p>	<p>The legal basis to further accelerate the organization of the introduction of water-saving technologies in agriculture. It approves the proposal of the Ministry of Water Resources, the Council of Ministers of the Republic of Karakalpakstan, and regional hakimiyats to increase the rate of introduction of water-saving technologies five-fold.</p>
<p>Resolution of the President No. 4975 (February 3rd, 2021) “On the organization of the activities of the national center for knowledge and innovation in agriculture under the Ministry of Agriculture of the Republic of Uzbekistan”</p>	<p>The national center for knowledge and innovation in agriculture under the Ministry of Agriculture of the Republic of Uzbekistan was created.</p>
<p>Resolution of the President No. 5006 (February 24th, 2021) “On additional measures to improve the system of use and protection of agricultural land”</p>	<p>Ensuring the sustainability of relations related to agricultural land, the cardinal improvement of the system of state monitoring, use and protection of agricultural land and the widespread introduction of information and communication technologies in the agricultural sector.</p>
<p>Resolution of the President No. 5009 (February 26th, 2021) “On measures to implement in 2021 the tasks identified in the Strategy for the development of Agriculture of the Republic of Uzbekistan for 2020-2030”</p>	<p>Ensuring the implementation of the Decree of the President No. 5853 (October 23rd, 2019) “On approval of the Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030”.</p>
<p>Resolution of the President No. 5041 (March 27th, 2021) “On additional measures carried out within the framework of programs for the development of family entrepreneurship”</p>	<p>Supporting the development of entrepreneurship and employment for youth and women, and setting financing targets for different programs among the sub-national regions of Uzbekistan.</p>
<p>Resolution of the President No. 5202 (July 29th, 2021) “On measures to implement a special resolution of the United Nations General Assembly dated May 18, 2021 ‘On declaring the Aral Sea region a zone of environmental innovations and technologies’”</p>	<p>Granting some independence for the central administration to test new agricultural methods, crops and value-chains, to diversify sources of income for the local population.</p>
<p>Resolution of the President No. 20 (November 23rd, 2021) “On measures to develop family business in fruit and vegetable growing and viticulture, to increase the share of dehkan farms in agricultural production”</p>	<p>Measures to develop family businesses in fruit and vegetable growing and viticulture, as well as to increase the share of farms in agricultural production. Phased transfer of more than 200,000 ha of land provided to citizens on the basis of the right of lease through an open electronic tender - 0.1 to 1 ha at the expense of low-profit lands released from cotton and grain production.</p>

DECREE OF THE CABINET OF MINISTERS OF THE REPUBLIC OF UZBEKISTAN	
Decree of Cabinet of Ministers No. 290 (June 21 st , 2003) “On improvement of Activities of Ministry of Agriculture and water resources of the Republic of Uzbekistan”	This decree focused on water use systems and relationships related to its use, including the transition to a two-level irrigation management system within the river basin and the introduction of a holistic market relations to engage at all levels.
RESOLUTION OF THE CABINET OF MINISTERS OF THE REPUBLIC OF UZBEKISTAN	
Resolution of Cabinet of Ministers No. 149 (February 28 th , 2018) “On measures for the widespread introduction of market mechanisms in agriculture”	Approve state-guaranteed purchase prices and guaranteed volume of distribution of credit resources by regions for cotton and cereal crops.
Resolution of the Cabinet of Ministers No. 841 (October 20 th , 2018) “On measures to implement the National Sustainable Development Goals and Targets for the period until 2030”	An assimilation of the Sustainable Development goals into the national agenda.
Resolution of Cabinet of Ministers No. 324 (April 17 th , 2019) “On measures to increase the efficiency of use of farms and land plots”	A program for the effective use of farms and plots of land for increasing the volume of agricultural production and improving the income and living standards of the rural population.
Resolution of the Cabinet of Ministers No. 481 (June 11 th , 2019) “On approval of normative legal acts governing the activities of the Agency for the Development of Horticulture and Greenhouse Economy under the Ministry of Agriculture of the Republic of Uzbekistan”	An agency was established aimed at comprehensively supporting and enhancing the value chains of horticultural crops.
Resolution of Cabinet of Ministers No. 41 (January 25 th , 2022) “On additional measures to transform the Aral Sea region into a zone of environmental innovations and technologies”	Implementation of the UN Resolution and the Concept, leading to a sustainable improvement of the living conditions and livelihoods of people in the Aral Sea region.

Source: Authors’ assessment, building on Uzbekistan’s Third National Communication under the UN Framework Convention on Climate Change - Agricultural Policy Assessment (2016).

Ensuring the effective protection of the rights and legitimate interests of dehkan and farm enterprises regarding climate change, introducing new market mechanisms within the existing system, continuing the development of diversified farms, and stably increasing land use efficiency and agricultural production have been areas of continued concern and shortcomings, but have begun to be addressed in legislation. The decree of the President of the Republic of Uzbekistan (henceforth Presidential Decree) No. 5199 (November 9th, 2017) identifies priority areas in protecting the rights and legitimate interests of owners of farms, dehkan farms and household plots, and in the increase of efficient utilization of the sown area, so as to support the implementation of tasks under the “*Action Strategy on Five Priority Development Areas 2017-2021*”.

Meanwhile, Presidential Decree No. 4947 (April 7th, 2017) supported further agricultural development and the improvement of livelihoods by introducing systematic measures to mitigate present and future climate change and Aral Sea desiccation impacts, including the provision of technical assistance and advisory services on climate change. In particular, this targeted government authorities at central, provincial and local level, and the most vulnerable farmers and dehkan farms.

With this foundational policy and legislation in place, the Government of Uzbekistan launched the “*Agriculture Development Strategy for the Republic of Uzbekistan for 2020-2030*” (henceforth ADS). Notably, this strategy paves the way for reduced state participation in the agricultural sector and activities aimed at increasing private sector interest and investments to enhance, diversify and support continued stable development in the agro-food sector, as well as re-establishing the need to tackle issues regarding the rational use of natural resources and environmental protection.

More specifically, the strategy aims to increase the annual agricultural sector growth rate to 3% in 2021 and 5% in 2025, and increase annual agro-foods exports to USD \$20bn by 2030 (MoA 2020). Over the same period, the strategy suggests a 1% increase in employment in agriculture, and a 5% and 3% increase in the food and textile industries (which are dependent on agriculture), respectively (MoA 2020). To achieve these goals, nine priorities have been established. Priorities two, three, four, six and seven are particularly influential for Uzbekistan’s transition to a climate resilient and green agriculture sector, laying the foundation for capacity building and enhanced resource management, in particular:

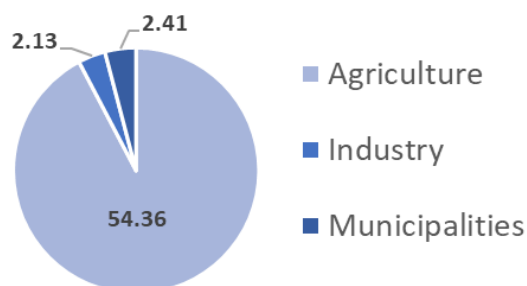
- **Priority Two – “Create a favorable agri-business environment & enhance value-chains”:** Primarily, this priority aims to increase the volume of value-added products, increase the potential for exports from the agricultural sector, introduce a certification system in-line with international standards, and develop and deploy mechanisms to facilitate cooperation between large farms and small holders in value chains.
- **Priority Three – “Reduce state involvement & improve the investment environment”:** Primarily, this priority aims to modernize, diversify and sustainably develop the agri-food sector by ensuring that effective systems exist that can attract and facilitate private investment.
- **Priority Four – “Ensure the rational use of natural resources & enhance environmental protection”:** Primarily, this priority aims to bolster climate change adaptation and mitigation efforts via the rational and efficient use of resources, including water, agricultural land, forests and fisheries.
- **Priority Six – “Gradual diversification of state expenditure”:** Primarily, this priority aims to enable a redistribution of public finances in support of the development and reformation of support systems.
- **Priority Seven – “Development of research, education, information & advisory services”:** Primarily, this priority aims to improve the business environment, increase rural human capital, and support agricultural innovation and labor productivity by creating a system encompassing agriculture, food supply, education, and training and information services, which is flexible enough to meet contemporary needs, holistic in its consideration, and modernized.

Most recently, on January 28th, 2022, Presidential Decree No. 60 was passed, which made commitments to strengthen the on-going reforms of property rights, water resources management, public engagement and dialogue, and the empowerment of women. Critically from an agricultural standpoint, goal 30 of the decree commits to having districts specialize in producing one type of agricultural product - thereby consolidating production - and scaling up export crops, intensive gardens and greenhouses. Goal 81 targets the expansion of forests, including those designed to protect irrigation lands from erosion and the incursion of salt and dust storms from the dried Aral Sea lakebed. This synergizes with goal 30’s desire to reduce soil degradation, increase soil fertility and increase the volume of agricultural output by 5% annually.



Water Resource Management

Sectoral Water Use (km³) in Uzbekistan, 2018



Water Losses in Agriculture in Uzbekistan in 2017



Source: (FAO 2022)

Overcoming the issues of water scarcity and implementing water saving actions has become a priority of water policy, reflected in the Law on Water and Water Use, and a number of governmental and presidential decrees and resolutions (See **Table 2**). In support of this, the Ministry of Water Resources⁴ has been developing and implementing a unified agro technical and investment policy since 2018, with a focus on supporting the sustainable development of agriculture and water management through modernization and the introduction of advanced technologies.

In terms of the management of water resources, the ADS provisions for the improvement of the indicators of agricultural development, such that: the total area irrigated using water-saving technologies is increased from 1.7% in 2018 to 32% in 2030; mechanisms that promote and facilitate the implementation of these systems are improved; the proportion of land with high salinity is decreased from 45% in 2018 to 37% in 2030; and settlements between consumers and water suppliers are introduced based on the actual cost of water delivery and market mechanisms. Meanwhile, the “*Concept for the Development of the Water Sector of the Republic of Uzbekistan for 2020-2030*” (henceforth CDWS), legislated in Presidential Decree No. 6024 (July 20th, 2020), notes the mid- and long-term impacts of climate change on the availability of water resources for consumers – most notably changes in runoff from glaciers and rivers, changes in air temperature, and the increased chance of drought conditions.

According to Chapter 3 of the CDWS, glaciers in the Central Asian region have experienced a decrease in area of around 30% over the past 50-60 years, with further reductions in glacial area expected. A 50% reduction is projected to align with a 2^oC temperature increase, and a 78% reduction is forecast following a 4^oC increase. This will contribute to a reduction in water resource availability of up to 5% in the Syr Darya river basin and up to 15% in the Amu Darya river basin, by 2050. In total, reduced runoff from both glacial and river sources as a result of climate change will compound water scarcity issues in Uzbekistan - complicating attempts to satisfy demand⁵ and potentially contributing to an increase in drought events, as experienced in 2000, 2008, 2011, 2014 and 2018.

In response to these threats to water security, the CDWS identifies the development of joint plans for regional water resources management and the determination of future objectives for the rational

⁴ The Ministry of Water Resources was itself established under Presidential Decree No. 5330 (February 23rd, 2018), which provisioned for efficiency improvements by clearly delineating the responsibility of different state entities in agricultural and water resources management, ensuring the rational distribution of state resources. This led the Ministry of Agriculture and Water Resource to become decoupled.

⁵ Over the past 15 years, water availability per capita has declined from 3,048 m³ to 1,589 m³.

use of water resources, including: expanding the scope of water-saving technologies; improving the ameliorative condition of irrigated lands; ensuring the safety and reliable operation of water facilities; introducing information, communication, and innovative technologies; improving research activities and introducing market mechanisms.

This priority is exemplified by the CDWS goal of ensuring water security in the context of reduced water resources availability and climate change. Specifically, this goal aims to: increase awareness of climate change mitigation and adaptation measures; establish early warning systems for enhanced water resources planning and management; provide advanced and specialist training for those involved in water management; and foster interdisciplinary cooperation and knowledge dissemination between the education, scientific and production sectors.

To focus on the role of science, the goal specifies that research will be conducted - including the simulation of climate change and its impact on water - in the context of national climate change adaptation plans, so as to ensure efficiency in the scientific research being undertaken and knowledge being introduced. Approved under Presidential Decree No. 5005 (February 24th, 2021), *“The Strategy for Water Resource Management and Development of the Irrigation Section in the Republic of Uzbekistan for 2021-2023”* (henceforth SWARMD) supports the CDWS by aiming to implement many of its priority actions and satisfy its main targets. Specifically, SWARMD aims to introduce infrastructural, political, institutional, and capacity building measures for sustainably managing water resources and developing and modernizing irrigation. Presidential Decree No. 60 (January 28th, 2022) introduces an up-to-date water saving target; goal 31 of the decree promises fundamental water resource management reforms and targets 7 billion m³ of water saved by 2026. Presidential Resolution No. 144 (March 1st, 2022) *“On measures to further improve the introduction of water-saving technologies in agriculture”* sets actions for 2022 that will be taken in pursuit of this goal.

Initiated in 2020, the Ministry of Water Resources and the Ministry of Finance financed measures aimed at improvement of the reclamation condition of irrigated lands. Simultaneously, an experiment was undertaken in the Republic of Karakalpakstan, in which the costs of repair and the restoration of facilities covered under the framework of measures on the improvement of the reclamation condition of irrigated lands would receive finance from the republican budget of Karakalpakstan, in accordance with Article 21 of the Law of the Republic of Uzbekistan No. 589. Measures taken to develop irrigation and improve the reclamation condition of irrigated lands in Karakalpakstan, under Presidential Resolution No. 4912 (December 5th, 2020), resulted in improved water supply for more than 47,000 ha of land, a reduction in land experiencing high and medium salinity levels by an area of 11,200 ha, and the maintenance of a stable land reclamation status on over 140,000 ha. However, water supply remained low for 44,900 ha of irrigated land and 95,200 ha retained high or medium salinity levels, making the efficiency in use of available water resources very low.

 **Table 2.** Main Government documents related to water management.

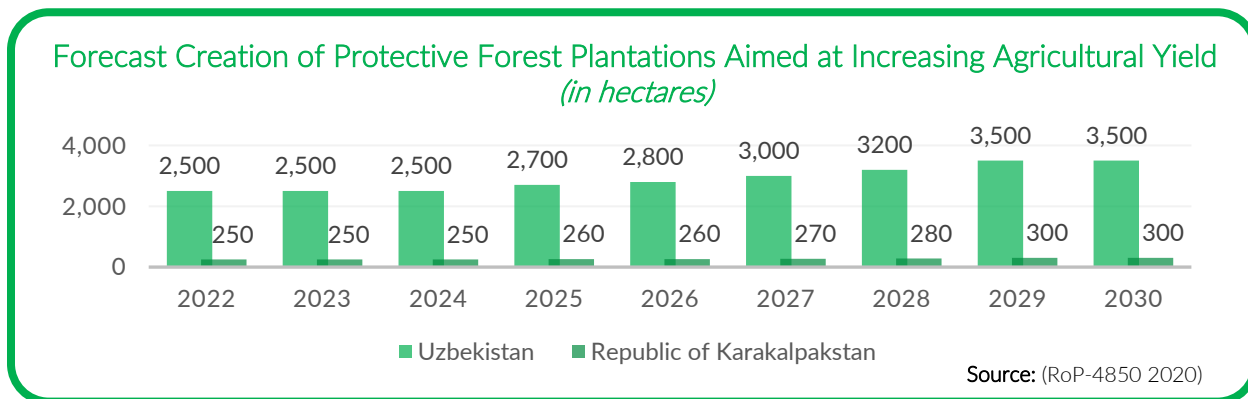
Document	Content
LAW	
Law No. 837-XII (May 6 th , 1993) <i>“On water and water use”</i> (as amended on December 25 th , 2009)	Defining and ensuring the rational use of water across multiple users, the protection of water resources from degradation, and the acknowledgment and protection of the rights and interests of various water users.
DECREE OF THE PRESIDENT OF THE REPUBLIC OF UZBEKISTAN	

Decree of President No. 5330 (February 23 rd , 2018) "On organizational measures to radically improve the system of state management of agriculture and water management"	Provisions for quickly improving agriculture and water management efficiency, in particular by decoupling the Ministry of Agriculture and the Ministry of Water Resources to ensure the efficiency use of resource.
Decree of President No. 6024 (July 10 th , 2020) "On approval of the Concept for the Development of the Water Sector of the Republic of Uzbekistan for 2020-2030"	Approved the Concept for the Development of the Water Resources of the Republic of Uzbekistan for 2020-2030, and "Roadmap" for the implementation in 2020-2022 of the tasks defined in the Concept.
Decree of President No. 4919 (December 11 th , 2020) "On measures to further accelerate the organization of the introduction of water-saving technologies in agriculture"	Approved the proposal to increase the rate of implementation of drip and sprinkle irrigation systems fivefold, as well as a discrete method of irrigation with land leveling using laser equipment. Approved forecast indicators for 2021.
RESOLUTION OF THE PRESIDENT OF THE REPUBLIC OF UZBEKISTAN	
Resolution of the President No. 1958 (April 19 th , 2013) "On measures to further improve the reclamation condition of irrigated lands and rational use of water resources for the period 2013-2017"	Before becoming invalid, this resolution provisioned for the construction and reconstruction of improved irrigation facilities, including drip irrigation systems, and the development systems for financing these projects to increase the quality of reclaimed lands and bolster the sustainable development of agriculture.
Resolution of the President No. 2731 (January 18 th , 2017) "On the state program for the development of the Aral Sea Region for 2017 - 2021"	This resolution sought to develop water supply and sanitation systems, improve healthcare, create jobs and increase job security, and increase the attractiveness of investments in the Aral Sea region. This resolution also included infrastructural improvements such as in irrigation, heat, lighting and energy supply, and transportation.
Resolution of the President No. 4486 (October 9 th , 2019) "About measures for further enhancement of management system water resources" (as amended on April 6 th , 2021)	Further improve the system of water resources management and operation of water facilities, ensure the effectiveness of the implementation of irrigation and melioration projects, introduce market principles and mechanisms in the field of water management, as well as develop knowledge in this area.
Resolution of the President No. 4912 (December 5 th , 2020) "On urgent measures for effective use of water resources and improvement of land reclamation status in the Republic of Karakalpakstan"	Approved, among others, the construction and reconstruction of irrigation and melioration facilities, as well as forecast indicators for the introduction of water-saving irrigation technologies.
Resolution of the President No. 5005 (February 24 th , 2021) "On approval of the strategy of water resources management and development of the irrigation sector"	Consistent implementation of the tasks to ensure the achievement of the main target indicators defined in the Concept for the Development of the Water Resources of the Republic of Uzbekistan for 2020-2030.

in the Republic of Uzbekistan for 2021-2023"	
Resolution of the President No. 144 (March 1 st , 2022) "On measures to further improve the introduction of water-saving technologies in agriculture"	Sets actions to mitigate existing shortcomings and problems in the implementation of water-saving technologies, as well as to further support the efficient use of water resources in agriculture.
RESOLUTION OF THE CABINET OF MINISTERS OF THE REPUBLIC OF UZBEKISTAN	
Resolution of Cabinet of Ministers No. 1004 (December 5 th , 2017) "On measures for the creation and reconstruction of protective and landscaping forest plantations and landscaping of territories along water management facilities"	This resolution targeted the construction, repair and improvement of landscaping projects in the form of fences and trees near water facilities for sanitary and water quality purposes. In particular, this resolution facilitated the use of foreign investment funds for these projects.
Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 95 (February 23 rd , 2021) "On measures to refund part of the costs of agricultural producers for the introduction of water-saving technologies"	Ensuring the implementation of the Resolution of the President No. 4919 (December 11 th , 2020), approved regulations on the procedure for reimbursement of some of the expenses for introducing water-saving technologies.

Source: Authors' assessment, building on Uzbekistan's Third National Communication under the UN Framework Convention on Climate Change - Agricultural Policy Assessment (2016).

Forest Resource Management



Forestry has been occupying an ever-increasing space in the considerations of the Government of Uzbekistan with regards to the management of natural resources, but also, as a mechanism for supporting agricultural lands. This recent focus by the Government on forest management through Presidential Resolution No. 4850 (amended November 11th, 2021) "On approval of the Concept of the development of the forestry system of the Republic of Uzbekistan until 2030", decoupled the Main Department of Forestry (the majority owned of the SFF⁶) from the Ministry of Agriculture and

⁶ The State Forest Fund (SFF) accounted for 11.975 million ha, or around 26.7% of the total land area of Uzbekistan, with the wooded area within the SFF reaching 3.236 million ha. Since 2008, the land area accounted for the by SFF has

Water Resources under Presidential Decree No. 5329 (Amended February 8th, 2018), forming the State Committee for Forestry (SCF) – at which time the forested area was also increased by 2.3 million ha, 12 new forestry enterprises were formed, and measures were taken to bolster the material and technical base of forestry management, including its support to agriculture. Notably, projects in pursuit of the creation of forests on the dried Aral Seabed lakebed would be undertaken, in addition to projects to expand windbreaks to protect agricultural lands, and the improvement of monitoring systems and environmental education programs. On-going cooperation with GIZ and the German Federal Enterprise for International Cooperation (GmbH) and with the World Bank aims to improve the understanding of the critical role that forests play in enhancing natural capital and maintaining ecosystem services, with clean water availability, the protection of agricultural land and the preservation of ecological diversity (GIZ 2019; Akramkhanov, Strohmeier, & et al. 2021).

Since 2017, more than 10 presidential and governmental resolutions have been adopted regarding the forestry system, radically organizing the activities of the SFC. Notably, this includes the abovementioned Presidential Resolution No. 4850, which defines the work to be undertaken in the forestry sector until 2030.

Passed on October 30th, 2019 and amended on March 17th, 2021, Presidential Decree No. 5863 “Concept of Environmental Protection in the Republic of Uzbekistan until 2030” was approved, aiming to determine priority policy focus areas for environmental protection. These include; the introduction of effective mechanisms for the prevention, detection and penalization of environmental legislation violations; the strengthening of the personal responsibility of heads of state, economic entities, and citizens for the sanitary and ecological conditions of settlements, and; the achievement of the national 2030 goals on sustainable development. Presidential Resolution No. 5006 (amended November 18th, 2021) “About additional measures for enhancement of system of use and agricultural protection of lands of agricultural purpose”, builds on this, bolstering the system utilized for state monitoring, use and protection of agricultural land, motivating the broad deployment of ICT⁷ to support this, and introducing additional measures to ensure the stability of agricultural land relations. The introduction of new technologies, aligned with the UN General Assembly Special Resolution⁸ with its corresponding Presidential Decree, shifted the rhetoric of the Aral Sea from a zone of environmental and humanitarian crisis to a zone of environmental innovations and technologies.

Measures have been taken under Presidential Decree No. 5202 (July 29th, 2021), and updated under Decree of the Cabinet of Ministers No. 41 (January 25th, 2022), which responds to the special resolution by the UN General Assembly to declare the Aral Sea region a zone of environmental innovations and technologies, so as to:

- 1) Develop an institutional framework to facilitate political and legal innovations, pursuant to structural and transformational changes in the Aral Sea region.
- 2) Digitalize and realize innovative approaches to the rational use of natural resources in the Aral Sea region, whilst ensuring ecological stability.

increased from 8.66 million ha, however, there has been no significant change in the wooded area, which remained at 3.24 million ha (Botman, n.d.).

⁷ Information and Communication Technologies.

⁸ <https://undocs.org/pdf?symbol=en/A/RES/75/278>

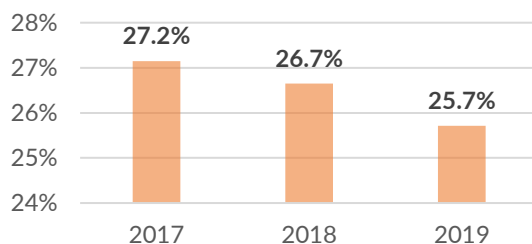
- 3) Deploy innovative technologies and mechanisms able to support the social development of the population of the Aral Sea region.
- 4) Broadly deploy economic and financial mechanisms in the Aral Sea region, and introduce modern and innovative resource-saving, green, and circular economy technologies at scale.
- 5) Develop scientific knowledge through research, provision for the legal protection of objects of intellectual property, and support cooperative local and international scientific developments and innovations in the Aral Sea region.
- 6) Attract foreign investment and foster international cooperation pursuant to the implementation of the tasks defined within the UN General Assembly special resolution.
- 7) Form and coordinate internal sources of financing for innovative projects in the Aral Sea region.

One such set of measures aiming to address the Aral Sea issue are the “Additional Measures for the Establishment of “Green Cover” – Protective Forests on the Dried Bottom of the Aral Sea and in the Aral Sea Region”, which has been recently published by Resolution of the Cabinet of Ministers of the Republic of Uzbekistan (January 18th, 2022). Targets are set for planting protective forests and desert plants in the Republic of Karakalpakstan, Bukhara Region, Navoi Region, and Khorezm Region for 2022-2026. The Resolution aims to improve the ecological situation in the country by reducing the negative impacts of sand, salt, and dust particles rising from the dried bottom of the Aral Sea and from the Aral Sea Region, which directly affect the agricultural sector. Presidential Decree No. 60 (January 28th, 2022) supports much of the aforementioned legislation and targets increased digitalization nationally, the deployment of innovation financial mechanisms and continued cooperation with development partners (particularly in combatting the consequences of the desiccation of the Aral Sea), commitments to increased green cover and the planting of protective forests.

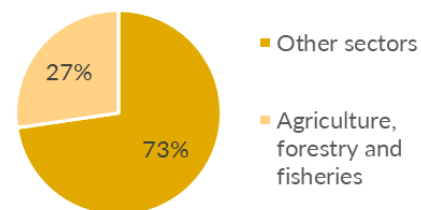


Human Resource Management

Employment in Agriculture in Uzbekistan as a Percentage of All Employed



Employment in the Republic of Karakalpakstan (2018)



Source: (WB 2022) & (SCS 2022)

Human resource management policy – particularly that focused on agricultural labor rights – has been implemented in accordance with the “*Law of the Republic of Uzbekistan ‘On Amendments and Additions to the Law of the Republic of Uzbekistan On Labor Protection’*” (2016). More recently, however, under Presidential Decree No. 4947 (amended April 30th, 2021), which regards five priority areas of development, the socio-economic factors of real income and employment have been focal points. In receipt of particular attention are the following issues:

- 1) Increased real incomes and consumer purchasing power, continued reductions in the number of low-income families and in the level of income disparity throughout the population.
- 2) Consistent wage rate increases at a rate higher than inflation for those employed at budgetary institutions, as well as for pensions, scholarships and social benefits.
- 3) The creation of new jobs and rational employment of the population, largely consisting of secondary-specialized and higher education graduates, ensuring a balanced and developed labor market infrastructure, and further reducing unemployment rates.
- 4) The creation of conditions conducive to facilitating the full implementation of labor and entrepreneurial activity of the working-age population, improving the quality of the workforce by expanding systems for vocational and advanced training, and retraining for those requiring employment.

Working conditions and the need to support their development in Karakalpakstan are embodied by three pieces of legislation in particular; Presidential Resolution No. 856 (July 14th, 2018) "On measures to improve and increase the efficiency of work to ensure employment of the population", Presidential Resolution No. 3913 (August 2nd, 2018) "On measures to improve the structure of labor bodies and strengthening the system of protection of labor rights and labor protection of citizens", and Resolution of the Cabinet of Ministers No. 263 (September 15th, 2014) "On further improvement of measures for labor protection of workers". Yet, continued policy support to motivate enhanced working conditions, opportunities and benefits in the agriculture sector will be critical to supporting agricultural innovation and enhancing resilience.

In summary, the Government of Uzbekistan has enacted a vast number of legislative acts, decrees, resolutions and so on at a rapid pace, reflecting the immediacy for supporting the development of the agriculture sector in the country. This Insight Brief has brought together and summarized those most critical to the on-going actions in the country, from which a more holistic consideration of the path forward for Uzbekistan and the autonomous Republic of Karakalpakstan can be developed. Understanding what type of actions are needed and should be prioritized necessitates an investigation of the risks to which the agricultural sector is exposed, the impacts of these risks and their scale, and the ability of the agricultural sector to adapt to these risks in order to minimize damages and bolster productivity.

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