United Nations Development Programme

Country: Uzbekistan

Country Plan

Project Title: Leveraging Nationally Determined Contributions (NDCs) to achieve net-zero emissions and climate-resilient development, in response to the climate emergency

Sub-title (national) if any: Climate resilient livelihoods of horticultural producers in Fergana Valley in Uzbekistan

Expected UNSDCF/CP Outcome(s): UNSDCF Outcome 5/CPD Outcome 4: By 2025, the most at risk regions and communities of Uzbekistan are more resilient to climate change and disasters, and benefit from increasingly sustainable and gender-sensitive efficient management of natural resources and infrastructure, robust climate action, inclusive environmental governance, and protection

Expected CPD Output(s): Output 4.1: Innovative and sustainable climate change adaptation and mitigation initiatives designed and implemented

Initiation Plan Start/End Dates: March 2022 – March 2023

Implementing Partner: UNDP Uzbekistan in partnership with the Center of Hydrometeorological Services of the Republic of Uzbekistan (Uzhydromet)

Brief Description

The project will support the country's climate adaptation efforts as per COP26 outcomes and the more ambitious NDC committed by Uzbekistan. Adaptation is a high priority for the country as the warming trends observed are twice as fast as the global average and result in water stress, increasing climate aridity, and more frequent extreme weather events. This poses serious challenges to human security, including economic, food and environmental risks, and calls for urgent, people-centred, prevention-oriented responses focused on marginalized groups. Agriculture, which is an important sector for rural employment, is climate-sensitive and vulnerable. The project implementation is planned to impact 1,450 direct and 9,876,000 indirect beneficiaries. The project is expected to increase climate resilience of horticultural production of **300 direct project beneficiaries** - rural households and small/medium-size agricultural businesses (gender and youth sensitive) who will have access to evidence-based information/recommendations from **10** small and inexpensive agro-meteo stations installed in target districts. While installation of **15** automated agro-meteo stations/posts in **40** districts of 3 provinces in Fergana Valley, will **indirectly** strengthen livelihoods and food security of **9,876,000** people (incl. women and youth) living in this region. **1.4** mln dehkans and farmers (**3%** of Uzbekistan's rural population) will **indirectly** benefit from climate forecast and early warnings will be generated by the modernized agro-meteo observation network of the Fergana Valley, which is an integrated part of the national agro-meteo network. Other **direct beneficiaries** of the project will be **150** staff of Uzhydromet and **100** experts of other institutions responsible for provision of agro-meteo information/services and climate-resilient agriculture related recommendations who will be trained and improve their operational capacities through partnerships with the advanced meteorological agencies, producers of agro-meteorological observation equipment/software, and transfer of best practices/expertise on weather forecasting and early warning systems.

Programme Period:	1 year
Atlas Project Number:	00141102____
Atlas Output ID:	00129919___
Gender Marker:	___GEN2_____

Total resources required	US$954,147_
Total allocated resources:	US$954,147_
• Regular	_____
• Other:	
○ Donor	US$954,147_
○ Donor	____N/A____
○ Government	_____
Unfunded budget:	_____0____
In-kind Contributions	US$20,000 (Uzhydromet)
Parallel co-financing:	US$57,000 _(NAP project)

Agreed by UNDP:

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Matilda Dimovska
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01-Apr-2022

Ms. Matilda Dimovska, Resident Representative, UNDP Uzbekistan

I. Purpose and Expected Output

Warming trends observed in Uzbekistan since 1951 have been occurring at more than twice the rate of the global average and significant climate risks have already become evident. Reductions in water resources and changing precipitation patterns are predicted to further exacerbate prolonged droughts and extreme weather

events. This poses widespread and cross-cutting challenges to human security, including economic, food and environmental risks, and calls for urgent, people-centered, comprehensive and prevention-oriented approaches to empower the most marginalized to respond to these issues.

Agriculture is an important sector of Uzbekistan economy employing 32% of the population. The horticultural sub-sector is a key source of both rural livelihoods (49% of total population are households[1]) and high-value exports (up to 40%), with half of this production sourced from rural households and micro-, small- and medium-size enterprises (MSMEs).[2] The Fergana Valley is home to nearly 17%[3] of the Central Asia region's population concentrated in only 0,5% of the region's territory. For the Ferghana Valley with nearly 30%[4] of Uzbekistan's population, the rural households' main source of income is their agricultural products. Growing shortages of water and productive land, combined with rapid growth in population, insufficient employment opportunities, and low-skilled labor forces, affect different dimensions of the human security.

Climate change impacts on agriculture, including fruit and vegetables production, is well documented[5,6,7,] with micro and small producers being hit hardest. In 2015, farmers lost 15-30% of total expected yield due to the abnormal weather events.[8] The heat wave triggered early flowering but was followed by two waves of frost in February and March 2021 that caused serious damage to stone fruit led to estimated losses of 70% to 99% on early and middle-ripening varieties. The current and especially future horticulture production by MSMEs and rural households is increasingly threatened by drought, aridity, scarcity of water and frequency of extreme weather events, and increase of agricultural plant pests and diseases was indicated by farmers and households in Fergana Valley as one of the most negative phenomena associated with climate change.[9]

Without urgent steps to increase climate resilience of horticultural practices, the sector is forecast to have reduced yields of up to 60% by 2040. If timely actions are not taken and support is not received, modelling by the World Bank[10] forecasts that direct effect of climate change (irrigation water shortages) will reduce the horticulture fruit and vegetable yield by 10-25% by 2050 across all agro-zones of Uzbekistan. Urgent and well-informed adaptation action in agriculture sector is needed to prevent yield and productivity losses, secure livelihoods and food supply of the most vulnerable rural communities in the face of climate change.

In 2020, the President of Uzbekistan prioritized the importance of improving hydrometeorological services, which cannot meet increasing demand for timely and credible climate information for agriculture and other sectors. Uzhydromet was requested[11] to establish more agro-meteo stations/posts in each region in 2021, while also increasing the menu of agro-meteorological services to farming, dehkans, agricultural clusters and cooperatives, and rural households. The priority actions include: (i) enhanced coverage of the agro-meteorological network; (ii) development of an intelligent operational system for agro-meteo monitoring based remote sensing and modern modelling; (iii) improving reliability of forecasting and early warning systems.

The proposed project will orientate the agro-meteorological information services towards the vulnerable agricultural communities in the Fergana Valley employed horticultural sector. It will address their needs by improving observation, forecasting and extension services for climate-resilient production of fruit and vegetables, and introduce greater knowledge about climate variability into horticultural planning. Such support to the private producers is fundamental and urgent in the context of ensuring that the post-COVID recovery investments are protected from climate risks. Project will have positive spill-over effects on neighbouring communities living the Fergana Valley (Tajik and Kyrgyz parts) through strengthened regional cooperation in the exchange of hydrometeorological information from observations in transboundary territories.

Forecast and sufficient lead time early warnings on irrigation water availability is critical for the informed decision-making on what crops shall be grown. Water-intensive crops (wheat, cotton, rice, maize) should be replaced by drought-resistant and climate-resilient ones (vegetables, fruits, etc.) to avoid substantial yield and monetary losses in water deficient years. Climate information, forecasts of possible outbreaks of diseases and pests, recommendations on their control, application of innovative climate resilient practices will be available and accessible by end-users.

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[1] https://www.uzdaily.com/articles-id-37665.htm
[2] World Bank. China (and Russia) 2030 - Implications for agriculture in Central Asia. Phase 1 & 2 results. Report No: AUS0000211. Washington DC, June 8, 2018
[3] CAREC Institute. Visiting Fellow Program 2021. Fergana Valley
[4] https://stat.uz/ru/ofitsialnaya-statistika/demography
[5] Centre of Hydrometeorological Service at the Cabinet of Ministers of the Republic of Uzbekistan. Third national communication of the Republic of Uzbekistan under the UN Framework Convention on Climate Change. Tashkent, 2016
[6] Sutton W. R., Srivastava J. P., Neumann J. E., Droogers P., Boehlert B. B. Reducing the vulnerability of Uzbekistan's agricultural systems to climate change. Impact assessment and adaptation options. World Bank: Washington DC, 2013
[7] Чуб В. Е. Изменение климата и его влияние на гидрометеорологические процессы, агроклиматические и водные ресурсы Республики Узбекистан. НИГМИ: Ташкент, 2007
[8] http://ru.sputniknews-uz.com/society/20160219/1826799.html
[9] Basic assessment of risks and problems of agriculture associated with climate change in the conditions of the Namangan and Fergana regions of Uzbekistan, UNDP Uzbekistan (2015)
[10] Sutton et al. 2013.
[11] https://lex.uz/ru/docs/5108959

The project outcomes will strengthen the country's climate adaptation efforts indicated in more ambitious NDC adopted by Uzbekistan in October 2021[12] and are in line with COP26 outcomes and decisions. NDC2 states that a key priority in meeting the rapidly-growing population's demand for food products is to increase climate resilience of agriculture sector, with which and project targets and activities are aligned with (see Table below). Also, the project outcomes will contribute to National Adaptation Plan is being developed in 2022 for agriculture within the UNDP project *"Sector driven National Adaptation Plan (NAP) to advance medium- and long-term adaptation planning in Uzbekistan"* funded by the Green Climate Fund.

Country NDC sector	Country NDC target	Project activity contributing to target	Expected results towards target *(full achievement or partial)*
Agriculture	Adaptation target: Increased average productivity of basic agricultural products by 20-25% by 2030:		
	Developing EWS for hydrometeorological hazards and manage climate risks. Introducing adaptation criteria into public investment projects in various sectors	Implement interventions to modernize Uzhydromet's agrometeorological observation network in rural districts of Fergana Valley (Andijan, Fergana and Namangan provinces)	**15** WMO certified automated agro-meteo stations/posts installed in **40** districts of 3 provinces in Fergana Valley. They are a part of modernized Uzhydromet's agro-meteo network and serve **9,876,000** people (incl. women and youth). (*partial achievement*)
	Implementing crop diversification and breeding highly productive plant species (varieties) resistant to salinity, drought and other extreme weather events and climate risks	Improve analytical capacities of Uzhydromet to deliver more gender-responsive, accessible, better-targeted, and high-quality agro-meteo information/services to end-users (women, youth, and people with disabilities) for effective horticulture farming	The end-users provided with climate information, forecasts of possible outbreaks of diseases and pests, recommendations on their control, application of innovative agricultural technologies/practices by specialists of the State Plants Quarantine Inspection in consultation with Uzhydromet (*partial achievement*)
	Attracting investments in production and processing, as well as creating value chains for agricultural and food products	Install small and inexpensive agro-meteorological stations in selected districts (with women-led households and business participation in bids) to enable doing the plant disease/pests prediction models to produce evidence-based information/recommendations for horticulture producers	**10** small and inexpensive agro-meteo stations installed in selected target districts. **300** rural households and small/medium-size agricultural businesses (gender and youth sensitive) received evidence-based information/recommendations produced by State Plants Quarantine Inspection and enabled preventive measures on disease/pests spreading, applying integrated pest management approach (*partial achievement*)
	Raising awareness and improving access to information on climate change for all population groups	Adopt a gender-responsive and inclusive for people with disabilities, user-driven approach to dissemination of climate information	**1.4** mln dehkans[13] and farmers (**3%** of Uzbekistan's rural population) are familiar with climate information. **150** Uzhydromet staff and **100** experts of the Inspection responsible for provision of agro-meteo information/services agricultural recommendations trained and delivered climate forecast and early warnings to rural households and small/medium-size agricultural producers (*partial achievement*)
	Increasing participation of public, scientific institutions, women and local communities in planning and management, and mainstreaming gender approaches and practices	Secure continuous flow of agro-meteo information and extension services for horticultural production. Strengthen capacity for knowledge-based decision-making/planning for strategic planning of agricultural/fruit and vegetable production.	Climate risks (drought, cold waves, changed precipitation patterns, dust storms) responded through well-informed planning/management, and contributing to achievement of adaptation targets set in the country's second NDC (*partial achievement*)

II. MANAGEMENT ARRANGEMENTS

The project will support the project beneficiaries with access to best practices and expertise through cooperation with Japan Embassy, JICA and other Japanese counterparts. Based on the partnership

[12] https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Uzbekistan%20First/Uzbekistan_Updated%20NDC_2021_EN.pdf
[13] A "Dehkan" farm is an individual or family farm in Central Asia; in Uzbekistan, household plots were reclassified as "dehkan" farms in 1998 as per the Law of Dehkan Farms

established with the Embassy of Japan within the UNFPA/UNDP Joint Programme[14] funded by the Japanese government, the UNDP kept posted the Embassy on this project idea development progress, receiving feedback and consultations on potential Japanese counterparts (relevant public agencies, production companies, NGOs, private sector). Potential international partners will include WB, FAO, EUD and USAID.

Uzhydromet will cooperate with the Japan Meteorological Agency (JMA)[15], which produces advanced agrometeorological equipment and software to generate weather forecasting and early warnings and disseminate climate information based on its high-performance telecommunication and data processing systems. Transfer of knowledge/technologies/solutions responding to changing precipitation pattern and temperatures with visualization and satellite observation statistics will be sought in cooperation with the Remote Sensing Technology Center of Japan (RESTEC).[16] Upgrading and modernizing IT capacities of Uzhydromet will avail smart-phone application for *40 district administrations and agricultural producers in Fergana Valley* for practical use in their horticultural business.

Ministry of Economy and Poverty Reduction of Uzbekistan and JSC Uzagroexport are currently partnering with JICA within the project "Development of the value chain in the fruit and vegetable industry (Phase II)". Project aims to develop a value chain in horticulture, especially strengthening of export potential that well resonates with the proposed project activities to make horticulture more resilient (through minimizing induces by climate impacts) that increases access to credit finance for small farmers.

Ministry of Agriculture, Tashkent State Agrarian University, State Plants Quarantine Inspection and horticultural producers (MSMEs) will benefit from cooperation with Japanese NGO - Japan Agricultural Development and Extension Association (JADEA)[17] dealing with the extension services for rural communities (focused surveys/research and promoting international exchange programs for extension workers) in coordination with the EU funded project on development of a “climate-smart” agriculture knowledge and innovation system (UAKIS) is being implemented by UNDP.

Cooperation with the Japanese’s private sector companies will be sought, e.g. with the Slope Co. LTD[18] by the *Chamber of Commerce and Industry, Schröder Institute of Horticulture, Viticulture and Winemaking, Administrations of Andijan, Fergana and Namangan provinces, and 40 district administrations and agricultural and horticultural producers*. It developed a business model to ensure long-term agricultural sustainability in local community through production of climate resilient species based on guidance on harvest methodology, while ensuring stable profit return through domestic and overseas marketing channels (piloted with 200 farmers in Japan in sale of fresh vegetables), and it also provides support for agricultural technology.

UNDP will be responsible for preparation and submission of final narrative report within three months after the completion of project and final financial report within one year. Reporting will be results-oriented, and evidence based and will compare actual results with expected results at the output and outcome level. Final narrative report will contain an analysis of how the outputs and outcomes have contributed to the target beneficiaries. Financial reports will provide information on use of financial resources against the outputs and outcomes in the agreed results framework.

The UNDP Country Office will ensure visibility of the Government of Japan support through regular communication based on the strategy developed for dissemination of lessons learned and good practices extracted from the project activity to enable their upscaling or replication at national and global scales:

- Press releases to mass media (newspaper, radio stations and television channels) announcing the project launch, highlighting events, results and reporting final project outcomes;
- Information and visibility material: banners, photographs showing the progress of all project activities to document the progress of activities and relevant events, videos will be produced and posted at UNDP Uzbekistan website and shared with other dissemination platforms;
- All the information about the project will be also shared with the Embassy of Japan in Tashkent;
- Social media such as YouTube, Facebook, Twitter will be used twitter to provide short updates about relevant meetings, training and visits to the project sites in the Fergana Valley by Japan Ambassador and Head of JICA Office accompanied by press-tours by journalist to demonstrate the project activities and results;
- Success stories will be prepared and published to ‘show faces’ of people benefitted from the project.

To accord the proper acknowledgement to the Government of Japan for providing grant funding, the Government of Japan logo will appear together with the UNDP logo on all promotional materials, other written materials, like publications developed by the project, and project hardware.

[14] http://www.uz.undp.org/content/uzbekistan/en/home/projects/japan-funded-jp-building-the-resilience-of-local-communities-aga.html

[15] http://www.jma.go.jp/jma/index.html

[16] https://www.restec.or.jp/en/

[17] https://www.jadea.org/english/no-01.html

[18] http://www.on-the-slope.com

The UNDP project team will be composed by a Project Manager and Administrative and Finance Assistant. The project team will be supported by programme and operations staff in the Country Office as well as regional colleagues in the UNDP Regional Hub in Istanbul responsible for the Climate Promise programme.

III. RESULTS FRAMEWORK

Intended Outcome as stated in the UNSDCF/Country [or Regional] Programme Results and Resource Framework: By 2025, the most at risk regions and communities of Uzbekistan are more resilient to climate change and disasters, and benefit from increasingly sustainable and gender-sensitive efficient management of natural resources and infrastructure, robust climate action, inclusive environmental governance and protection

Outcome indicators as stated in the Country Programme [or Regional] Results and Resources Framework, including baseline and targets: Indicator 4.1: Energy intensity measured in terms of primary energy and GDP; Baseline: 9.4% (2018); Target: 20% (2025); Indicator: 4.2 Energy intensity measured in terms of primary energy and GDP; Baseline: 0.164 (2018); Target: 0.105 (2025)

Applicable Output(s) from the UNDP Strategic Plan: 2.3.1 Data and risk-informed development policies, plans, systems and financing incorporate integrated and gender-responsive solutions to reduce disaster risks, enable climate change adaptation and mitigation, and prevent risk of conflict

Project title and Atlas Project Number: Leveraging Nationally Determined Contributions (NDCs) to achieve net-zero emissions and climate-resilient development, in response to the climate emergency; #00141102

CORE INDICATORS[19]	DATA SOURCE	BASELINE		Pillar 1			Pillar 2	
		Value	Year	1.1 Driving investment in clean energy sectors and infrastructure	1.2 Support to Ministries of Energy, Finance, Environment and Planning to address key energy-related decisions on COVID-19 recovery	1.3 Alignment of energy targets in NDCs with net-zero pathways	2.1 Scaling-up adaptation, resilience, and disaster risk reduction tools and ensuring they are available to marginalized groups	2.2 Aligning targets in NDCs with national adaptation strategies and plans, including COVID-19 recovery
2.0 Number of direct beneficiaries with increased resilience to climate change (i.e., more resilient physical and natural assets, diversified and strengthened livelihoods and sources of income, **new/improved climate information systems**) *(disaggregated by: male, female, youth (15-24) and indigenous people)*	UNDP/AF project "Developing climate resilience of farming communities in the drought prone parts of Uzbekistan"	5,157 (17% female) received Drought Early Warnings	2021				***X***	
4.0 Number of people trained/educated/informed through technical transfers, dialogues, workshops, campaigns, and other efforts *(disaggregated by: male,*	UNDP/AF project "Developing climate resilience of farming communities in the drought	*21,200 (27% female)*	*2021*				***X***	

[19] It is recommended that projects use output indicators from the Strategic Plan IRRF, as relevant, in addition to project-specific results indicators. Indicators should be disaggregated by sex or for other targeted groups where relevant.

CORE INDICATORS[19]	DATA SOURCE	BASELINE		Pillar 1			Pillar 2	
		Value	Year	1.1 Driving investment in clean energy sectors and infrastructure	1.2 Support to Ministries of Energy, Finance, Environment and Planning to address key energy-related decisions on COVID-19 recovery	1.3 Alignment of energy targets in NDCs with net-zero pathways	2.1 Scaling-up adaptation, resilience, and disaster risk reduction tools and ensuring they are available to marginalized groups	2.2 Aligning targets in NDCs with national adaptation strategies and plans, including COVID-19 recovery
female, youth (15-24) and indigenous people)	prone parts of Uzbekistan"							
6.0 Number of partnerships with Japanese organizations	UNDP/UNFPA joint programme 'Building the resilience of local communities against health, environmental and economic insecurities caused by environmental destruction in the Aral Sea region' funded by the Japanese government	*1*	*2021*				***X***	

IV. WORK PLAN

Period: 1 year

EXPECTED OUTPUTS	Indicators	Baseline	Targets	PLANNED ACTIVITIES *List activity results and associated actions*	PLANNED BUDGET	
					Budget Description	Amount (USD)
Country Output 1 Resilience of climate-sensitive horticultural production and livelihoods of climate-affected rural communities in Fergana Valley in Uzbekistan strengthened through improved agrometeorological services *CP Pilar 2:* *2.1 Scaling-up adaptation, resilience, and disaster risk reduction tools and ensuring they are available to marginalized groups*	Lead time (week or months) of early warnings with warnings validity (%)	Lead time of 6 months and validity 70%	Lead time of 8 months and validity 75%	**1. Activity Result: Agrometeorological services shaped, and early warnings produced** -Action: Conduct a comprehensive analysis of ground-based observations, remote sensing, and modern methods of mathematical modelling -Action: Develop an intelligent system for operational monitoring of agrometeorology	Contractual service, international specialized service, travel, equipment, and others	**77,447**
	Number of automated agro-meteo stations/posts for network, and small agro-meteo for districts installed	0	15 automated agrometeorological stations and post installed is part of network; and 10 small agrometeorological stations installed in target districts	**2. Activity Result: Agrometeorological observation networks modernised** -Action: Install automated agrometeorological stations and posts infrastructure and develop their information and communication infrastructure -Action: Install small and inexpensive agrometeorological stations in target districts	Training and workshops, local specialized service, travel, contractual service, equipment, audio visual, printing, production costs and others	**414,447**
	Status of phenological, pest and plant disease forecast adapted to local conditions (YES/NO)	No	Yes	**3. Activity Result: Data processing and user services improved** - Action: Upgrade and modernize IT capacities and expertise of Uzhydromet for agrometeorological data processing and forecasting in new formats, including visualizations and use of web-based mobile applications - Action: Improve delivery of and access to agrometeorological information for climate-resilient fruit and vegetable production - Action: Develop and disseminate data in gender responsive, inclusive, and accessible approach	Training and workshops, international and local specialized service, equipment, contractual service, audio visual, printing, production costs and others	**220,447**

	Number end-users (% of women-led) in Fergana Valley received long-term climate-change information and used it for strategic planning of agricultural fruit and vegetable production	Farmers, rural households, and agro-producers lost 15-30% of fruit and vegetable production due to abnormal weather events and lack of early warnings and long-term climate-information (2015)	At least 300 end-users (10% of women-led) in Fergana Valley received long-term climate-change information and used it for strategic planning of agricultural fruit and vegetable production	**4. Activity Result: Climate-informed planning introduced** -Action: Produce climate-change information and integrated into planning of agricultural fruit and vegetable production with consideration of irrigation water availability and climate risk early warnings	Training and workshops, international and local specialized service, travel, contractual service, audio visual printing, production costs and others	**114,548**
DPC				Personnel Cost ECA Cluster Leader (NOC) – 10% Programme Analyst, ECA Cluster (NOA) – 10% Finance Associate (GS7) – 10% Finance Clerk (GS4) – 7% Administrative/Logistics Assistant (GS5) – 10% Operations Manager (NOOC) – 10% HR Associate (GS7) – 10% Procurement Associate (NOA) – 15%		47,833
SUBTOTAL						**874,722**
					GMS (8%)	69,978
					UN Levy (1%)	9,447
TOTAL						**954,147**