

Green Jobs for the Agriculture and Forestry Sector Republic of Uzbekistan

MAY 2024



This document has been produced under the 'Green Rehabilitation Investment Project for Karakalpakstan Republic to address impacts of the Aral Sea Crisis' funded by the Korea International Cooperation Agency (KOICA) and co-funded and implemented by the Global Green Growth Institute (GGGI).



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ACKNOWLEDGEMENTS

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Cover Image by Polya Pokataeva, inspired by Nikolay Karaxan artwork "Irrigators", 1930

Illustrations by Polya Pokataeva inspired by Nikolay Karaxan artwork "Going to work", 1934; "Two women near xavuz", 1930s; "Irrigators", 1930; and "Landscape with a train", 1930.

Cite this publication as:

J.J. Robalino & J. Kim (2024) Green Jobs for the Agriculture and Forestry Sector, Uzbekistan, Global Green Growth Institute (GGGI), Seoul, South Korea.

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AFOLU	Agriculture, forestry, and other land-use
ALMP	Active Labor Market Program
CMT	Crisis Management Team
CRGG	Climate-Resilient Green Growth Assessment
CSA	Climate-Smart Agriculture
DWCP	Decent Work Country Programme
EC	European Commission
ESG	Environment, Social and Governance
FPRW	Fundamental Principles and Rights at Work
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GGGI	Global Green Growth Institute
GHG	Greenhouse gases
GRIA	Green Recovery Investment Analysis
GVA	Gross Value Added
ILO	International Labour Organization
ISCAD	International Strategic Center for Agri-Food Development
MoU	Memorandum of Understanding
NDC	Nationally Determined Contributions
NTFPs	Non-timber forest products
PD	Presidential Decree
PEFC	Programme for the Endorsement of Forest Certification
SCF	State Committee on Forestry
SFE	State forest enterprises
SFF	State Forest Fund
SOs	Strategic Outcomes
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
USD	United States dollar
USP	Unified Social Payment
USSR	Union of Soviet Socialist Republics

EXECUTIVE SUMMARY

The Government of Uzbekistan showed its commitment toward an economy driven by a low-carbon development, inclusiveness, and environmental responsibility with the approval of the “Strategy for a transition to a green economy” in 2019. A green path is expected to address and resolve the challenges which limit sustainable economic growth in the country. Currently, Uzbekistan is the fifth most carbon intensive economy in the world. The inadequate use of natural resources has led the country to deal with internationally recognized problems such as the desiccation of the Aral Sea. Furthermore, informal employment remains substantial, with informal employees mostly involved in the agriculture sector which employs about 26% of the labor force and accounts for approximately 25% of Uzbekistan’s GDP.

Among these and other challenges that the country faces, employment represents the greatest challenge and, at the same time, the greatest opportunity for economic growth. Uzbekistan creates on average around 280,000 new jobs annually on a net basis; however, around 600,000 new jobs are needed each year for demographic reasons alone. This has resulted in substantial migration, a decline in women’s participation in the economy, and a significant share of informality in the labor market. Informal employment, mostly present in the agriculture sector in the country, has been identified as one of the key bottlenecks for a sustainable development.

The government of Uzbekistan is well aware of this labor market problem and has prioritized for its future sustainable development to improve productivity and raise wages in the country by 1) moving manufacturing from primary goods to products with more added value and a higher degree of processing; 2) promoting effective agriculture to ensure food security and enable sound employment; and 3) transitioning to production of higher-quality services using improved human capital. Under these priority actions, the creation of green jobs are envisioned in agriculture, natural resource management, and ecotourism, together with a trained and skillful workforce.

The creation of jobs in a green growth economy may be the cornerstone for achieving the aimed balanced transformation in environmental, social, governance, and economic terms for 2030. For this, it is of the utmost importance to understand what the characteristics of green employment are, as well as the conditions that need to be met in order to frame a job as ‘green’ in Uzbekistan. Unfortunately, in the country, there are no guidelines for the recognition of green jobs, neither a definition nor a framework to distinguish between green jobs and conventional jobs. Despite having clear actions identified for creating green jobs under the “Action Plan for transitioning to a green economy until 2030”, the future impact of green jobs in agriculture and natural resource management, including forestry, is vague and difficult to imagine at this point.

To make things more difficult, at the moment, there is no universal definition accepted for green jobs. Across various definitions reviewed, it is clear that the primary objective is a more efficient use of resources with the condition of being decent work. However, there is a vast number of practices and technologies that can improve the efficient use of resources. At the same time, decent work, as a multidimensional concept, covers a range of issues and challenges that depends on a country’s context and its level of development.

With the objective to support the Government of Uzbekistan with the implementation of an economic green growth model for the country, this document presents a suggested definition for 'green jobs' in the agriculture and forestry sector. The suggested definition considers the priorities listed in the country's green strategy, the significant amount of people engaged in informal employment in this sector, and the government plans to develop a 'green' program for developing entrepreneurship in activities based on natural resource management.

In terms of decent work in Uzbekistan, the legal framework of the country provides the rights and guarantees for people to have a decent job in the agriculture and forestry sector according to internationally accepted dimensions or conditions for decent work. Unfortunately, informal employment in the country represents the greatest barrier for people to work under the characteristics of a decent job. Consequently, it has been identified that full-time, part-time, and seasonal jobs need to be formally agreed and registered according to Uzbekistan's labor procedures, in order to be considered as green jobs.

In addition, and in terms of efficient use of resources in the agriculture and forestry sector, Uzbekistan's Program on the transition to a "green" economy particularly emphasizes the implementation of climate-smart production systems for promoting a sustainable agro-ecosystem in the country. Considering this prioritization, the implementation of climate-smart agriculture technologies with a positive impact in terms of productivity, resilience, and reduction or removal of greenhouse gases, is recommended as the action needed for distinguishing between conventional jobs and green jobs.

Following a review of the labor conditions in the agriculture and forestry sector, and considering the context of Uzbekistan's decent job criteria, as well as the clear direction paths that Uzbekistan has set through its Green Strategy, Program, and Action Plan, it is highly suggested to frame a green job involved in agriculture and forestry in Uzbekistan as:

... a full-time, part-time, or seasonal job, to which all people above the age of sixteen¹ can apply; formally registered, and contributing to the social system in Uzbekistan; directly engaged in Climate Smart Agriculture (CSA) technologies on farm or for landscape management & restoration, particularly in the following interventions:

Agriculture:

- organic farming methods;
- restoring degraded pastures by introducing sustainable pasture management mechanisms;
- energy-efficient and water-saving technologies for irrigation in farms;
- diversifying crop production from annual and biennials to perennial grasses, plants, and trees;
- processing and storage of organic animal waste;
- breeding highly productive animal breeds and plant species, resistant to salinity, drought and other dangerous phenomena and risks, preserving the gene pool of local animal breeds and plant varieties, as well as the gene pool of wild ancestors of cultivated plants;
- agroforestry systems.

¹ According to Uzbekistan's Labor Code Article 77, employment is allowed from the age of sixteen (Labor Code of the Republic of Uzbekistan 1996).

Forestry:

- restoring forests and preserving natural vegetation;
- increasing, conserving, and protecting the area of forests;
- expanding plantations of fast-growing native tree species;
- creating soil-protective forest plantations and afforestation of degraded lands;
- sustainable wood production systems.

In Uzbekistan, adopting and framing the characteristics of green jobs in the agriculture and forestry sector can support:

- Reaching the expected results described in Uzbekistan's green economy priorities, the agricultural development strategy, and other environmental goals, as well as the efforts of formalizing the informal economy;
- Preventing a distorted effort for creating green jobs, especially when seeking only productivity gains through new technologies and practices; and
- Building the mechanisms used by interested stakeholders to monitor impact and progress in the transition to a green path.

Hence, it is highly recommended for the government of Uzbekistan to adopt a clear definition, or to set the characteristics of green jobs considering Uzbekistan's context, in order to support the establishment of Uzbekistan's green policy framework as a mechanism to guide and accelerate the transition to a green economy.



01

1. INTRODUCTION

With the Presidential Decree No. 4477 (October 4, 2019) 'On the approval of the Strategy for the transition of the Republic of Uzbekistan to a "GREEN" economy for the period 2019-2030', the Government of Uzbekistan made a clear commitment to shifting its economy to low-carbon development. This, by pledging to enhance the conservation of resources in all economic sectors and introduce efficient and environmentally friendly technologies, as well as sustainable agriculture. In fact, the implementation of the Strategy is expected to increase the access to green energy and

energy efficiency of the economy, increase the rational consumption and conservation of natural resource management, reduce the emissions of greenhouse gases (GHG), ensure climate resilience, and create green jobs.

This ambitious new path, set recently by the administration of President Shavkat Mirziyoyev, builds on the recognition that a rising standard of living can be supported by a sustainable use of natural resources and by avoiding environmental problems (GoU 2021). Existing economic challenges in the country cannot be tackled anymore by traditional economic models based on intensive extraction and unsustainable production systems. Currently, Uzbekistan is the fifth most carbon intensive economy in the world (Honorati and Marguerie 2021). The inadequate use of natural resources has led the country to deal with internationally recognized problems such as the desiccation of the Aral Sea. Furthermore, informal employment remains substantial, with most of the informal employees related to the agriculture sector (Anderson, Ginting and Taniguchi 2020) which employs about 26% of the labor force and accounts for approximately 25% of Uzbekistan's GDP (ITA 2022).

BOX 1. Typical economic, environmental and social issues tackled by green growth.

The discussion paper 'Green Economy and Green Jobs: Challenges and Opportunities in Europe and Central Asia' provides a list of typical economic, environmental, and social issues with a linkage to green growth (UNDP 2018), including:

Economic Issues

- Economic resilience
- Increasing productivity
- Absorbing a growing workforce into the national labor market
- Rural economic development (forestry, agriculture)

Environmental Issues

- Climate variability impacts – e.g., windstorms and droughts
- GHGs emission reduction
- Sustainable natural resource management, GHG capture capacity, biodiversity, land use management, food production
- Organic farming, sustainable logging, eco-tourism

Social Issues

- Inclusion of marginal social groups
- Poverty reduction
- Sustainable job creation
- Employment, income, decent work, quality of work

Among the challenges identified in Uzbekistan, employment in the country represents the greatest challenge and, at the same time, the greatest opportunity for this new aimed path for economic growth. The working age population in the country has increased from 11 million in 1990 to almost 19 million in 2017. An additional 4.3 million are expected to enter the labor force by 2030.

Unfortunately, the country's annual economic growth rate has not led to a sufficient rise in the number of jobs created, which has resulted in substantial migration (over 2 million Uzbeks residing abroad), a decline in women's participation in the economy, and a significant share of informal employment (Anderson, Ginting and Taniguchi 2020). Indeed, informal employment in Uzbekistan has been one of the key bottlenecks for a sustainable development of the country (UN in Uzbekistan 2020). Generally in Uzbekistan, informal jobs offer lower wages and imply lower labor productivity when compared to formal jobs. They are often temporary and not covered with employment benefits. People informally employed have fewer opportunities for training, have greater exposure to risks, have greater vulnerability to labor exploitation, and have limited or no access to capacity development (Anderson, Ginting and Taniguchi 2020).

On the other hand, and considering that an estimated 500,000 individuals will enter the labor force every year until 2030, a successful and formal integration of job seekers into the labor market could help the country achieve an upper-middle-income status in the coming years. This may be the reason why the government has prioritized improving productivity and raising wages by 1) moving manufacturing from primary goods to products with more added value and higher degree of processing; 2) promoting effective agriculture to ensure food security and enable sound employment; and 3) transitioning to production of higher-quality services using improved human capital (Anderson, Ginting and Taniguchi 2020). According to the report 'Uzbekistan: Choosing an Innovative and Green Future', one of the priorities for a greener economic growth model in the country is the creation of jobs in agriculture, natural resource management, and ecotourism, together with training and reskilling workers (Ministry of Economic Development and Poverty Reduction of the Republic of Uzbekistan, The World Bank, and the United Nations Development Programme 2022).

The creation of 'green' jobs may be the key cornerstone for achieving the aimed balanced transformation in environmental, social, governance, and economic terms for 2030. For this, it is important to understand what the characteristics of 'green' employment are, as well as the conditions that need to be met in order to frame a job as 'green'. Unfortunately in Uzbekistan, there are no guidelines for the recognition of green jobs in the agriculture sector, as well as no data on the number of green jobs and the related environmental/economic sectors in the country (UNECE 2020). The Plan of Action for Transitioning to a Green Economy and Ensuring Green Growth until 2030², approved on December 2nd, 2022, prioritizes the number of jobs created through green programs and businesses based on natural resource management. For this, the document identifies the Ministry of Economic Development and Poverty Reduction, the Ministry of Employment and Labor Relations, the State Committee for Forestry, and the State Committee for Ecology and Environmental Protection, as the responsible entities for assessing the opportunities and potential for creating 'green' jobs, and for developing the "Green Rate" program. The development and submission to the Cabinet of Ministers of the "Green Rate" program is scheduled for July 2023, and should include the development of "green" entrepreneurship in relevant sectors, the implementation of pilot projects for the organization of entrepreneurial activities based on natural resource management, and stimulating the expansion of "green" entrepreneurship. Despite the vast details of

² Presidential Decree No. 436 (December 2, 2022) "On measures to improve the effectiveness of reforms aimed at the transition of the Republic of Uzbekistan to a "green" economy until 2030".

the Action Plan for a green transition, it is not clear what the necessary conditions for framing a job as 'green' are.

This document suggests a definition for a 'green job' in the agriculture and forestry sector in the Republic of Uzbekistan, considering the country's labor conditions and legal framework, as well as the country's plan for an economic transformation that considers a sustainable use of natural resources. This document, as part of the 'Green Rehabilitation Investment Project for Karakalpakstan Republic to Address Impacts of the Aral Sea Crisis', complements the '[Climate-Resilient Green Growth Assessment](#)' (CRGG) and the '[Green Recovery Investment Analysis](#)' (GRIA), with the overall objective to support the implementation of green growth actions in Uzbekistan and Karakalpakstan.

Specifically, the Climate-Resilient Green Growth Assessment evaluates the current status of the agriculture sector in both Uzbekistan and Karakalpakstan, providing a contextual assessment of the exposure to, sensitivity of, and adaptive capacity of the agriculture sector towards adverse impacts of climate change and the natural hazards from the desiccated Aral Sea (Bathe and et al. 2022). Complementary, the Green Recovery Investment Analysis informs on decision-making regarding the potential monetary and non-monetary benefits from implementing infrastructural adaptation measures in the Republic of Karakalpakstan (Robalino and et al. 2022), considering its vulnerability identified in the CRGG.



02

2. OBJECTIVES

This document aims to support the establishment of Uzbekistan's green policy framework by setting out a definition for 'green jobs' in the agriculture and forestry sector, as a measure to support the implementation of an economic green growth model for the country in the coming years. More broadly, this document aims to support the government in the creation of green jobs to tackle productivity, adaptation, and mitigation issues in the agriculture and forestry sector in the Republic of Uzbekistan. Under this overall goal, the specific objectives are:

- i. To provide a situational analysis of the labor market in the agriculture and forestry sector in Uzbekistan;
- ii. To build a definition of 'green jobs' for the agriculture and forestry sector in Uzbekistan, following internationally accepted definitions and characteristics that frame a job as 'green'; and
- iii. To provide recommendations for the creation of green jobs in the agriculture and forestry sector in Uzbekistan.

This document, as well as the recommendations for the creation of green jobs, are aligned with the Global Green Growth Institute's (GGGI) Strategy 2030 for a low-carbon, resilient world of strong, inclusive, and sustainable growth. To deliver on its vision and mission, GGGI supports its Member countries, including Uzbekistan, to implement eight Global Operational Priorities underpinning the achievement of the following six Strategic Outcomes (SOs):

- i. Significant GHG emissions reduction in line with the Paris Agreement.
- ii. Creation of green jobs.
- iii. Increased access to sustainable services, such as clean affordable energy, sustainable public transport, improved sanitation, and sustainable waste management.
- iv. Improved air quality.
- v. Sustained natural capital for adequate supply of ecosystem services.
- vi. Enhanced adaptation to climate change.

These SOs are the priority impact areas of GGGI's assistance in supporting the transformation of Member countries toward a green growth economic development model.

2.1 Policy Objectives

This document aims to support the government's achievement of priorities set in accordance with the following key strategies and plans for the green development of the agriculture and forestry sector in the Republic of Uzbekistan:

- i. Priority directions set in the 'Strategy for the transition of the Republic of Uzbekistan to a "GREEN" Economy for the period 2019-2030'³:
 - a. In the field of water management:
 - i. Improving the efficiency of water use and preventing further salinization and degradation of land quality;
 - ii. Widespread use of energy-efficient and water-saving technologies for irrigating crops, improving mechanisms for stimulating water conservation;
 - b. In the field of agriculture:
 - i. Restoration of degraded pastures and introduction of sustainable pasture management mechanisms;
 - ii. Introduction of organic farming methods;
 - iii. Re-seeding of crops to ensure permanent coverage of the cropland surface;
 - iv. Crop diversification (expansion of crops of perennial tree plantations and perennial grasses);

³ Presidential Decree No. 4477 (October 4, 2019) 'On the approval of the strategy for the transition of the Republic of Uzbekistan to a "GREEN" economy for the period 2019-2030 2019'.

- v. Attraction of investments in production and processing, as well as the creation of value chains for agricultural and food products;
 - vi. Proper storage/processing of organic animal waste;
 - vii. Prevention of pollution of water sources by agricultural waste;
 - viii. Breeding highly productive animal breeds and plant species (varieties) resistant to salinity, drought and other dangerous phenomena and risks, preserving the gene pool of local animal breeds and plant varieties, as well as the gene pool of wild ancestors of cultivated plants.
- c. In the field of forestry:
- i. Restoration of forests and preservation of natural vegetation in all natural areas of the country;
 - ii. Increasing the area of forests in the mountainous, foothill and desert zones of the country, as well as ensuring their conservation, protection, and sustainable development;
 - iii. Expanding plantations of fast-growing native tree species;
 - iv. Creation of soil-protective forest plantations and afforestation of degraded lands (agroforestry);
 - v. Introduction into the process of afforestation and gardening of species and varieties of plants from the local flora that are resistant to salinity, drought and other dangerous phenomena and risks;
 - vi. Improvement of forestry with the use of modern high-performance technologies;
 - vii. Wide use of geoinformation technologies and innovations in forestry;
 - viii. Conducting broad information campaigns among the population on the protection and restoration of forests, including through the media.
- ii. Priority directions for the sustainable and efficient use of natural resources under the Program on the transition to a “green” economy and ensuring “green” growth in the Republic of Uzbekistan until 2030⁴:
- a. Diversifying agricultural production to increase resilience to climate risks:
 - i. Diversifying agricultural production with climate-smart sustainable production to promote a sustainable agro-ecosystem;
 - ii. Diversification and specialization of crop production in farms and dekhans in order to increase resilience to climate-related risks;
 - b. Introduction of sustainable pasture management – development and implementation of methods for sustainable management of pastures and pastures by preserving the ecological state of pastures, as well as reducing land and forest degradation;
 - c. Increasing climate resilient tree plantations – planting climate resilient trees to reduce erosion, sand and dust storms, and increase the resilience of ecosystems and infrastructure;
 - d. Development and approval of a landscape management plan to ensure the transition from a sectoral approach to a landscape approach:

⁴ Presidential Decree No. 436 (December 2, 2022) “On measures to improve the effectiveness of reforms aimed at the transition of the Republic of Uzbekistan to a “green” economy until 2030”.

- i. Integrated landscape management to increase crop yields, improve ecosystem services and diversify the economy;
 - ii. Stimulating the use of an integrated landscape approach, restoring the landscape in order to return it to productive use;
 - e. Improving food security and well-being through sustainable production and processing of agricultural products – the creation of a global governance system aimed at ensuring food security, developing healthy ecosystems, and supporting the sustainable management of land, water and other natural resources;
 - f. Increasing the number of jobs created through programs and businesses based on natural resource management:
 - i. Creation of “green” jobs and development of “Green Rates” program;
 - ii. Increasing the capacity of enterprises based on natural resource management to be resilient to climate change in improving local living standards, creating jobs in the fields of agriculture, natural resource management, and ecotourism;
 - g. Setting and putting into practice water withdrawal limits from water bodies based on accurate calculations in order to reduce overall water consumption and water shortage, monitoring water supply within the water withdrawal limit;
 - h. Expanding the use of efficient technologies in the agricultural sector – introducing and scaling up water-saving technologies, including drip, sprinkle, discrete and other efficiency irrigation technologies;
 - i. Introduction of wastewater treatment and circular water supply at industrial enterprises;
 - j. Ensuring the pace of “green” growth through the conservation of cultivated land and perennial plantings (orchards and vineyards) used for agricultural purposes;
 - k. Increase the production of seedlings or perennial ornamental and fruit trees in the Republic;
 - l. Determination of specific measures to create annually green areas in regional centers and districts.
- iii. Priorities two, three, four, six, and seven of the ‘Agriculture Development Strategy for the Republic of Uzbekistan for 2020-2030’⁵ which are particular influential for Uzbekistan’s transition to a green agriculture sector, laying the foundation for capacity building and enhanced resource management (GGGI 2022):
 - a. Priority Two: Create a favorable agri-business environment and enhance value-chains;
 - b. Priority Three: Reduce state involvement and improve the investment environment;
 - c. Priority Four: Ensure the rational use of natural resources and enhance environmental protection;
 - d. Priority Six: Gradual diversification of state expenditure;
 - e. Priority Seven: Development of research, education, information, and advisory services.

⁵ Presidential Decree No. 5853 (October 23, 2019) ‘On the approval of the Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030’.

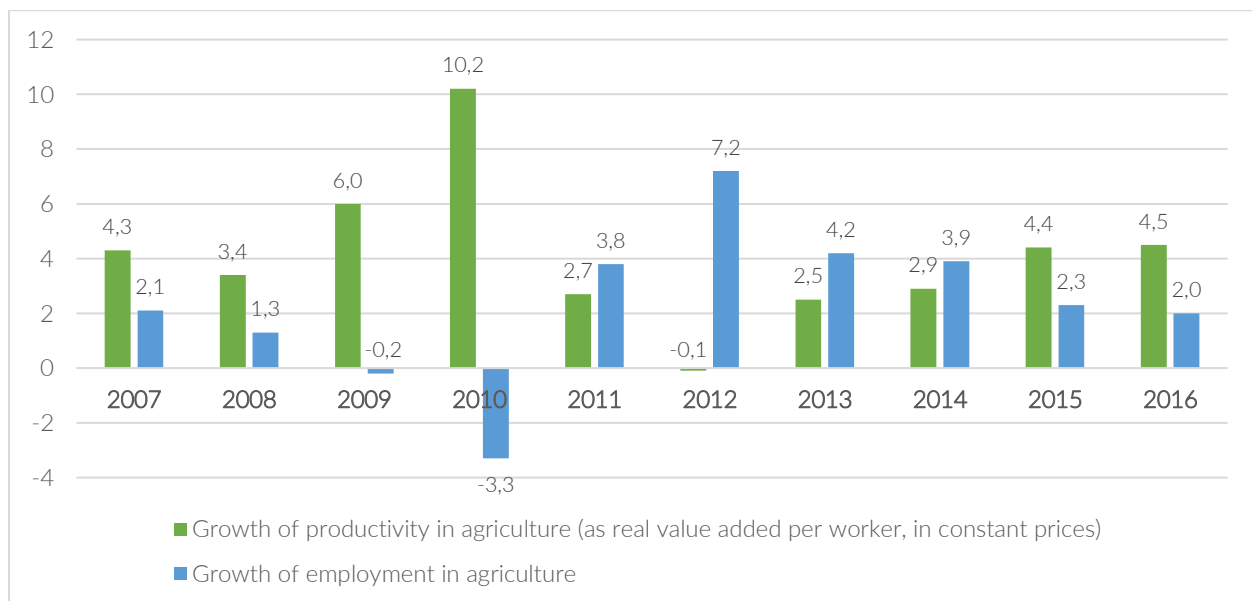


3. AGRICULTURE & FORESTRY JOBS IN UZBEKISTAN

3.1 Jobs in the Agriculture Sector in Uzbekistan

After independence from the Union of Soviet Socialist Republics (USSR) in 1991, the government of Uzbekistan set two main objectives for its economic development. First, the government decided to maintain cotton production as an indispensable financial resource to stabilize the country's trade balance. Second, the government opted for food self-sufficiency, particularly in breadmaking cereals which were at the time largely imported from Ukraine and Kazakhstan (Couetil and et al. 2020). With this economic model and through several waves of farm restructuring and land allocations (See Box 2), the agriculture sector grew at a relatively high rate, with an average agricultural labor productivity growth of 1.5% per year between 1996 and 2016. However, agricultural productivity growth slowed down over time. The growth in agricultural labor productivity was the result of a large decline in the number of agricultural workers rather than the result of an increase in agricultural value addition (Zorya and et al. 2019). The sectoral decrease in employment significantly offset its overall contribution to economic growth (share of agriculture in total labor force declined from 42.7% in 1996 to 30% in 2016). During this period, the reduction in agricultural employment resulted from labor shifting from agriculture to manufacturing with higher-paid jobs (ADB 2018). In addition, many workers from the agriculture sector sought jobs abroad (Trushin 2018).

Figure 1. Agriculture, growth in labor productivity, and employment (2007-2016)



Source: (Trushin 2018)

The period before setting a new 'green' direction for the agricultural sector development is characterized by a 'jobless growth', as job creation did not accompany growth (Trushin 2018), and the sector's development did not generate jobs in food and textile industries, where employment declined in both, absolute and relative terms (Zorya and et al. 2019). Furthermore, between 1996 and 2016, the 'Uzbek model' of economic development was unable to ensure sufficient job creation for the rapid-growing population (Trushin 2018), especially for the agricultural sector. This issue is highly relevant considering that the combined sector of agriculture, forestry, and fisheries in Uzbekistan is the largest employer for men and women (nearly one third of men and around one

quarter of employed women work in this combined sector) (FAO 2019). According to the report 'Uzbekistan Quality Job Creation as a Cornerstone for Sustainable Economic Growth' from the ADB (2020), a key macroeconomic issue to be addressed for Uzbekistan at this time, is the conversion of 'jobless growth' into more inclusive economic growth. This means, that the government should prioritize creating good quality employment opportunities for the Uzbek people (Anderson, Ginting and Taniguchi 2020).

BOX 2. Farm restructuring and land tenure.

In Uzbekistan, three major organizational types of agricultural production are differentiated according to the Law on Dehkan Farms (1998) and the Law on Farms (2004) (*Robalino and et al. 2022*):

- 1) **homestead landowners** (subsidiary farming limited to plots directly attached to houses);
- 2) **dehkan farms** (a 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); and
- 3) **private farms** (an independent economic entity that conducts commercial agricultural production using land plots that are leased).

In addition to technical and economic orientation and the size of the surface area, farms as a whole differ from one another in terms of access to water, soil type of the plot/s, and the number of employees and the type of workers employed on the farm (i.e., family, yearly, seasonal).

In the country, the last farm restructuring was prescribed by the 2019 Resolution of the Cabinet of Ministers No. 14 'On additional measures to optimize the land plots of farms and other agricultural enterprises and effective use of cultivated areas in agriculture' (*Robalino and et al. 2022*). Unfortunately, frequent farm restructuring and weak land tenure rights have limited proper farm management, farm investment, and the free movement of farmland from less efficient to more efficient producers. Furthermore, they have raised several issues regarding fairness and justice in terms of access to farmland for rural population (*WB 2019*).

The transition to a 'green growth' model in the years to come is expected to have an impact in jobs, with employment expected to increase in certain sectors including agriculture (Honorati and Marguerie 2021). The emphasis in the agricultural sector and its development is connected with its high potential for job creation. Historical data shows that in Uzbekistan, agriculture has contributed more than any other sector of the economy for total job creation between 2012-2016⁶ (Trushin 2018). This may be the reason why the 'Agri-food Development Strategy 2020-2030' highlights the creation of new jobs as a key outcome from its priority actions. In fact, the Agri-food Development Strategy targets an increase in the number of people employed in agriculture by 2% for 2021, 1% for 2025, and 1% for 2030. It also targets increasing the annual growth rate of the agriculture sector

⁶ By 2016, the total people employed in the agriculture sector was reported at 3,684,000.

to 5% by 2030, and raising labor productivity in agriculture (per worker per year, in USD) from USD 3,960 in 2018 to USD 6,500 by 2030 (MoA 2020).

These ambitious targets have been set for an agricultural sector currently characterized by a labor not mechanized, heavily physical dependent, and based on repetitive work. Agricultural jobs in the country are not high value-adding, despite that in Uzbekistan, a 'typical farmer' is well-educated, has an average age of 46, and has professional and technical agricultural education (according to FAO's data, 43.8% of survey farmers in the country have higher education, and 34.4% have secondary vocational education) (FAO 2019). In terms of job quality, the agriculture sector is negatively affected by informal employment. In 2016, an estimated 21.1% of the total employed population (18 to 64 years old) was informally engaged, working mostly in the agriculture, construction, retail, and transport sectors (Anderson, Ginting and Taniguchi 2020). This situation was aggravated with the impact of the global pandemic as reported by the COVID-19 Crisis Management Team⁷ (CMT) (See Box 3). Generally, rural residents and less educated people are employed informally, especially in seasonal work (Anderson, Ginting and Taniguchi 2020). Seasonal agricultural work involves temporary jobs primarily undertaken by women who seek cash income (especially during cotton harvest). Agricultural seasonal labor is regularly for 30 days on average per year, the majority involved are paid in cash, and very few have written contracts or written consent. Seasonal work is not secure and offers few labor protections (FAO 2019).

BOX 3. COVID-19 impact & response in Uzbekistan.

Due to COVID-19 pandemic in 2019, lockdown and subsequent economic paralysis affected mostly those involved in informal activities. In the first half of 2019, the share of employment in the informal sector was 58% of the total labor force. This represented around 7.8 million people (dominated by youth between 18 to 25 years old) informally employed mostly in agriculture, construction, trade, tourism, and service activities. Migration disruption adversely affected women in agriculture. Anecdotal evidence suggests that with a significant number of migrants unable to leave the country, women lost comparative advantage and were squeezed out by the stay-home male migrants in the sector (UN in Uzbekistan 2020).

According to the COVID-19 Crisis Management Team, external shocks (including volatility in commodity prices), disruption to value chains, and the fall in remittances, set an urgent need for a rigorous effort to protect existing jobs, as well as to create new jobs, especially for youth, women, labor migrants, and informal workers (UN in Uzbekistan 2020).

As a response & recovery offer, and relevant to the agriculture sector, the Team proposed the provision of financial advisory support to the private sector, including agriculture and agribusinesses, by introducing a curriculum to build new skills and entrepreneurial activities. In addition, it was proposed to provide support through liquidity for financial institutions and by reforming the financial sector through advisory and capacity building for handling non-performing assets in a restrictive environment, as well as for offering new instruments in support of the private sector (UN in Uzbekistan 2020).

⁷ The COVID-19 Crisis Management Team was established on March 12, 2020, to enable a coherent and coordinated multilateral response to the crisis. The CMT was chaired by the UN Resident Coordinator, supported by five Task Forces chaired and co-chaired by ADB, UNFPA, UNDP, World Bank, and WHO.

For youth, job quality and inclusiveness in the agricultural sector is a serious concern. Roughly one out of five young workers (aged 25 to 34) is engaged in agriculture. Around 20% of them are working in low-productive agricultural activities with limited income and security benefits, while others (around 9%) work in subsistence agriculture producing goods and services for their own family consumption. Inactivity rates and discouragement are high among sectoral young workers due to social norms, low wages, and limited ‘formal’ opportunities. Even when they are employed in the sector, they are hired without formal registration⁸ and without opening an “employment work-book⁹” (Honorati and Marguerie 2021).

Finally, and in terms of gender parity, a higher proportion of men, when compared to women, are receiving higher education and technical training in the fields that are experiencing growth, including the agriculture sector (Anderson, Ginting and Taniguchi 2020). Furthermore, men perform most of the work that requires machinery and technology, such as ploughing land, while women carry out manual work such as weeding, thinning plants, or sowing seeds (FAO 2019). In Uzbekistan, cultural norms and social stereotypes have a significant impact on women’s participation in economic activities, access to good employment opportunities, and the gender pay gap (Honorati and Marguerie 2021). According to FAO’s research and data, the current ‘gender gap’ in agriculture reduces women’s contributions to the agricultural sector by diminishing their productivity and by affecting the wellbeing of families. This, unfortunately, imposes a high economic cost for the sector through productivity losses (FAO 2019).

BOX 4. Women’s participation in the agriculture sector in Uzbekistan.

By 2015, women’s participation in agriculture and forestry was the greatest (27.6%) among all economic sectors in Uzbekistan. Compared to men, women’s agriculture and forestry sectoral participation for the same year represented 45.5%. Women’s share of jobs in small and micro businesses, including farms, increased from 21.7% in 2014 to 22.5% in 2016 (ADB 2018).

Women significantly contribute to the family budget by tending small gardens and larger plots of land. They grow fruits, vegetables, or seedlings; care for livestock and poultry; produce dairy products for family consumption; and sell products in the community. Yet, only 5% operate farm enterprises themselves, limited by the lack of startup capital and the inability to collateralize their property and assets as men retain ownership in most cases. Additional challenges include lack of time management, lack of technical skills, and limited access to short-term bank loans (ADB 2018).

⁸ With the local labor authority.

⁹ The work-book is the main document confirming the work experience of an employee. The employer is obliged to keep work-books for all employees who have worked for more than five days, with the exception of part-time workers. People entering a part-time job, instead of a work-book, they should present a certificate from the main place of work. The employer is obliged to enter in the work-book information on employment, transfer to another permanent job and termination of the employment contract (Labor Code of the Republic of Uzbekistan 1996).

3.2 Jobs in the Forestry Sector in Uzbekistan

Compared to more than 3.5 million people employed in the agriculture sector, the forestry sector in Uzbekistan is relatively small, employing around 10,000 people as estimated by national experts (UNECE & FAO 2020). In the country, all forests and forest land (the State Forest Fund) are owned and managed by the state under the responsibility of the State Committee on Forestry (SCF) (from 2023 the SCF is part of the Ministry of Natural Resources of the Republic of Uzbekistan). The SCF has the responsibility to program the measures for an effective organization of forest activities, including the introduction of advanced scientific and technical achievements in the industry, as well as expanding the area of forests (through restoration, afforestation, and the creation of forest and pasture protective belts), the production of seedlings, the collection of medicinal herbs, and the conservation and improvement of existing forests (UNECE & FAO 2020).

Although the State Forest Fund¹⁰ (SFF) land occupies officially around 22% of the total land area of Uzbekistan (corresponding to approximately 9.6 million hectares), only about 3.69 million hectares are covered by forests. From this, and based on Forest Resources Assessment (2020), 69% of the total forested area is managed for soil and water protection (2.5 million ha), while 31% is managed for biodiversity conservation (1.1 million ha) with restricted use only allowing non-timber forest products (NTFPs). Only 0.2% of the total forested area (6,000 ha) is considered as production forests for timber and wood, mainly poplars and other fast-growing species (World Bank Uzbekistan 2022). Yet, as no modern forest inventory has been carried out for over 20 years, the information presented for the forestry sector and its trends over time should be interpreted with caution (UNECE & FAO 2020).

According to official figures, around 89% of the country's forests (3.28 million ha) are managed by more than 100 state business entities including 66 state forest enterprises (SFE), all overseen by the SCF¹¹. SFEs have territorial responsibilities on the SFF land generally at district level. Besides the SFEs, there are a number of differentiated enterprises, including 13 specialized enterprises producing medicinal plants, 10 specialized forestry stations, 5 state forest hunting facilities, and 8 stations managing protected areas that are under the jurisdiction of the SCF with different legal status (i.e., national reserves, biosphere reserve) (World Bank Uzbekistan 2022).

Data on employment in the SCF and related institutions is not readily available; however, it is acknowledged that each state forest enterprise is well equipped with technical staff and responsible for a full range of forestry activities (World Bank Uzbekistan 2022). These include the protection of trees including sanitary cuts; managing and harvesting of NTFPs such as nuts, fruits, and medicinal herbs; and reforestation, prevention of fires, pests, and diseases, hunting, and preservation of nature reserve areas, and infrastructural development (including road construction). On an area basis, it is estimated that the number of employees in forestry and associated areas is 2.4 per 1,000 ha of forested land. Overall, there is not a 'typical' state business entity in the country. The size of managed forests and the type of economic activities are different between them. They employ their own staff in various numbers, and they also take care of pensions for retirees. Unfortunately, data

¹⁰ The Forest Fund corresponds to a legally determined territory. However, it is not an actual physiognomic and usage status of a piece of land as forests (World Bank Uzbekistan 2022).

¹¹ The Chairman of the SCF in Tashkent, together with the heads of regional forestry departments and in agreement with district-local authorities (Khokims), can establish or dissolve SFEs and appoint their directors. In addition, the SCF approves the annual plans of the SFEs and monitors their performance (World Bank Uzbekistan 2022).

on the individual earnings under the SFEs is not available, but it is presumed that there is a wide variation in economic performance linked to the kind of business at disposal and the environmental conditions prevalent in the specific ecoregions (World Bank Uzbekistan 2022).

In terms of gender equity, women are almost absent from formal employment related to forestry and forest management in Uzbekistan (FAO 2019). In fact, over 90% of the staff in local forestry organizations are male. Occupations in this sector are considered 'more appropriate' for men as they entail regular working hours and continuous overtime. In addition, forestry is unpopular among female vocational college students, who do not associate professional development with working in a forest organization (ADB 2018). Yet, women's minimal role in forestry as a form of employment should not imply that they are not engaged in forest use and management in other ways. In households near forests, women are likely to use forest land to gather NTFPs, while men tend to be engaged in the collection of firewood and cattle grazing, both regulated by tickets purchased annually or for several months from forest enterprises. However, men form the majority of ticketholders, and it is not clear to what extent women who do not have a close male breadwinner would have access to use the forest land (FAO 2019).

Finally, and regarding the future development of the forestry sector with implications in terms of jobs, two related Presidential Decrees (PD No. 4424¹² and PD No. 4850¹³) define the work to be undertaken in the forestry sector until 2030 with the objective to further develop the sector as well as to improve the efficiency of Forest Fund land. Furthermore, specific objectives set under the 'Concept for the development of the forestry system until 2030' (PD No. 4850) will have a direct impact in the creation of new jobs¹⁴. According to the approved concept, there is the aim to increase by 2030 the Forest Fund land up to 14 million hectares, with land covered with forests up to 6 million hectares. In addition, it is envisioned to increase the volume of seed harvesting up to 840 tons per year, the number of bee colonies up to 300,000, the volume of agricultural food production up to 32,000 tons per year, and the volume of cultivation of medicinal plants up to 11,600 tons per year. Despite these plans and objectives, unfortunately, it is not clear how detailed these plans are, and to what extent they are and will be implemented at the SFE level. In addition, there is no agreed certification standard for Uzbekistan, and no forest management unit has been certified by Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC) (UNECE & FAO 2020).

¹² Presidential Decree No. 4424 (August 23, 2019) 'On additional measures to improve the efficiency of forest management in the Republic'.

¹³ Presidential Decree No. 4850 (October 6, 2020) 'On Approval of the concept for the development of the forestry system of the Republic of Uzbekistan until 2030'.

¹⁴ PD No. 4850 builds on PD No. 4424, which according to the official document, in the period from January to September 2020, over 29,000 hectares of Forest Fund land not covered by forests were leased to 1,561 individuals and legal entities for a period of 49 years, subject to investment in the amount of more than 275 billion soums and 7 million dollars, and the creation of 4,300 new jobs.



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4. GREEN JOBS FOR THE AGRICULTURE AND FORESTRY SECTORS

4.1 Green Jobs

The European Commission (EC) has identified two approaches to defining 'green jobs': the "eco-industry" approach, in which "jobs are green by nature of activity," and the "transformation" approach, in which "all jobs are greening." The EC highlights that despite the conceptual distinction of these two approaches, they are actually not mutually exclusive (Maclean, Jagannathan and Panth 2018).

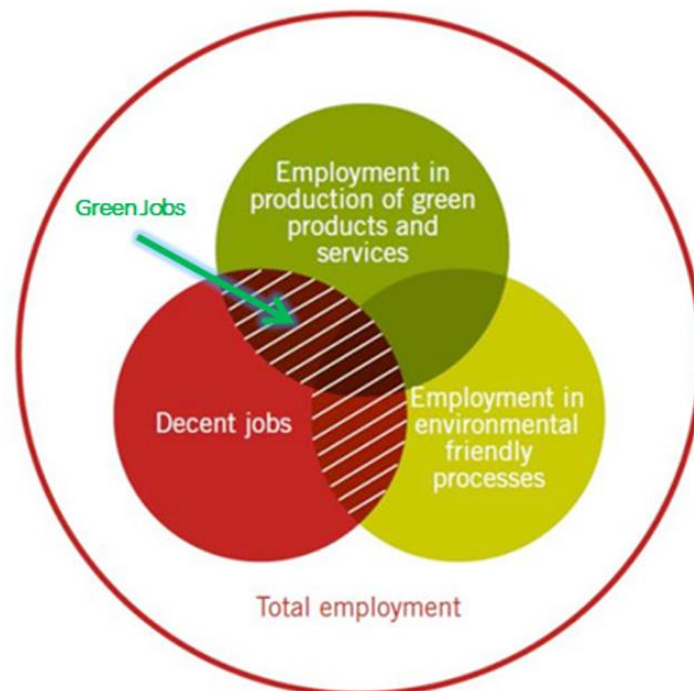
The United Nations Environmental Programme (UNEP) and the International Labour Organization (ILO) defined, back in 2008, 'green jobs' as:

... work in agricultural, manufacturing, research and development (R&D), administrative, and service activities that contribute substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high-efficiency strategies; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution (Martinez and et al. 2010).

The United Nations Development Programme (UNDP), through its discussion paper 'Green Economy and Green Jobs: Challenges and Opportunities in Europe and Central Asia', mentions that 'green jobs' can be generically defined as:

...the direct employment created in different sectors of the economy and through related activities, which reduces the environmental impact of those sectors and activities, and ultimately brings it down to sustainable levels (UNDP 2018).

Figure 2. What are Green Jobs?



Source: ILO. (2016, April 13). What is a Green Job? Cited in (UNDP 2018).

Uzbekistan's Third Environmental Performance Review (UNECE 2020) includes a section for 'Green jobs' and defines it as

... any decent job that contributes to preserving or restoring the quality of the environment, whether it is in agriculture, industry, services or administration (UNECE 2020).

The section in the report also states that despite mentioning the creation of green jobs as key principles of the Strategy for Transition to Green Economy for the period 2019-2030, there is no available data on the number of green jobs and the related environmental/economic sectors for Uzbekistan (UNECE 2020).

The Global Green Growth Institute follows ILO's¹⁵ definition of 'green jobs', that describes them as

... decent jobs that produce goods, provide services or make production processes more energy and resource efficient and less polluting (GGGI 2019).

'Green jobs' should follow the 'decent job's criteria' which implies

... work that is productive and delivers a fair income, security in the workplace and social protection for all, better projects for personal development and social integration, freedom for people to express their concern, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.

All the definitions above fall under the "eco-industry" approach, as they refer to activities and sectors that can contribute to improve the environment. The "eco-industry" approach allows identifying a core subset of activities that are affected by environmental and low-carbon drivers. These are the kinds of jobs created through new technologies and the redefinition of existing jobs in eco-industries (Maclean, Jagannathan and Panth 2018)

Regarding the agriculture, forestry, and other land-use (AFOLU) sector, GGGI refers to green employment to those jobs particularly created by sustainable agriculture interventions and climate-smart practices that contribute to sustainable farming, protection of the environment and promotion of biodiversity, improvement of wellbeing of people and communities, and increase of resilience to climate change (GGGI 2019). Especial emphasis is made for the AFOLU sector concerning work that uses child labor and bonded labor as it does not qualify for decent job, and therefore, neither for green job.

For the purpose of this document and following an "eco-industry" approach, a green job in the agriculture and forestry sector is considered as

...a decent job directly engaged in green interventions and/or climate-smart practices in agriculture and forestry.

From this definition, the following subsections build an understanding of decent job in Uzbekistan's context, as well as practices that can be considered as green interventions and/or climate-smart practices for agriculture and forestry activities, with the objective to frame a green job definition for these sectors.

¹⁵ Assessing Green Jobs Potential in Developing Countries: A Practitioner's Guide (2011): http://www.greengrowthknowledge.org/sites/default/files/downloads/resources/Assessing_green_jobs_potential_ILO.pdf

4.1.1 Decent Job in Uzbekistan

The ILO defines decent work as “productive work for women and men in conditions of freedom, equity, security and human dignity”. In general, work is considered as decent when it pays a fair income, it guarantees a secure form of employment, it ensures equal opportunities for all, it includes social protection, it offers prospects for personal development, and it allows workers to freely express their concerns (European Commission n.d.).

Decent work is a multidimensional concept covering a range of issues and challenges that needs to be addressed in a comprehensive way, ensuring the full protection of rights and opportunities for workers (USDOL n.d.). To facilitate its understanding, ILO has set 10 dimensions of decent work that fall into four interrelated pillars including: employment creation and productive work delivering a fair income; access to social protection programmes, particularly social insurance (implying access to pension, and temporary benefits); rights at work, involving safe working conditions and formal contracts; and social dialogue (Papa and et al. 2020). Depending on a country’s context and its level of development, decent work enhancement may take a staggered approach, dealing with fundamentals at first and then developing other relevant areas while securing more buy-in (USDOL n.d.).

In terms of fundamental principles and rights to work in Uzbekistan, prior to 2014 the ILO Supervisory Body noted a number of challenges in the application of the conventions in the country, particularly the conventions related to forced labor and child labor linked with cotton production. The ILO started its cooperation with the Government of Uzbekistan in 2013, and in 2014 both parties signed a Memorandum of Understanding (MoU) for the first Decent Work Country Programme (DWCP) for Uzbekistan (2014-2016, and extended in 2017). The program addressed three main problem areas: 1) a limited capacity in Uzbekistan for the realization of Fundamental Principles and Rights at Work (FPRW), including the prevention and elimination of child labor and forced labor; 2) an ineffective policy framework for decent employment opportunities; and 3) lack of a mechanism to promote decent work in the country (Kacapor and Zarkovic 2020).

Effective measures for changing the situation were made predominantly after the change of the President of Uzbekistan at the end of 2016, in which the government took various measures to address the issue of child labor and forced labor. As a result, the 2019 ‘Third Party Monitoring of Child Labor and Forced Labor During the Cotton Harvest’ report noted that systematic forced labor did not occur during the 2019 cotton harvest and that systematic or systemic child labor is no longer used during the cotton harvest in the country since 2016 (Kacapor and Zarkovic 2020). This achievement is publicly shared and highlighted in Uzbekistan’s First Sovereign Environment, Social and Governance (ESG) Report for 2020 (GoU 2021).

In recent years, the government has adopted and applied relevant ILO conventions, including the Convention on Freedom of Association and Protection of the Right to Organize (no. 87), the Tripartite Consultation Convention (no. 144), the Protocol of 2014 to the Forced Labor Convention (no. 29), the Labor Inspection in Agriculture Convention (no. 129), and the Labor Inspection Convention (no. 81) (Kacapor and Zarkovic 2020). The ratification of the above-mentioned Conventions proceeded important reforms done to Uzbekistan’s Labor Code.

The standing Labor Code of the Republic of Uzbekistan (2023) states the following under the articles cited below (Labor Code of the Republic of Uzbekistan 1996):

- **Article 6.** Prohibition of discrimination in labor relations.

All citizens have equal opportunities in the possession and use of labor rights. The establishment of any restriction or the provision of advantages in the field of labor relations, depending on gender, age, race, nationality, language social origin, property and official status, attitude to religion, beliefs, membership in public associations, as well as other circumstances, shall not associate with the business qualities of employees and the results of their work, is unacceptable and constitutes discrimination.

- **Article 7.** Prohibition of forced labor.

Forced labor, i.e. coercion to perform work under the threat of any punishment (including as a means of maintaining labor discipline) is prohibited.

- **Article 16.** Basic labor rights of an employee.

In accordance with the Constitution of the Republic of Uzbekistan, everyone has the right to work, to free choice of work, to fair working conditions and to protection from unemployment in the manner prescribed by law.

Every employee has the right:

for remuneration for work not lower than the amount established by law for the first category of the Unified tariff scale for wages¹⁶;

for rest, provided by the establishment of the maximum duration of working hours, reduced working hours for a number of professions and jobs, the provision of weekly days off, holidays, as well as annual paid holidays;

on working conditions that meet the requirements of safety and hygiene;

for vocational training, retraining and advanced training;

for compensation for harm caused to health or property in connection with work;

to join trade unions and other organizations representing the interests of workers and labor collectives;

for social security by age, in case of disability, loss of a breadwinner and in other cases established by law;

to protection, including judicial, labor rights and qualified legal assistance;

defend their interests in collective labor disputes.

¹⁶ According to Presidential Decree No. 138 (May 20, 2022) 'About Salary Increase', from June 1, 2022, on the territory of the Republic of Uzbekistan the minimum wage is 920,000 soums per month and the base settlement value is 300,000 soums per month.

- **Article 115. Normal hours of work.**

Normal working hours for an employee may not exceed forty hours per week. With a six-day working week the duration of daily work cannot exceed seven hours, and with a five-day working week - eight hours.

- **Article 282. Extension of state social insurance to all employees.**

All employees are subject to state social insurance.

- **Article 283. State social insurance contributions.**

State social insurance contributions are paid by employers, as well as by insured employees themselves. Non-payment of state social insurance contributions by employers does not deprive the insured employee of the right to be provided at the expense of state social insurance funds (See Box 5).

The legal framework of Uzbekistan provides the rights and guarantees for people to have a decent job in the agriculture and forestry sector according to the four interrelated pillars from ILO. Unfortunately, informality in the country represents the greatest barrier for people to work under the characteristics of a decent job. Evidence from Uzbekistan shows that large shares of the working population are employed in low-wage, low-quality jobs, which do not fall under the category of decent work. In fact, relatively high employment rates for working age adults and low numbers of registered unemployed people suggest that many have no choice but to go for informal low-paid and low-quality work or migration (Papa and et al. 2020).

People under informal working arrangements (including their families) do not qualify for social insurance programmes, such as the case of maternity, sickness, or unemployment as their practices are not properly registered and do not contribute accordingly to the programme. At the same time, as they earn some income, they do not qualify also for non-contributory programmes (i.e., low-income family allowances and child benefits, old age pensions, breadwinner-loss allowance) based on very strict means tested as eligibility criteria (Papa and et al. 2020). Furthermore, unemployment is something that people cannot afford. There are little incentives to register as unemployed due to the low level of unemployment benefits and the low salaries of the vacancies offered by employment centers. As a result, many unemployed people consider registration as unworthy of their efforts (Papa and et al. 2020).

In terms of social protection, Uzbekistan has lacked the mechanisms to promote decent work. Before 2021, the social protection system in the country was very fragmented and hindered by the lack of a national social protection strategy and a central government body responsible for social protection policy planning (Kacapor and Zarkovic 2020). On February 17, 2021, the Presidential Decree No. 5634 'On measures to improve the system of social protection of the population of the Republic of Uzbekistan for 2021-2030' was signed. The document also approved the Concept of the National Strategy for Social Protection (NSSP) for 2021-2030 and the Roadmap for the development of the NSSP for 2021-2030 with measures to improve social assistance schemes, social insurance, and inclusion of people who face multiple barriers when seeking employment (UNICEF 2021).

BOX 5. Social insurance and unemployment benefits.

Social Insurance Contributions: Before 2019 Tax Code reform, the Unified Social Payment (USP) was 25% of the gross payroll for all firms and 15% for micro and small private enterprises including agricultural workers. After 2019 Tax Code reform, the USP (renamed as Social Tax in 2020) was reduced to 12% of the gross payroll for all private firms (whatever the size), and for new categories of taxpayers including: individual entrepreneurs and their employees, members of family enterprises, farming enterprises, and artisans. It remained at 25% for State Owned Enterprises (SOE) (Honorati and Marguerie 2021).

Out of the Social Tax, 0.1% goes to the Employment Fund, which covers Unemployment assistance and the Active Labor Market Program (ALMP) (Papa and et al. 2020) (Honorati and Marguerie 2021).

Social Insurance Benefits according to the Labor Code: It includes:

- 1) Allowance for temporary disability - paid in case of illness, labor, or other injury. The allowance for temporary disability due to an employment injury and occupational disease is paid in the amount of full earnings or in the amount of 60% to 100% of earnings, depending in contribution and other circumstances.
- 2) Benefit for pregnancy and childbirth – maternity benefit is paid in the amount of full earnings during the entire maternity leave.
- 3) Childbirth benefit – one time allowance (established by law) when a child is born.
- 4) Burial allowance – a funeral allowance is paid in the amount and manner determined by law.

Pension security – An old-age pension is assigned to insured workers on a general basis for men (upon reaching 60 years old with a total length of service of at least 25 years) and for women (upon reaching 55 years old with a total length of service of at least 20 years). For certain categories of insured workers (including in the agriculture sector), a pension is established at a reduced retirement age, and, in appropriate cases, at a reduced length of service (Labor Code of the Republic of Uzbekistan 1996).

Unemployment benefit: it is intended for people whose unemployment status has been officially recognized. Qualifiable unemployed are able-bodied people over the age of 16 who are registered with employment centers as job seekers until they acquire the right to pension benefit and who, at the time of registration, are not working or realizing earnings or are ready to either work, undergo vocational training and retraining, or advanced skill training. The amount of unemployment benefits depends on the employment history of the applicant. The employment centers are available in every district (200 units across the country) (Papa and et al. 2020).

ILO's second Decent Work Country Programme for 2021-2025 covers a different and broad range of development issues for Uzbekistan, besides the elimination of the worst forms of child labor and forced labor. The second DWCP aims to improve the regulatory framework governing labor

relations; enhance decent work and better employment opportunities for youth, women, and vulnerable groups, generated by inclusive and equitable economic growth; extend the access of the most vulnerable groups to equitable, inclusive and quality education and social protection; and to strengthen social dialogue and the institutional capacities of the social partners (ILO 2021).

To date, the government of Uzbekistan has taken big steps in the process of formalizing jobs, especially in the agricultural sector. Two main actions are highlighted due to their relevance towards better quality jobs. First, since 2019 the government has incentivized farmers to conclude contracts with workers and to formalize working arrangements by reducing the mandatory social payments from 25% to 12% (FAO 2019). Second, on December 21, 2022, the government of Uzbekistan approved the Resolution of the Cabinet of Ministers No. 717 'On approval of the regulation on the procedure for accounting for new jobs created', which states that seasonal jobs (included in farms) are now counted as occupations, formalizing the situation for seasonal workers. During the last years, it was acknowledged that even where there were agreements between the farmers and seasonal workers, the terms of these agreements were not always observed and there were instances of underpayments and other poor working and living conditions. Furthermore, considering the lack of production planning and forecasting in the agriculture sector, improper estimations were made for seasonal work requirements, leading to under recruitment that required existing seasonal workers to work excessive hours and be coerced to stay longer, both key indicators of forced labor (FLA 2020).

The government of Uzbekistan has worked and its currently working on reducing the informal economy. This has resulted in state authorities setting targets in terms of number of inspections/audits that should be conducted, or the level of fines that should be generated each year. However, for advancing to a formal economy, it has been suggested to the government to shift the objective from "reducing the informal economy" to "formalizing the informal economy". When the strategic objective is to formalize the informal economy, the targets become the number of businesses or jobs moved into the formal economy. Although Uzbekistan's targets are to reduce the informal economy, there is progress being made towards formalizing the informal economy (ILO 2021).

4.1.2 Green Interventions and/or Climate-Smart Practices

As per definition, sustainability¹⁷ in agriculture¹⁸ and forestry¹⁹ refers to the ability to farm crops and animals, and to grow and take care of trees in forests, at a steady level without exhausting natural resources or causing severe ecological damage. The government of Uzbekistan, through its Program on the transition to a "green" economy, has set priority tasks for the sustainable use of natural resources clearly connected with agriculture and forestry. Among the priority tasks, it is mentioned the need to develop and implement agricultural solutions that feed a growing population while ensuring food security and conserving water resources; the introduction of practices based on sustainable landscapes, reforestation, and rational use of natural resources; and the harmonization of crop diversification and the introduction of water-saving agricultural technologies with landscape

¹⁷ The ability to be maintained at a steady level without exhausting natural resources or causing severe ecological damage (Collins 2023).

¹⁸ Farming and the methods that are used to raise and look after crops and animals. (Collins 2023).

¹⁹ The science or skill of growing and taking care of trees in forests, especially in order to obtain wood. (Collins 2023).

restoration activities. These tasks have been set under the framework of climate change, highlighting the necessity to reduce the impact of climate change and the need to adapt to it (On measures to improve the effectiveness of reforms aimed at the transition of the Republic of Uzbekistan to a "green" economy until 2030 2022).

BOX 6. GHG emissions from the agriculture sector in Uzbekistan.

According to Uzbekistan's updated First Nationally Determined Contributions (NDC) (Submitted on October 30th, 2021), the total GHG emissions in the country, without CO₂ removals in the forest and other land use sector in 2017, amounted to 189.2 MtCO₂eq. Considering removals, in 2017 it amounted to 180.6 MtCO₂eq. From this, the agriculture sector represents the second greatest contributor, accounting for 17.8% of the total GHG emissions (*Republic of Uzbekistan 2021*).

According to Uzbekistan's updated NDC, the Republic of Uzbekistan will reduce specific GHG emissions per unit of GDP by 35% from the level of 2010 by 2030. This, by further introducing energy-saving technologies in industry, construction, agriculture, and other sectors of the economy; improving productivity of agricultural land; expanding forest areas; improving the water management system; and other actions and measures reflected in the Strategy for Transition to a Green Economy until 2030 (*Republic of Uzbekistan 2021*).

For GGGI, green interventions refer to actions that seek to deliver economic growth that is both environmentally sustainable and socially inclusive. In terms of efficient use of natural resources, green interventions strive to increase the quantity and quality of natural capital and environmental services, as these factors affect productivity, and their availability is critical for sustainable economic growth. It also strives to increase the productivity of resources that allow for higher growth with the consumption of fewer resources, as well as to develop and promote the application of innovative and green technologies, as innovation is a key driver of economic growth (GGKP 2020).

GGGI through its technical report 'Green Recovery and Climate Action: Assessing Green Jobs from Renewable Energy and Forestry Investments for Developing and Emerging Countries' defined occupations and activities related to natural resource management, specifically in the forestry sector. As a reference, the occupations and activities included those related to forest management and conservation, those related to agroforestry, those related to fire management, those related to urban and peri-urban forestry, those related to maintaining forest and water-related ecosystem services, and those related to wood production, of course, in a sustainable manner (Grafakos and et al. 2021).

On the other hand, the Food and Agriculture Organization (FAO) of the United Nations defined for the first time Climate-Smart Agriculture (CSA) in a 2010 report that showed that farming was adversely impacted by climate change and that greenhouse gas emissions (GHG) from farming made climate change worse (USDA n.d.). According to FAO, CSA is

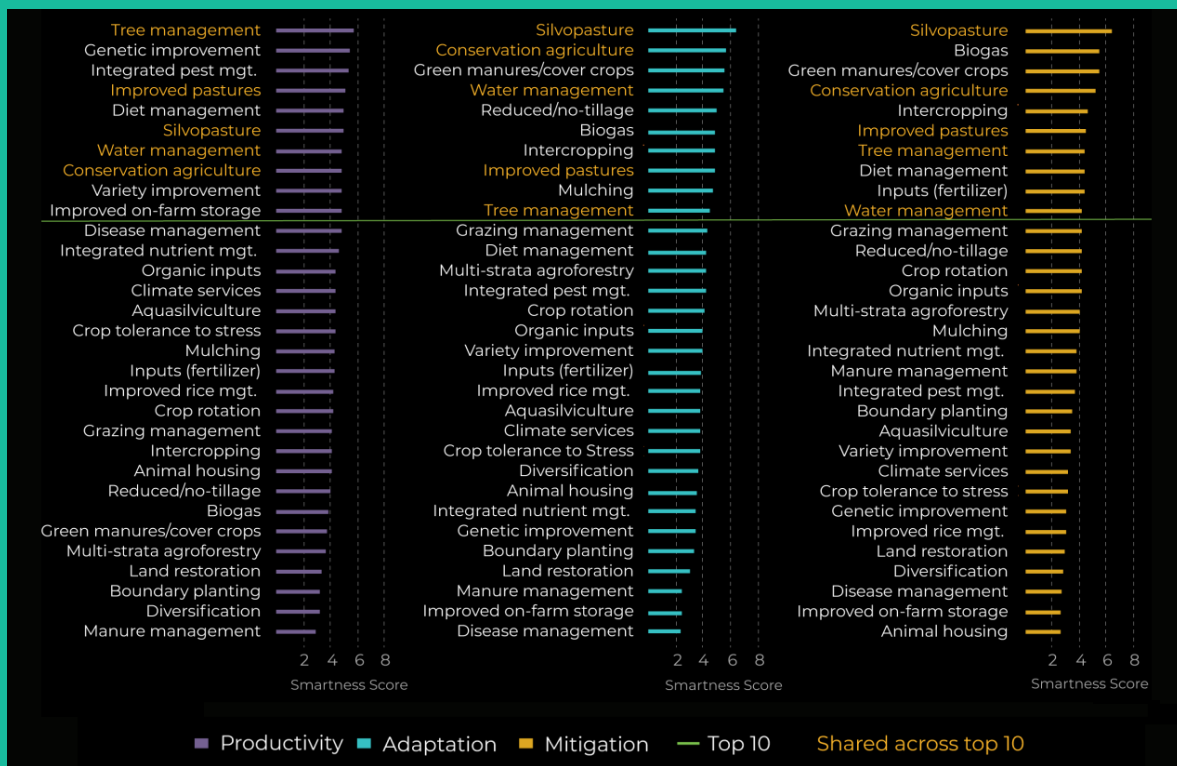
... an approach that helps guide actions to transform agri-food systems towards green and climate resilient practices. It aims to tackle three main objectives: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible (FAO 2023).

BOX 7. Three pillars' "smartness" of climate-smart technologies.

The report 'Bringing the Concept of Climate-Smart Agriculture to Life', published by the World Bank in 2018, introduces the first analysis between climate-smart technologies conducted at a global scale, identifying trade-offs and synergies between the productivity, adaptation, and mitigation pillars, and building an impact smartness score for each technology.

The report also emphasizes that globally, capacity needs in the form of training and information is the single largest barrier for CSA adoption. Investment in capacity building and knowledge dissemination are critical for enabling a vital but complex implementation of CSA.

Figure 3. Smartness of Climate-Smart Technologies by Pillar (global).



Note: Climate-smartness is highly context-dependent, not an innate property. The smartness of a given CSA technology can vary considerably between different production systems and locations.

Source: (IBRD 2018).

Green interventions and CSA are interrelated designations for activities that will allow maintaining food and wood production at a steady level in the long run by properly managing the available natural resources, a clear requirement for achieving sustainability in the agriculture and forestry sector. Yet, Uzbekistan’s Program on the transition to a “green” economy particularly emphasizes the implementation of climate-smart production systems for promoting a sustainable agro-ecosystem in the country, along with the creation of jobs based on natural resource management.

Considering this prioritization, the concept of CSA is further elaborated; however, it is stressed the interchangeably nature of green interventions and CSA when talking about sustainability for the agriculture and forestry sector.

CSA, as a concept, emphasizes its ambition to improve the integration of agricultural development and climate responsiveness. At the production stage, CSA technologies sustainably increase productivity (i.e., yield), enhance resilience, and reduce or remove GHGs. At this point, it is important to clarify that CSA is an approach, in other words, a way of dealing with something. CSA is not an assessed list of interventions. Consequently, there is not a defined list of climate-smart technologies across contexts (IBRD 2018).

CSA is diverse in terms of the large number of technologies, crops, and regions. Yet, one thing applies to all. The implementation of technologies requires careful planning in order to address trade-offs and synergies between the three pillars of CSA (productivity, adaptation, and mitigation) (IBRD 2018). Even though most technologies considered as climate-smart reveal opportunities for co-benefits and potential “triple-wins”, trade-offs exist between the three pillars (See Box 7). As a consequence, there is not a CSA “silver bullet”. In fact, the impact of CSA depends on more than the technologies deployed at plot level. If, for instance, extensive soil erosion and the expansion of degraded lands prevail, not even the best technologies deployed would make an agricultural system climate-smart. However, despite the fact that effectiveness of a given CSA technology depends on context and can vary significantly between locations and production systems, global experts have consistently identified several technology clusters as “high” climate-smart. These include, water management, crop tolerance to stress, intercropping, organic inputs, and conservation agriculture (IBRD 2018).

BOX 8. CSA and job creation potential in Uzbekistan.

Job creation potential from implementing CSA is, as the effectiveness of CSA technologies, highly context-dependent. For instance, according to the document ‘Uzbekistan: Choosing an Innovative & Green Future’, labor requirements per hectare on organic farms (organic inputs) are higher than their conventional counterparts as organic farming implies more labor-intensive production activities, and a higher share of labor-intensive crops and less mechanization (Ministry of Economic Development and Poverty Reduction of the Republic of Uzbekistan, The World Bank, and the United Nations Development Programme 2022).

Conversely, according to the ‘Green Recovery Investment Analysis’ the implementation of drip-irrigation (water management) for fruit production negatively affects labor requirements per hectare, estimating a reduction of full-time equivalent labor from 0.79 people/ha/year to 0.53 people/ha/year due to improvements in irrigation efficiency. On the other hand, the plantation of trees for windbreaks (boundary planting) may represent a potential for job creation in the short-term (for planting trees); however, in the long-term the labor requirements per hectare of a farm protected with tree windbreaks is similar to a conventional farm (Robalino and et al. 2022).

In Uzbekistan, the implementation of CSA technologies has reported triple wins in terms of productivity, adaptation, and mitigation. For instance, the ‘Green Recovery Investment Analysis’

conducted in Karakalpakstan in 2022, assessed the impacts of implementing drip-irrigation systems (water management) and planting tree windbreaks (boundary planting) for fruit production in the context of climate change, water stress, and the continuous degradation of the Aral Sea. According to the analysis, the implementation of drip-irrigation has the potential to improve agricultural yield by 40% (on average) (productivity impact), increase water savings estimated at 11,455 m³/ha/year (adaptation impact), and reduce GHG emissions by ca. 50% (mitigation impact). On the other hand, it was identified that planting trees for windbreaks has the potential to improve agricultural yield by 15% (on average) (productivity impact), provide protection for salt and dust storms, as well as for winds at the speed of 5 m/s (adaptation impact), and sequester carbon on an average of 1.57 MtCO_{2e}/ha/year (Robalino and et al. 2022). Besides this example, and following the Agriculture Development Strategy, the document 'Good Agriculture Practice Manual' provides a set of new intensive and innovative technologies, including CSA technologies in the context of Uzbekistan, aiming at increasing triple wins for Uzbek farmers (Aljinovic and et al. 2021). Furthermore, Uzbekistan's Green Strategy, Program, and Action Plan define, through a set of priority directions related to CSA technologies, the multiple areas and activities that the country will need to follow for ensuring "green" growth in the country.

4.2 Green Jobs for the Agriculture and Forestry Sector in Uzbekistan

The implementation of 'green' agriculture²⁰, with direct implications in the creation of green jobs, has mostly followed up the development of green growth strategies for the transformation of a country's development path (Bianco 2016, Honorati and Marguerie 2021). Uzbekistan has ratified its commitment to follow green growth through its Program and Action Plan on the transition to a "green" economy issued at the end of 2022.

Consequently, considering the context of Uzbekistan's decent job criteria, and the direction paths that Uzbekistan has set through its Green Strategy, Program, and Action Plan, it is highly suggested to frame a 'green' job involved in agriculture and forestry in Uzbekistan as:

... a full-time, part-time, or seasonal job, to which all people above the age of sixteen²¹ can apply; formally registered, and contributing to the social system in Uzbekistan; directly engaged in Climate Smart Agriculture (CSA) technologies on farm or for landscape management & restoration, particularly in the following interventions:

Agriculture:

- organic farming methods;
- restoring degraded pastures by introducing sustainable pasture management mechanisms;
- energy-efficient and water-saving technologies for irrigation in farms;
- diversifying crop production from annual and biennials to perennial grasses, plants, and trees;
- processing and storage of organic animal waste;

²⁰ Changing agricultural practices for climate change adaptation, GHGs emission reduction, GHG capture capacity, for rational natural resource management, halting erosion and desertification (UNDP 2018).

²¹ According to Uzbekistan's Labor Code Article 77, employment is allowed from the age of sixteen (Labor Code of the Republic of Uzbekistan 1996).

- breeding highly productive animal breeds and plant species, resistant to salinity, drought and other dangerous phenomena and risks, preserving the gene pool of local animal breeds and plant varieties, as well as the gene pool of wild ancestors of cultivated plants;
- agroforestry systems;

Forestry:

- restoring forests and preserving natural vegetation;
- increasing, conserving, and protecting the area of forests;
- expanding plantations of fast-growing native tree species;
- creating soil-protective forest plantations and afforestation of degraded lands;
- sustainable wood production systems.

Adopting and framing the characteristics of green jobs, in this case for agriculture and forestry activities, can have a direct and positive impact formalizing the informal economy in this sector. Furthermore, clearly defining what is considered as a green job and differentiating it from a conventional or traditional job will avoid creating "green" jobs that do not fall under the criteria to be called 'green', especially when deploying new and innovative technologies aiming to improve the sustainable development of the agriculture and forestry sector. For instance, even if a CSA technology is being implemented on a farm, the fact that the people employed are still under informal working arrangements with no access to social security would be an immediate cause to disqualify those jobs as green jobs.

BOX 9. Greening or greenwashing the agriculture sector.

Nowadays, there is a societal growing concern about the environmental impacts of agriculture and the food systems in place. On the other hand, companies are eager to exploit this concern by advertising products that are environmentally friendly. Greenwashing happens when companies attempt to present a responsible public image, but do not change production practices, misleading consumer preferences (Francis and et al. 2008). In other words, greenwashing can be defined as the intersection of two behaviors: poor environmental performance and positive communication about environmental performance (Delmas and Cuereil 2011).

As with food products, there is a risk of using disinformation to mislead interested stakeholders when claiming the creation of green jobs, especially if there is not a clear understanding or definition of what entails a green job. For example, considering the ambitions of the government and the interest of financial institutions to mobilize green finance, accessing to incentives or preferential financial resources driven by technology productivity gains can be exploited without actually having any improvement in terms of decent work criteria, leaving behind the integrated components needed for achieving green growth.

Adopting a definition for green jobs, or having a clear understanding of the minimum requirements needed to be framed as green, allows also to distinguish and compare green production systems

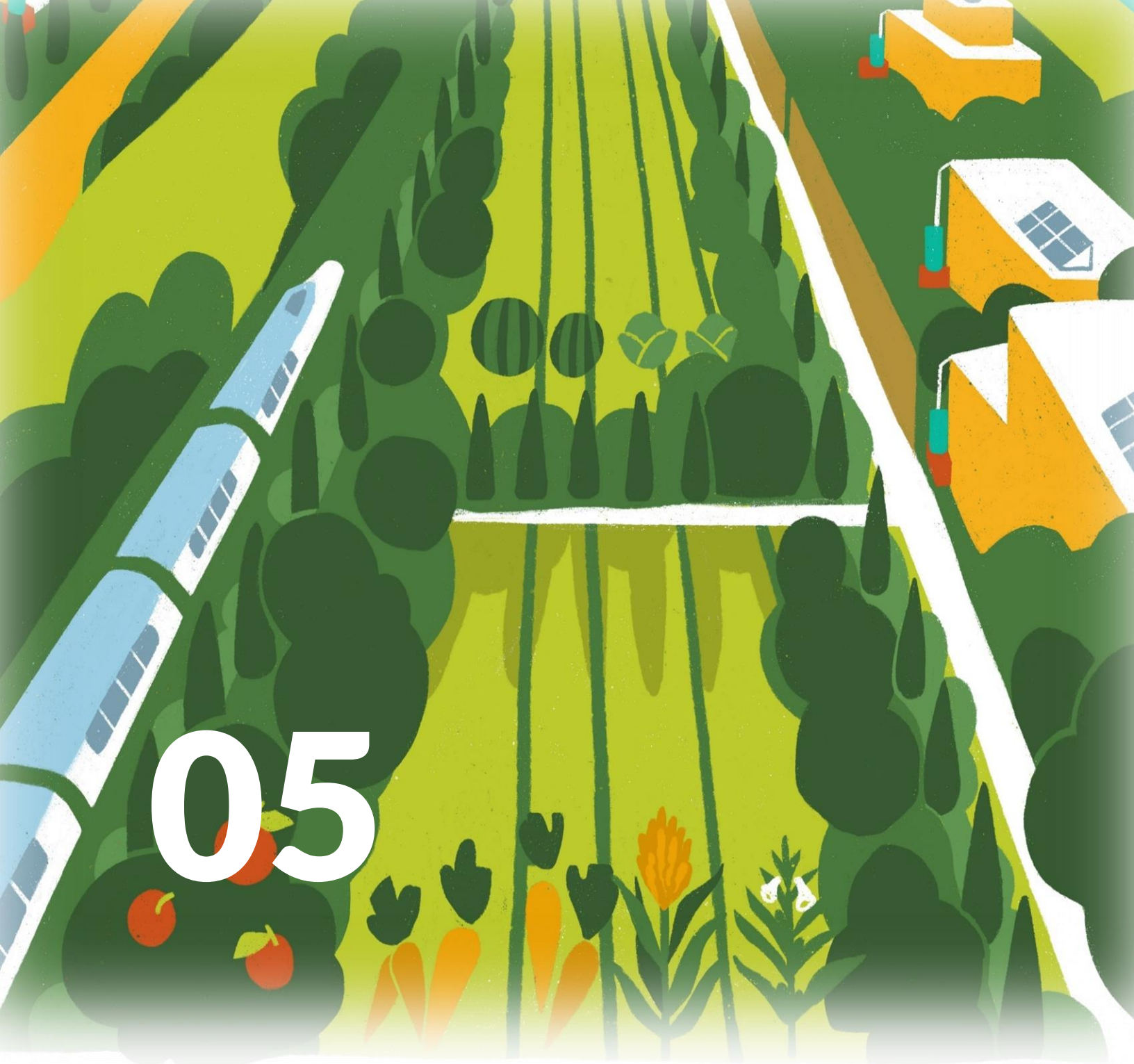
versus conventional production systems. Following the suggested definition provided above, for instance, a farm that has implemented an agroforestry system and has formally registered its permanent and seasonal workers, will reflect different characteristics in terms of productivity, environmental impact, and social welfare. Consequently, the creation of green jobs, following a clear definition, can be one of the mechanisms used to monitor impact and progress when greening a sector and the whole economy.

Finally, it is important to clarify that the suggested definition of green jobs involved in agriculture and forestry in Uzbekistan, emphasizes the direct linkage and engagement with CSA technologies deployed on farm or for landscape management & restoration. That is, all the people directly involved in a farm or forest that has implemented a CSA technology, if formally registered, shall be counted as green jobs. For example, a farm that has implemented drip-irrigation will count its farm owner/manager, as well as its employees (e.g., part-time tractor driver, permanent worker, seasonal worker), as people under green jobs. People indirectly involved, for instance, fertilizer providers or product off-takers shall not be counted as green jobs under the definition suggested. To count people indirectly involved will require an analysis of the job conditions and minimum characteristics needed for framing them as green in the agrochemical industry or the service sector in Uzbekistan. Unfortunately, this is out of the scope of the suggested definition and this document.

BOX 10. Counting green jobs.

The collection of statistics on green employment poses a particular challenge in countries with large informal sectors and/or where agriculture and forestry are widespread activities. Traditional establishment surveys based on business registers are not a good option as these sectors are not normally covered by formal registers. Household surveys, agricultural censuses and area-based establishment surveys are among the most useful sources for statistical information in agriculture and the informal sector. Yet, compelling information on green employment may face multiple challenges, as respondents and interviewers may have difficulty assessing the extent to which the activities performed or the labor conditions fall between the scope of green employment (ILO 2013).

The adoption of a definition for green jobs for agriculture and forestry in Uzbekistan may support overcoming the future statistical challenges expected in the process of greening the economy and the creation of green jobs. Furthermore, by considering the suggested definition proposed in this document, the collection of statistics may be possible by using labor registries, as one of the conditions suggested for green jobs is to be formally registered according to Uzbekistan's labor procedures.



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5. CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

In Uzbekistan, a key macroeconomic issue that needs to be tackled is the conversion of jobless growth into more inclusive and sustainable economic growth (Anderson, Ginting and Taniguchi 2020). Furthermore, the economy needs to urgently increase the number of jobs created each year in order to absorb all new entrants into the labor market. Uzbekistan creates on average around 280,000 new jobs annually on a net basis; however, around 600,000 new jobs are needed each year for demographic reasons alone (Trushin 2018). Informality has arisen, welcoming those displaced from formal employment. Unfortunately, informality has a high economic cost associated with an inherent fiscal inequality, lack of social security and protection of workers' rights, and problems related to employing and retaining skilled workers (ADB 2019).

Hope has been placed on a new economic agenda, a more efficient, sustainable, and inclusive economic growth. Hand in hand with the green agenda for the Republic of Uzbekistan, green jobs are seen as a one of the potential solutions for the existing necessities of the country. The expected transition toward a green economy is anticipated to result in the creation of new jobs. For the agriculture and forestry sector, a green growth path with green jobs is anticipated to boost productivity issues as well as to address climate change challenges by a better and more efficient use of natural resources.

Nevertheless, the future impact of green jobs in agriculture and forestry at this point is vague and difficult to imagine without a clear understanding of what a green job entails in Uzbekistan. Without a clear distinction between green jobs and conventional jobs, the implementation of green technologies and practices aiming to create green jobs may have a direct impact in terms of productivity and efficiency, but it may lack other social and environmental characteristics needed under a green growth path.

Currently, there is no universal definition accepted for green jobs, neither a definition of green jobs in Uzbekistan. Across various definitions reviewed, it is clear that the primary objective is a more efficient use of resources with the condition of being a decent work. However, there is a vast number of practices and technologies that can improve the efficient use of resources. At the same time, decent work, as a multidimensional concept, covers a range of issues and challenges that depends on a country context and its level of development. As a result, it is challenging to draw the conditions and characteristics in which green jobs will lead to a sustainable development, especially for the agriculture and forestry sector in the country.

In Uzbekistan, adopting and framing the characteristics of green jobs can support reaching the expected results aimed under Uzbekistan's green economy priorities, the agricultural development strategy, and other environmental goals, as well as the efforts of formalizing the informal economy. In addition, setting a definition for green jobs can support preventing a distorted effort for creating green jobs, especially when seeking only productivity gains through new technologies and practices. Setting a definition of green jobs can also support the mechanisms used by interested stakeholders to monitor impact and progress in the transition to a green path.

Regarding impact and progress toward a green economy, it is important to understand that, on the one hand, new jobs arising can be anticipated with a green agenda, yet, on the other hand, greening the economy also results in displacement of workers and job losses. The end result depends on how

wide or narrow is the gap between the skills from current workers and the set of skills and resources that a green economy and green jobs require (Maclean, Jagannathan and Panth 2018).

For advanced and developed countries, the driving force behind labor creation and growth in labor productivity has been a combination of investment in the quantity and quality of human capital, physical capital, technological progress, and social capital (Trushin 2018). In the case for greening the agriculture and forestry sector in the Asian region, it has been identified that the main priority should be the development of skills, ensuring a sufficient pool of professionals and specialists in priority areas identified (Maclean, Jagannathan and Panth 2018). As the report 'Uzbekistan: Choosing an Innovative & Green Future' clearly emphasizes, green employment will require new skills for new emerging jobs and for existing jobs. A suitable trained work force will secure a successful green transition (Ministry of Economic Development and Poverty Reduction of the Republic of Uzbekistan, The World Bank, and the United Nations Development Programme 2022).

By 2020, the government of Uzbekistan identified that education and training courses, as well as the form and methods of teaching in educational institutions about agriculture, did not meet modern requirements. Furthermore, it was identified that the public investment in research (0.2% of the total agricultural budget) was not enough for the practical implementation of the research results funded by the state. As a response, Priority 7 under the Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030, emphasizes a radical reform of the activities of scientific research institutions and the system of agricultural education and training. Indicators and targets were set, including a gradual increase of public spending on research in agriculture to 1% of the GDP by 2030 (Baseline 2018 – 0.02%) and an increase in the number of farmers with access to advisory and extension services (Baseline 2018 – 51,100; 10% by 2021; 35% by 2025; and 50% by 2030) (MoA 2021). If targets are met accordingly, the probability of accelerating the adoption of modern technologies (including CSA) will be higher, increasing the chances for greening the agriculture and forestry sector.

On a side note, but related to Uzbekistan's future labor force potential, experts have identified in Uzbekistan a one-time window for potential economic growth driven by the dividends from favorable demographics and its sustained high growth. Uzbekistan's working-age population, as a share of the total population, has rapidly risen from the late 1990s. As a result, the proportion of people available to work is projected to remain nearly 70% until 2040, providing a one-time opportunity for realizing Uzbekistan's economic potential (Trushin 2018). Furthermore, the country's growing working population represents an important opportunity to reduce poverty and for increasing shared prosperity (Honorati and Marguerie 2021).

Overall, by setting clear requirements when implementing green growth in the agriculture and forestry sector, by investing in human capital development for meeting the set of skills needed for a sectoral green growth, and by developing inclusive mechanisms that will support formalizing the economy while taking advantage of the demographic growth opportunity in the coming years, the government of Uzbekistan may be able to maintain and increase productivity in agricultural and forestry systems in a sustainable and inclusive manner, reducing the need for expansion and minimizing the loss and degradation of natural ecosystems (LDN TSP 2019). If green strategic objectives are achieved by 2030, the agriculture and forestry sector will positively contribute to the three pillars of sustainability (economic, environmental, and social), helping the Republic of Uzbekistan to move away from a jobless growth.

5.2 Recommendations

First, and as main objective of this document, it is highly recommended for the government of Uzbekistan to adopt a clear definition, or to set the characteristics of green jobs considering Uzbekistan's context, in order to support the proper implementation of the country's green agenda in the agriculture and forestry sector. The specific suggestion for defining what a green job entails for agriculture and forestry activities comes from the priority directions identified under the country's green strategy, the significant amount of people engaged in informal employment in this sector, and the plans from the government to develop a 'green' program for developing entrepreneurship in activities based on natural resources. However, it is highly recommended to clearly define how green jobs will look like in Uzbekistan in other sectors including manufacturing, industry, research & development, administrative, and in the service sector. This will facilitate and support the government in its efforts to transition the Republic of Uzbekistan to a green economy until 2030.

Second, general recommendations are provided below in order to support creating green jobs in the agriculture and forestry sector in the country. These recommendations adapt and build on valuable recommendations provided by multiple development partners for improving the labor market in Uzbekistan. These recommendations showcase the alignment between quality jobs, high productive jobs, and decent jobs with green jobs, which have been discussion topics analyzed separately but with related positive outcomes for the Uzbek economy.

From a macroeconomic perspective, it is clear that Uzbekistan needs to overcome several labor market challenges and tackle the economic growth opportunities associated with having a high population growth rate, low dependency ratio (Anderson, Ginting and Taniguchi 2020), and the aim of decision makers to move toward a green future. As for quality job creation, key elements that the government should carefully look for green job creation include providing economic stability, increasing investment in physical infrastructure, enhancing human resources, improving access to finance, and lowering the barriers for international commerce and foreign investment flows (Anderson, Ginting and Taniguchi 2020). To strengthen productivity growth, job creation, and climate change response, the government of Uzbekistan should carefully look at strengthening private property rights, removing barriers to market entry and exit, easing business regulations, lifting remaining price controls, and boosting public spending on sectoral programs critical for implementing green interventions (including research and development, extension and advisory services, and sanitary and phytosanitary measures) (Trushin 2018).

At the farm level, it is emphasized the need to equip workers with the necessary skills for CSA technology implementation for greening the agriculture and forestry sector. Furthermore, greening the sector will require actions including the expansion to market access, fostering allocative efficiency by expanding competition in the product market, setting up technology adoption and export promotion councils, improving technical and managerial capacity of workers by establishing dedicated training centers or training programs, ensuring the availability of credit, improving logistics, and encouraging the participation of female workers (Trushin 2018). It is highly recommended that capacity development efforts include providing training to workers on decent work principles and workers' rights and responsibilities (FLA 2020). While taking necessary actions for creating green jobs at the farm level, it is recommended to support farmers with economic analysis of household

incomes and expenditures, identifying sources of employment, understanding labor use planning and agribusiness operations, and identifying mechanisms for accessing markets (ADB 2018).

In terms of capacity development, farms and forest enterprises will play a critical role in applying improved practices but most importantly, in strengthening the capabilities and skills of the workers to perform new tasks. The purpose of capacity development is to invest in improving the ability of the workers in order to identify and resolve issues, while filling knowledge gaps. The implementation of CSA technologies needs to be proposed as priority topic under capacity development programs for farm and forest enterprise representatives and workers, in order to improve their managerial and technical skills (World Bank Uzbekistan 2022).

Complementary to capacity development, the provision of extension services, setting up demonstration farms and forests, as well as the exchange of experience with other countries, plays a key role for mainstreaming CSA technologies. The existing initiative of the government for implementing the concept of the System of Knowledge and Innovation in Agriculture (AKIS) through the establishment of the AKIS Agricultural Service Centers, is laying the foundations for ensuring an effective exchange and transfer of knowledge, skills, abilities, and technologies to the agriculture sector in the country. Consequently, special attention should be paid to the progress and impact of this initiative.

In terms of inclusiveness, it is of the utmost importance to invest in the creation of green jobs in rural areas that are accessible to women and men, especially young people, ensuring their access to vocational education that will equip them with the necessary skills to meet the needs of local labor markets (FAO 2019). For this, the government should consider introducing measures to promote inclusiveness and gender balance in vocational education programs such as setting enrollment quotas, providing scholarships or stipends, or other incentives (Anderson, Ginting and Taniguchi 2020). In addition, it has been suggested to adopt a broader range of methods to deliver agricultural education that ensure women's participation. Furthermore, it is important to develop and deliver rural advisory services that are accessible to rural women and men equally and that cover subjects that address their respective roles and needs (FAO 2019). Finally, it has been suggested the need to address the high level of informality in the agriculture sector and to support initiatives that will decrease the burden of domestic responsibilities for women and their limitation for accessing formal employment (FAO 2019).

Recommendations for the government to formalize the informal economy includes moving toward flexicurity, a system that combines flexible contractual arrangements with income and social security for individuals. Flexicurity involves strong active labor market policies that support training, re-training, job matching, and supporting an efficient and flexible labor market at the aggregate level. Well-structured policies for flexicurity include introducing measures to strengthen the use of employment contracts, while extending and securing the coverage of labor market regulations (ADB 2019). In terms of employment contracts, it has been suggested to policy makers the creation of standard labor agreements or contract templates, consent forms, and to facilitate the overall process of recruitment and labor registration (FLA 2020).

As a measure that could support accelerating formalizing the economy, it has been recommended to the government the introduction of digital mechanisms for the management of worker recruitment and to expedite administrative requirements needed for the recruitment process.

Furthermore, digital mechanisms can be used for job advertisements, for sharing information about compensation and benefits, as well as for sharing standard contractual templates and other forms needed for the recruitment process (FLA 2020).

Finally, it has been strongly recommended to the government to build a strong system for labor market information and analysis. Taking the necessary actions for creating green jobs requires policy makers and interested stakeholders to bring strategies, plans, and interventions that require data as the fundamental base for analyzing the structure and employment conditions of the labor market (ADB 2019).

BOX 11. Identifying opportunities for green job creation checklist.

The Discussion Paper 'Green Economy and Green Jobs: Challenges and Opportunities in Europe and Central Asia' includes in its annexes a checklist to help identifying opportunities for green job creation when developing projects (*UNDP 2018*). Following the suggested definition provided in this document, the checklist has been adapted in order to identify opportunities for green job creation in the agriculture and forestry sector in Uzbekistan.

A project will have a high probability of creating or transforming conventional jobs into green jobs if all the suggested questions below are answered YES.

1. Can the existing activities use greener (CSA) technologies?
2. Can training be provided to existing and/or new workers to use greener (CSA) technologies?
3. Can productivity, mitigation, and adaptation benefits be identified from the implementation of the technologies?
4. Is it possible to formalize the existing and/or new jobs?

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