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Report No: PAD4828

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT AND
INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN
IN THE AMOUNT OF
US$90 MILLION

AND A

PROPOSED CREDIT
IN THE AMOUNT OF
US$150 MILLION

TO THE

REPUBLIC OF UZBEKISTAN

FOR THE

SECOND LIVESTOCK SECTOR DEVELOPMENT PROJECT

March 30, 2023

Agriculture And Food Global Practice
Europe And Central Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective February 28, 2023)

Currency Unit =	Uzbekistan Sum (UZS)
11336.58 UZS=	US$1

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Anna Bjerde
Country Director:	Tatiana A. Proskuryakova
Regional Director:	Sameh Naguib Wahba Tadros
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Task Team Leaders:	Teklu Tesfaye Toli, Aira Maria Htenas

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
ADS	Agriculture Sector Development Strategy 2020-2030
AEZ	Agroecological Zone
AFD	French Development Agency/ Agence Française de Développement
AI	Artificial Insemination
AIR&T	Animal Identification, Registration, and Traceability
AKIS	Agricultural Knowledge and Innovation System
AM	Accountability Mechanism
AMP	Agriculture Modernization Project
AMR	Anti-Microbial Resistance
ASFs	Animal Source Foods
AWPs&Bs	Annual Work Plans and Budgets
BCR	Benefit Cost Ratio
BIPs	Border Inspection Posts
CA	Competent Authority
CAs	Central Asian
CCDR	Country Climate Development Report
CE	Citizen Engagement
CLG	Credit Line Guideline
COM	Cabinet of Ministers
CPF	Country Partnership Framework
CSA	Climate Smart Agriculture
CVLD	Committee of Veterinary and Livestock Development
DP	Development Partner
DPO	Development Policy Operation
ECA	Europe and Central Asia
EFA	Economic and Financial Analysis
ENPV	Economic Net Present Value
ERR	Economic Rate of Return
ESMF	Environmental and Social Management Framework
ESRS	Environmental and Social Review Summary
ESS	Environmental and Social Standard
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FM	Financial Management
FVREDP	Fergana Valley Rural Enterprise Development Project
GAHP	Good Animal Husbandry Practice
GCRF	Global Crisis Response Framework
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIZ	German Technical Cooperation
GIIP	Good International Industry Practice
GRID	Green, Resilient, and Inclusive Development
HDP	Horticulture Development Project

HLO	Higher Level Objective
IA	Implementing Agency
IBRD	International Bank for Reconstruction and Development
ICT	Information and Communications Technology
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IRR	Internal Rate of Return
LMP	Labor Management Procedure
LSDP	Livestock Sector Development Project
LSSDS	Livestock Subsector Development Strategy 2020-2030 and Five-Year Investment Plan 2020-2025
LUCF	Land-Use Change and Forestry
M&E	Monitoring and Evaluation
MEF	Ministry of Economy and Finance
MFD	Maximizing Finance for Development
MOA	Ministry of Agriculture
MOH	Ministry of Health
NCDs	Non-Communicable Diseases
NDC	Nationally Determined Contribution
NPV	Net Present Value
NVLN	National Veterinary Laboratory Network
OH	One Health
PDO	Project Development Objective
PFI	Participating Financial Institution
PIU	Project Implementation Unit
PLF	Precision Livestock Farming
POM	Project Operation Manual
PPP	Public Private Partnership
PPSD	Project Procurement Strategy for Development
PSC	Project Steering Committee
PTC	Project Technical Committee
PVS	Performance of Veterinary Services
QQB	Qishloq Qurilish Bank
R&D	Research and Development
RIs	Research Institutions
RISE	Resilience, Inclusion, Sustainability, and Efficiency
RPIU	Regional PIU
SARS-CoV-2	COVID-19 caused by the 2019 novel coronavirus
SEP	Stakeholder Engagement Plan
SER	Shadow Exchange Rate
SCD	Systematic Country Diagnostic
SLSDP	Second Livestock Sector Development Project
SORT	Systematic Operations Risk-Rating Tool
TA	Technical Assistance
TOT	Training of Trainers
UNFCCC	United Nations Framework Convention on Climate Change

VC	Value Chain
VCD	Value Chain Development
VCM	Value Chain Model
VIS	Veterinary Information System
VS	Veterinary Services
WB	World Bank
WBG	World Bank Group
WOAH	World Organization for Animal Health

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Uzbekistan	Second Livestock Sector Development Project	
Project ID	**Financing Instrument**	**Environmental and Social Risk Classification**
P177825	Investment Project Financing	Substantial

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[✓] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	[ ] Hands-on Enhanced Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
20-Apr-2023	31-Dec-2028

Bank/IFC Collaboration

No

Proposed Development Objective(s)

The Project Development Objective (PDO) is to support the development of a productive, market-oriented, sustainable and inclusive livestock subsector in Uzbekistan.

Components

Component Name	Cost (US$, millions)

Component 1: Strengthen public livestock support services	34.50
Component 2: Strengthen market and value addition infrastructure and facilitate trade	40.00
Component 3: Promote green and resilient livestock value chains	160.50
Component 4: Project management and coordination	3.88
Unallocated	1.12

Organizations

Borrower:	Republic of Uzbekistan
Implementing Agency:	Committee of Veterinary and Livestock Development

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	240.00
Total Financing	240.00
of which IBRD/IDA	240.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	90.00
International Development Association (IDA)	150.00
IDA Credit	150.00

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	SML Amount	Guarantee Amount	Total Amount
Uzbekistan	150.00	0.00	0.00	0.00	150.00
National Performance-Based Allocations (PBA)	150.00	0.00	0.00	0.00	150.00

Total	**150.00**	**0.00**	**0.00**	**0.00**	**150.00**

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2023	2024	2025	2026	2027	2028	2029
Annual	0.00	3.00	25.00	50.00	75.00	83.00	4.00
Cumulative	0.00	3.00	28.00	78.00	153.00	236.00	240.00

INSTITUTIONAL DATA

Practice Area (Lead)

Agriculture and Food

Contributing Practice Areas

Climate Change, Digital Development, Environment, Natural Resources & the Blue Economy, Finance, Competitiveness and Innovation

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Moderate
7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other	Moderate
10. Overall	Moderate

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
Cultural Heritage	Not Currently Relevant
Financial Intermediaries	Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description

Financing Agreement, Section I.A.1 of Schedule 2. Not later than one hundred and twenty days after the Effective Date, the Recipient, through the MOA, through the CVLD, shall establish and maintain throughout Project Implementation Unit, and Regional Project Implementation Units with a structure, functions, responsibilities, and adequate staff, all as further described in the POM and acceptable to the Association, for the purposes of day-to-day Project management, monitoring, evaluation, and supervision.

Sections and Description

Financing Agreement, Section I.A.2 of Schedule 2. Not later than ninety (90) days after the Effective Date, the Recipient, through the MOA, through the CVLD, shall establish and thereafter maintain throughout Project implementation, Steering Committee acceptable to the Association, with a structure, functions, and responsibilities, including the responsibility to provide strategic guidance on Project implementation and ensure coordination among Project stakeholders, as set forth in the POM.

Sections and Description

Financing Agreement, Section I.A.3 of Schedule 2. Not later than ninety (90) days after the Effective Date, the Recipient, through the MOA, through the CVLD, shall establish and thereafter maintain throughout Project implementation a Technical Committee acceptable to the Association, with a structure, functions, and responsibilities, including the responsibility to provide technical advice to the PIU and RPIUs on the quality of plans, implementation reports, special studies, guidelines, and documentation of best practices, as set forth in the POM.

Sections and Description

Financing Agreement, Section I.A.4 of Schedule 2. Not later than ninety (90) days after the Effective Date, the Recipient, through the MOA, through the CVLD, shall carry out an Infrastructure and Human Capacity Needs Assessment in accordance terms of reference acceptable to the Association.

Sections and Description

Financing Agreement, Section I.A.5 of Schedule 2. Not later than ninety (90) days after the Effective Date the Recipient, through the MOA, through the CVLD, shall prepare an Investment Plan detailing infrastructure and capacity building needs of the CVLD and public institutions that will be beneficiaries of Project activities under Parts 1.3 and 1.4 of the Project, in accordance terms of reference acceptable to the Association.

Sections and Description

Financing Agreement, Section I.A.7 of Schedule 2. Not later than sixty (60) days after the Effective Date, the Recipient, through the MOA, through the CVLD, shall update the existing accounting software for Project accounting and reporting in a manner acceptable to the Association.

Sections and Description

ESCP. Not later than thirty (30) days after the Effective Date, the Recipient, through the MOA, through the CVLD, shall prepare and submit to the World Bank the first monitoring report on the environmental, social, health and safety (ESHS) performance of the Project, including but not limited to the implementation of the ESCP, compliance of the Project with the Stakeholder Engagement Plan (SEP), Labor Management Procedures (LMP), Environmental and Social Framework (ESMF), Resettlement Policy Framework (RPF).

Sections and Description
ESCP. Not later than thirty (30) days after the Effective Date, the Recipient, through the MOA, through the CVLD, shall establish (and maintain thereafter throughout project implementation) an ESHS team within the PIU, within the CVLD, to support the management of environmental and social risks and impacts of the Project

Sections and Description
ESCP. Not later than thirty (30) days after the Effective Date, the Recipient, through the MOA, through the CVLD, shall adopt and implement LMP for the Project, including, inter alia, provisions on working conditions, management of workers relationships, occupational health and safety (including personal protective equipment, and emergency preparedness and response), code of conduct (including relating to SEA and SH), forced labor, child labor, grievance arrangements for Project workers, and applicable requirements for contractors, subcontractors, and supervising firms.

Sections and Description
ESCP. Not later than thirty (30) days after the Effective Date, the Recipient, through the MOA, through the CVLD shall adopt and implement the Resettlement Policy Framework (RPF) for the Project to the satisfaction of the World Bank and consistent with ESS 5.

Sections and Description
ESCP. Not later than thirty (30) days after the Effective Date, the Recipient, through the MOA, through the CVLD shall adopt and implement site-specific resettlement action plans (RAPs) in the event of any need of land acquisition, restrictions on land use, and involuntary resettlement, or for each activity under the Project for which the RPF requires such a RAP, as set out in the RF and consistent with ESS5.

Sections and Description
ESCP. Not later than thirty (30) days after the Effective Date, the Recipient, through the MOA, through the CVLD shall adopt and implement the SEP for the Project to the satisfaction of the World Bank and consistent with ESS10.

Conditions

Type	Financing source	Description
Effectiveness	IBRD/IDA	The Financing Agreement has been executed and delivered and all conditions precedent to its effectiveness or to the right of the Borrower to make withdrawals under it (other than the effectiveness of the Loan Agreement) have been fulfilled.
Type	Financing source	Description
Effectiveness	IBRD/IDA	The Loan Agreement has been executed and delivered and all conditions precedent to its effectiveness or to the right of the Recipient to make withdrawals under it (other than the effectiveness of the Financing Agreement) have been fulfilled.
Type	Financing source	Description
Effectiveness	IBRD/IDA	The Recipient/Borrower, through the MOA, through the CVLD, has

		established a Project Implementation Unit in accordance with Section I.A.1 of Schedule 2 to this Agreement.
Type Effectiveness	Financing source IBRD/IDA	Description The Recipient/Borrower, through the MOA, through the CVLD, has adopted the Project Operations Manual in accordance with the provisions of Section II.B of Schedule 2 to this Agreement.

I. STRATEGIC CONTEXT

A. Country Context

1. **Uzbekistan is a lower middle-income country aspiring to become an upper middle-income country by 2030 while maintaining equitable income distribution and halving poverty by then.** Its GDP per capita grew by an annual average of about five percent between 2010 and 2020, and this was well above regional and other lower-middle income country averages. Poverty fell from nearly 28 percent in 2000 to 11 percent in 2019. Between 2018 and 2020, life expectancy rose by more than two years, access to primary and secondary education became universal, and the number of higher education institutions grew by 88 percent (with enrollment up by 54 percent). Nevertheless, high unemployment and low wages resulted in a mass labor migration mainly to Russia and Kazakhstan, with remittances until recently accounting for about 10-12 percent of the GDP. Despite increased urbanization, particularly in recent years, poverty remains a rural phenomenon, as 75 percent of those living in extreme poverty still reside in rural areas where agriculture and livestock are the main sources of livelihoods.[1]

2. **Since 2017, the government has been implementing a series of agricultural reforms.** The reforms, underpinned by a series of Bank-financed Development Policy Operations (DPOs)[2] have led to amongst others: trade liberalization and export promotion; abolishment of the state quota systems for cotton and wheat; elimination of a systematic use of forced and child labor in cotton harvesting; removal of policy distortions for horticulture and livestock; acceleration of agricultural diversification; the liberalization of wheat price; and the adoption of the Agriculture Sector Development Strategy (ADS) 2020-2030, and the Livestock Subsector Development Strategy 2020-2030 and Five-Year Investment Plan 2020-2025 (LSSDS). However, the reforms are not yet complete and the focus is now shifting towards deepening reforms by addressing structural issues, including: land tenure and rental land market; access to finance for smallholder farmers; quality of agricultural and livestock public support services; recognition of unique problems faced by smallholder farmers (dehkans) and their inclusion in public support programs; transition to green growth in agriculture and livestock; and regional integration and trade, including through the One Health approach, food safety, and digital innovations. The One Health is a collaborative approach that explicitly combines human, animal, and ecosystem health to prevent, detect, respond to, and recover from infectious diseases, with an endpoint of improving global health security and achieving and sustaining gains in development. It involves increased intersectoral cooperation on human and animal health, including on epidemiological surveillance, promotion of food safety, prevention of antimicrobial resistance (AMR), and outbreak, emergency, and pandemic preparedness.

3. **The COVID-19 pandemic slowed down Uzbekistan's economic growth, but the country did not fall into recession**. Uzbekistan was one of only three economies in Eastern Europe and Central Asia that maintained positive economic growth in 2020.[3] Fast policy measures backed by the Anti-Crisis Fund (US$1 billion or 2.2 percent of GDP) to support and sustain the economic activity served to cushion the shocks of an acute effect of the COVID-19 pandemic.

[1] Country Partnership Framework for the Republic of Uzbekistan for the Period FY2022-FY2026. Report No. 170931. Discussed by Board of Executive Directors on May 24, 2022.
[2] The first (2018) DPO (P166019) helped reduce land area allocated for the mandatory production of cotton and wheat and make more land available for horticulture, while the second (2019) DPO (P155553) removed mandatory pre-payment and minimum export price requirements for horticultural exports. The third (2020) DPO helped abolish the state quota system for cotton, and the fourth (2021) DPO (P176353) did the same for wheat.
[3] Turkstra, Alberto, and Matthew Neapole. 06 June 2020. Uzbekistan's Economic Resilience in the Face of COVID-19. European Institute for Asian Studies (EIAS). Available at: https://eias.org/op-ed/uzbekistans-economic-resilience-in-the-face-of-covid-19/

The agriculture sector proved resilient to the outbreak of COVID-19[4] thereby sustaining the economic growth of the country. In 2020, the agriculture GDP grew by three percent, higher than the industry, service and transport sectors, the latter having decelerated by - 2.2 percent.[5] In agriculture, the government implemented policy measures that countered the negative impacts of COVID-19, including: monitoring market prices of food products important for national food security, e.g., meat and milk, and ensuring their sufficient supply; provision of 0.01 ha of greenhouse for cultivating fresh vegetables to families; leasing land plots (for up to one hectare), primarily to low-income families with agricultural knowledge and skills in need; financial support to low-income families participating in poultry cooperatives in the order of US$50,000 per family; allocating US$0.5 billion from the Anti-Crisis Fund to cover up to 50 percent of the transportation costs (by road) of exporters of fruits and vegetables; and allocating up to one hectare of land for rural youth and returnee migrants.

4. **Spillovers from Russia's invasion of Ukraine are exerting new pressures on Uzbekistan, the implications of which are not yet clear.** Russia's invasion of Ukraine is expected to have large indirect effects on Uzbekistan, particularly on wheat supply and prices, even if it does not import much wheat from Russia and Ukraine. One scenario is that a sharply lower supply of wheat and other cereals from Russia and Ukraine onto global markets will put an upward pressure on grain prices in Kazakhstan, increasing demand for Kazakh wheat in places, which used to buy Russian or Ukrainian wheat. This, coupled with Kazakhstan's latest export restrictions of wheat, leave other Central Asian (CAs) countries with no alternatives to source wheat. The result will be an immediate impact on food security in CAs countries through higher food prices. This situation will have not only immediate negative effect on food security; it could also damage it in the long run. Moreover, reduced remittances to countries in CAs are expected to significantly increase food insecurity risks via an income reduction and job losses. Based on an initial assessment of the first-round effects of a decline in economic activity in Russia (that will dampen employment and incomes of migrant workers and their ability to send remittances) and a weakening of the ruble against the US dollar (which will reduce the nominal US dollar value of remittances sent in rubles), the revised projected growth rates of remittances in CAs in 2022 are expected to average around -25 percentage points.

5. **Uzbekistan is vulnerable to climate change particularly in the sectors of agriculture, including livestock; energy; and water.** Anticipated impacts include increases in monthly maximum temperatures, reduced and high variability of rainfall, changes in rain seasonality, and increased glacier melting with implications for seasonal water availability and river flow. For the agriculture sector, impacts will be in the form of extreme temperatures, less precipitation during the hot months, potential shortages of irrigation water, high hazard from wildfires and changes in the distribution of pests and pathogens. The country ranks second in terms of disaster risk and is in the top 20 in the world in terms of its exposure to drought,[6] and droughts may become more frequent due to decreases in runoffs of Amu and Syr Darya Rivers. Effects on the livestock sector and related supply chains will be both direct and indirect. Direct impacts will stem from increased heat, more frequent heat waves, and water stress that will reduce livestock productivity. Indirect impacts will be related to loss of productivity of pasture (although pasture yields are not expected to be as severe across all three agroecological zones, AEZs) and feed crops, and to emerging diseases.[7] The sector will be further impacted by probable feed and energy price increase and volatility. Feed prices, that typically represent over two thirds of production costs will be affected by input costs (energy and fertilizers) and yield losses (heat and water stress). Ecosystem's degradation and biodiversity

[4] Etenesh B. Asfaw, Iroda Amirova and Shakhzoda Erkinova. March 2021. The Impact of COVID-19 on Agriculture, Food and Rural Areas in Central Asia and Caucasus Countries: The case of Uzbekistan. Center for Policy Research and Outreach at the Westminster International University in Tashkent (CPRO/WIUT).
[5] The GDP deflator index, relative to 2019, used by the State Statistics Committee is 11.9 percent.
[6] The World Bank Group and the Asian Development Bank. 2021. Climate Risk Country Profile: Uzbekistan.
[7] The World Bank Group and the Asian Development Bank. 2021. Climate Risk Country Profile: Uzbekistan.

losses caused by climate change also drive the emergence of infectious diseases exacerbating existing vulnerabilities and inadequacies in the current animal health, human health, and food safety systems, thus introducing additional burdens to the anticipatory capacity of national agencies and institutions for such emerging threats. Most of the rural population is set to be disproportionately affected by climate change risks since their livelihoods depend on agriculture and livestock, and since they have relatively lower ability to adapt and spend a high share of their income on food, on average 50 percent. Climate change impacts could also reverse progress made in poverty reduction, and negatively affect food security and economic growth in vulnerable rural areas, as changes in the seasonal distribution of temperature and precipitation undermine predictable agriculture production.[8]

6. **The government adopted the Strategy for the Transition of the Republic of Uzbekistan to a Green Economy for the period 2019-2030.**[9] The Strategy highlights the need for mainstreaming climate mitigation and adaptation, environmental protection, and sustainable natural resource management as essential components of any development endeavor. The Strategy identified priority areas, including improving energy efficiency; enhancing adaptation to and mitigation of the effects of climate change; increasing the efficiency of natural resources and preservation of natural ecosystems; and developing financial and non-financial support mechanisms for the green economy. The Strategy underlined the need to promote climate-smart, and energy-efficient technologies and innovations that help increase productivity, enhance resilience, and reduce greenhouse gas (GHG) emissions. The Strategy envisions the creation of a monitoring, reporting and verification system on GHG emissions; the development of public-private partnerships to promote green technologies; and support to private investors, including small businesses, in the implementation of the "green growth" initiative. To address the socio-economic impacts of COVID-19 resources were shifted leading to less than expected funding for the implementation of the Strategy in 2020. But the global health crisis also re-emphasized the link between public health, climate, and nature. This renewed emphasis is expected to enhance the implementation of the Strategy and build a green economy.

B. Sectoral and Institutional Context

7. **Livestock is one of the key economic subsectors of Uzbekistan's economy** constituting 13 percent of the GDP and about 50 percent (livestock value added) of the national agricultural GDP without accounting for the estimated monetary value of organic matter from livestock (manure). Out of the total livestock value-added, cattle (dairy and beef) contribute 76 percent; small ruminants (sheep and goat-meat) nine percent; poultry (meat and egg) seven percent; and fish (meat) two percent. Further livestock value added comes from other livestock value chains, including apiculture (honey), rabbit (meat), horse (meat and breeding), ostrich (meat), and camel (milk). Livestock constitutes 45 to 67 percent of the rural household income and plays a significant role for food and nutrition security. It is also an important source of employment and constitutes about 27 percent of the agricultural employment,[10] including in primary production and along livestock value chains. Dairy (cattle), meat (cattle, small ruminants, poultry, and fish), and egg (poultry) are the most important livestock value chains.

8. **Livestock production is an economic activity in all AEZs[11] of Uzbekistan.** While beef production is predominantly practiced in the Highland and Piedmont AEZs, dairy production is practiced in all AEZs but predominantly in the Piedmont

[8] WBG. 2019. Uzbekistan Country Economic Update Summer 2019.
[9] Resolution of the President of the Republic of Uzbekistan, No. PP-4477, dated April 10, 2019.
[10] State Committee of the Republic of Uzbekistan on Statistics.
[11] ***The Desert and Steppe AEZ*** constitutes lowlands and low plateaus in the western areas of the country, with vast valleys in the central part of the AEZ. Elevation ranges from 60 to 150 meters above sea level with smaller areas in eastern districts with elevation greater than

and Highland AEZs, and in areas dominated by irrigated croplands and near urban industrial centers. Small ruminant production is practiced in the Highland AEZ whereas karakul sheep production is practiced in the Desert and Steppe AEZ. Poultry production is practiced in all AEZs with industrial-scale poultry production predominantly practiced near large cities and industrial centers and backyard poultry production in rural areas around homesteads. Apiculture is practiced in all AEZs whereas fishery (aquaculture), an emerging and fast-growing subsector, is practiced in the Piedmont and Highland AEZs.[12]

9. **Livestock is held by dehkans, commercial farmers, agricultural cooperatives (formerly known as shirkats), and agribusinesses.**[13] Dehkans keep more than 90 percent of livestock herd and produce more than 95 percent of livestock products.[14] They are less regulated by the government plan of land allocation and use their plots for producing different agricultural products. They receive little, if any, public support and have limited access to land, improved technologies, and finance. They are fragmented and least integrated into the livestock value chains rendering commercialization and service delivery challenging. Although they are primarily oriented towards self-sufficiency, evidence from the Livestock Sector Development Project (LSDP) (P153613) showed that they can be commercially competitive. Agribusinesses, commercial farmers, and agricultural cooperatives on the contrary have access to land and finance and receive government subsidies and support. However, they suffer from lack of access to improved technologies and innovations, and frequent farm restructurings and (persisting) weak land tenure security rights that have made them reluctant to invest in measures that improve land productivity and competitiveness.

10. **Livestock production has grown over the last three decades,[15] but is not meeting the growing demand.** Demand grew by 4.2 percent and 6.5 percent in 2017 and 2018, respectively outpacing the overall average growth in agriculture, which was 1.2 percent in 2017 and 0.2 percent in 2018. However, the increase in per capita livestock production is low compared to neighboring countries, such as Russia, Türkiye, and Kazakhstan. Livestock productivity in general is low, and the productivity of animals kept by dehkans is lower than those kept by commercial farmers and agribusinesses. Average meat productivity measured by average market live weight (cattle) is 500 kg for agri-businesses, 350 kg for dehkans, and 420 kg for commercial farmers. Average milk productivity, measured by liters of milk per cow per day is three liters for dehkans, eight liters for private farms and 20 liters for agribusinesses. Despite the growth in livestock production, the country has not been able to meet its increasing domestic demand for animal source foods (ASFs); hence, it is a net importer of livestock products. The increase in the demand for ASF is expected to continue, and it is projected that by 2035, under a business-as-usual scenario, Uzbekistan can experience 41 percent and 48 percent production and

400 meters above sea level. Annual mean temperature ranges from 10 to 15 degree Celsius and rainfall 100 to 200 millimeters or mm. The vast rangeland found in the AEZ is used for livestock production. ***The Piedmont AEZ*** is found in the central, southeast and Fergana valley areas of the country and consists of the undulating terrain intermixed with open plains and elevation ranging from 400 to 1,000 meters above sea level; precipitation is below 400 mm. Extensive areas of pasture are used for livestock production. ***The Highland AEZ*** is found in the southeast and Fergana valley areas of the country and consists of steep and mountainous with elevation greater than 1,000 meters; annual mean temperature of -5 to 5 degree Celsius; rain fall exceeds 600 mm. The zone is the source of summer grazing for livestock.

[12] Uzbekistan Livestock Sector Analysis Baseline 2017.

[13] ***Dehkans*** are small household farms engaged in livestock and crop production mainly for own consumption but also for marketing, mainly using household labor and household land plot. They control less than 5 percent of the arable land with average land size of 0.35 ha in non-irrigated areas and from 0.04-0.08 ha in irrigated lands. ***Commercial farmers*** **(also known as large scale private farms*/fermers*)** are independent legal entities with long term land lease. They hire external labor and also use household labor. They produce mainly for the market. ***Agribusinesses*** also referred to as specialized production (SP) systems **(also known as agro-companies or enterprises)** include those entities the livestock production methods of which are modern, and which depend mainly on the procurement of live animals, farm machinery and feed from outside the farm operation for livestock feeding. They employ modern livestock production practices, and they are commercial (market-oriented).

[14] They produce 97 percent of the milk, 90 percent of the meat and 60 percent of the egg (State Statistics Committee, 2021).

[15] Uzbekistan Livestock Subsector Development Strategy 2020-2030 - and Five-Year Investment Plan 2020-2025.

consumption gaps in milk and meat, respectively. This gap in production and consumption would incentivize livestock farmers to increase production and productivity and provide them with market opportunities. However, in order to increase production sand productivity in a climate smart and sustainable way, the challenges that the livestock subsector is facing need to be addressed, including subsistence oriented and fragmented livestock production system; limited availability of animal feed and nutrition and inefficient natural resource (pasture) management; weak veterinary, animal health, research and extension services; low productivity of animals (breeding and genetics); limited access to inputs, technologies and finance; underdeveloped market and value addition infrastructure; and traditional, not inclusive and less competitive livestock value chains.

11. **The livestock subsector currently has limited commercial orientation due to inadequate market and value addition infrastructures.** The main market outlets are local and regional markets, wholesale buyers, and processing enterprises. Physical infrastructures, including market centers, stock routes or slaughtering houses, processing plants, and milk collection centers, are few and lack the appropriate facilities and equipment. Moreover, they have not been supported by a real-time market information system to enhance efficiency in the function of the marketing system. Value addition facilities are either lacking or suffer from limited investments. Only a small portion of livestock products goes through value addition, and that comes mainly from commercial farmers and agribusinesses. Only few processors exist in the country and most of them operate under capacity.[16] Dehkans are not the preferred source of livestock products for processing because of concerns over quality and animal health. Dehkans sometimes process excess livestock products into traditional products e.g., processing milk to produce kaymak, sour cream, chakka, cottage cheese, and butter. However, these are either destined for own consumption or sold at local bazaars by peddlers. Encouragingly, recently the number of legal and certified livestock product processing companies is increasing. However, they are still few and need substantial capacity building.

12. **Limited access to finance is one of the challenges faced by the livestock subsector.** The credit accessed by the subsector is disproportionately low compared with its contribution to GDP. Indicatively, in 2019, aggregate livestock lending accounted for one percent of the overall banks' loan portfolios, while the subsector contributed about eight percent of GDP. Access to finance, although showing signs of improvement lately, is still far from being a reality for many livestock farmers and enterprises, especially dehkans. The limited assets and financial capacity of small livestock farmers limits their access to formal financial institutions, forcing them to self-finance or depend on informal sources thereby limiting their access to innovation and improved and climate smart technologies. The capacity of financial institutions involved in providing loans to livestock farmers is also very much limited, especially when it comes to developing diversified loan products that are inclusive and climate smart thereby leading to the development of green and resilient livestock value chains.

13. **The public sector dominates livestock support services but has largely remained weak.** The Committee of Veterinary and Livestock Development (CVLD),[17] is the Competent Authority (CA) responsible for providing livestock public support services as well as some elements of veterinary public health i.e., food safety and diagnostics. However, the management and service delivery capacity of the CVLD has largely remained weak. For example, the resources allocated for provision of basic services by the CVLD, including vaccination, and deworming, and anticipated revisions (if any) on legislation provisions for a compensation mechanism in case of culling for disease control; access and use of veterinary drugs; and detailed diagnosis on the capacity of the laboratory network have been scanty. The LSDP supported capacity building of the CVLD. However, the scope of the support was very limited and focused more on infrastructure

[16] Uzbekistan Livestock Sub Sector Development Strategy 2020-2030 and Five-year Investment Plan (2020-2025).

[17] The CVLD includes its branch offices at the regional and district level, Livestock Research Institutes (RIs), the National Veterinary Laboratory Network (NVLN), Border Inspection Posts (BIPs), and Artificial Insemination (AI) centers.

capacity building, including procurement of goods, as in for example refrigerated vehicles and information and communications technology (ICT) equipment, and less on improving planning, systems, coordination, and human resource capacity of the CVLD. Research institutions (RIs), the national veterinary laboratory network (NVLN), and border inspection posts (BIPs) have also been largely underfunded with limited human and infrastructure capacity making the provision of veterinary and animal health, extension, research services as well as import control less efficient. The almost complete lack of field quarantine stations poses a significant threat and a risk of importing pests and diseases along with live animals and livestock products especially in the face of climate change that favors their proliferation.

14. **Livestock public support services and programs are often not yet climate smart and not yet sufficiently targeted towards climate goals despite the country's commitment to climate targets**. Policies and legislation pieces related to the livestock subsector are not yet sufficiently considering climate actions and solutions, and even when espousing to principles of climate adaptation and mitigation they can be incoherent and have little or no assessment of their likely impacts on climate adaptation and mitigation, productivity, and the environment. In Uzbekistan, livestock contributes most of the agriculture GHG emissions, estimated at 13.1 percent of total domestic emissions. Uzbekistan's Land-Use Change and Forestry (LUCF) sector, including pastureland, was a net carbon sink, absorbing 16.4 $MtCO_2e$ more than was emitted from that sector in 2014.[18] The country increased its commitments in the updated nationally determined contribution (NDC) and intends to reduce specific greenhouse gas emissions per unit of GDP by 35 percent by 2030 from the level of 2010 instead of the target of 10 percent that was specified in the NDC1. The main strategic direction of climate adaptation is closely related to mitigation measures and includes breeding highly productive livestock breeds resistant to salinity, drought and other hazardous weather events and risks; preserving the gene pool of local livestock breeds; introducing organic farming practices; properly storing/processing organic animal waste; and restoring degraded pastures and introducing sustainable pasture management mechanisms.[19]

15. **In Uzbekistan, women play an important role in livestock production. However, they tend to take on traditionally gendered tasks** (for example those that are less visible or involve less physical strength). Men are more involved in livestock sales, slaughter, and breeding, whereas women oversee grazing (close to the home) and feeding livestock, milking, and preparing dairy products, as well as the informal sale of excess products (for example, milk and eggs). Women have a small role in aquaculture (most formal employees on fish farms are men), and they are mostly involved in retail trade. Official statistics do not differentiate by gender in livestock production, but experience shows that women face constraints in owning and accessing productive assets and resources such as land, water, livestock, agricultural equipment, seeds, and information and knowledge, as well as accessing finance and markets.[20] Reasons for limited access to financing include that borrowing is considered a risky activity, which is to be undertaken by men, not women; and difficulties in producing collateral, due to limited land ownership and lease rights for women. Moreover, a survey has shown that while rural women would have liked to pursue entrepreneurial opportunities, they had concerns over their business skills, mobility, and knowledge of laws and regulations.[21] A 2017 United Nations Development Programme (UNDP) policy brief based on a survey of Uzbek female entrepreneurs highlighted the remaining urgent need for financial inclusion and focus on capacity and skills enhancement for entrepreneurship.[22]

[18] The Strategy for the Transition of The Republic of Uzbekistan to a "Green" Economy for the period 2019 – 2030.
[19] Republic of Uzbekistan. 2021. Updated Nationally Determined Contribution submitted to the United Nations Framework Convention on Climate Change (UNFCCC) secretariat.
[20] FAO. 2019. *Gender, agriculture, and rural development in Uzbekistan*. Country gender assessment series. Budapest. 88pp. License: CC BY-NC-SA 3.0 IGO.
[21] International Fund for Agricultural Development (IFAD). 2015.Dairy Value Chains Development Programme. Design completion report.
[22] United National Development Programme (UNDP). 2017. Women Entrepreneurs in Uzbekistan: Challenges and Opportunities; Policy Brief. Prepared by UNDP project 'Business Forum of Uzbekistan (Phase III)', the Chamber of Commerce and Industry of Uzbekistan, the

16. **The government approved the Livestock Subsector Development Strategy (LSSDS) in February 2022.** The vision of the LSSDS, which is aligned with the ADS 2020-2030, is to develop a competitive, sustainable, resilient, and inclusive livestock subsector that contributes to a prosperous and green Uzbekistan. The goal of the LSSDS is to transform and modernize the livestock subsector by increasing production, productivity, and income; improving access to market, technology and finance of livestock farmers, agribusinesses, and other value chain actors; developing more green, resilient, sustainable, and competitive livestock value chains; and enhancing food and nutrition security. The LSSDS also identified key priority development areas, including: (a) inclusion and modernization of dehkans; (b) improving animal feed and nutrition; (c) management and delivery of public livestock support services; (d) livestock breeding and genetics; (e) livestock market and value addition infrastructures; (f) border security and quarantine; and (g) digitizing livestock production. The LSSDS also supports the promotion of sustainable and energy-efficient livestock production practices that will reduce GHG emissions, thus contributing to the overall national goal of GHG reduction. Improving the coordination and management capacity of the CVLD, gender and nutrition considerations, climate change and jobs creation are all mainstreamed in each priority development area identified in the LSSDS.

C. Relevance to Higher Level Objectives

17. **The project will support the implementation of the LSSDS, which was prepared in alignment with the recommendations of the various World Organization of Animal Health (WOAH) Performance of Veterinary Services (PVS) Missions as well as with the priorities identified by the Permanent Mission of the Republic of Uzbekistan to the United Nations.**[23] Uzbekistan hosted a number of WOAH PVS Missions, including the WOAH PVS Evaluation Mission (diagnosis) in 2007, the WOAH PVS Evaluation Follow-Up Mission (diagnosis) in 2017, the WOAH PVS Gap Analysis Mission (prescription) in 2018 and the WOAH PVS Sustainable Laboratory Mission (treatment) in 2019. The objectives of the WOAH Pathway Missions were to assess the performance of veterinary services and provide decision makers with information to allocate appropriate resources and the necessary support to the veterinary system, and to help them make strategic decisions to support accurate and timely diagnosis, while ensuring the sustainability of the veterinary system. The missions recommended priority areas that support the development of sustainable livestock production, and the provision of veterinary and animal health service that are climate smart and resilient. These include: (a) National Livestock Development Priorities[24]; (b) Animal Health Priorities[25]; (c) Veterinary Public Health Priorities[26]; and (d) Management of Veterinary Services (building the capacity of the CVLD).[27]

Women's Committee of Uzbekistan, the Business Women's Association of Uzbekistan, and the UN Joint Programme 'Building the Resilience of Communities Affected by the Aral Sea Disaster through a Multi-Partner Human Security Fund for the Aral Sea'.

[23] The Permanent Mission of the Republic of Uzbekistan to the United Nations (citing a meeting of the Cabinet of Ministers of the Republic of Uzbekistan) https://www.un.int/uzbekistan/news/uzbek-agriculture-progress-and-achievements# accessed 2018-04-29

[24] These include increasing domestic production and self-sufficiency in livestock products; liberalizing the agriculture economy, including the livestock and veterinary subsector; improving food and nutrition security; reducing costs of imports and increasing exports; and introducing animal identification, registration, and traceability (AIR&T) system.

[25] These include improving dairy cattle health to support increased milk production; minimizing the risks and impacts from brucellosis and other transboundary and zoonotic animal diseases; preventing/controlling infectious and non-infectious diseases.

[26] These include developing a National Food Safety Strategy jointly with the Ministry of Health (MOH) to increase effectiveness and efficiency of the national food safety system; strengthening ante- and post-mortem inspection; developing capacity to control the distribution, sale, and use of veterinary medicines; reducing/preventing the development of antimicrobial resistance (AMR).

[27] These include completing/consolidating the reorganization of the CVLD; computerizing the activities of CVLD, training of its staff, including the leadership, improving its coordination capacity; creating a veterinary statutory body (VSB) to strengthen governance of the profession through systematic licensing, standards for continuous education, a code of practice and a regime of professional oversight; improving research, extension and advisory services; and improving graduate veterinary training and continuing education based on needs of the new activities of veterinary services (e.g., animal ID, epidemiology, risk analysis, food safety etc.).

18. **The project will contribute to the implementation of a One Health (OH) approach.** The World Bank is supporting the development of a Regional One Health Framework for Action that will provide a vision and a road map for regional and cross-sectoral cooperation for OH implementation in CAs, including Uzbekistan. The COVID-19 pandemic has caused over 200,000 cases and 1,588 deaths in the country, demonstrating the need to ramp-up pandemic preparedness. Regulatory and institutional elements are in place to control some zoonotic diseases such as tuberculosis and brucellosis, but much remains to be done in terms of epidemiologic surveillance, cross ministerial collaboration, and information management. The country also needs a better understanding and control of food safety and Anti-Microbial Resistance (AMR) issues, which are largely unknown but of increasing concern. The project will support the operationalization of OH approach by building on the on-going dialogue at both high- and technical-levels among representatives from the agriculture, environment, health, and livestock and veterinary sectors and seeking alignment with the Regional One Health Framework for Action.

19. **The project is consistent with the Country Partnership Framework (CPF) for the Republic of Uzbekistan for the period of FY22-FY26, and the Second Systematic Country Diagnostic[28] (SCD) for Uzbekistan.** It falls under the CPF's High-Level Outcomes (HLO):): HLO-1 - Increase Inclusive Private Sector Employment, specifically under the Objective 1.3 Increase the returns from agriculture and agri-business development, and supports a more strategic engagement in agriculture; and also contributes to the HLO-2 - Improve Human Capital; and HLO-3 - Improve Livelihoods and Resilience through Greener Growth. The project will also support the CPF's cross-cutting objectives of closing gender gaps and strengthening Citizen Engagement and accountability in public services. The project is also aligned with the Second SCD, which emphasizes the need for: (a) a stronger private sector response, through its support for the development of a vibrant, competitive and private sector-led livestock subsector; (b) effectiveness and accountability of the state, through the project's support for strengthening public livestock institutions with the aim to reduce their economic footprint while improving their capacity, regulatory quality, and accountability; (c) effective investments in people, through the project's support for human capacity building; and (d) an environmentally sustainable growth model that promotes efficient use of natural resources, through the project's support for the generation of climate smart and inclusive livestock production technologies and their dissemination to and adoption by end users as well as the development of green and resilient livestock value chains.

20. **The project is aligned with the World Bank Group's (WBG) twin goals and strategic directions.** Specifically, the project will support ending extreme poverty and boosting shared prosperity and two focal areas of the WBG "Saving Lives, Scaling-up Impact and Getting Back on Track" approach paper of June 2020 in response to the COVID-19 crisis including: (a) economic response for saving livelihoods, preserving jobs, and ensuring more sustainable business growth and job creation; and (b) focused support for strengthening policies, institutions, and investments for resilient and sustainable recovery. Moreover, the underlying themes of the project, specifically, inclusion, and climate resilience and mitigation, reflect the three dimensions of the World Bank's GRID (Green, Resilient, and Inclusive Development) Approach and RISE (resilience, inclusion, sustainability, and efficiency) pillars that are identified by the World Bank as having a large impact on economic and social development around the globe and being key to achieving the goals of a fairer, more efficient, and sustainable economy.[29] The GRID Approach is identified by the World Bank as important to achieving a more sustainable and equitable recovery from COVID-19 and a long-term development paradigm.[30] The project also builds on the World Bank ECA Climate Change Action Plan (2021-2025) to support ambitious, people-

[28] World Bank Group. 2021. The Second Country Systematic Diagnostic for Uzbekistan: Towards a Prosperous and Inclusive Future.
[29] World Bank. 2021. The RISE Framework. Washington, D.C.
[30] From COVID-19 Crisis Response to Resilient Recovery - Saving Lives and Livelihoods while Supporting Green, Resilient and Inclusive Development (GRID). Washington, D.C. https://thedocs.worldbank.org/en/doc/9385bfef1c330ed6ed972dd9e70d0fb7-0200022021/original/DC2021-0004-Green-Resilient-final.pdf

centered transitions in ECA by prioritizing amongst others climate-smart agri-food and livestock value chains with a priority to achieve sustainable and carbon neutral/negative livestock systems. Lastly, the project is aligned with the World Bank's Global Crisis Response Framework (GCRF).[31] Specifically, it is aligned with Pillar 1: Responding to Food Insecurity since it supports production and producers, facilitates increased trade, and promotes sustainable food and nutrition security; Pillar 2: Protecting People and Preserving Jobs since it contributes to gender equality; Pillar 3: Strengthening Resilience since it contributes to the development of nutrition sensitive and sustainable food systems, and climate resilience; and Pillar 4: Strengthening Policies, Institutions and Investments for Rebuilding Better since it supports climate smart policies and incentives, green and sustainable growth, institutional strengthening and capacity building, and digital development. Further, the project addresses tentative recommendations of the Country Climate Development Report (CCDR), currently in preparation. In particular, the project will help control the rapidly growing GHG emissions generated by the expansion of the sector over the past years, in line with the target of the ADS.

21. **The project builds on the gains and lessons learnt from the LSDP[32] (more in Section F) and complements three ongoing projects related to agrifood sector development**, specifically, the Agriculture Modernization Project (AMP) (P158372), the Horticulture Development Project (HDP) Additional Financing (P164226), and the Fergana Valley Rural Enterprise Development Project (FVREDP) (P166305) that collectively aim at supporting productivity; enhancing public services; strengthening the crisis and climate resilience of the agriculture sector; increasing domestic food self-reliance and improving nutrition; fostering competitiveness of the growing agricultural sector; and improving public institutions' early warning and crises preparedness and response capacity; and contributing to the development of viable private micro, small and medium enterprises in rural areas.

II. PROJECT DESCRIPTION

A. Project Development Objective

22. The Project Development Objective (PDO) is to support the development of a productive, market-oriented, sustainable, and inclusive livestock subsector in Uzbekistan.

23. The project's results will be measured by the following PDO indicators[33]:

- PDO Indicator 1: Beneficiaries adopting improved livestock production technologies and practices that control GHG emissions and/or enhance resilience to climate change, among others (disaggregated by gender) (percentage).
- PDO Indicator 2: Increase in total value of livestock products sold (percentage) (disaggregated for sold by dehkans).
  PDO Indicator 3: Increased productivity of targeted livestock commodities (disaggregated by value chain)[34] (percentage).
- PDO Indicator 4: Increased participation of targeted smallholder farmers (dehkans) in formal markets

[31] Navigating Multiple Crises, Staying the Course on Long-term Development: The World Bank Group's Response to the Crises Affecting Developing Countries. Washington, D.C. The World Bank Group.
[32] The LSDP closed on June 30, 2022.
[33] The main dimensions of the PDO have been associated with specific PDO indicators and components in this section and the Theory of Change (Figure 1) reflects the interrelationships of activities and main objective(s). For purposes of clarity in the eventual Implementation and Completion Results Report each PDO dimension has been associated only with one PDO indicator in the Results Framework.
[34] The livestock value chains considered are milk (cattle), and meat (cattle and small ruminants).

(percentage).

Productive: The "productivity" dimension of the PDO will be reflected by achievements under Components 1 and 3. PDO Indicator 3 reflects those achievements and is associated with the "productivity" dimension of the PDO.

Market-oriented: The "market-oriented" dimension of the PDO will be reflected by achievements under Components 2 and 3. PDO Indicators 2 and 4 reflect those achievements and are associated with the "market-oriented" dimension of the PDO.

Sustainable: The climate change mitigation and adaptation dimension (focus area of the environmental sustainability) of the PDO will be reflected by achievements under Components 1 and 3. PDO Indicator 1 reflects those achievements and is associated with the "sustainable" dimension of the PDO.

Inclusive: The "inclusive" dimension, and specifically for dehkans and women, of the PDO will be underpinning all components. PDO Indicator 4 and disaggregation of PDO Indicator 1 for gender and of PDO Indicator 2 for dehkans will enable measurement on achievement of these two aspects of inclusion at the PDO level.

24. **The project aims to transform the livestock subsector by promoting the development of sustainable livestock production systems that can efficiently respond to the growing demand for ASF and climate risks.** It will contribute to: (a) strengthening the capacity of public livestock institutions for better management and enhanced service delivery and climate resilience; (b) developing climate resilience market and value addition infrastructure; and (c) developing green and resilient livestock value chains by improving the access to finance, innovation and technology of livestock farmers, including dehkans, agribusinesses, and other value chain actors. The project will follow good animal husbandry practice (GAHP) addressing breeding and genetics, feed and nutrition, animal health and veterinary, and animal husbandry. All activities and investments supported through the project will facilitate the wide adoption of climate smart and improved livestock production technologies and practices ranging from adaptation and increased productivity (resulting in lower emission intensities) to specific mitigation options such as covered manure storage, biogas and energy saving technologies. Annex 2 contains a detailed project description.

B. Project Components

25. **Component 1: Strengthen public livestock support services (IDA US$34.5 million).** The objective of this component is to improve the capacity of public institutions involved in providing livestock support services.[35] The component is aligned with Pillar 1 (Responding to Food Insecurity), Pillar 2 (Protecting People and Preserving Jobs), Pillar 3 (Strengthening Resilience), and Pillar 4 (Strengthening Policies, Institutions and Investments for Rebuilding Better) of the GCRF. Climate change, inclusion, resilience, and sustainability will be at the center of strengthening public livestock support services. The various WOAH PVS missions as well as the LSSDS indicate the needs to strengthen public livestock support services and to make them inclusive, sustainable, and climate resilient. They also indicate the need for improving the management and service delivery capacity of the CVLD, including reorganizing the CVLD Headquarters by establishing units, building the capacity of its staff, including the leadership. Livestock support services in general are weak, including veterinary, animal health, research, extension and advisory services, veterinary education. This is coupled with ineffective system of control and enforcement of present and future food safety laws and regulatory acts; and low motivation of the "veterinary specialists" (veterinarians in the field) who need adequate infrastructure (facilities, transportation, equipment), training and increased salaries. This component has four subcomponents: (a) improving the enabling

[35] These include veterinary and animal health services; extension, and advisory services; and research and development, including educational institutions i.e., universities and colleges.

environment; (b) strengthening the management and service delivery capacity of the CVLD; (c) strengthening livestock extension and advisory services; and (d) strengthening research and development.

26. **Subcomponent 1.1: Improve the enabling environment (IDA US$0.5 million).** The objective of this subcomponent is to improve the policy and legal framework of the livestock subsector. Since independence in 1991, the government has issued several policies and legislation pieces, including presidential decrees, resolutions, and directives of cabinet of ministers (COM). Not only are some of the policies and legislation pieces outdated, with the majority placing more emphasis on increasing production volumes, and not enough on improving production efficiency, market orientation, inclusion, resilience, and environmental sustainability, they also do not address novel issues such as climate change and food system insecurity, thus missing out on some of the great challenges Uzbekistan currently faces. In addition, the WOAH PVS missions and the LSSDS identified policy and legislative gaps, including in pasture management, livestock breeding and genetics, land tenure, animal health and veterinary services, veterinary public health, trade, Animal Identification, Registration, and Traceability (AIR&T), and management and coordination of animal health and veterinary services. The subcomponent thus aims at filling the policy and legislation gaps by developing new and/or revising existing policies and legislation pieces, and tailoring them to promoting sustainable livestock production, including climate resilience and mitigation, and the control of One Health related issues, i.e., zoonoses, food safety, animal welfare and AMR. The development and/or revision of policies and legislation will focus on ensuring better coordination with the MOH and the State Committee for Ecology and Environmental Protection for surveillance and control of zoonotic diseases and AMR, which will be done in line with the WOAH PVS mission recommendations.

27. **The subcomponent will support the development/revision of policies and regulations to support the mainstreaming of national objectives of climate change adaptation and mitigation identified in the Green Economy Development Strategy 2019 and pertaining to the livestock subsector.** New policies, legislation, regulations, institutions, and standards the preparation of which will be supported by the project will systematically deliver climate adaptation and/or mitigation outcomes. Examples include: (a) the repurposing of public support to the subsector for greater adaptation and mitigation results, including for the mainstreaming of climate mitigation into policies and regulations and the related monitoring of impact and efficiency of public investments and other forms of finance geared towards mitigation outcomes; (b) support to policy actions promoting investments on sustainable pasture management and restoration of degraded pastures; (c) introduction of organic livestock farming methods; (d) support to the development of the area under forage crops and diversification of forage crops i.e., expansion of the area under perennial forage trees and perennial grasses; incentives for green investments in livestock production, processing and marketing; (e) incentives and regulations for proper storage/processing/recycling of organic animal waste; (f) policies and investments in support of clean cooling along livestock value chains; (g) support to breeding highly productive and adaptive animals and developing high yielding forage crop varieties resistant to salinity, drought and other hazards and risks; (h) technical support for monitoring of GHG emissions in the livestock sector and improvement of relative sections in National GHG inventory reports submitted to the United Nations Framework Convention on Climate Change (UNFCCC); (i) programs for the inventory and preservation of the gene pool of local animal breeds and forage crop varieties, especially as they relate to climate change resilience traits; and (j) awareness raising programs for stakeholders along the livestock value chains regarding current GHG emissions and adaptation needs, and related potential turnkey improvements. All the policy actions and technical support under this subcomponent will contribute to climate mitigation outcomes, and thus the project's climate mitigation co-benefits. The results of this work will also support and enhance the implementation of the LSSDS.

28. **As the component supports the capacity of public institutions involved in providing livestock support services, it will raise awareness and progressive implementation of the collaborative One Health approach.** The integrated

approach and cross-sectoral collaboration underpinning One Health, for example. in the areas of disease surveillance, laboratory capacity development and data systems, will enable cost savings and increased effectiveness in addressing issues of productivity, food safety, zoonoses and AMR in the sector. One Health is also an effective approach to improving the resilience and adaptation of food systems to climate change, for example in the control for emerging diseases, the control of livestock productivity losses and the prevention of pandemic events.

29. **The subcomponent will support:** (a) review of existing policies, legislation pieces, regulations, institutions and standards, including: (i) identifying gaps and implementation challenges, (ii) developing new and/or revising/updating existing policies, legislation pieces, regulations, institutions and standards, including harmonizing them with regional and international standards; and (b) provision of technical assistance (TA) for the CVLD and other stakeholders in the review, formulation and implementation of policies and legislation pieces with particular focus on building their capacity in mainstreaming climate change i.e., adaptation and mitigation into the policy and legislation formulation processes. The subcomponent will also support awareness raising and progressive implementation of the collaborative One Health approach.

30. **Subcomponent 1.2: Strengthen the CVLD (IDA US$13.0 million).** The objective of this subcomponent is to improve the management and service delivery capacity of the CVLD. The CVLD, as well as NVLN,[36] artificial insemination (AI) centers, and BIPs are responsible for veterinary and livestock development. The current capacity of the CVLD is limited: its vision and mission are not aligned with the new strategic vision for the subsector outlined in the LSSDS and with the green development path outlined in the Green Economy Transition Strategy 2019; and it does not comprise units/departments and adequate systems and procedures that are in line with a modern, forward-looking, resilient, and sustainable subsector. The CVLD is also underfunded to fulfill its mandate, and lacks the required capacity, including IT system to implement its core functions, support its activities, monitor sector performance, and improve internal and external coordination capacity. The various WOAH PVS missions highlighted the urgency to strengthen the management and service delivery capacity of the CVLD, including the need to make climate change the centerpiece of the strengthening process. Guided by findings of the 2017 WOAH PVS evaluation follow-up, national priorities, and detailed discussions with representatives of the CVLD and supporting documents, the WOAH PVS gap analysis mission made recommendations for priority activities to strengthen the CVLD.[37] There is also a need to strengthen the capacity of CVLD in environmental monitoring and in particular in the monitoring of GHG emissions in the subsector.

31. **The subcomponent will support:** (a) developing systems, including a Veterinary Information System (VIS); (b) infrastructure capacity building, including rehabilitation/renovation and refurbishment/equipping office and laboratory buildings, and acquisition of equipment and vehicles; and (c) human capacity building, including advanced and vocational trainings, and international knowledge exchanges. The support to strengthen the CVLD will be based on priority development areas identified by the various WOAH PVS missions as well as the LSSDS and a detailed human and infrastructure capacity needs assessment that will be undertaken during implementation, including climate change-related capacity/training needs assessment. Support to the proposed rehabilitation/renovation of infrastructure and

[36] The NVLN consists of the Central Veterinary Laboratory in Tashkent, 13 Regional Veterinary Laboratories, and 130 District Veterinary Laboratories.

[37] These include building the capacity of CVLD staff, including the leadership, improving the infrastructure of the CVLD, developing the veterinary information system (VIS) with connected databases managed by the CVLD that will allow collection and sharing of information amongst different levels and units of the CVLD and across Ministries in a One Health approach, as well as monitoring of the effectiveness of implementation of the activities; ensuring relevant and stable financing of the different programs through better planning and financing of the activities; and improving standards and regulations through systematic licensing, a code of practice and a regime of professional oversight.

acquisition of equipment and vehicle will prioritize climate resilient design standards and energy efficient considerations to increase climate adaptation and mitigation outcomes, respectively.

32. **A capacitated CVLD will fully integrate the concept of climate smart livestock development in its functions, capacity, and service delivery programs.** At least half of the funding under this subcomponent will be dedicated to activities and technologies that generate mitigation and adaptation co-benefits. Namely: the VIS will include the collection and management of information relevant to adaptation and mitigation activities. The VIS will support climate sensitive extension services and policy design and implementation. The VIS will include monitoring data on GHG emissions in livestock value chains and their reduction as well as the monitoring of progress in improving the drivers of resilience to climate change. Support to VIS will also include tools and capacity development for the monitoring of grassland productivity and degradation (including soil organic carbon). Finally, the VIS will be informed by a One Health approach. Regarding infrastructure development, the support will focus on energy efficiency, on-site renewable energy production and carbon sinks. Human capacity building will be climate change focused i.e., themes such as climate change risks, mitigation and adaptation will be mainstreamed in all trainings and human capacity building endeavors.

33. **A capacitated CVLD will be able to undertake its core functions effectively and efficiently and improve veterinary and animal health services provision to increase resilience to climate change risks.** At least two-thirds of the capacity building investments, including infrastructure and human resource will have climate adaptation and/or mitigation measures. As the CVLD becomes capacitated, it will be able to fully integrate the concept of climate smart and sustainable livestock production in its functions, capacity building programs, service delivery and coordination. With enhanced capacity, the CVLD will be able to design and implement climate smart, sustainable, and inclusive policies, strategies, legislation pieces, regulations, and standards that help the country adhere to WOAH codes, regulations, and standards; be able to plan and manage operations and resources (human, financial and infrastructure) in a sustainable manner; improve internal and external coordination and liaise with other operational bodies active in the subsector. With enhanced capacity, the CVLD will also be able to develop sustainable livestock development programs and fully engage in promoting the One Health approach; undertake surveillance, disease control and eradication, early detection, and rapid response; coordinate with the MOH on issues such as food safety, nutrition, zoonoses and AMR; provide TA and raise awareness among stakeholders about the benefits of improving animal health and welfare and AMR risk associated with using antimicrobials as growth promoters in animal production; and develop guidelines for good animal welfare. With increased capacity and enhanced capability, the CVLD will be able to facilitate the development of a private sector-led livestock subsector that is more productive, market oriented, competitive, sustainable, inclusive, and resilient. A capacitated CVLD will also be able to develop a well-established and functioning VIS that will ensure the collection and management of information relevant to adaptation and mitigation activities, including for extension work and for policy design and implementation (e.g., monitoring and reporting of GHG emissions in livestock value chains and their reduction, monitoring of progress in improving the drivers of resilience to climate change). A capacitated CVLD will also be able to build climate smart livestock infrastructure, including marketing and value addition infrastructure.

34. **Subcomponent 1.3: Strengthen public livestock extension and advisory services (IDA US$6.0 million).** The objective of this subcomponent is to further improve livestock extension and advisory service provision that facilitates the development of sustainable and climate smart livestock production systems. In Uzbekistan, the mandate of providing livestock extension and advisory services is that of the CVLD. The CVLD, as a relatively newly established entity, lacks the necessary infrastructure, systems and human capacity and resources to plan, implement, monitor, and evaluate livestock extension and advisory services. Thus, livestock extension and advisory services in Uzbekistan remain weak, and not sufficiently supporting livestock farmers, agribusinesses, and other value chain actors. Universities and research institutes have also been involved in providing livestock extension and advisory services. However, their services are not only ad-

hoc and weak, but they have neither been inclusive (often they target only their members) nor climate sensitive. This is aggravated by the lack of feedback mechanisms for ensuring the participation of producers and the private sector and informing the design and implementation of extension and advisory service programs.

35. **The subcomponent will support:** (a) capacity development need assessment of the CVLD and other public livestock extension and advisory service providing institutions; (b) based on the outcome of the assessment, build capacity of CVLD and other public livestock extension and advisory service providing institutions, including (i) infrastructure capacity building, including rehabilitation/renovation and refurbishment/equipping office and laboratory buildings, and acquisition of equipment, vehicles, and field equipment and farm machinery; (ii) human capacity building, including short and long term training (of subject matter specialists, and front line extension workers); exchange visits, study tours and TA; (iii) development of best practices and extension material targeting dehkans farms; (iv) demonstration and popularization of improved technologies and best practices to dehkans and commercial farmers; and (v) TA for public education campaign using traditional and new media tools to raise awareness about diet-appropriate nutrition and food preparation practices in collaboration with the MOH.

36. **The livestock extension and advisory service supported in this subcomponent will all address key aspects of climate smart agriculture (CSA) and sustainable livestock production thereby contributing to a nation-wide, progressive shift towards greater climate change adaptation and mitigation in the subsector and related value chains.** CSA principles will be mainstreamed throughout all supported activities in the subcomponent. This will include feed and nutrition (production, storage, marketing, and ration balancing); breed improvement (AI, and development, dissemination, and producer-based improvement programs); animal health and veterinary (surveillance, vaccination, biosecurity, and control of production diseases through vaccination, and deworming); and animal husbandry (climate proof housing for animals, clean cooling, renewable energy production and energy efficient technologies, and herd management for efficiency gains). Further, sustainable rangeland and pasture management; sustainable use and management of water resources; and data collection, analysis, and reporting on various environmental issues, including grassland and pastureland degradation and epidemiology will also be part of the extension and advisory service provision as well as demonstrations. Climate change adaptation and mitigation will be a continuous feature of extension and advisory service provision where climate smart technologies and practices will be demonstrated. Animal welfare and One Health principles will be also embedded in all livestock extension and advisory service provision. In addition, targeted livestock extension and advisory services will also engage beneficiaries on youth and women's role and contribution to livestock production and in decision making; and services will be provided, and field days organized during times of the day that are convenient also for women and in venues that are accessible to women.

37. **The human capacity building aspect of extension and advisory service provision will focus on training subject matter specialists, and frontline extension and advisory agents, who will then train and advise livestock farmers, agribusinesses, and other value chain actors through a training of trainers (TOT) model**. Building on the principles of CSA and focusing on elements of climate change adaptation and mitigation, resilient and sustainable livestock production, trainings will include aspects of farmer organizations, including establishing and/or strengthening cooperatives and productive partnerships (under Component 2). TA that will undertake a public education campaign using traditional and new media tools to raise awareness about diet-appropriate nutrition, food preparation practices and climate resilient practices, such as practices to minimize consumer food waste, including meal planning, and food storage and preservation (pickling, freezing, canning, or dehydrating) in collaboration with the MOH will also be part of the training. Topics will include awareness raising on low-carbon diets, the importance of ASFs in diets, food safety and hygiene. The project will finance public efforts and engage the private sector in the consumer awareness and nutrition campaign. This collective effort aims to further stimulate demand and behavioral change as it pertains to food

consumption. Climate change adaptation and mitigation will be a main feature of demonstration sites where climate smart technologies and practices will be demonstrated, such as: improved livestock feeding strategies (for resilience and reduce GHG emissions); improved breeds (feed conversion efficiency and climate change resilience); herd management for efficiency gains (reduced GHG emissions); efficient water management; manure management for better soil fertility resilience; improved animal health and veterinary services; pasture management and pasture restauration (soil carbon sequestration); climate proof housing for animals; renewable energy production; and energy efficient technologies.

38. **Subcomponent 1.4: Strengthen public livestock research and development (IDA US$15.0 million).** The objective of this subcomponent is to build the capacity of selected public institutions involved in livestock research and development (R&D).[38] The R&D institutions are significantly underfunded and understaffed, and they lack human and systems infrastructure capacity. Initial basic trainings to bring new graduates and professionals entering the veterinary profession up to standards set out in the WOAH Competencies Guidelines, and continuing education for improving the knowledge and skills of existing CVLD staff and reflect current expertise and methods are also lacking. As a result, R&D institutions have not been able to engage in meaningful R&D programs hence in the generation of high-quality and client-oriented knowledge, technologies, and innovations, including in the areas of productivity and efficiency gains among dehkans, women and the youth, climate smart livestock production, environmental sustainability, and food safety. Training institutions have also not been able to produce graduates (professionals) that are up to the standard. The situation is aggravated by the lack of mechanisms for ensuring the participation of livestock producers and the private sector in determining research, development and training priorities and providing feedback.

39. **The subcomponent will support:** (a) infrastructure capacity building**,** including construction (of new), rehabilitation/renovation (of existing), and refurbishment (both existing and new) office and laboratory buildings, green houses and lath houses; and procurement of goods i.e., office furniture; laboratory equipment and consumables, green house and lath house facilities, field equipment and farm machineries, vehicles; and (b) human capacity building, including training (short and long term) of staff, exchange visits, study tours, and technical assistance.

40. **The R&D institutions supported will be able to engage in the design, implementation, monitoring, and evaluation of climate smart, demand driven, client-oriented and inclusive R&D programs.** At least half of the resources will be directed to R&D for the development of CSA technologies, innovations, and practices. This will be ensured through the development of a national strategy for R&D by CVLD, that will set such objectives as well as criteria, milestones and indicators for the delivery of R&D programs and track the allocation of resources to R&D programs advancing CSA related objectives. Programs that the project aims to support, include high yielding drought resistance/tolerant and adaptive forage crop varieties (15,000 ha at the Research Institute of Karakul Breeding and Desert Ecology); improved animal feed and nutrition (ration formulation) technologies; climate smart animal breeding, including calf management; and energy efficiency, clean cooling and renewable energy production along the livestock supply chains.

41. R&D human capacity development will focus on topics related to climate change, sustainability and resilience among others, and infrastructure capacity building will include the establishment of climate resilient infrastructure and energy efficient laboratory and office equipment; as well as practices and technologies that would reduce women's drudgery. As a result of improved capacity, R&D institutions will also be able to establish strong linkages with extension and advisory service providers, input suppliers and thereby ensure the generation and dissemination of demand-driven

[38] These include the Research Institutes of Veterinary; Animal Husbandry and Poultry; Fisheries, and RIs under the auspices of the Uzbekistan Academy of Sciences, including the Research Institute of Karakul Sheep Breeding and Desert Ecology, and the Samarkand Institute of Veterinary Medicine (SIVM). The detailed investment plans of the RIs to be supported by the project will be prepared before the project is declared effective.

and climate smart technologies among dehkans, women and the youth. The R&D institutions will also be able to forge linkages with international research and training institutions and thereby engage in climate change related capacity building initiatives in the form of participating in international trainings, seminars, symposia, workshops, exchange visits and sabbaticals. The support, which targets selected public R&D institutions will be provided based on the outcome of a detailed infrastructure and human capacity needs assessment to be undertaken and investment plans to be prepared before effectiveness.

42. **Component 2: Strengthen market and value addition infrastructure and facilitate trade (IDA US$40.0 million).** The objective of this component is to improve the access to the market of livestock farmers, agribusinesses and other value chain actors and enhance import control. The component is aligned with Pillar 1 (Responding to Food Insecurity), Pillar 3 (Strengthening Resilience), and 4 (Strengthening Policies, Institutions and Investments for Rebuilding Better of the GCRF). Enhancing climate resilience, including adaptation and mitigation opportunities will be at the center of strengthening the market and value addition infrastructures, both in terms of climate proofing, building broader climate resilience due to addressing climate risks and impacts, as well as energy efficiency, and less food loss and waste along the value chain and strengthening border control and quarantine. The component has three subcomponents, including: (a) strengthening market and value addition infrastructures; (b) strengthening border security and quarantine; and (c) operationalizing the AIR&T system.

43. **Subcomponent 2.1: Strengthen livestock market and value addition infrastructures (IDA US$2.0 million).** With a focus on dehkans, the objective of this subcomponent is to improve market access for livestock farmers, processors, and other value chain actors. Market and value addition infrastructures, including market centers and the associated basic amenities, including feed and nutrition, veterinary services, and water provision, stock routes or slaughtering houses, processing plants, and milk collection centers, are few and lack the appropriate facilities and equipment and they are not climate smart. There are very few livestock product processing facilities and most of them are outdated while others are not operating at full capacity due to shortage of supplies and poor infrastructure quality. Only a small portion of livestock products goes through value addition, and that comes mainly from commercial farmers and agribusinesses. The country does not have quarantine facilities and border inspection and import controls are weak. Market participation by producers is currently hampered by remoteness of the marketplaces, absence of stock routes, and poor infrastructure development, accompanied by lack of vertical (value addition) and horizontal (productive alliances) coordination between value chain actors through, for example, forward contracts and cooperatives, women groups, youth groups, or clustering, that leads to inefficiencies and unpredictability of transactions in the livestock value chain.

44. **The subcomponent will support:** (a) establishing new and/or strengthening and modernizing existing livestock market and value addition infrastructures. This includes: (i) infrastructure capacity building (goods and civil works), including the construction (of new), rehabilitation/renovation (of existing) and equipping (of both existing and new) market and value addition infrastructures, and (ii) human capacity building, including trainings, exchange visits, study tours and TA to livestock producers, traders and staff of institutions involved in livestock marketing; (b) developing vertical and horizontal integration/coordination among livestock value chain actors for production, processing, marketing, and input supplies through productive alliances, with due attention to women and youth and possibilities of greening; and (c) establishing livestock market information infrastructure.

45. **Strengthened market and value addition infrastructures will increase market participation, ensure food safety, increase revenues and resilience, and reduce GHG emissions of dehkans.** Further they will facilitate access of livestock farmers, agribusinesses and other value chain actors to energy-efficient storage, processing, transportation, and refrigeration equipment that minimize food losses and waste, as well as improve food safety. Consultations with women

and women's groups will ensure that priorities and concerns for women (in terms of distance, safety, access among other things) will be reflected in establishing and/or strengthening climate smart, resilient, and sustainable livestock market and value addition infrastructures. Productive alliances will enhance the integration of dehkans into the livestock value chains, improve access to market and finance as well increase the volume and quality of livestock products produced and sold. The project will support formation of production alliances (through the CVLD extension and advisory services under Component 1) by identifying and mobilizing potential value chain participants interested in cooperating as partners and empower them to jointly identify and build more integrated value chains. The technical designs, equipment installed, and human capacity building activities supported by the subcomponent will systematically integrate requirements and specifications for energy use efficiency, smart cooling renewable energy production, and climate resilience. Capacity building activities will include awareness raising on climate risks and knowledge on the interconnectedness of climate risk and animal health as well as food safety.

46. **Subcomponent 2.2: Strengthen border security and quarantine (IDA US$5.0 million).** The objective of this subcomponent is to enhance import control and thereby protect the health of the population and animals (including wildlife) and ensure food safety. There are 20 BIPs in Uzbekistan but no quarantine stations. All BIPs have serious capacity limitations and lack the necessary infrastructure, including vehicles and equipment required for sample collection and related inspection at customs terminals that will enable them to monitor the health status of animals and animal products imported from abroad. The country does not have a comprehensive and integrated border control strategy, a border module for the proposed VIS, and biosecurity measures that meet international standards for on-farm quarantine of animals from abroad. It also does not have well qualified veterinarians who have the capacity to diagnose and detect clinical signs and recognize diseases of potential risk for the country that are expected to increase in Uzbekistan due to changes in the temperature regime, precipitation amount, and air humidity (see paragraph 5). With stronger border security and quarantine, risks related to animals and food can be assessed earlier, traceability can help in zeroing on the source of anticipated possible problems, and the capacity to avert impacts on animals and humans will be strengthened thereby reducing and/or mitigating environmental risks. This is particularly important in a context where climate change is expected to drive up the emergence of new diseases and changes in the distribution of disease vectors and pathogens.

47. **The subcomponent will support:** (a) developing a comprehensive, integrated and climate smart border control strategy; (b) strengthening BIPs; (c) establishing on-farm quarantine stations; and (d) establishing cross-border collaboration on animal movements and control. Strengthening BIPs and establishing quarantine stations include: (i) infrastructure capacity building, such as works i.e., construction and/or rehabilitation of various types of buildings, and goods i.e., the procurement of vehicles, sample collection and related physical inspection equipment, computers and office equipment, a VIS compatible border inspection module; and (ii) human capacity building, such as training of personnel involved in quarantine and border security. The capacity building support, which targets BIPs, and quarantine stations will integrate the concept of emerging diseases and One Health approach to surveillance, prevention, and control of zoonoses and food safety hazards. Support will be provided based on WOAH recommendations as well as the outcome of a detailed capacity needs assessment to be developed during project implementation. The support to the development of a comprehensive and integrated border control strategy will focus on the development of a trade health certificates system that follows international standards and ensures sustainability. With strengthened border security and enhanced quarantine, Uzbekistan will be able to protect the health of its population, animals, ensure environmental sustainability, green investments and ensure food safety.

48. **Subcomponent 2.3: Operationalize AIR&T system (IDA US$33.0 million).** The objective of this subcomponent is to support the government in the development and implementation (roll out) of the AIR&T system. The LSDP financed the preparation of the methodology for AIR&T based on recommendations of the various WOAH PVS missions and by

reviewing (a) the current legislative base for AIR&T systems, and (b) characteristics of the livestock production systems with particular focus on stock routes, slaughtering, marketing systems, pastures, livestock markets, holding grounds, transport facilities, feedlots, and quarantine stations. The methodology includes a roadmap i.e., step-by-step implementation plan for the AIR&T system in Uzbekistan and an estimate of the financial resources required to fully implement the AIR&T system and its maintenance. The AIR&T system, the roll out of which the project will be supporting, can also be used as precision livestock farming (PLF) since it allows the use of several technologies used for health and welfare monitoring, weight control, and animal management (identification, registration, and movement control) that can support the livestock keeper in making decisions or even make decisions for the producer.

49. **The subcomponent will support:** (a) procurement of information and communications technology (ICT) equipment, including software, computers, servers, smartphones, printers, tablets, scanners, and field equipment, including vehicles, ear tags - integrating energy efficiency objectives and specifications throughout; (b) field activities, including coordination mechanisms with relevant national and regional institutions and local authorities, preparation of census staff and materials, conducting the census i.e. cattle census (individual animal) and holding census (cattle and small ruminant owners); (c) drafting legislation pieces and rules; (d) human resource development, including training and capacity building of staff of the CVLD, field veterinarians, farmers, slaughter house and livestock market workers, police and zootechnicians; and (e) awareness creation, including preparing communication plan, production (and distribution) of printed materials and audiovisuals and social media outlets.

50. **With an AIR&T system in place, livestock producers will be able to protect trade and improve their herd.** The AIR&T system helps producers and animal health officials respond quickly and effectively to animal disease events and take necessary mitigation actions. It will also enable traceability of products for export and will also help coordination with other services and Ministries for border control and implementation of One Health activities. The AIR&T system will contribute to evidence-based decision-making for productivity and efficiency at the farm level while continuously informing policy and investment decisions to address emerging challenges (including those from climate change) and thus contribute to resilient livestock value chains infrastructures and systems. The system will also improve consumer confidence in food supply by ensuring food safety, including minimizing potential exposure to emerging and climate sensitive diseases.

51. **Component 3: Promote green and resilient livestock value chains (US$160.5 million: IBRD US$90.0 million and IDA US$70.5 million).** The objective of this component is to modernize livestock value chains and make them greener, less GHG-intensive, and more resilient to shocks and climate change, by improving access to targeted finance. The component is aligned with Pillar 1 (Responding to Food Insecurity), Pillar 2 (Protecting People and Preserving Jobs), Pillar 3 (Strengthening Resilience), and 4 (Strengthening Policies, Institutions and Investments for Rebuilding Better of the GCRF).A special focus will be given to support access to finance for productive alliances established under the project (particularly those comprising or led by women and/ or youth), as well as smallholder livestock farmers. The component includes two subcomponents: (a) credit line to participating financial institutions (PFIs) for provision of working capital and investment finance to the livestock subsector nationwide for farmers, agribusinesses, productive alliances and other value chain actors, including for climate-resilient and green livestock farming, marketing, distribution, and processing; and (b) capacity building for PFIs on sector-specific loan product development, loan appraisal, environmental and social standards, and monitoring in the livestock subsector.

52. **Subcomponent 3.1: Improve access to finance (US$160.0 million: IBRD US$90.0 million, IDA US$70.0 million).** The objective of this subcomponent is to improve the access to finance of livestock producers interested in improving the climate resilience of their farms and in greening livestock production. The credit line will have two windows. Window

1 will support loans in the amount of up to US$1 million in order to meet the needs of commercial farmers, agribusinesses, productive alliances, and other value chain actors who are generally operating within this scale. Window 2 will be for loans up to US$100,000 targeting dehkans, using more streamlined procedures. The initial credit line allocation is US$110 million under Window 1 and US$50 million under Window 2. PFIs will need to draw on both windows concurrently and ensure a well-diversified sub-loan portfolio at the PFIs as well as at the project level. One hundred percent of the credit line investments (sub-loan financing) will include climate change (adaptation and/ or mitigation) measures.

53. **Smallholder livestock farmers lack access to investment financing** due to lack of suitable loan products, funding structure of financial institutions characterized by limited long-term fundings and "investment choices" of the financial sector institutions, which tend to favor lending to larger farms/livestock production businesses. The increasing provision of long-term funding for the livestock sector, targeting the funding towards smallholders and ensuring the PFIs are aware of the specifics of lending to livestock sector can help alleviate these structural constraints and increase flow of loan funds to smallholder livestock farmers. Financial products that are tailored to livestock production cycles and to the needs of the smallholder farmers are in short supply, highlighting the need to further support financial institutions in developing specific loan products/services for this segment and in building the capacity of financial institutions in new lending methodologies. Window 2 is deemed, therefore, necessary to fill the credit gap of very small farmers who usually are not able to borrow from the formal financial sector. In order to encourage downscaling by the commercial banks, a number of simplifications will be proposed for sub-loans in the amount of up to US$100,000: (a) simplified business plan and documentation requirements; (b) strictly enforcing application of the agreed prior and post-review formats, not requiring full sub-loan applications for the smaller loans; (c) submitting the Statements of Expenditure for the sub-loans up to US$100,000 in a table format, indicating some key parameters; (d) digitizing the sub-loan application process, including environmental and social safeguards; and (e) encouraging the use of the refinancing facilities for small loans. Building on the experience gained under several previous credit lines to Uzbek agriculture sector, the subcomponent will be compliant with World Bank Guidance for Financial Intermediary Financing and adopt a set of acceptable Credit Line Guidelines.

54. **The credit line will fund investments that strengthen transition towards sustainable and climate smart production systems: 100 percent of sub-loans will finance climate change mitigation and/or climate adaptation activities.** Positive lists will be provided for both eligible mitigation activities (e.g., feed digestibility and ration balancing, improvement of animal health and breed, animal waste management, biodigesters, pasture management, energy saving) and adaptation activities (e.g., drought- and heat-resistant fodder crop varieties and breeds, water savings, renewable energy, buildings, diversification), and all investments will have to comply with these positive/ eligibility lists. The component will also provide financing for integrating renewable energies production along the livestock value chain, for instance, biodigesters and solar panels to power processing plants or temperature control in animal houses. In addition, the subcomponent will include eligibility and evaluation criteria of applications to benefiting women participation. All beneficiaries will receive TA to adopt the activities supported by the credit line.

55. **Subcomponent 3.2: Strengthen the capacity of PFIs (IDA US$0.5 million).** The objective of this subcomponent is to build the capacity of PFIs, including through trainings, study tours and exchange visits to staff and managers of PFIs so that they can introduce innovative financing instruments such as digital financial services and value chain financing modalities for livestock farmers and agribusiness enterprises. The training program will focus on the use of new financial products to target clients (with a particular focus on smallholder farmers in this case, and on female clients) engaged in livestock production activities, evaluating the suitability and effectiveness of these new financial products, and mitigating the possible risks associated with lending to these beneficiaries as well as risks associated with climate change. Training

will also cover how to integrate climate change (mitigation and adaptation) measures in the credit line programs, including for example cost-of-fuel savings into financial analyses.

56. **Component 4: Project management and coordination (IDA US$3.88 million).** This component will be implemented by the project implementation unit (PIU) established under the auspices of the CVLD. The component will support incremental operating costs for project execution, including project administration and management, management of social and environmental issues, financial management (FM), procurement, contract administration, project reporting, and monitoring and evaluation (M&E). It will also finance TA consultancy services (individual and firm) hired to complement capacity building of the implementation units, baseline and project completion surveys, preparation of assessments and data collection, annual project audits.

57. **The total financing of the project is US$240.0 million and includes a currently unallocated amount (US$90 million IBRD loan and US$150 million IDA credit, out of which US$1.12 million is unallocated and will be allocated during project implementation).** The lending instrument is an Investment Project Financing (IPF) to be implemented over a five-year period. The preliminary breakdown of the project costs by component/subcomponent is presented in Table 1.

Table 1: Project costs and financing (US$ million)

Components	Cost
Component 1: Strengthen public livestock support services-IDA	**34.5**
Subcomponent 1.1: Improve the enabling environment	0.5
Subcomponent 1.2: Strengthen the Committee of Veterinary and Livestock Development	13.0
Subcomponent 1.3: Strengthen public livestock extension and advisory services	6.0
Subcomponent 1.4: Strengthen public livestock research and development	15.0
Component 2: Strengthen market and value addition infrastructure, and facilitate trade-IDA	**40.0**
Subcomponent 2.1: Strengthen livestock market and value addition infrastructure	2.0
Subcomponent 2.2: Strengthen border security and quarantine	5.0
Subcomponent 2.3: Operationalize Animal Identification, Registration, & Traceability (AIR&T) system	33.0
Component 3: Promote green and resilient livestock value chains-IBRD and IDA	**160.5**
Subcomponent 3.1: Improve access to finance	160.0
Subcomponent 3.2: Strengthen capacity of participating financial institutions (PFIs)	0.5
Component 4: Project management and coordination-IDA	**3.88**
Unallocated-IDA	**1.12**
Total	**240.0**

C. Project Beneficiaries

58. ***Primary beneficiaries***. The project's primary beneficiaries are smallholder farmers (dehkans), large scale commercial farmers, agribusinesses, and other livestock value chain actors such as service providers, input suppliers, aggregators, and off takers. They will benefit from operating in an improved enabling environment and through access to enhanced public livestock support services and assets, including veterinary and animal health, extension, and advisory services, and more advanced livestock technologies and practices on breeds, feed and nutrition, animal husbandry, and veterinary and animal health. They will also benefit from access to improved market and value addition infrastructure and finance as well as upgraded control of import of livestock (live animals) and livestock products. Primary beneficiaries are also staff of public institutions, from agricultural researchers and extension officers to the staff working in various

CVLD departments and agencies and in the local government as well as staff of private entities, including members of the Farmers Council.

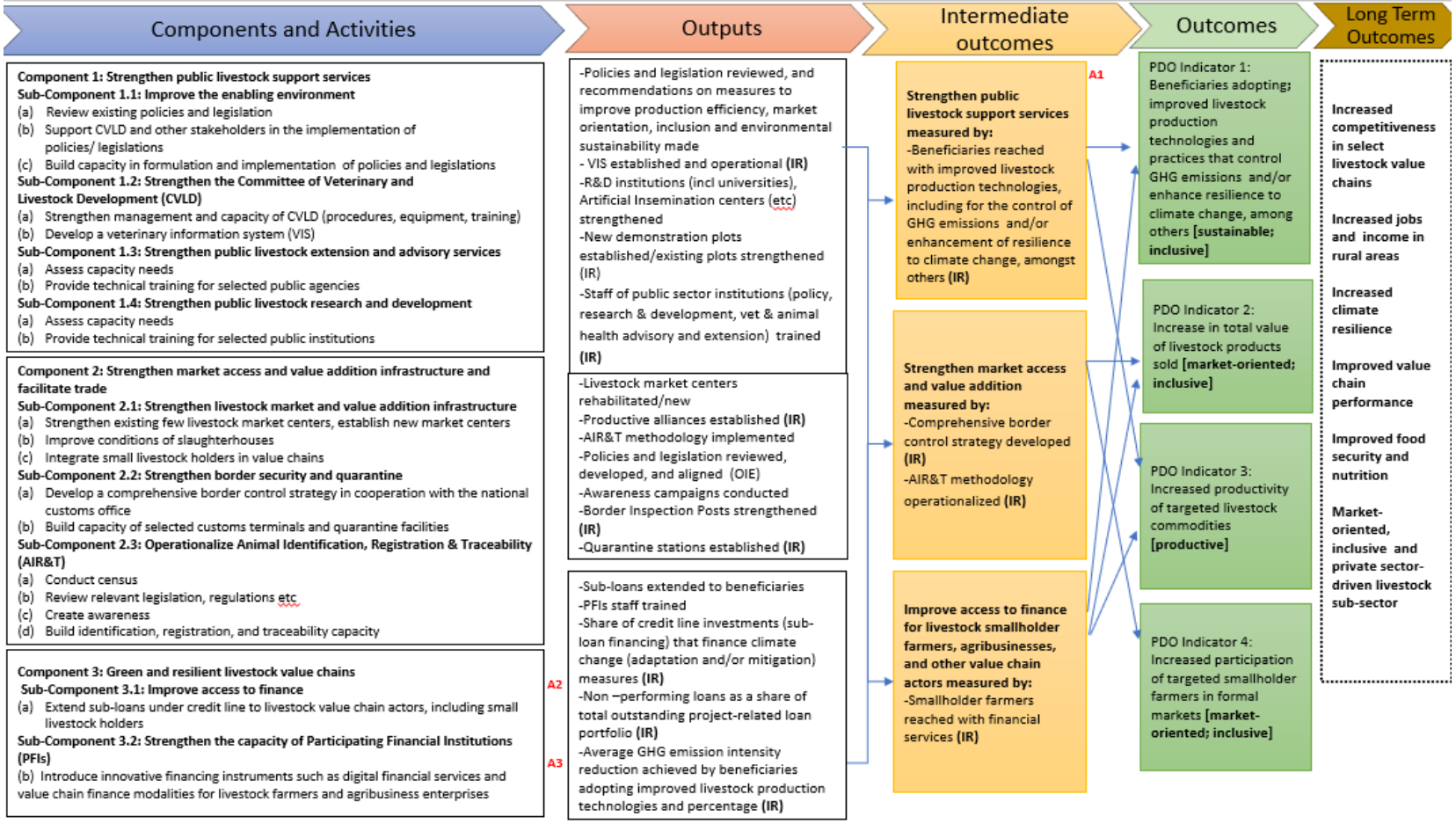
59. ***Geographic focus and selection criteria***. The project will be implemented nationwide in all regions of Uzbekistan, including Tashkent City. Beneficiaries of Component 1 will be across the country, as will be beneficiaries of Component 3. Similarly, beneficiaries of project interventions under Component 2 will be those that are found in the regions/districts where the physical market and value addition infrastructures are to be established and/or strengthened.

D. Theory of Change

60. The project's Theory of Change links project components, subcomponents, and key interventions (measured by intermediate results indicators) through to project development objectives (measured by PDO indicators) and is shown in Figure 1. The project aims to address the constraints and challenges posed by a changing climate, limited smallholder farmer access to markets and finance, as well as limited physical, human and systems infrastructure in the livestock subsector.

Figure 1: Theory of Change

The Project Development Objective (PDO) is to support the development of a productive, market-oriented, sustainable and inclusive livestock subsector in Uzbekistan.



Notes: IR stands for intermediate results indicator.

Critical assumptions:

A1: Trainings, demonstrations (and farmer field days that will be organized around them) will result in adoption of good practices by farmers. A2: Smallholder farmers are willing to commercialize and borrow funds for this.

A3: There are sufficient actors available and willing to invest in livestock sub-projects.

E. Rationale for Bank Involvement and Role of Partners

61. **The SLSDP marks an important milestone in the engagement of the World Bank with the government in the livestock subsector of Uzbekistan.** The World Bank (WB), having led the implementation of the LSDP and coordinated its interventions with other development partners (DPs), participated in the development of the LSSDS where it helped the government reflect the lessons and priorities as they rose in the LSDP on sustainable livestock sector development and market-orientation. The LSSDS provides a solid institutional and policy framework as well as identifies investment needs of the livestock subsector development. The implementation of the Strategy is key in ensuring that the country increases livestock production (in the short to medium term) and exports some of the livestock products (in the long term). The SLSDP, while building on the operational experience of the LSDP, will be used as a vehicle to implement the Strategy.

62. **The range and complexity of public and private livestock subsector issues to be addressed under the SLSDP require high-level expertise.** The WBG has extensive experience internationally, and specifically in the CAs region and in Uzbekistan in supporting different agents of the livestock subsector, including increasing productivity, improving market access, value addition and competitiveness, market integration, and strengthening public livestock support institutions. The latter is a unique contribution by the Bank as interventions of other DPs tend to focus largely on credit line activities. The project builds on and draws lessons from livestock operations financed by development partners, including the Asian Development Bank (ADB) and the French Development Agency (AFD), which highlighted the need for investments in public goods, improving the management and service delivery capacity of public veterinary and animal health and extension and advisory service providing institutions. The SLSDP will also incorporate the Maximizing Finance for Development (MFD) approach as described in Section I.V.

F. Lessons Learned and Reflected in the Project Design

63. **The project builds on the experiences, results and lessons learnt from the LSDP**. The LSDP improved access to finance of farmers and agribusinesses, increased the productivity of selected livestock value chain and the value of livestock products sold, ensured the inclusion of dehkans into the livestock value chains, and contributed to job creation, though predominantly for large commercial farmers and agribusinesses. The LSDP, through its credit line component, financed sub-loans that were used to finance investment costs i.e., procurement of animals (pregnant heifers, cattle, sheep, and goats) and farm machinery., and recurrent investment costs. The sub-loans contributed to increased productivity and enhanced the competitiveness of livestock value chains. For example, milk productivity increased on average from 2,620 to 5,200 liters/cow/lactation period (193 percent increase), meat productivity from 2,796.9 to 10,485 tons/year (375 percent increase) and eggs from 1,161,365 to 1,419,813 thousand pieces of eggs/year (122 percent). Total value of livestock products sold also increased by 142 percent (milk and milk products) and by 412 percent (meat and meat products) whereas income of beneficiaries increased by 209 percent (from US$18,626 to US$38,973 per annum). The sub-loans also helped beneficiaries establish new and/or expand existing businesses as a result of which beneficiaries were able to create new jobs. For example, through credit line investments, beneficiaries were able to create a total of 20,396 new jobs, including 4,423 direct jobs, out of which 1,302 were women jobs; 7,769 seasonal jobs; and 8,204 indirect jobs.[39]

64. **The European Union (EU) grant-supported Value Chain Development (VCD) program of the LSDP promoted inclusion of dehkans into the livestock value chains, thereby contributing to improvements in productivity and income as well as access to markets and technologies**. Specifically, the LSDP financed a total of 135 VCD grants that smallholders

[39] Supporting Effective Jobs Lending at Scale: The Case of Uzbekistan Livestock Sector Development Project. March 2022.

used to procure improved technologies, including (dairy and/or beef) animals; livestock product processing units; farm machinery, including tractors and bailors; transportation (special purpose vehicles); and storage facilities (coolers and milk tankers). The VCD grants helped smallholders increase production and productivity, improve their market access as well as the quality of livestock products produced and sold. Most beneficiaries of the LSDP, though, were mainly large-scale commercial farmers and agribusinesses. The number of dehkans who benefited from LSDP interventions, including from credit line investments as well as VCD grants is very low. For example, out of the 574 credit line beneficiaries, only five were dehkans and the rest were commercial farms and agribusinesses. Through the VCD grants, only 1,456 dehkans were reached (out of the nearly 5 million dehkans). The preliminary assessment of the VCD grants, though, shows that as a result of the support, these few dehkans were able to participate successfully in livestock value chains (through establishing Productive Partnerships), gain access to markets (commercialization) demonstrating the potential impact for operations that will target smallholders. The LSDP invested little in livestock support services, including veterinary and animal health; research, extension, and advisory services; and marketing and value addition infrastructures that are important in transforming the livestock subsector. The project aims to cover exactly these gaps: being inclusive by targeting dehkans, who play a crucial role in livestock production, and investing in livestock public support services, as well as in market and value addition infrastructures and it aims to do so in a sustainable, inclusive and climate smart way.

65. **Project preparation has benefitted from the implementation experience of several projects and analytical work in countries of Central Asia in general and Uzbekistan in particular.** WOAH PVS missions as well as previous projects supported by the Bank (LSDP) and other DPs have highlighted the need for strengthening public livestock support services and making them climate resilient, including veterinary and animal health services, research, extension, and advisory services; improving market access and enhancing value addition, strengthening import control and quarantine services, and improving access to finance. They also clearly showed the need for sufficiently addressing the supply side, for example, establishment and/or strengthening laboratories, establishing an AIR&T system, and developing enabling policies, legislation pieces, and standards. However, most of the support is donor-financed and supports provided was limited in scope. Consequently, long-term benefits from previous efforts have been largely lost due to mainly the inability of the public sector to maintain momentum by providing the required and necessary level of support at scale, including in terms of policy and legal provisions, R&D, and public support services. Whilst some private entities have tried to fill the gaps with respect to supply and technical support, they tend to limit their services to their clients and not to the subsector as a whole. This lack of sustainability of both the local and internationally funded initiatives and weak public institutions in the sector have been well documented as early as 2017.[40] The project tries to bridge the critical gap of weak institutional development by strengthening the capacity of public institutions for the development of climate resilient policies, legislation pieces, institutions, regulations and standards; enhanced coordination; and the delivery of climate smart, resilient, and improved and inclusive services. The project also aims at strengthening R&D institutions for the generation and successful dissemination of climate smart, resilient, and sustainable technologies and practices along the livestock value chains.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

66. **The primary project implementing entity is the CVLD under the MOA.** The CVLD will have the overall responsibility of coordinating all aspects of the project, including contributions by the different relevant committees, ministries and agencies participating in the project's implementation. The main responsibilities of the CVLD will include

[40] WOAH PVS Evaluation Mission, 2017.

project oversight, coordination, planning, technical support, fiduciary compliance, and support, environmental and social standards (ESS) compliance and support, and M&E. The CVLD will be accountable for authorizing and verifying all project transactions and will work closely with the World Bank's Task Team during project implementation.

67. **The CVLD will be supported by a PIU that will be established at headquarters (Tashkent) and PIUs that will be established in all project-implementing regions, Regional PIUs (RPIUs).** The PIUs will be fully staffed. The PIU in Tashkent will report directly to the CVLD (Chairman) whereas the RPIUs will report to the Project Manager, who is also head of the PIU. The PIUs will support the CVLD in the implementation of the project. The PIUs will be equipped and strengthened to support project management and coordination. The PIUs will be responsible for facilitating day-to-day implementation of the project in close collaboration with other implementing institutions at national, regional, and local levels. They will also be responsible for ensuring fiduciary and ESS compliance and provision of support to implementing institutions.

68. **The implementation of the SLSDP will further be supported by a Project Steering Committee (PSC) and Project Technical Committee (PTC) to be established.** The PSC, which will be established by drawing representatives from project implementing entities, and headed by the Chairman of the CVLD, will provide strategic guidance for project implementation, ensure coordination as well as help identify key issues that need to be brought to the attention of the government and facilitate their resolution. The PTC, which will be established by drawing technical staff (specialists) from project implementing entities, and chaired by the Deputy Chairman of CVLD, will be responsible for providing technical advice to the PIU on the quality of implementation. It will also review reports and special studies, guidelines, documentation of best practices, and M&E reports.

69. **The implementation of the SLSDP will also be supported by TA consulting firm(s).** Effective implementation of some of the capacity building and technical-assistance-related activities identified under the various components and subcomponents requires specialized technical knowledge and experience. It also requires coordination and supervision capacities on behalf of the CVLD and other project implementing entities e.g., research institutions, which it currently lacks. As such, the project will finance the procurement of consulting firms (international and local) and individual consultants (international and local) that will assist in the implementation of some of the capacity building and TA-related activities. Specific areas that will require further TA will be identified during the first year of project implementation as part of the capacity needs assessment under the various components and subcomponents. The details of institutional and implementation arrangements and support plan are provided in Annex 1.

B. Results Monitoring and Evaluation Arrangements

70. **The project will support the PIU to develop and implement the M&E system and framework to monitor progress toward PDO and intermediate indicators.** It will comprise both regular quantitative data collection with periodic qualitative surveys on key thematic areas. The project will carry out beneficiary satisfaction surveys (using scorecards and other feedback mechanisms), and it will also conduct ex ante inclusive group discussions to elicit the demand for activities and delivery mechanisms, with emphasis on group discussions with vulnerable (small, young) producers as well as women farmers and other users. These will be organized annually as participatory social monitoring activities with the objective to engage with stakeholders. The M&E system will be designed in such a way as to link technical and financial data regarding project implementation, so that it serves to establish a project Management Information System (MIS).[41]

[41] Baseline, intermediate target, and end target values are set for January 2023, January 2025, and January 2028 respectively.

71. **The PIUs will be responsible for overall M&E of project outputs and impact, as well as the development and monitoring of annual work plans.** A full-time M&E specialist will be appointed for leading the results measurement, with guidance from the World Bank, and for compiling M&E data for consolidation into project progress reports. M&E capacity building under Component 4 will facilitate understanding of gender dimensions and inequalities in the sector. The project will provide technical assistance to encourage CVLD to introduce the measurement of gender indicators in their M&E system. Indicatively, these could include the development of specific mixed-methods to track gender (surveys, focus groups, specific evaluations), gender-specific evaluations, and use of diagnostics to recognize gender-specific constraints or opportunities and design policy interventions which could address these problems. The M&E system will include baseline, mid-term, and end of project surveys and studies (e.g., income and job impacts) to be carried out by independent specialists that will be recruited under the project. Semi-annual joint implementation support missions with representatives from the government and the World Bank will ensure compliance with legal covenants and implementation progress. A mid-term review will be undertaken three years after project effectiveness to review progress and, if necessary, adjust project design. An Implementation Completion and Results Report will be prepared by the government and by the World Bank within six months after the project closes to assess achievements.

72. **The project's implementation and supervision strategy will build on the most recent advances in the field of "smart supervision".** The project will collaborate with the World Bank's Geo-Enabling Monitoring and Support (GEMS) initiative[42] to establish an online platform consisting of a cloud-based database, a web portal, and mobile data collection applications based on the Kobo ToolBox – an open-source software that enables the collection and reporting of real-time data to facilitate project monitoring and supervision.

C. Sustainability

73. **The SLSDP's sustainability is reinforced by the government's strong ownership of the project.** The project follows the request to support the implementation of some of the recommendations of the WOAH PVS missions as well as the government's Strategy known as LSSDS. The Strategy aims at building a more productive, market oriented, sustainable, and inclusive livestock subsector that contributes to self-sufficiency in livestock and ensures food and nutrition security. The Strategy also aims at building resilient livelihoods and institutions and creating new jobs. The project targets public livestock support services, market and value addition infrastructures and access to finance, which are included in the Strategy prepared by CVLD.

74. **The project's sustainability is also reinforced by the government's commitment to invest in public capacity building.** The project follows a holistic and systematic capacity building approach. The SLSDP strengthens public institutions for better service delivery, coordination, and management. It also builds the capability (enhancing knowledge and skill) of personnel in various public and private institutions for better and improved leadership, organizational, managerial, financial, and technical capabilities.

75. **Technical sustainability of infrastructure investments**, including research, demonstrations, and market and value addition infrastructure will be ensured through provision of relevant knowledge and skills enhancing trainings and hands-on technical assistance to personnel involved in the operation and management of the infrastructures.

76. **Technical sustainability of the credit line** will be ensured through provision of relevant training and hands-on technical assistance to PFIs. They will be trained in applicability of the new financial products, assessing the suitability

[42] *https://www.worldbank.org/en/topic/land/brief/geospatial-technology-and-information-for-development*

and effectiveness of these new products, and on mitigation of the related risks. The sustainability of the funding that PFIs will be receiving will be also ensured by working closely with other entities in the country that have accumulated extensive experience and monitor the implementation of the previous WB-financed credit lines.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

77. **Technical**. Technical design of project activities reflects the need for strengthening the management and service delivery capacity of public livestock support services and improving the access to market and finance of smallholder farmers, commercial farmers, agribusinesses, and other value chain actors. The project contributes to increased production, productivity, and export competitiveness and ultimately to the resilience of the growing livestock subsector. The design is supported by international experience, lessons learned from implementing the LSDP, livestock projects financed by other international finance institutions (IFIs), including ADB, Islamic Development Bank (IsDB) and the International Fund for Agricultural Development (IFAD), and other DPs, including AFD and USAID. The design also benefited from the three ongoing World Bank projects (HDP, FVREP and AMP), and consultations with research and academia, private sector, and DPs in Uzbekistan. The design of activities under the public livestock support services is based on the need for boosting/strengthening CVLD's and other relevant public institutions' capacity in providing effective and efficient advisory services, including in early warning, preparedness, and response to shocks/crises like climate change, flooding, disease outbreaks, and the COVID-19 global pandemic.

78. **Economic and financial analyses (see Annex 3 for more details)**. A value chain approach applying a cost benefit analysis is performed based on different livestock production, processing and marketing activities budgets and models under both with and without project scenarios. The expected quantifiable benefits of the project will be a result of: (a) improved access to better and enhanced public livestock support services, including improved enabling environment; (b) improved access to markets, finance and improved production technologies and practices that are more productive, inclusive, climate smart and resilient to external shocks; and (c) improved and enhanced value addition and competitive livestock value chains.

79. The financial analysis provides an example of the practical application of the value chain (VC) approach as well as the findings of the analysis for the indicative dairy and meat value chains. However, the number of value chains to be supported by the project is not limited to these two VCs; it would potentially include beekeeping (apiculture) and fish farming (aquaculture) VCs as well. Eight illustrative models were prepared to demonstrate the financial viability of potential investments: three farm models and one processing enterprise model for each of dairy and meat value chains. All models show the prospective benefits and rate of return derived from improved enabling environment, enhanced public livestock support services, and the access to required financing (loans), training, demonstrations, and advisory services. These models were used as building blocks for the dairy and meat value chain models (VCMs). Such methodology intends to provide an indication of how the VC approach would be applied in the context of implementation of SLSDP. As such, it does not represent the only element or indication for supporting particular enterprises, sub-sectors and/or activities hence would have to be assessed in conjunction with the other SLSDP eligibility criteria.

80. The approach applied in the economic analysis is not a standard approach, which is based on aggregation of benefits from specific households taking up pre-defined packages of interventions as compared to project costs. In the chosen approach, due to the demand driven nature of the project, representative value chain models (same as used in the financial analysis) are used to estimate potential returns to US$1 of economic investments after being converted to

economic terms. The potential range of opportunities for economic advancement in the country varied greatly throughout the area, and it is anticipated that farmers and rural entrepreneurs would encourage diversity in order to accelerate economic advancement. The project will support farmers and entrepreneurs to identify those opportunities, thus generating investments beyond the indicative value chains included in the analysis.

81. Considering the above examples as reasonable assumptions of the VCs likely to be implemented, an estimated average incremental annual net benefit per US$1 of investments is used. In particular, an average indicator for the incremental annual net benefits per US$1 of investments equals to US$0.35 on average.

82. Given the above benefit and cost streams, the base case economic rate of return (ERR) is estimated at 20.6 percent. The base case net present value of the project's net benefit stream, discounted at 6 percent is US$159.1 million in economic terms.

83. **GHG analysis**. An ex-ante assessment of the impact of the SLSDP on the GHG emission has been undertaken using the FAO Ex-Act tool. The net carbon balance is the difference between the gross results of with and without project scenarios achieved for 20 years, including five years of project implementation and 15 years of capitalization periods. The SLSDP finances several activities that can be captured with the GHG accounting tool. The analysis has resulted in the amount of total net carbon balance estimated at 54,520 tCO2-eq of mitigated emissions (which means that carbon sequestration outweighs emissions within the project) per year at full development or 1,090,399 tCO2-eq during the whole project lifetime. The estimated shadow price of carbon that will evolve from year to year according to the World Bank Shadow Price of Carbon Guidance Note, the ERR and the Economic Net Present Value (ENPV) were calculated. The results of scenarios with low carbon price (starting from US$43 and evolving over years), high carbon price (starting from US$86 and evolving over year) are presented in Annex 3, Table 8. The base-case scenario project ERR of 20.6 percent may reach 24.1 percent and 28.1 percent in low-carbon price and high-carbon price scenario, respectively.

84. Economic returns of the base case scenario were tested against changes in benefits and costs and for various lags in the realization of benefits. In relative terms, the ERR is equally sensitive to changes in costs and in benefits. In absolute terms, these changes do not have a significant impact on the ERR, and the economic viability is not threatened neither by the 20 percent decline in benefits nor by a 20 percent increase in costs, since the ERR in both cases remains well above the discount rate. A one-year delay in project benefits reduces the ERR to 17.4 percent, with which it remains economically viable. The results are presented in Table 2 below.

Table 2: Sensitivity analysis

Sensitivity Analysis (20-year period)	Base case	Costs Increase			Increase of Benefits		Decrease of Benefits			Delay of Benefits	
		+10%	+20%	+50%	+10%	+20%	-10%	-20%	- 30%	1 year	2 years
ERR	**20.6%**	18.8%	17.4%	13.8%	22.4%	24.1%	18.7%	16.7%	14.5%	17.4%	15.0%
NPV (Million USD)	**159.1**	149.6	140.1	111.5	184.6	210.0	133.7	108.2	82.8	134.6	111.4

85. **Citizen engagement (CE).** The project will develop and implement a CE strategy that will be included in the POM. The CE strategy will be designed to solicit unrestricted feedback actively and regularly through multiple channels from citizens and project beneficiaries on project activities as well as the CE process itself. CE mechanisms will be developed and implemented throughout the project components. Under Component 1, the project will pro-actively engage with beneficiaries to develop and validate demand-driven technologies and practices in a participatory manner. Under Component 2, the upgrade of market infrastructure will be informed by feedback from beneficiaries, as relevant. Both

these activities will be undertaken with the help of a community scorecard administered by service providers and with the help of the PIU. Under Component 3, beneficiaries will be invited to regular roundtables to provide feedback to the design, accessibility, and application processes of the credit line (particularly including smallholder farmers and women) and to prioritize the technologies that will help to address key problems. Other relevant value chain stakeholders, including buyers, processors, service, and technology providers will also be consulted. Under Component 4, a beneficiary feedback survey will be implemented annually; the annual information campaigns for beneficiary engagement in the credit line program will serve as a mechanism to inform potential beneficiaries of the requirements for participation; and training for government officials on CE and response to beneficiaries' needs will be organized if the need is identified during implementation. The project's Stakeholder Engagement Plan (SEP) will reflect all CE mechanisms and outline actions for enhancing multistakeholder dialogue and inclusion throughout the project cycle. The project results framework includes an indicator to measure improvement in the CE process.

86. **Nutrition.** Uzbekistan has been marking progress against malnutrition, and is on course to meet global nutrition targets for childhood stunting, wasting and obesity.[43] Nevertheless, it is off course to meet targets for adult obesity and diet-related non communicable diseases (NCDs) (such as diabetes and raised blood pressure). Moreover, anemia continues to be more prevalent among low-income families and in rural areas, as are vitamin A and iodine deficiencies. Lastly, Uzbekistan is listed at the top of European nations with the highest mortality from consuming an unbalanced diet: between 1990 and 2006 it had more diet-related cardiovascular deaths than the other 51 countries in the World Health Organization's European Region. High blood pressure, dietary risks and high body mass index are the top three risks causing death and disability in Uzbekistan.[44]

87. **The livestock subsector is occupying a precarious place for nutrition purposes.** Whereas on one hand it can contribute to ending malnutrition in Uzbekistan through increasing the direct consumption of nutritious ASFs, such as meat, eggs, milk, and milk products, on the other hand it can contribute to worsen it (particularly overweight/ obesity, and NCDs). ASFs are a source of six critical nutrients (vitamin A, vitamin B12, riboflavin, calcium, iron, and zinc) and essential amino acids. Consumption of relatively small amounts of ASF can thus substantially contribute to dietary adequacy and alleviation of micronutrient deficiency, especially of children and women in reproductive age. An inadequate intake of some of the major micronutrients available in ASFs during pregnancy and childhood can lead to health problems that affect growth and educational attainment. High consumption of processed red meats, however, has been associated with diet related NCDs, and chronic diseases particularly in populations with a high burden of overweight/ obesity or in the context of an unbalanced diet. The evidence on health consequences of consumption of unprocessed or minimally processed red meat is mixed, but intake beyond a small to moderate amount likely contributes to risk for chronic diseases.[45] The project will contribute to improved nutrition by undertaking a public education campaign using traditional and new media tools to raise awareness about diet-appropriate nutrition and food preparation practices in collaboration with the MOH. Topics will include the importance of ASFs in diets, food safety and hygiene. The communication campaign will differentiate between consumer groups with nutrition deficits, to improve their diets balanced with adequate ASFs, from those already eating high levels of ASFs. The project will finance public efforts and engage the private sector in the consumer awareness and nutrition campaign (under Component 1). This collective effort aims to further stimulate demand and behavioral change as it pertains to livestock product consumption.

[43] Global Nutrition Report. 2021. Uzbekistan Country Profile. Available at: https://globalnutritionreport.org/resources/nutrition-profiles/asia/central-asia/uzbekistan/

[44] The Institute for Health Metrics and Evaluation (IHME). Uzbekistan Country Profile. Available at: *https://www.healthdata.org/uzbekistan*

[45] Global Alliance for Improved Nutrition (GAIN). February 2020. Animal-Source Foods for Human and Planetary Health. GAIN Briefing Paper Series No. 2. Available at: https://www.gainhealth.org/sites/default/files/publications/documents/gain-briefing-paper-series-2-animal-source-foods-for-human-and-planetary-health.pdf

88. **Gender. The project will focus on closing three gender gaps, specifically (a) access to livestock advisory and extension services, (b) access to financial products and services, and (c) lack of gender disaggregated data availability for analysis and policymaking.** In parallel, the project will contribute to reducing gender stereotypes in the livestock subsector. These are in line with the WBG Gender Strategy (2016 – 2023) objectives of Removing Constraints for More and Better Jobs, Removing Barriers to Women's Ownership of and Control over Assets and Enhancing Women's Voice and Agency and Engaging Men and Boys.[46] Increased access to livestock advisory and extension services, including technologies, and to financial products and services is expected to contribute to women's skills and capacity to generate income increasing their chances of improving their livelihoods and increasing their income potential opportunities.

89. For the first gender gap, the project particularly under Components 1 and 2, will assess and address the needs of women producers and agri-entrepreneurs on targeted training and/or advisory services and accessing livestock market and value addition infrastructure. Although there is no official data about female (or male) farmers' use of extension services, development partners report that unless women are explicitly included as a specific target group in farmer training programs, they tend to be underrepresented participants. Existing analysis in the country suggests that even though male farmers may also encounter obstacles in accessing services and information, women tend to have even less access to agricultural information, services and goods, including agricultural technologies, extension services, and the capital needed to purchase or lease machinery.[47] Through participatory discussions, that will be planned considering women's schedule and other responsibilities to ensure maximum participation, women's feedback will be collected to inform training design and mechanisms for service delivery and improve women outreach (e.g., fora of providing services, proximity to households, time of the day) (Component 1), and to ensure that priorities and concerns for women (in terms of distance, safety, access among other things) will be reflected in establishing and/or strengthening livestock market and value addition infrastructures (Component 2). Moreover, Subcomponent 1.4 on R&D will promote the generation, adaptation, and dissemination of also gender-inclusive technologies, such as the dairy milking technology powered with solar energy, which facilitate milking processes often carried out by women. Women-focused outreach activities will be conducted to ensure broad awareness and dissemination around the opportunities and benefits to women generated from their engagement in project activities (as in adoption of gender-inclusive technologies). The project will reach out with information and awareness raising campaigns (on services offered by the project) to women farmers and agri-entrepreneurs through means that are accessible to women. For example, given the low access of rural households to modern information and communication technologies, the project will utilize traditional media outlets,[48] and gender disparity in mobile phone ownership (77.4 percent of men versus 58.8 percent of women own one).[49] The project will also contribute to reducing gender biases in agriculture by incorporating, in extension and capacity building services, messages that do not confine women to defined gender roles and social expectations. This could include gender-transformative advisory services that will address biases over male- and female dominated livestock activities, and ownership of livestock and their products.

90. **To address the gap in terms of women accessing financial products,** the project will under Component 3 target technical support (e.g., capacity building on business plan development) to women to ensure that financial support applicants include women in their management and/ or membership, and that women are empowered to submit

[46] World Bank Group. 2015. *World Bank Group Gender Strategy (FY16-23): Gender Equality, Poverty Reduction and Inclusive Growth.* Available at: *https://openknowledge.worldbank.org/handle/10986/23425*

[47] FAO. 2019. *Gender, agriculture, and rural development in Uzbekistan*. Country gender assessment series. Budapest. 88pp. License: CC BY-NC-SA 3.0 IGO.

[48] United Nations Development Programme Uzbekistan. 2017. *Women Entrepreneurs in Uzbekistan: Challenges and Opportunities.* Policy Brief. *https://www.uz.undp.org/content/uzbekistan/en/home/library/poverty/women-entrepreneurs-in-uzbekistan--challenges-and-opportunities.html*

[49] The Second Country Systematic Diagnostic for Uzbekistan: Towards a Prosperous and Inclusive Future.

applications to borrow. In parallel, PFIs will be sensitized to revisit eligibility and selection criteria that might favor male applicants and disadvantage female applicants and may discourage women from applying altogether. Sensitization could extend over lowering for example minimum farm sizes, or reconsidering collateral (type or size). The 2019 FAO gender assessment notes that female entrepreneurs face constrains in accessing financial resources, including start-up capital, credit and loans, and particularly rural women have even more limited access to finance, as they tend to not be registered property owners (hence, they lack collateral), and have more limited knowledge about loan application processes and business planning and face constraints on their time and mobility.[50]

91. **Lastly, the project will contribute to addressing gaps in terms of gender-disaggregated data for policy analysis, through project M&E activities embedded in the implementation of subcomponents (e.g., survey baselines), as well as within the overall M&E under Component 4.** The project proposes the gender gap indicator of Number of women accessing services that have been redesigned to be more accessible to women beneficiaries. In addition to the gender gap related indicator, the project will disaggregate for gender other relevant indicators namely: Beneficiaries adopting improved livestock production technologies and practices, that control GHG emissions and/or enhance resilience to climate change, among others, and Beneficiaries reached with improved livestock production technologies and practices, that control GHG emissions and/or enhance resilience to climate change, among others. The PIU and PFIs will also track indicator "women farmers reached with financial services (Number)" (with no associated target) that will be reported on by the PIU outside the RF. Disaggregated data collected by the project and assessment reports commissioned by the project will contribute to understand gender-specific constraints and will inform opportunities for designing gender-centered policy interventions.

92. **Climate co-benefits.** Climate change mitigation and adaptation objectives are encompassed in the "sustainable" element of the PDO. The project will support public institutions, service delivery and investment towards the development, adaptation and adoption of climate-smart technologies and practices on a country-wide scale, adjusted for local agro-ecological conditions. Mitigation benefits will be gained, amongst others, through improved production efficiency at animal and herd levels and thus reduce GHG emissions intensity, e.g., use of efficient breeds (breeds with high feed conversion ratio), feeding management; manure management; grazing practices; energy efficiency and renewable energy generation. Towards mitigation, the project will also support pasture improvement and range restoration as well as the upgrading of energy uses efficiency and renewable production in livestock value chains. The project will support a public education campaign to raise awareness about diet-appropriate nutrition, food preparation practices and climate resilient practices, such as practices to minimize consumer food waste, including meal planning, and food storage and preservation (pickling, freezing, canning, or dehydrating) in collaboration with the MOH. Adaptation benefits are expected to be generated amongst others through the development of an information system that will enable the monitoring of emerging diseases related to climate change and impact of climate on animal productivity. The Results Framework includes climate-sensitive indicators to monitor progress on adaptation and mitigation. Table 2 shows how the project will contribute to specific actions.

[50] FAO. 2019. *Gender, agriculture, and rural development in Uzbekistan*. Country gender assessment series. Budapest. 88pp. License: CC BY-NC-SA 3.0 IGO.

Table 2: Summary of project climate co-benefits per activity

Activity	Adaptation	Mitigation
Subcomponent 1.1: Improve the enabling environment (US$0.5 million)		
Review of policies and legislation (100% F)	Increased awareness and information dissemination on how to adapt to climate change impacts on the livestock sector for government at all administrative levels. National objectives of climate change adaptation and mitigation identified in the Green Economy Development Strategy 2019 will be mainstreamed into policies and regulations developed with support of the project. Examples include the repurposing of public support to the sector for greater adaptation and mitigation results; support to sustainable pasture management and restoration of degraded pastures; introduction of organic livestock farming methods; support to the development the area under forage crops and diversification of forage crops i.e., expansion of the area under perennial forage trees and perennial grasses; incentives for green investments in livestock production, processing and marketing; incentives and regulations for proper storage/processing of organic animal waste; monitoring of GHG emissions in the livestock sector and linkages with National Inventory Reports to UNFCCC; support to breeding highly productive animals and developing forage crop varieties resistant to salinity, drought and other hazards and risks; programs for the preservation of the gene pool of local animal breeds and forage crop varieties.	
Subcomponent 1.2: Strengthen the CVLD (US$13.0 million)		
Capacity building Developing systems, including VIS (15% F) Infrastructure capacity building (goods and works) (70% F) Human capacity building (15% F)	A strengthened CVLD will be able to design and implement veterinary and livestock policies, strategies and regulations that enhance resilience of the sector. This specific sub-component will help CLVD to support adaptation to climate change impacts on the livestock sector through training, capacity building, and improved information dissemination (by developing a veterinary information system). The VIS will include the collection and management of information relevant to adaptation activities, (e.g., monitoring of progress in improving the drivers of resilience to climate change). The integration of the One Health approach will contribute to climate adaptation. The vulnerability context of the livestock subsector with regard to climate related zoonotic diseases and follow-on impacts call for an integrated system-based approach such as One Health.	Energy efficiency consideration will be incorporated in civil works and equipment purchase. A strengthened CVLD will be able to support the sector in developing and adopting practices that improve animal production efficiency (health, feed, reproduction management), and thus reduce emission intensity. The VIS will include the collection and management of information relevant to mitigation activities (e.g., monitoring and reporting of GHG emissions in livestock value chains and their reduction).
Subcomponent 1.3: Strengthen public livestock extension and advisory services (US$6.0 million)		
Capacity building and extension	All resources in this subcomponent will support farmers and institutions (extension providers) in the development, adaptation and adoption of climate smart	All resources in this subcomponent will support farmers and institutions (extension providers) in the development, adaptation and adoption of climate

Activity	Adaptation	Mitigation
Infrastructure capacity building (goods and works) (90% F) Human capacity building (10% F)	practices and technologies. For example, in the area of adaptation: • Improved feed production and animal husbandry practices, such as water and feed management and breed selection. • Veterinary infrastructure and services contribute to improve detection and surveillance to deal with increased occurrence, distribution of infectious disease linked to higher temperatures and changes in patterns and intensities of precipitation events. • Sustainable use of rangelands and pasture management, range restoration. • Data collection, analysis, and reporting on various environmental issues, including grassland and pastureland degradation and epidemiology, as part of the extension and advisory service provision.	smart practices and technologies. For example, in the area of mitigation: • Energy efficiency and renewable energy production. • Improved practices, better breeds and balanced nutrition to reduce GHG emissions. • Manure management via anaerobic digestion, digestate substitutes chemical fertilizers and biogas capture is used for energy production. • Field application of good agricultural practices in demonstration livestock such as green manures, residue management and manure application among others. • Animal health management, resulting in lower emission intensity than sick animals. • Soil carbon stocks improvements through range management and restoration. • Public education campaign to raise awareness about diet-appropriate nutrition, food preparation practices and climate resilient practices, such as practices to minimize consumer food waste, including meal planning, and food storage and preservation (pickling, freezing, canning, or dehydrating). Topics will include awareness raising on low-carbon diets.
Subcomponent 1.4: Strengthen public livestock research and development (US$15.0 million)		
Capacity building and transfer Technology development and transfer (50% F) Infrastructure capacity building goods and works) (40% F) Human capacity building (10% F)	Half of the resources will be directed to R&D in the area of CSA.	Half of the resources will be directed to R&D in the area of CSA.
Subcomponent 2.1: Strengthen livestock market and value addition infrastructure (US$2.0 million)		

Activity	Adaptation	Mitigation
Construction and capacity building Developing systems, including VIS (15% F) Infrastructure capacity building (goods and works) (80% F) Human capacity building (5% F)	Energy-efficient storage, processing, transportation, and refrigeration equipment, and more generally the improvement of access to market and product diversification are important adaptation strategies	Improvement of energy efficiency and production of renewable energy will be mainstreamed as a target for all in civil works and equipment purchase. Access to markets is an essential driver for investment in efficiency gains, which in turn contributes to emission intensity reduction.
Subcomponent 2.2: Strengthen border security and quarantine (US$5.0 million).		
Construction and capacity building Developing integrated boarder control strategy (10% F) Infrastructure capacity building (goods and works) (85% F) Human capacity building (5% F)	The activities under this subcomponent will allow to better prepare for, and control emerging diseases and related anti-microbial resistance, food safety and productivity losses as they relate to climate change.	
Subcomponent 2.3: Operationalize Animal Identification, Registration, & Traceability (AIR&T) (US$33.0 million)		
Operationalization of AIR&T System development, including the inclusion of data on environmental [performance in VIS (5% F) Infrastructure capacity building (goods) (85% F) Human capacity building (10% F)	Functioning AIR&T are key to monitoring impacts of climate change on livestock and developing short term as well as longer term adaptation and resilience strategies. The AIR&T will be used to inform policy development (Subcomponent 1.1) and extension work (Subcomponent 1.3).	Support the inclusion of data on environmental performance in livestock information systems (e.g., GHG emission accounting, manure management practices, and farm-level nutrient balances), and will include training and resources for the collection of census data that can enable environmental performance assessment.
Subcomponent 3.1: Improve Access to Finance (US$160 million)		
Access to finance and technical assistance (100% F)	100 percent of sub-loans will finance climate change mitigation and/or climate adaptation activities. Positive lists will be provided for both eligible mitigation and adaptation activities.	
Subcomponent 3.2: Build capacity of PFIs (US$0.5 million)		
Capacity building (100% F)	Climate change awareness for PFIs and clients.	The capacity building will focus on the use of new and climate smart financial products to targeted

Activity	Adaptation	Mitigation
	The capacity building will focus on the use of new and climate smart financial products to targeted clients, evaluating the sustainability, suitability, and effectiveness of these new financial products, and mitigating the possible risks associated with lending to these beneficiaries as well as risks associated with climate change. They will also include how to integrate cost-of-fuel savings into financial analyses.	clients, evaluating the sustainability, suitability, and effectiveness of these new financial products, and mitigating the possible risks associated with lending to these beneficiaries as well as risks associated with climate change. They will also include how to integrate cost-of-fuel savings into financial analyses.

93. **Jobs.** The project aims to create jobs by promoting livestock-based farm and non-farm businesses, including small scale production, and processing of livestock products, and facilitating the livestock value chain, that could create new opportunities for the rural youth and women. Regular targeted counseling within the framework of extension and advisory services can play important role in this case thereby increasing the potential of young people and women in animal husbandry.

94. **Maximizing Finance for Development (MFD).** The project will seek to enable private investments by strengthening the quality of public institutions and programs, reducing transaction costs for farmers and agribusinesses, and piloting public private partnerships (PPPs). Key binding constraints to private sector participation in infrastructure investments and service delivery include lack of enabling environment, including policies and legislation. To remove the barriers, the project will adopt the World Bank Group's integrated MFD approach to agricultural value chain. First, to facilitate private sector contribution to investments, the project will leverage capital from private sector actors towards investments within green and resilient livestock value chains (Component 3). Beneficiary contributions will be deployed to encourage investment that enhances the efficiency of supply chains and quality of inputs, as well as investments in cold storage, packaging, and other value addition activities. The project will support sustainable and better organized supply chains for ASFs processors, as well as upstream animal feed manufacturers. This helps generate viable supply chain partners for larger agribusiness investments from the private sector at large. In addition, the project will focus on public goods and services that enable private sector providers to extend services to farmers within the value chains for which a sustainable private market can be created. These will include the following services along the value chain: advisory services and technology, training and TA, equipment and logistics, pharmacies (animal drugs), financial services and products, marketing, and commercialization (e.g., milk collectors), input supply (feed), and livestock health services (para-vets) (Component 1). Lastly, the project will enable private participation in services delivery and larger investments in livestock value and supply chains with public good aspects (Component 1). Specifically, the project will enable private sector participation in (a) service delivery by minimizing/eliminating competition of public livestock support services by focusing on CVLD's role of public services provider (in regulations, monitoring, quality assurance and control, food safety, disease surveillance); and ultimately contributing to building an effective livestock value chains and food safety system; and (b) investments with public good aspects by inviting private sector input to drafting new laws, regulations and wider public awareness and risk communication, among others.

95. **Digital Agriculture.** Meeting the growing and diverse demand in livestock products requires a sustainable production growth based on knowledge derived from reliable real-time data that enables the livestock keepers and actors in the value chain to make the right decision on basic farm management questions commensurate with the health of the

environment and the natural resource base. Digital Agriculture in livestock, or PLF, is key to achieving these growing and diverse demand for livestock products that require precisions in the implementation of all activities along the livestock value chain. The project aims to promote PLF by strengthening existing and/or creating new automated systems in the various livestock farms, including dairy, beef, poultry, and fishery and aquaculture but gradually expanding the application to include other livestock production activities e.g., beekeeping. The AIR&T system the roll-out of which the project is supporting can also be used as PLF since it allows the use of several technologies used for health and welfare monitoring, weight control, and animal management (identification, registration, and movement control) that can support the livestock keeper in making decisions or even make decisions for the producer. Through Digital Agriculture or PLF, the livestock keepers can record numerous attributes of each animal, such as pedigree, age, reproduction, growth, health, feed conversion, carcass weight as a percentage of its live weight and meat quality. PLF, besides providing economic benefits, also supports societal goals: high quality and safe food, efficient and sustainable animal farming, animal welfare, and a low footprint of livestock production on the environment.

B. Fiduciary

(i) Financial Management (FM)

96. **The FM arrangements at the CVLD are adequate to implement the project and meet the minimum requirements of the Bank's Policy and Directive on Investment Project Financing.** To strengthen FM performance and prepare the CVLD for project implementation, the CVLD will take the following actions to be implemented by project effectiveness: (a) the FM chapter of the POM (acceptable to the Bank) shall be developed to guide staff in daily project FM operations, including description of the CVLD internal control role over the FM functions in PIU and Regional PIUs; (b) the FM Specialist(s) and Disbursement Specialist(s) shall be hired (on the Terms of Reference, TORs, acceptable to the Bank) as part of the PIU and at Regional PIUs. Financing of the subcomponent related to credit line operations (Subcomponent 3.1) will be subject to Disbursement condition, via development and adoption of the Credit Line Guidelines (acceptable to the World Bank) by the implementing entity. Within 60 days from project effectiveness, the CVLD shall update the existing 1C accounting software for project accounting, budgeting, and reporting. The accounting system shall have inbuilt controls to ensure data security, integrity and reliability, and the functionality of automatic generation of interim unaudited financial report (IFRs) and Statements of Expenditures (SOEs).

97. **The residual FM risk under the project is currently assessed as Moderate.** The FM risk is rated as such due to CVLD's experience and capacities gained during implementation of the LSDP as well as other donor-funded projects, including ADB, AFD and the scope of FM, which is typical for the agricultural sector. The expenditures are straightforward; and existing FM arrangements at the CVLD are adequate and reliable to implement the project. The strengths that provide a basis for reliance on the project's FM system include: (a) the experience of the FM/accounting staff in Bank-financed projects; (b) overall adequate internal control and filing systems in place; (c) annual independent and external audits of the Bank-financed project implemented by the CVLD having been acceptable to the Bank; and (d) quarterly IFRs on the Bank-financed project being implemented. Under the LSDP, the CVLD submitted quarterly IFRs on time which were satisfactory to the World Bank, and under the SLSDP the financial reporting scheme and approach will remain unchanged.

(ii) Procurement

98. **All procurement of contracts will be conducted through the procedures as specified in the World Bank's Procurement Regulations for IPF Recipients - Procurement in Investment Project Financing Goods, Works, Non-**

Consulting and Consulting Services dated November 2020. The Guidelines on Preventing and Combating Fraud and Corruption in projects financed by IBRD loans and IDA credits and Grants, dated October 15, 2006, and revised January 2011 and as of July 1, 2016, shall apply to the project. Procurement and contract management processes will be tracked through the Systematic Tracking of Exchange in Procurement (STEP) system.

99. **Project Procurement Strategy for Development (PPSD) and the Procurement Plan (PP).** The preparation of PPSD was initiated at the early stage of project preparation with extensive support by WB procurement staff. PPSD informs PP's preparation for the first 18 months of project implementation. PP will be updated at least annually or as required during project implementation to reflect any substantial changes in procurement approaches and methods to meet actual project implementation needs, market fluctuations, and improvements in institutional capacity. The updated PPs along with the revised PPSD (if required) will be subject to WB's prior review and no objection. The PPSD includes a detailed Procurement Risk Analysis and actions to mitigate the procurement risk that is being rated as Substantial. If followed properly, and the risks are mitigated, a lower risk rating might be upgraded during project implementation. The preliminary conclusions of PPSD reveal that for market analysis for procurement packages there is a competitive market both at local and international levels with sufficiently large number of manufacturers and suppliers for procurement under investment components. The nature of the contracts is not particularly complex, and a good level of competition is anticipated among national and international companies depending on the packaging approach.

100. **Procurement risk assessment.** The WB task team is processing a procurement capacity assessment using the Procurement Risk Assessment and Management System (P-RAMS). Based on the assessment and taking note of the existing capacity within the IA and the risks associated with procuring a large number of activities, the procurement risk is Substantial. Risks identified in the procurement assessment of the IA include: (a) issues with the enforcement of the PPL and other relevant legislative requirements in practice; (b) difficulties in hiring qualified procurement consultants due to the low salary levels and low attractiveness of civil servant jobs among qualified staff; and (c) procurement delays due to complex internal approval procedures. To mitigate these risks, the following actions are recommended: (a) all procurement activities will be carried out following World Bank procurement procedures, including the related prior- or ex-post reviews; (b) the IA will ensure that a qualified procurement consultant is hired to be responsible for the day-to-day procurement activities and to ensure that procurement processes are carried out in line with relevant World Bank policies and regulations; (c) the World Bank good governance and anticorruption safeguards, particularly the transparency and disclosure provisions of the IBRD Guidelines, will be promoted and enforced; (d) the PPSD will include a section reflecting the roles and responsibilities, including roles of consultant/experts, for development of good quality TORs and Technical specifications. In addition, the role of the IA and other involved agencies in designing technical specifications and TORs will be clarified; (e) the POM should have clear deadlines and timelines for each step in the procurement processes for both consultant selection and goods/technical services procurement to avoid unnecessary delays during the implementation.

101. **Use of national procurement procedures.** All contracts for goods, works and consultancy services following national market approach shall use the procedures set out in the Public Procurement Law (PPL) enforced in June 2021. The provisions of the PPL are consistent with the WB Procurement Regulations Section V – Para 5.4 National Procurement Procedures subject to a few conditions specified in PPSD. Further improvement of the 2021 legal and regulatory framework is being carried out GOU. The ongoing reform activities include the development of a full-fledged e-procurement system. The World Bank will update the assessment of the National Procurement Procedures after introduction of a full-fledged e-procurement system that will be adopted for national competition procurement approach under the project.

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Areas OP 7.60	No

102. Operational Policy 7.50 is triggered because the project supports the rehabilitation of existing irrigation schemes in selected public research institutions, which are already consuming water from the two main transboundary rivers, Syr Darya and Amu Darya, and their tributaries which are shared by Tajikistan with Afghanistan, Turkmenistan, the Kyrgyz Republic, and Kazakhstan. However, paragraph 7 of the Policy specifies three exceptions to the requirement that the other riparian states be notified of the project. For this project the exception of paragraph 7(a) of the Policy applies. According to paragraph 7(a): "For any ongoing schemes, projects involving additions or alterations that require rehabilitation, construction, or other changes that in the judgment of the Bank (i) will not adversely change the quality or quantity of water flows to the other riparians; and (ii) will not be adversely affected by the other riparians' possible water use. This exception applies only to minor additions or alterations to the ongoing scheme; it does not cover works and activities that would exceed the original scheme, change its nature, or so alter or expand its scope and extent as to make it appear a new or different scheme". Given the nature and scope of project investments, which represent rehabilitation, minor additions or alterations to ongoing schemes, the Task Team has determined that the project activities will not adversely affect the quantity or quality of the water flowing to downstream riparians, and the project will not be affected by other riparians' possible water use. Accordingly, the task team has prepared the Exception Memo, which was cleared by Regional Vice President on May 20, 2022.

D. Environmental and Social

103. **The environment risks and the social risks are both rated Substantial for an overall ESF risk of Substantial.** Under the project, two categories of risks are recognized: one, as related to the impacts of the project activities; and the other, contextual. The former relates to civil works (construction and renovation) related environmental disturbances, risks during the operation of livestock facilities, and land acquisition/usage related economic and/or physical displacement and inclusion/exclusion. The latter, contextual risks, relate to chiefly land tenure and land allocation and tenure security. All the project related risks are identifiable and manageable. These risks are covered by ESS 1, ESS 2, ESS 3, ESS 4, ESS 5, ESS 6, ESS9 and ESS 10.

104. **Environmental risks are expected to occur during the construction phase related to occupational health and safety hazards, generation of solid waste, air pollution and noise, and disruption of traffic; and during operational phase associated with manure generation, storage, sewerage, and other types of waste.** Under Component 1, the project's main efforts will be on strengthening public institutions in the livestock sector through consultant services, capacity building, purchase of training and goods, purchase of new equipment, development of information management systems, transfer of technologies and knowledge, among others. These activities will have limited environmental impacts, such as the generation of waste. However, physical works such as construction, rehabilitation/renovation of existing administrative and laboratory facilities under Subcomponents 1.2, 1.3 and 1.4 will generate significant impacts, but these impacts are site-specific and temporary (dust, noise, construction litter, occupational and safety risks) that can be reliably mitigated by applying good construction management practices. The larger scale environmental risks of the project will be associated with Component 2 aimed at improving physical livestock market infrastructure, including. quarantine

centers and Component 3 aimed at improving access to finance for livestock farmers country-wide, which, in turn, encourage farmers to increase number of livestock and build new infrastructure. Risks will stem from investments in improving physical market infrastructures (such as well-facilitated market centers, stock routes or slaughtering houses, livestock product processing plants, and milk collection centers), as well as rehabilitation/renovation and refurbishment of office and laboratory buildings, etc. (including the risk of contracting COVID-19). The operation of veterinary laboratories is associated with the risks of worker exposure to biological agents. Under the credit line, encouraging farmers to increase the number of livestock and build/renovate infrastructure, individual sub-project financing may generate the following types of adverse risks and impacts: (a) increased pollution with wastes, noise, dust, and air pollution, health hazards and labor safety issues, etc., due to civil works; (b) increased ground and surface waters pollution due to use of agro-chemicals and silage production; (c) threats to human health and wildlife due to improper handling of treated seeds, fertilizers and pesticides, and due to inappropriate management and disposal of livestock vaccines and other drugs. During construction, such risks expected to be typical for construction/rehabilitation works for various livestock processing activities, temporary by nature and site specific and can be reliably mitigated by applying best construction practices.

105. **The main social risks relate to: (a) possible exclusion of farmers (e.g., small farms, women headed farms) from access to credit lines; (b) land acquisition and resettlement related economic and physical displacement; (c) SEA/SH labor management and violation of labor rights at workplace; and (d) community health and safety impacts related to the construction of livestock infrastructure, including demonstration centers, livestock market infrastructures, and quarantine stations.** Some small and marginal farms and households may feel excluded because of the insufficiency of credit lines to support them. This inclusion risk will be mitigated through enhanced attention to public awareness, outreach, and transparency in selection procedures. There is a need to ensure that all farmers, and particularly small farmers, women farmers, and vulnerable groups such as the rural poor, have equal access to participate in and benefit from project initiatives. A number of social risks in the broader context of the livestock sector, including the capacity of the implementing agency, also lead to project social risks being assessed as Substantial. These relate to the transparency and equity of land allocation and land tenure security, information constraints, the overall ability of smaller farmers to partake in benefits of the project, and risks of reduced access to land and productive assets due to land reallocation., The labor influx, GBV risk, including SEA/SH, is assessed as Moderate mostly due to the status of national GBV legislation, gender norms, and little or no labor coming from outside local rural communities; nevertheless, there may be some risks. All the proposed large investments and civil works include substantial social risks related to labor management, land acquisition and involuntary resettlement. The project will also provide a Window for loans up to US$100,000 targeting small livestock farmers. The Window is deemed necessary to fill the credit gap of small livestock farmers who have not been able to access previous credit lines under the LSDP. Environmental and social procedures to be put in place under the project have to consider these contextual risks, manage, and monitor them as they relate to project-supported activities, and provide adequate attention to capacity-building activities of the involved implementing institutions. ILO 2021 Third Party Monitoring (TPM) in cotton harvest report informs that less than 1 percent of cotton pickers were subject to direct or perceived forms of coercion. This led to announcing the end of systematic child labor and systematic forced labor in cotton production and followed by lifting 12-year global cotton boycott by Cotton Campaign. Considering progress achieved in ending systematic child and forced labor in cotton sector, improved legislation prohibiting use of child and forced labor in any sector, continuous strengthening capacity of Labor Inspectorate, minor risks with violation of labor rights at workplace still may occur that can be mitigated with sufficient awareness, capacity-building, and operating GRM during project implementation.

106. **The project is taking a framework approach because the details about the investments and their exact locations (could be located anywhere across the country) are not known and most of which will not become known until after**

implementation begins. The following instruments have been finalized and disclosed before negotiations: (a) Environmental and Social Management Framework (ESMF); (b) Resettlement Policy Framework (RPF); (c) SEP; and (d) Labor Management Procedures (LMP). The ESMF will assess current pest management practices and recommend areas for improvement; provide guidelines for assessing project activities; and, where necessary, preparing and implementing the project specific Pest Management Plan (PMP) and the site-specific Environmental and Social Impact Assessments/Environmental and Social Management Plans (ESIA/ESMPs). The RPF will likewise indicate when site specific Resettlement Action Plans (RAPs) will be required.

V. WORLD BANK GRIEVANCE REDRESS

107. ***Grievance Redress.*** Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance redress mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the Bank's Accountability Mechanism, please visit *https://accountability*.worldbank.org.

VI. KEY RISKS

108. **The overall residual project risk is assessed as Moderate**, with the following key risks:

Environmental and Social risks. Substantial. The overall environmental and social risk is assessed as Substantial. This is due, in part, to the nation-wide nature of the project, which is more difficult to manage than location-specific activities. Two categories of risks are recognized: one, as related to the impacts of the project activities; and the other, contextual. The former concerns: civil works (construction/renovation)-related environmental disturbances, risks during the operation of livestock facilities, and land acquisition/ usage related economic and/ or physical displacement and inclusion/ exclusion. The latter relates to mainly land allocation and tenure security. All the project related risks are identifiable and manageable. These risks are covered by ESS 1, ESS 2, ESS 3, ESS 4, ESS 5, ESS 6, ESS9 and ESS 10. Environmental risks occurring during the construction phase relate to occupational health and safety hazards, generation of solid waste, air pollution and noise, and disruption of traffic. During the operational phase, impacts from these facilities would be associated with manure generation and storage, sewerage, other types of waste, odor and potentially, and pesticides use for the forage crops. The following social risks and impacts are expected: (a) project activities are likely to cause economic impacts to local farmers, as the proposed land plots for the sites are state-owned pasture lands being used by local farmers; (b) the social inclusion/ exclusion issues are predictable and mitigatable through meaningful and inclusive consultations with local communities and local governments; (c) the labor influx risks could be inevitable and are manageable through appropriate measures; (d) labor risks would be associated with inequity and discrimination in employment, working terms and conditions, and challenges in organizing favorable working environments, all of

which are manageable through appropriate measures. The child and forced labor risks are rated low due to the enforced national legal provisions prohibiting use of child and forced labor. The project is assigned a moderate risk rating for sexual exploitation and abuse, and sexual harassment (SEA/SH). The project has developed the following key instruments to address the risks: ESMF, SEP, RPF, and LMP.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Uzbekistan

Second Livestock Sector Development Project

Project Development Objectives(s)

The Project Development Objective (PDO) is to support the development of a productive, market-oriented, sustainable and inclusive livestock subsector in Uzbekistan.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	Intermediate Targets	End Target
			1	
Sustainability				
Beneficiaries adopting improved livestock production technologies and practices, that control GHG emissions and/or enhance resilience to climate change, among others (Percentage)		0.00	20.00	45.00
Beneficiaries adopting improved livestock production technologies and practices, that control GHG emissions and/or enhance resilience to climate change, among others of which are women (Percentage)		0.00	10.00	20.00
Market orientation				
Increase in total value of livestock products sold (Percentage)		0.00	10.00	20.00
Increase in total value of livestock products sold by dehkans (Percentage)		0.00	30.00	50.00

Indicator Name	PBC	Baseline	Intermediate Targets	End Target
			1	
Productivity				
Increased productivity of targeted livestock commodities (Percentage)		0.00	0.00	0.00
Increased productivity of targeted livestock commodities - milk (cattle) (Percentage)		0.00	25.00	50.00
Increased productivity of targeted livestock commodities - meat (cattle) (Percentage)		0.00	10.00	20.00
Increased productivity of targeted livestock commodities - meat (small ruminants) (Percentage)		0.00	20.00	40.00
Inclusion				
Increased participation of targeted smallholder farmers (dehkans) in formal markets (Percentage)		0.00	15.00	30.00

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	Intermediate Targets	End Target
			1	
Component 1: Strengthen public livestock support services				
Farmers adopting improved agricultural technology (CRI, Number)		0.00	3,500.00	7,000.00
Farmers adopting improved agricultural technology - Female (CRI, Number)		0.00	800.00	1,600.00
Farmers adopting improved agricultural technology - male (CRI, Number)		0.00	3,200.00	5,400.00

Indicator Name	PBC	Baseline	Intermediate Targets	End Target
			1	
Veterinary information system (VIS) established and operational (Yes/No)		No	Yes	Yes
Beneficiaries reached with improved livestock production technologies and practices, that control GHG emissions and/or enhance resilience to climate change, among others (Number)		0.00	20,000.00	40,000.00
Beneficiaries reached with improved livestock production technologies and practices, that control GHG emissions and/or enhance resilience to climate change, among others of which female (Number)		0.00	1,200.00	1,500.00
Staff of public sector institutions (policy, research & development, vet & animal health advisory and extension) trained (Number)		0.00	750.00	1,400.00
Component 2: Strengthen market and value addition infrastructure, and facilitate trade				
Productive alliances established (Number)		0.00	50.00	100.00
Border Inspection Posts strengthened (Number)		0.00	10.00	20.00
Quarantine stations established (Number)		0.00	1.00	2.00
Comprehensive border control strategy developed (Yes/No)		No	No	Yes
Animal Identification, Registration & Traceability (AIR&T) methodology operationalized (Yes/No)		No	No	Yes
Component 3: Promote green and resilient livestock value chains				
Smallholder farmers (dehkans) reached with financial services (Number)		0.00	1,000.00	2,500.00
Share of credit line investments (sub-loan financing) that finance climate change (adaptation and/ or mitigation) measures (Percentage)		0.00	100.00	100.00
Non-performing loans as a share of total outstanding project-related loan portfolio		0.00	5.00	5.00

Indicator Name	PBC	Baseline	Intermediate Targets	End Target
			1	
(Percentage)				
Average GHG emission intensity reduction achieved by beneficiaries adopting improved livestock production technologies and practices (Percentage)		0.00	10.00	40.00
Component 4: Project management and coordination				
Project Monitoring Information System developed and operational (Yes/No)		No	Yes	Yes
Beneficiaries with rating 'Satisfied' or above with Citizen Engagement process (Percentage)		0.00	75.00	90.00
Beneficiary dehkans with rating 'Satisfied' or above with Citizen Engagement process (Percentage)		0.00	75.00	90.00
Number of women accessing services that have been redesigned to be more accessible to women beneficiaries (Number)		0.00	1,220.00	2,440.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Beneficiaries adopting improved livestock production technologies and practices, that control GHG emissions and/or enhance resilience to climate change, among others	Proposed climate indicator. This indicator measures the number of farmers, agri-businesses, and other agricultural value chain	Annually (starting in year 3)	Survey	This indicator will be measured conducting an annual representative survey of beneficiaries,	PIU

	actors who have adopted technologies promoted by the project. Adoption refers to a change of practice or change in use of a technology that was introduced or promoted by the project. Technology includes a change in practices compared to currently used practices or technologies.			i.e. farmers, agri-businesses, and other agricultural value chain actors, (specifically under Sub-Components 1.3, 1.4, 3.1 and 3.3). The methodological approach will be based on the general concept of technology adoption, which refers to the knowledge, processes and/or products of exogenous origin that producers incorporate into their production systems.	
Beneficiaries adopting improved livestock production technologies and practices, that control GHG emissions and/or enhance resilience to climate change, among others of which are women					
Increase in total value of livestock products sold	This indicator will measure the increase in total value of livestock products sold that have been produced by producers benefiting from Components 1,2 and 3. Livestock products include: milk (cattle), meat (cattle),	Annually (starting in year 2)	Survey	This indicator will be measured conducting an annual representative survey of beneficiaries (specifically under Components 1, 2 and 3).	PIU

	meat (small ruminants), meat (fisheries), poultry and eggs.				
Increase in total value of livestock products sold by dehkans	This indicator will measure the increase in total value of livestock products sold that have been produced by dehkans benefiting from Components 1,2 and 3. Livestock products include: milk (cattle), meat (cattle), meat (small ruminants), meat (fisheries), poultry and eggs.				
Increased productivity of targeted livestock commodities	This parent indicator will not be measured at the aggregate level.				
Increased productivity of targeted livestock commodities - milk (cattle)	Percentage increase of milk production per cow (liters per cow per day)	Annually (starting in year 2).	Survey	This indicator measures the productivity of cows at herd level, among project participants. It is computed as the total volume (liters) of milk produced in a year divided by the standing animal population (including males and females not in production). It reflects both productivity at	PIU

				animal and herd level, e.g. the share of animals that are in production.	
Increased productivity of targeted livestock commodities - meat (cattle)	Percentage increase in average offtake rate expressed as live market weight for cattle.	Annually (starting in year 2).	Survey	This indicator measures the productivity increase of meat cattle among project participants. It is computed as the total volume (kg) of live market weight produced in a year, divided by the standing cattle population. It reflects productivity at animal (daily weight gains) and herd level (reproduction performance, improved health), as well as improvement in dressing performance.	PIU
Increased productivity of targeted livestock commodities - meat (small ruminants)	Percentage increase in offtake rate expressed as live market weight for small ruminants.	Annually (starting in year 2).	Survey	This indicator measures the productivity increase of small ruminants' meat among project participants. It is computed as the total volume (kg) of live	PIU

				market weight produced in a year, divided by the standing small ruminants population. It reflects productivity at animal (daily weight gains) and herd level (reproduction performance, improved health), as well as improvement in dressing performance.	
Increased participation of targeted smallholder farmers (dehkans) in formal markets	Share of dehkan beneficiaries who sell animal-source products or livestock in formal markets (that include bazaars, agribusiness).	Annually (starting in year 2)	Survey	This indicator will be measured conducting an annual representative survey of beneficiaries (specifically under Components 1,2 and 3).	PIU

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Farmers adopting improved agricultural technology	This indicator measures the number of farmers (of agricultural products) who have adopted an improved	Annually (starting in year 3).	Survey	This indicator will be measured conducting an annual representative	PIU

	agricultural technology promoted by operations supported by the World Bank.			survey of beneficiaries, i.e. farmers, agri-businesses, and other agricultural value chain actors, (specifically under Sub-Components 1.3, 1.4, 3.1 and 3.3). The methodological approach will be based on the general concept of technology adoption, which refers to the knowledge, processes and/or products of exogenous origin that producers incorporate into their production systems.	
Farmers adopting improved agricultural technology - Female					
Farmers adopting improved agricultural technology - male					
Veterinary information system (VIS) established and operational	This indicator will measure the progress in setting up an operational integrated VIMS. It will be achieved (Yes), when it is both established and operational.	Biannual	Project Monitoring and Evaluation system		PIU
Beneficiaries reached with improved livestock production technologies and practices, that control GHG emissions	This indicator measures the number of farmers (dehkans, commercial), agri-	Annual	Reports from departments, agencies, and		PIU

and/or enhance resilience to climate change, among others	businesses, and other agricultural value chain actors who are provided with agricultural assets or services, including training, as a result of the project.		PFIs providing assets and services to the project beneficiaries.		
Beneficiaries reached with improved livestock production technologies and practices, that control GHG emissions and/or enhance resilience to climate change, among others of which female					
Staff of public sector institutions (policy, research & development, vet & animal health advisory and extension) trained	This indicator measures the number of staff working in public sector institutions (policy, research & development, vet & animal health advisory and extension) trained (participation in study tours, workshops, tailored trainings, etc).	Biannual	Project Monitoring and Evaluation system		PIU
Productive alliances established	This indicator is measuring productive partnerships between agro-enterprise, borrowing under the credit line window, and farmers or farmer groups, with formal contractual relationships.	Annual	Project Monitoring and Evaluation system		PIU

Border Inspection Posts strengthened		Biannual	Project Monitoring and Evaluation system		PIU
Quarantine stations established	This indicator is measuring quarantine stations established at Kazakhstan and Kyrgyz borders.	Biannual	Project Monitoring and Evaluation system		PIU
Comprehensive border control strategy developed	This indicator is measuring: preparation and consultation of proposed strategy, as well as approval by the State Committee. Indicator will be achieved (Yes), when the strategy reaches the level before an official decree & resolution is issued for the strategy.	Biannual	Project Monitoring and Evaluation system		PIU
Animal Identification, Registration & Traceability (AIR&T) methodology operationalized	This indicator measures progress achieved in operationalizing the AIR&T methodology. Operationalization means that it is technically possible to have target animals carry an ear tag with identification, registration and traceability information.	Biannual	Project Monitoring and Evaluation system		PIU

Smallholder farmers (dehkans) reached with financial services		Biannual	Project Monitoring and Evaluation system		PIU
Share of credit line investments (sub-loan financing) that finance climate change (adaptation and/ or mitigation) measures	Climate indicator	Biannual	Reports of participating financial institutions		PIU and PFIs
Non-performing loans as a share of total outstanding project-related loan portfolio	Non-performing loan means any payments overdue for 90 days or more – both interest and principal, and restructured debts. End target should be interpreted as "not more than 5%"	Biannual	Reports of participating financial institutions		PIU and PFIs
Average GHG emission intensity reduction achieved by beneficiaries adopting improved livestock production technologies and practices	Climate indicator. The indicator measures progress in reducing average GHG emissions per kg of animal protein produced among beneficiaries who have adopted improved practices and technologies. It reflects both the adoption of improved practices and the shift in the mix of outputs.	The indicator will be measured at baseline, mid-term and end of project.	Survey	The indicator is computed following the GLEAM method developed by FAO: www.fao.org/gleam/en/ and the methodology for data collection will include structured sampling, reflecting production systems, type of product (i.e. meet, milk) and agro-ecological conditions.	PIU

				Data collection will be tailored to data requirements of GLEAM.	
Project Monitoring Information System developed and operational	This indicator measures the implementation of a monitoring and evaluation system to manage all information related to the project. This system will have a digital platform to manage all project information.	Biannual			PIU
Beneficiaries with rating 'Satisfied' or above with Citizen Engagement process	Citizen Engagement indicator. This indicator measures the satisfaction level of the beneficiaries with the citizen engagement process by the project, disaggregated by gender. Satisfaction level will be evaluated considering three aspects: i) beneficiaries' participation in the planning, implementation and evaluation process of the activities implemented by the project, ii) beneficiaries' perception on the quality of the goods and services provided by the	Annual		This indicator will be measured through the application of representative survey to the beneficiaries of the three project components annually. The level of satisfaction will be estimated using a standard Likert scale based on a set of questions established in the frame of three criteria considered to evaluate the Citizen Engagement. In addition, the project will apply simple survey	PIU

	project and iii) beneficiaries' perception on the project results or impacts			questionnaires distributed after every community/ citizen/ farmers' meeting (collecting feedback on the CE process after each event) that will be reported in the project progress reports.	
Beneficiary dehkans with rating 'Satisfied' or above with Citizen Engagement process	Same as parent indicator, but disaggregated for dehkans.	Same as parent indicator, but disaggregated for dehkans.	Same as parent indicator, but disaggregated for dehkans.	Same as parent indicator, but disaggregated for dehkans.	Same as parent indicator, but disaggregated for dehkans.
Number of women accessing services that have been redesigned to be more accessible to women beneficiaries	Gender indicator. Services that have been redesigned to be more accessible to women farmers comprise facilitated livestock advisory and extension services and livestock market (under Component 1) and value addition infrastructures (under Component 2) that have been improved for womens' improved access and participation, gender-inclusive and gender-smart	Biannual	Project Monitoring and Evaluation system		PIU

	technologies, as well as critical technical and capacity support for women to accessing financial products (under Component 3).				

ANNEX 1: Implementation Arrangements and Support Plan

1. **The implementation of the SLSDP will rely on existing government structures and the CVLD, under the MOA will be the lead implementing entity.** The implementation of SLSDP will build on institutional arrangements and implementation mechanisms, including by revamping those that have been established for the LSDP under the CVLD and those that will be established as new. The SLSDP will be implemented in all regions/oblasts of Uzbekistan, including at national, regional, and local/district levels involving relevant government institutions but also private sector actors as deemed necessary.

2. **CVLD.** The CVLD, under the MOA will have overall responsibility of implementing the SLSDP, including coordinating all aspects of the project. The main responsibilities of the CVLD will include project oversight, coordination, planning, technical support, financial management, procurement support and monitoring and evaluation. The CVLD will be accountable for authorizing and verifying all project transactions and will work closely with the WB's Task Team during project implementation. To fulfill its responsibilities, the CVLD will use the institutional mechanisms established for the implementation of LSDP, including the LSDP Project Implementation Unit (LSDP PIU) and PSC.

3. **Project Steering Committee (PSC).** As in LSDP, the project's oversight and strategic direction will be performed by a PSC to be established. This is important since project implementation involves a number of institutions, including those that were not part of the LSDP. The PSC will ensure coordination and effective and enhanced project implementation. In this regard, the project will use the PSC established for the LSDP with additional members, as deemed necessary, by drawing from institutions involved in project implementation.

4. **The PSC, chaired by the Chairman of the CVLD will provide strategic guidance for project implementation, ensure coordination as well as help identify key issues that need to be brought to the attention of the government and facilitate their resolution.** It shall have the following broad responsibilities: (a) establish policy guidelines and provide overall oversight and strategic guidance; (b) review of project's progress towards the PDO; (c) review and approve the Annual Work Plans and Budgets (AWPs&Bs) submitted by the PIU; (d) review and approve annual implementation performance report prepared by the PIU and oversee the implementation of corrective actions; and (e) ensure inter-ministerial coordination, harmonization and alignment among donors. The PSC will meet bi-annually focusing on review and approval of annual work plans and budget and monitoring of project performance based on annual and bi-annual reports. The membership, terms of reference, duties and responsibilities, frequency of meetings as well as modalities of the PSC will be detailed in the Project Operations Manual (POM).

5. **Project Implementation Unit (PIU).** The CVLD, under the MOA and PSC will be supported by a PIU to be established in Tashkent and PIUs all project implementing regions, Regional PIUs (RPIUs) and maintained throughout the project implementation with the resources and the terms of references acceptable to the Bank. The PIUs will be responsible for project management and coordination, including following the day-to-day project implementation, leveraging existing staff. The PIUs will ensure: (a) the overall management and coordination of the project; (b) the annual planning and preparation of consolidated AWPs&Bs and progress reports; (c) the follow-up and reporting on project implementation, including the M&E and learning, the supervision and monitoring of the activities and the evaluation of project impacts; (d) the fiduciary management and reporting (financial management and procurement); (e) the liaison and coordination with other stakeholders; (f) safeguards compliance, including social and environment; and (g) the overall knowledge management, and the strategic staff capacity-building and mobilization. The composition of the PIUs staff, including specialization, responsibility, salary scale and benefits, and incentives such as annual and sick leave will be detailed in the POM.

6. **Project Technical Committee (PTC).** The PSC will be assisted by a project technical committee (PTC) to be established by drawing technical experts from various entities involved in project implementation. The PTC, chaired by the Deputy Chairman of CVLD, will be responsible for providing technical advice to the PIU on the quality of plans and implementation reports and special studies, guidelines, documentation of best practices, and M&E reports. More specifically, the PTC will be responsible for: (a) reviewing, providing recommendations and advise on improving the AWPs&Bs submitted by the PIU; (b) providing technical advisory services on implementation modalities; (c) providing institutional capacity building to the PIU and to relevant implementation entities; and (d) reviewing and analyzing all documents prepared under the project's responsibilities providing recommendations and advising on improvement. The PTC will meet quarterly focusing on reviewing the technical aspect of annual plans and monitoring reports. The membership, terms of reference, duties and responsibilities and frequency of meetings of the PTC will be detailed in the POM.

7. **Technical Assistance (TA).** Effective implementation of some of the capacity building and technical-assistance-related activities identified under the various components requires specialized technical knowledge and experience. It also requires coordination and supervision capacities on behalf of the CVLD and other project implementing entities e.g., research institutions, which it currently lacks. As such, the project will finance the procurement of consulting firms (international and local) and individual consultants (international and local) that will assist in the implementation of capacity building and TA-related activities. Specific areas that will require further TA will be identified during the first six-months of project implementation as part of the capacity needs assessment under the various components and subcomponents.

8. **Planning and Implementation.** The project will follow an AWP&B preparation, review and approval and implementation process. The preparation of the AWP&B will be consultative involving all implementation agencies, including RIs. While the primary responsibility of preparing investment proposals to be financed by the project and their implementation is that of the responsible institution, the CVLD, under the MOA will have the responsibility of leading the preparation and implementation of strategic investments (e.g., feasibility studies) in close collaboration with relevant institutions. Annual plans for activities related to coordination and management of the project (e.g., M&E and fiduciary) will be prepared and implemented by the PIU. The AWP&B, after going through technical review by the PTC, will be reviewed and approved by the PSC in one of the bi-annual PSC meetings. The AWP&B preparation process with eligible project activities and indications of the type of investment and when appropriate expected contribution of both project and beneficiaries will be provided in the POM.

9. **Project Operations Manual (POM).** Before effectiveness, the PIU will prepare a POM, which will detail the institutional arrangements and the implementation mechanisms of the project, including the project coordination mechanisms, the project's oversight, the planning and implementation of project activities, the monitoring and evaluation and the learning aspects. The POM will also detail the mechanism and procedures for the development, operation, and management of model livestock demonstration farms. It will also summarize the Environmental and Social Safeguards Management Issues, and the procurement and financial management aspect of the project.

10. **Implementation Support Plan.** The strategy for supporting project implementation will focus on successfully mitigating the risks identified at various levels and supporting the risk mitigation measures proposed in the SORT and will consist of: (a) implementation support missions (ISMs); (b) base line, mid-term review (MTR), and end of project impact evaluation; (c) other complementary reviews (OCRs); and (d) implementation completion review (ICR), all carried out jointly with the Government. It will also consist of TA in areas of weaknesses and where new approaches/procedures

may be introduced.

ISMs: Semi-annual implementation support missions will be conducted jointly by the Government and the World Bank Task Team to review overall SLSDP implementation performance and progress towards achievement of the PDO. In the first year of implementation, the ISMs will focus more on technical issues, later focusing more on routine progress monitoring, trouble shooting and results framework-based assessments. In all ISMs, DPs will be consulted to ensure coordination between complementary operations.

Baseline: A base line will be carried before project implementation begun. It will include a comprehensive assessment of the base line situation of the SLSDP as laid out in the results framework. The baseline will also serve as a platform for measuring project success during MTR and end of project impact evaluation (EOP IE). It may also be used for revisiting design issues that may require adjustments to ensure satisfactory achievement of the project's objective.

MTR: An MTR will be carried out mid-way in the implementation phase. It will include a comprehensive assessment of the progress in achieving SLSDP objectives as laid out in the results framework. The MTR will also serve as a platform for revisiting design issues that may require adjustments to ensure satisfactory achievement of the project's objective.

OCRs: These include analytical, advisory and knowledge sharing activities. Each year, the Government and the Bank will consider the need for OCRs and/or third-party reviews. Such reviews will be planned for over and above the semi-annual ISMs.

EOP IE: An EOP IE will be carried at the end of project implementation. It will include a comprehensive assessment of progress towards achieving project development objectives as laid out in the results framework. The EOP IE will also inform the design of future investments, by drawing lessons and identifying gaps.

ICR: At the close of the project, the Government and the Bank will carry out separate implementation completion and result reviews to assess the success of the Project and draw lessons from its implementation.

TA: Implementation support will include technical support from the World Bank task teams on critical aspects, particularly in terms of ensuring proper financial management and procurement and, given that the use environmental and social standards (ESSs) is new, in terms of follow-up on environmental and social development issues. The objective of the technical support will be to help the project teams to internalize good practices, and to resolve implementation bottlenecks as they are identified during ISMs.

11. **The implementation support and oversight missions (ISMs, OCRs, ICRs and TAs) will have the combined aim of reviewing the quality of implementation, providing solutions to implementation problems, and assessing likelihood of achieving the PDO.** More specifically, they will: (a) review component-wise implementation progress (through its results chain); (b) provide solutions to implementation problems as they arise; (c) review with the PIU the next six months action plan and disbursement; (d) review the fiduciary aspects, including disbursement and procurement; (e) verify compliance of project activities with the World Bank's Environmental and Social Standards (ESSs); (f) review case studies and survey results to measure results indicators to determine progress towards the PDO against the targets set within the results framework and the quality of implementation; and (g) review the quality of capacity building activities, which are crucial

for an effective implementation of the project. The missions will combine comprehensive field visits and field-based focus group discussions to highlight implementation issues, pick up on implementation lessons emerging and share mission recommendations, including agreements on way forward actions. They will also include reviews of quarterly/annual progress reports and reports of various studies that may be commissioned.

12. ***Technical Rigor*****:** The World Bank task team will comprise team members with appropriate technical skills and experience commensurate with SLSDP requirements. The World Bank task team members are in large part based in Country Offices. The World Bank will, however, periodically draw on international experience, particularly from the FAO Investment Centre to complement the in-country staff.

13. ***Focus of Support*****:** The implementation support missions will be on a semi-annual basis complemented by technical missions and regular short visits by individual specialists to follow up on specific thematic issues as needed.

14. ***Fiduciary Reviews and Support*****:** The World Bank will provide risk-based implementation support on FM and procurement arrangements. During the implementation support missions, the project FM specialist based in the country office will review the FM systems, including capacity for continued adequacy, evaluating the quality of the budgets and implementing agencies' adherence thereto, reviewing the cycle of transaction recording until the final end of report generation, evaluating the internal control environment, including the internal audit function, reviewing interim financial reports (IFRs) and/or annual Financial Statements, follow up on ageing of the advance to the Designated Account, follow up on both internal and external audit reports and periodically assess the project's compliance with the FM manual as well as the financial agreement. The FM risk for the SLSDP is rated Moderate and after each implementation support mission, the risk will be measured and re-evaluated. Supervision will be carried out in coordination with government and will include:

(a) On-site visits to the various project institutions at all levels, including PIU. These visits will include a review of controls and the overall operation of the FM system, review of internal audit, selected transaction reviews, and sample verification of existence and ownership of assets,
(b) Reviews of IFRs and follow-up on actions needed, and
(c) Review of Audit Reports and Management Letters, and follow-up on actions needed.

15. **On procurement, the Bank will provide implementation support to the client through a combination of prior and post reviews, procurement training to project staff and relevant implementing agencies, and periodic assessment of the project's compliance with the procurement manual.** Additionally, procurement specialists will participate in semi-annual implementation support missions to visit the field and carry out post review of procurement actions. Implementation support missions will be geared towards: (a) reviewing procurement documents; (b) providing detailed guidance on the World Bank's Procurement Guidelines; and (c) monitoring procurement progress against the detailed Procurement Plan.

16. ***Environmental and Social Standards*****:** The World Bank safeguards team consisting of social and environmental specialists will guide the project teams in applying the project applicable ESF instruments; and review compliance during implementation.

ANNEX 2: Detailed Project Description

1. **Livestock production has increased over the last three decades,[51] but is not meeting demand.** For example, it grew by 4.2 percent and 6.5 percent in 2017 and 2018, respectively outpacing the overall average growth in agriculture, which was 1.2 percent in 2017 and 0.2 percent in 2018. However, the increase in per capita livestock production is lower compared to neighboring countries, such as Russia, Türkiye, and Kazakhstan. Livestock productivity in general is low, with widespread knowledge gaps in basic animal care methods in the country. Average meat productivity measured by average market live weight (cattle) is 500 kg for agri-businesses whereas it is 350 kg for dehkans and 420 kg for commercial farmers. Average milk productivity, measured by liters of milk per cow per day is 3 liters for dehkans, 8 for private farms and 20 for agribusinesses. Productivity of animals kept by dehkans is lower than those kept by commercial farmers and agribusinesses. As a result, Uzbekistan has not been producing enough livestock products to meet its domestic requirement for animal source foods (ASFs) and is a net importer of livestock products. The increase in the demand for ASFs is expected to continue, and it is projected that by 2035, under a business-as-usual scenario, Uzbekistan can experience 41 and 48 percent production and consumption gaps in milk and meat, respectively, a deficit that could widen, unless interventions are made to address the challenges to increase the production and productivity of the livestock resources. Addressing this deficit will also present an opportunity to use the increased demand for ASFs as an engine of livestock production and productivity, rural growth, and inclusion. Key challenges contributing to such low productivity include inadequate marketing and value addition infrastructure, limited access to finance, and weak institutional capacity, and limited and inadequate livestock support services, such as veterinary and animal health, research, extension, education, and advisory services.

2. **The government succeeded in addressing several of the sub-sector's challenges, yet additional support is needed to build on this success and assure sustainability.** Addressing the challenges can serve as an engine of growth in livestock production and productivity, and creating rural jobs, while ensuring sustainability, resilience, and inclusion. The Livestock Sector Development Project (LSDP) is the latest in the government's continued endeavor of addressing some of the challenges faced by the subsector. The LSDP supported the livestock subsector public investment framework and public services, including developing the LSSDS; the modernization of the subsector by improving access to finance, market, and technology of commercial farmers and agribusinesses, and the inclusion of smallholder farmers into the livestock value chains. It also contributed to increased production and productivity, increased value of livestock products sold and creation of new jobs. However, larger-scale commercial farmers and agribusinesses were the main beneficiaries of the LSDP support, and dehkans benefitted less. The European Union (EU)-financed VCD program of the LSDP improved the access to finance of dehkans. However, because of the limited financial resources allocated to the VCD program, it was not possible to reach many dehkans. Moreover, the LSDP did not focus on improving market and value addition infrastructure and addressing climate change and resilience issues. The Second LSDP (SLSDP), while building on the gains of the LSDP, will fill in the gaps that were addressed partially, and the results of this work will also support the implementation of the recently approved LSSDS.

3. **The project aims to support the development of a more productive, market oriented, inclusive, and sustainable livestock subsector in Uzbekistan.** It seeks to achieve this by strengthening the management and service delivery capacity of public livestock support institutions, supporting the development of market and value addition infrastructures, enhancing import control, and animal identification, registration and traceability, and enhancing the competitiveness, resilience and sustainability of livestock value chains by improving the access to improved, climate smart and inclusive technologies and greener finance of livestock farmers, agribusinesses, and other value chain actors. Beneficiaries of the project include staff of public livestock institutions, smallholder farmers, commercial farmers, agribusinesses, and other

[51] Uzbekistan Livestock Subsector Development Strategy 2020-2030- and Five-Year Investment Plan 2020-2025

value chain actors (such as service providers). Interventions the project will finance are in line with findings and recommendations of the various World Organization of Animal health (WOAH) Performance of Veterinary Services (PVS) missions as well as propriety development areas identified in the LSSDS. The project will be implemented nationwide in all regions of Uzbekistan, including the Tashkent City and will have four components, namely three technical and one project management and coordination component.

4. **Component 1: Strengthen public livestock support services (IDA US$34.5 million).** The objective of this component is to strengthen the management and service delivery capacity of public institutions involved in providing livestock support services.[52] The component is aligned with Pillar 1 (Responding to Food Insecurity), Pillar 2 (Protecting People and Preserving Jobs), Pillar 3 (Strengthening Resilience), and Pillar 4 (Strengthening Policies, Institutions and Investments for Rebuilding Better) of the GCRF. Livestock support services in Uzbekistan are dominated by public institutions. However, these institutions are underfunded, do not have the requisite human and physical resources and capacity, and hence provide support that is often weak and ad hoc. This is further hampered by a weak enabling environment of non-comprehensive, not inclusive, and outdated policies, legislation pieces, and standards. While the country is progressively adopting the concept of One Health in addressing issues such as zoonoses, antimicrobial resistance (AMR) and food safety, there is a need to develop the legislative, institutional, and technical capacities to effectively operationalize the approach. There are private veterinary services providing entities (private veterinary organizations) known as Zoo-Veterinary Points (ZVP). However, they provide veterinary services only to private farmers (e.g., surgery, therapy, supply of feed, ear tags). In some instances, they can choose to support the CVLD in the implementation of programs of national interest e.g., mass vaccinations against priority diseases, and provide services to farmers as their clients. For the latter, the CVLD supplies them with vaccines, but they will have to cover the cost of the service itself and related costs (e.g., administration of vaccines, transport). Private veterinarians are motivated to keep connections with farmers and ensure competitiveness. Based on the type of employment and source of revenues, veterinarians can be divided into three groups: 1) public veterinarians paid directly from the national, regional or district budget (CVLD, laboratories, or veterinary offices and practices in regions/cities/district/towns); 2) private veterinarians paid by private establishments for the services (e.g. slaughterhouses, farms, pharmaceutical companies); and 3) private entrepreneurial veterinarians (e.g. veterinarians employed in ZVP or petshops). This component has four subcomponents: (a) improving the enabling environment; (b) strengthening the capacity of the CVLD; (c) strengthening livestock extension and advisory services; and (d) strengthening research and development. The subcomponents cover all key public livestock support services.

5. **Subcomponent 1.1: Improve the enabling environment (US$0.5 million)**. The objective of this subcomponent is to improve the policy and legal framework of the livestock subsector. Since independence in 1991, the government has issued several policies, laws, and regulations/legislation pieces (resolutions and decrees) that are aimed at improving the productivity and competitiveness of the livestock value chain, including Decree of the President PKM RUz No. 87: “On Improving Reforms in Livestock Production and Protecting the Interests of Dehkan Farms and Privatized Farms”; Decree of the President PP-308 “On measures to stimulate the increase in the number of livestock in private subsidiary plots, dehkans and farms”; Resolution of the Cabinet of Ministers of Uzbekistan: “On measures to further improve pedigree breeding, zootechnical and research work in animal husbandry”; Decree of the President of the Republic of Uzbekistan No. PP-4243: "On measures for the further development and support of the livestock industry"; Decree of the President of the Republic of Uzbekistan “On measures for the comprehensive development of the karakul breeding industry” dated 08/16/2019; Decree of the President of the Republic of Uzbekistan “On measures for the accelerated development of livestock industries in the Republic of Karakalpakstan” dated 11/07/2019; Resolution of the President of the Republic of

[52] These include veterinary and animal health services; extension, and advisory services; and research and development, including educational institutions i.e., universities and colleges.

Uzbekistan **"**On measures to specialize in animal husbandry in Bozatau, Muynak, Takhtakupyr and Kungrad districts of the Republic of Karakalpakstan"; Resolution of the President of the Republic of Uzbekistan "On measures to accelerate the development of the livestock industry, introduce modern and innovative methods, increase the volume and expand the range of products produced, as well as ensure uninterrupted provision of the population with high-quality and affordable livestock products produced in local conditions, state support for enterprises specializing in animal husbandry" dated 01/29/2020; Decree President of the Republic of Uzbekistan "On measures for the further development of sericulture and karakul breeding in the Republic of Uzbekistan"; and Decree President of the Republic of Uzbekistan "On measures to restore and develop silkworm and astrakhan breeding by creating favorable conditions for the full use of the existing potential of these industries and increasing the profitability of production" dated 02/09/ 2020. The policies, laws and legislation pieces issued targeted all types of livestock species, including cattle, small ruminants, poultry, fishery, rabbit, and karakul sheep. By developing policies, laws and regulations, the government showed its willingness and commitment to accelerate the transformation of the subsector from subsistence to a more productive, competitive, inclusive and market oriented.

6. **Some of the policies and legislation pieces are outdated, with the majority placing more emphasis on increasing production volumes, and not enough on improving production efficiency, market orientation, inclusion, resilience, and environmental sustainability.** They also do not address novel issues such as climate change and food system insecurity, thus missing out on some of the great challenges Uzbekistan currently faces. In addition, there are policy and legislative gaps identified by the WOAH PVS missions and the LSSDS, including in pasture management, livestock breeding and genetics, land tenure, animal health and veterinary services, veterinary public health, trade, and management and coordination of animal health and veterinary services. The subcomponent thus aims at filling the policy and legislation gaps by developing new and/or revising existing policies and legislation pieces, and tailoring them to promoting sustainable livestock production, including climate resilience and mitigation and the control of One Health related issues, i.e., zoonoses, food safety, animal welfare and AMR. The development and/or revision of policies and legislation pieces will also ensure better coordination with MOH and State Committee for Ecology and Environmental Protection for surveillance and control of zoonotic diseases and AMR, which will be done in line with the WOAH PVS mission recommendations.

7. **The subcomponent will support the development/revision of policies and regulations to support the mainstreaming of national objectives of climate change adaptation and mitigation identified in the Green Economy Development Strategy 2019 and pertaining to the livestock subsector.** New policies, legislation, regulations, institutions, and standards the preparation of which will be supported by the project will systematically deliver climate adaptation and/or mitigation outcomes. Examples include: (a) the repurposing of public support to the subsector for greater adaptation and mitigation results including for the mainstreaming of climate mitigation into policies and regulations and the related monitoring of impact and efficiency of public investments and other forms of finance geared towards mitigation outcomes; (b) support to policy actions promoting investments on sustainable pasture management and restoration of degraded pastures; (c) introduction of organic livestock farming methods; (d) support to the development of the area under forage crops and diversification of forage crops i.e., expansion of the area under perennial forage trees and perennial grasses; incentives for green investments in livestock production, processing and marketing; (e) incentives and regulations for proper storage/processing/recycling of organic animal waste; (f) policies and investments in support of clean cooling along livestock value chains; (g) support to breeding highly productive and adaptive animals and developing high yielding forage crop varieties resistant to salinity, drought and other hazards and risks; (h) technical support for monitoring of GHG emissions in the livestock sector and improvement of relative sections in National GHG inventory reports submitted to the United Nations Framework Convention on Climate Change (UNFCCC); (i) programs for the inventory and preservation of the gene pool of local animal breeds and forage crop varieties, especially as they relate

to climate change resilience traits; and (j) awareness raising programs for stakeholders along the livestock value chains regarding current GHG emissions and adaptation needs, and related potential turnkey improvements. All the policy actions and technical support under this subcomponent will contribute to climate mitigation outcomes, and thus the project's climate mitigation co-benefits. The results of this work will also support and enhance the implementation of the LSSDS.

8. **As the component supports the capacity of public institutions involved in providing livestock support services, it will raise awareness and progressive implementation of the collaborative One Health approach.** The integrated approach and cross-sectoral collaboration underpinning One Health, for example. in the areas of disease surveillance, laboratory capacity development and data systems, will enable cost savings and increased effectiveness in addressing issues of productivity, food safety, zoonoses and AMR in the sector. One Health is also an effective approach to improving the resilience an adaptation of food systems to climate change, for example in the control for emerging diseases, the control of livestock productivity losses and the prevention of pandemic

9. The subcomponent will support: (a) review of existing policies, legislation pieces, regulations, institutions and standards, including: (i) identifying gaps and implementation challenges, (ii) developing new and/or revising/updating existing policies, legislation pieces, regulations, institutions and standards, including harmonizing them with regional and international standards; (b) provision of technical assistance (TA) for the CVLD and other stakeholders in the review, formulation and implementation of policies and legislation pieces with particular focus on building their capacity in mainstreaming climate change adaptation and mitigation into the policy and legislation formulation process.

10. **Subcomponent 1.2: Strengthen the CVLD (US$13.0 million).** The objective of this subcomponent is to improve the management and service delivery capacity of the CVLD. The CVLD, the headquarters of which is located in Tashkent, is the competent authority (CA) responsible for livestock development, animal health and veterinary services, and some aspects of veterinary public health. It is made up of the Central Veterinary Laboratory, which is also known as State Center for Animal Diseases and Food Safety (SCADFS), which also manages the State Research Center on Quality Control of Veterinary Medicine Products and Feed Additives (SRC); 12 state Regional Veterinary Services (RVS) (also known as Regional State Centers for Diagnoses of Animal Diseases and Food Safety), and in addition, the RVS of Karakalpakstan Republic and RVS of the city of Tashkent; 12 state Regional Veterinary Laboratories (RVL), and the State Veterinary Laboratory (SVL) of Karakalpak Republic and VL of the city of Tashkent; 195 branches of Local Veterinary Services (LVS) in districts and towns; 130 Local Veterinary Laboratories (LVL) of districts and towns (also known as District/Town Centers for Diagnoses of Animal Diseases and Food Safety); 1,411 Field Veterinary Stations (FVS); 265 laboratory establishments for veterinary-sanitary expertise at food markets (also known as Market Laboratories); 27 Border Inspection Posts and Transport Stations (BIPs). The Market Laboratories, which are 265 in total, are embedded within markets (bazaars). They conduct mainly organoleptic assessment and basic chemical testing of food products, including meat, milk, eggs, fish, fruit, and various vegetables. They also conduct some Gram staining and microscopy, for evidence of bacterial contamination, especially gram-positive bacilli. The CVLD headquarter in Tashkent comprises various departments, including protection of animal health; food safety and diagnostics; coordination of veterinary activities; state veterinary control; certification and standardization; foreign relations and investments; innovative activity, science, and education; and financial analysis and accounting. This is a unique structure, which demonstrates the importance of the veterinary services and livestock to Uzbekistan's economy.

11. **The current capacity of the CVLD is limited:** its vision and mission are not aligned with the new strategic vision for the subsector outlined in the LSSDS, and with the green development path outlined in the Green Economy Transition Strategy 2019; and it does not comprise units/departments and adequate systems and procedures that are in line with a

modern, forward-looking, resilient, and sustainable subsector. It is also underfunded to fulfill its mandate, and lacks the requisite infrastructure and human resources, including ICT system to implement its core functions, support its activities, monitor sector performance, and improve its internal and external coordination capacities. The absence of computerization has been a serious obstacle for the development of the sector as well as for veterinary services (VSs) provision. The WOAH PVS Gap analysis mission indicated the need to optimize laboratories while at the same time indicating the need to enhance the capacity of the NVLN and Market Laboratories. For example, most of the laboratory system's records are hand-written. There is currently a registration system for samples and analysis, but there is no electronic recording system in place in any of the laboratories. There is no centralized sample reception section where all samples are received, registered, and dispatched to the relevant section. Instead, when clients arrive at the laboratory, they discuss their case with the duty veterinarian (at the entrance of the laboratory) who advises them where to deliver the samples; in the meantime, the relevant section is advised of the incoming submission. A move from paper to electronic management of activities is required for all activities of VS. Development of a Veterinary Information System (VIS), based on an animal identification database linked with interfaces to livestock information management system (LIMS), BIP, animal health (AH), veterinary public health (VPH) and management modules will bring the CVLD to a new level. The CVLD currently has 8,212 employees and most of these are veterinarians. However, while more staff (livestock specialists) are needed, most current staff of the CVLD are not adequately prepared to perform new activities and responsibilities that come with modern technologies and international harmonization. The WOAH PVS Gap Analysis mission indicated the need to train existing CVLD staff as one of the most critical areas of livestock development and veterinary service provision for the next five years, including the need to make climate change the centerpiece of the strengthening process. It also indicated the need for upgrading undergraduate education to meet the WOAH requirements and to provide "catch up" training for existing CVLD staff. Thus, significant investments are required to improve the human resource situation of the CVLD, including upgrading the current undergraduate veterinary education as well as continuing education program. In addition, a priority investment is needed by CVLD to ensure its capacity to manage human resources, including a program to develop leadership and management skills. In addition, guided by findings of the 2017 WOAH PVS evaluation follow-up, national priorities, and detailed discussions with representatives of the CVLD and supporting documents, the WOAH PVS gap analysis mission made recommendations that will allow collection and sharing of information amongst different levels and units of the CVLD and across Ministries in a One Health approach, as well as monitoring of the effectiveness of implementation of the activities; ensuring relevant and stable financing of the different program through better planning and financing of the activities; and improving standards and regulations through systematic licensing, a code of practice and a regime of professional oversight. There is also a need to strengthen the capacity of CVLD in environmental monitoring and in particular in the monitoring of GHG emissions in the subsector.

12. **The subcomponent will support:** (a) developing systems, including VIS; (b) infrastructure capacity building, including rehabilitation/renovation and refurbishment/equipping office and laboratory buildings, and acquisition of equipment and vehicles; and (c) human capacity building, including advanced and vocational trainings, and international exchanges. Infrastructure capacity building will focus on energy efficiency, on-site renewable energy, CO_2e-emission reduction, and carbon sinks e.g., planting trees in office compounds; and human capacity building, including trainings, and exchange visits will be climate change focused i.e., climate change risks, mitigation and adaptation will be mainstreamed in all trainings and human capacity building endeavors. The support to strengthen the CVLD will be based on priority development areas identified by the various WOAH PVS missions as well as the LSSDS and a detailed human and infrastructure capacity needs assessment that will be undertaken during implementation, including climate change-related capacity/training needs assessment. Support to the proposed rehabilitation/renovation of infrastructure and acquisition of equipment and vehicle will prioritize climate resilient design standards and energy efficient considerations to increase climate adaptation and mitigation outcomes, respectively.

13. **A capacitated CVLD will fully integrate the concept of climate smart livestock development in its functions, capacity and service delivery programs.** At least half of the funding under this subcomponent will be dedicated to activities and technologies that generate mitigation and adaptation co-benefits. Namely, the VIS will include the collection and management of information relevant to adaptation and mitigation activities, will support climate sensitive extension services and policy design and implementation, and will include monitoring data on GHG emissions in livestock value chains and their reduction as well as the monitoring of progress in improving the drivers of resilience to climate change. Support to VIS will also include tools and capacity development for the monitoring of grassland productivity and degradation (including soil organic carbon). Finally, the VIS will be informed by a One Health approach. Regarding infrastructure development, the support will focus on energy efficiency, on-site renewable energy production and carbon sinks e.g., planting trees in office compound. Human capacity building will be climate change focused i.e., themes such as climate change risks, mitigation and adaptation will be mainstreamed in all trainings and human capacity building endeavors.

14. **A capacitated CVLD will also be able to undertake its core functions effectively and efficiently and improve livestock production and veterinary and animal health services provision to increase resilience to climate change risks.** With enhanced capacity, the CVLD will be able to design and implement climate smart, sustainable, and inclusive policies, strategies, legislation pieces, regulations, and standards that help the country adhere to WOAH codes, regulations, and standards, be able to plan and manage operations and resources (human, financial and infrastructure) in a sustainable manner; improve internal and external coordination and liaise with other operational bodies active in the subsector. With enhanced capacity, the CVLD will also be able to develop sustainable livestock development programs and fully engage in promoting the One Health approach; undertake surveillance, disease control and eradication, early detection, and rapid response; coordinate with the MOH on issues such as food safety, nutrition, zoonoses and AMR; provide TA and raise awareness among stakeholders about the benefits of improving animal health and welfare and AMR risk associated with using antimicrobials as growth promoters in animal production; and develop guidelines for good animal welfare. With increased capacity and enhanced capability, the CVLD will be able to facilitate the development of a private sector-led livestock subsector that is more productive, market oriented, competitive, sustainable, inclusive, and resilient.

15. **Subcomponent 1.3: Strengthen public livestock extension and advisory services (US$6.0 million).** The objective of this subcomponent is to further improve livestock extension and advisory service provision that facilitates the development of sustainable livestock production systems. Uzbekistan's livestock extension and advisory services are weak hence unable to support livestock farmers and in sustainably building and improving economic efficiency and integrating sustainable, climate smart and resilience factors and innovations. The absence of a well-functioning agricultural knowledge and information system (AKIS) that can effectively link and coordinate research, education, training, and the provision of extension and advisory services remains to be one of the most significant constraints to development and growth of the sector. The CVLD is responsible for the provision of extension and advisory services. However, the CVLD lacks the requisite capacity and resources to plan, implement, monitor, and evaluate extension and advisory service programs hence the need to build its infrastructure, human and system capacity. This is aggravated by the lack of feedback mechanisms for ensuring the participation of producers and the private sector and informing the design and implementation of extension and advisory services.

16. **There are very few other livestock extension and advisory service providers.** Universities, and research institutes have also been involved in providing livestock extension and advisory services. However, their services are not only ad-hoc and weak, but they are neither inclusive (often they target only their members) nor climate sensitive. Some private entities (e.g., input suppliers) undertake advisory type activities during promotion of their products or business services,

while there are no non-governmental organizations in Uzbekistan with clear agenda of extension/advisory service. In addition, the country does not have conventional types of independent farmers' associations and organizations e.g., cooperatives, that could facilitate the provision of these services. There are certain associations, such as the Council of Farmers Householders (dehkan) and Landowners and association of wen farmers, which is involved in providing livestock extension and advisory services, but again only for their members, and with insufficient technical expertise and know-how to provide effective and sustainable livestock extension and advisory services. The problems in livestock extension and advisory services provision are aggravated by weak research-extension-livestock farmer linkages. The subcomponent will thus strengthen the delivery of demand-driven extension services of the Agency, agricultural universities, agricultural scientific research institutes and centers, Council of Farmers, and private institutions[53] involved in providing livestock extension and advisory services.

17. **The livestock extension and advisory service provision, including demonstrations, exchange visits, field days, and trainings will address key aspects of sustainable livestock production,** including feed and nutrition (production, storage, marketing, and ration balancing), breed improvement (AI, and development, dissemination, and producer-based improvement programs), animal health and veterinary (surveillance, vaccination, biosecurity, and control of production diseases through vaccination, and deworming), animal husbandry (buildings and animal management, including reproduction and animal offtake). Aspects of sustainable rangeland and pasture management; sustainable use and management of water resources; and data collection, analysis, and reporting on various environmental issues, including grassland and pastureland degradation and epidemiology will also be part of the extension and advisory service provision as well as demonstrations.

18. **The principles of climate smart agriculture (CSA) will be systematically mainstreamed throughout the activities of the extension and advisory service provisions under this subcomponent– thereby contributing to a nation-wide, progressive shift towards greater climate change adaption and mitigation in the subsector and related value chains.** CSA principles will be mainstreamed throughout all supported activities in the subcomponent. This will include feed and nutrition (production, storage, marketing, and ration balancing); breed improvement (AI, and development, dissemination, and producer-based improvement programs); animal health and veterinary (surveillance, vaccination, biosecurity, and control of production diseases through vaccination, and deworming); and animal husbandry (climate proof housing for animals, clean cooling, renewable energy production and energy efficient technologies, and herd management for efficiency gains). Further, sustainable rangeland and pasture management; sustainable use and management of water resources; and data collection, analysis, and reporting on various environmental issues, including grassland and pastureland degradation and epidemiology will also be part of the extension and advisory service provision as well as demonstrations. Climate change adaptation and mitigation will be a continuous feature of extension and advisory service provision where climate smart technologies and practices will be demonstrated.

19. **Animal welfare and One Health principles will be embedded in all livestock extension and advisory service provision.** In addition, targeted livestock extension and advisory services will also engage beneficiaries on youth and women's role and contribution to livestock production and in decision making; and services will be provided, and field days organized during times of the day that are convenient also for women and in venues that are accessible to women.

20. **The subcomponent will support:** (a) capacity development need assessment of sector entities involved in providing livestock extension services; (b) based on the outcome of the assessment, build capacity of CVLD and other public livestock extension and advisory service providing institutions , including (i) infrastructure capacity building, including rehabilitation/renovation and refurbishment/equipping office and laboratory buildings, and acquisition of

[53] These will be identified and agreed during implementation.

equipment, vehicles, and farm machinery; (ii) human capacity building, including short and long term training, exchange visits, study tours and TA; (iii) development of best practices and extension material targeting dehkans farms. ; and (iv) TA for public education campaign using traditional and new media tools to raise awareness about diet-appropriate nutrition and food preparation practices in collaboration with the MOH. (e.g., on low-carbon diets, the importance of ASFs in diets among different consumer groups, food safety and hygiene). Specifically, the Institute for Sanitation, Hygiene and Professional Diseases has developed a series of materials, such as on hygiene and food practice at home and a behavioral change communication strategy, that the project can use. The exact mode of activity implementation will be discussed during implementation (through contracting an independent provider, or the Institute itself).

21. **The training aspect of human capacity building of extension and advisory service provision will focus on training extension and advisory agents, who will then train and advise livestock farmers, agribusinesses, and other value chain actors through a training of trainers (TOT) model**. It will build on the principles of CSA and focus on elements of resilient and sustainable livestock production. It will also include aspects of farmer organizations, including establishing and/or strengthening cooperatives and productive partnerships (expected under Component 2). TA that will undertake a public education campaign using traditional and new media tools to raise awareness about diet-appropriate nutrition, food preparation practices and climate resilient practices, such as practices to minimize consumer food waste, including meal planning, and food storage and preservation (pickling, freezing, canning, or dehydrating) in collaboration with the MOH will also be part of the training. Topics will include the importance of ASFs in diets, food safety and hygiene. The communication campaign will differentiate between consumer groups with nutrition deficits, to improve their diets balanced with adequate ASF, from those already eating high levels of ASF. The project will finance public efforts and engage the private sector in the consumer awareness and nutrition campaign. This collective effort aims to further stimulate demand and behavioral change as it pertains to livestock product consumption. Climate change adaptation and mitigation will be a main feature of demonstration sites where climate smart technologies and practices will be demonstrated, such as: improved livestock feeding strategies (for resilience and reduced GHG emissions); improved breeds (feed conversion efficiency and climate change resilience); herd management for efficiency gains (reduced GHG emissions); efficient water management; manure management for better soil fertility resilience; improved animal health and veterinary services; pasture management and pasture restauration (soil carbon sequestration); climate proof housing for animals; renewable energy production; and energy efficient technologies.

22. **Subcomponent 1.4: Strengthen public livestock research and development (US$15.0 million).** The objective of this subcomponent is to build the capacity of selected public institutions involved in livestock R&D (R&D),[54] including the Research Institutes of Veterinary; Animal Husbandry and Poultry; Fisheries, and RIs under the auspices of the Uzbekistan Academy of Sciences, including the Research Institute of Karakul Sheep Breeding and Desert Ecology, and the Samarkand Institute of Veterinary Medicine (SIVM). However, the research and development institutions are significantly underfunded and understaffed, and they lack infrastructure and human capacity. The level of public investment in agricultural R&D is only 0.2 percent of the total agricultural budget. Most of these funds are allocated to programs related to cotton and wheat. As a result, R&D institutions have not been able to engage in meaningful research programs hence in the generation of high-quality and client-oriented knowledge, technologies, and innovations, including in the areas of productivity and efficiency gains among dehkans, climate smart livestock production, environmental sustainability, and food safety. Information and capacities are also missing for the adapted implementation of a One Health approach to specific issues facing the country.

23. **The absence of a well-functioning AKIS that can effectively link and coordinate research, education, and the provision of extension and advisory services remains one of the most significant constraints to the development of the**

[54] The detailed investment plans of the RI to be supported by the project will be prepared before the project is declared effective.

livestock subsector. The AMP is financing the establishment of AKIS centers, which are answerable to the MOA. The project will support strengthening AKIS centers so that they also cater for the needs of livestock-related research and development institutions. The lack of effective linkages between research, extension, and farmers remains a challenge for the generation and transfer of improved livestock technologies. The situation is aggravated by the lack of mechanisms for ensuring the participation of livestock producers and the private sector in determining R&D priorities and providing feedback.

24. **The subcomponent will support:** (a) infrastructure capacity building, including procurement of goods i.e., office furniture; laboratory equipment and consumables, field equipment and farm machineries, vehicles etc., and civil works, including the construction (of new), rehabilitation/renovation (of existing) and refurbishment (both existing and new) offices, laboratories, buildings; (b) human resource development, including training (short and long term) of staff, exchange visits, study tours, and TA; and (c) data collection, baseline analysis and surveillance. The support will be provided based on the outcome of a capacity needs assessment to be undertaken during project implementation.

25. **The R&D institutions supported will be able to engage in the design, implementation, monitoring, and evaluation of climate smart, demand driven, client-oriented and inclusive research and development programs.** At least half of the resources will be directed to R&D for the development and of CSA technologies and practices. This will be ensured through the development of a national strategy for R&D by CVLD, that will set such objectives as well as criteria, milestones and indicators for the delivery of R&D programs and track the allocation of resources to R&D programs advancing CSA related objectives. Programs that the project aims to support, include high-yielding drought resistance/tolerant and adaptive forage crop varieties (15,000 ha at the Research Institute of Karakul Breeding and Desert Ecology); improved animal feed and nutrition (ration formulation) technologies; climate-smart animal breeding, including calf management; and energy efficiency, clean cooling and renewable energy production along the livestock supply chains. R&D human capacity development will focus on topics related to climate change, sustainability and resilience among others, and infrastructure capacity building will include the establishment of climate resilient infrastructure and energy efficient laboratory and office equipment, as well as practices and technologies that would reduce women's drudgery. As a result of improved capacity, R&D institutions will also be able to establish strong linkages with extension and advisory service providers, input suppliers and thereby ensure the generation and dissemination of demand-driven and climate smart technologies among dehkans, women and the youth. The R&D institutions will also be able to forge linkages with international research and training institutions and thereby engage in climate change related capacity building initiatives in the form of participating in international trainings, seminars, symposia, workshops, exchange visits and sabbaticals. The support, which targets selected public R&D institutions will be provided based on the outcome of a detailed infrastructure and human capacity needs assessment to be undertaken and investment plans to be prepared before effectiveness.

26. **Component 2: Strengthen market and value addition infrastructure and facilitate trade (IDA US$40.0 million).** The objective of this component is to improve the access to market of livestock farmers and agribusinesses, enhance value addition, and import control of animals and animal products. The component is aligned with Pillar 1 (Responding to Food Insecurity), Pillar 3 (Strengthening Resilience), and 4 (Strengthening Policies, Institutions and Investments for Rebuilding Better of the GCRF). The livestock market infrastructures situation in Uzbekistan is dire as there are very few market centers and most of them lack the basic facilities, including feed, water, shades etc. The ASFs consumption structure in Uzbekistan is changing with the advent of modern retail trade enterprises and the growth of the population of Uzbekistan and their income which initially typically leads to a shift of dietary preferences towards ASFs, as well as demand for some food quality attributes such as packaging labeling, longer shelf life, and products that are safe. The system for controlling the import of animals and animal products is weak. Border inspections posts (BIPs), even if they

exist, have capacity constraints and there are no quarantine stations/ facilities. The animal identification, registration and traceability (AIR&T) system is yet to be operationalized. Marketing, value addition, and import control require the development of a satisfactory level of infrastructure; qualified personnel; and an appropriate knowledge of international standards. They also require the development and modernization of a VIS for border inspections and controls. Enhancing climate resilience, including adaptation and mitigation opportunities will be at the center of strengthening the market and value addition infrastructures, both in terms of climate proofing, building broader climate resilience due to addressing climate risks and impacts, as well as energy efficiency, and less food loss and waste along the value chain and strengthening border control and quarantine. The component has three subcomponents, including: (a) strengthening market and value addition infrastructure; (b) strengthening quarantine and border security; and (c) operationalizing the AIR&T system.

27. **Subcomponent 2.1: Strengthen livestock market and value addition infrastructure (US$2.0 million).** With a focus on dehkans, the objective of this subcomponent is to improve market access for livestock farmers, processors, and other value chain actors so that the quantity and quality of livestock and livestock products traded in formal market channels increases. The livestock subsector has a low commercial market offtake due to inadequate market and value addition infrastructure, and value addition activities themselves are in their infancy. There are very few market centers in Uzbekistan, and they are spread over the country. They also lack basic marketing facilities, including feed and nutrition, veterinary services, and water provision. Value addition infrastructures are not climate smart and have also been not fully developed to meet the diverse consumer demand. To address the growing diversity in demand for ASFs, livestock products should have added value so that they reach the final consumers in different forms and varying degrees of processing at locations convenient to the consumers. Large proportion of the national livestock production, meat, milk, eggs, skin, and wool in Uzbekistan is produced by the dehkan farms and most of it is home consumed by households themselves and the remaining is sold to neighbors at village markets without traceability to track down the source of origin in case of food safety problems. Less than ten percent of the livestock products produced by the dehkan system enters into the longer value chain and formal markets. If any left from direct consumption and sales to the village markets, it is processed locally using traditional processing mechanisms. Dehkan farms are isolated from high-end and better-paying retailers and exports. This is because they have difficulty in maintaining consistent supply volume, quality, and safety standards. More so, supermarkets and exporters avoid high transaction costs of reaching the fragmented small farms. There is a limited experience where large farms, the currently established clusters, and cooperatives work with small dehkan farms to bulk, collect and sort their products. Dehkan farms are also constrained by limited access to processors, storage, and packaging facilities for their perishable products, resulting in losses.

28. **Private farms, agricultural enterprises, and specialized livestock farms participate in longer livestock products value chain to supply the modern processing plants that channel processed livestock products through the supermarkets to reach the final consumers.** However, their participation is also limited. For example, there are about 50 modern slaughterhouses that are widely spread across the country, but they operate below 50 percent capacity as they are less accessible due to distance and infrastructure by smallholder livestock keepers. A significant volume of slaughtering is done at the farm or backyard to supply local traders and consumers. This situation cannot continue as urbanization is growing and the income of citizens who are willing to pay a competitive price for convenience, healthy and traceable products is increasing. Livestock products e.g., Karakul pelts are getting less competitive in the international markets due to lack of good quality and well-processed skin, and less investment in the best exportable karakul breed for quality skin. Most of the livestock producers at the high end of the value chain have very limited participation in the existing livestock value chains. The low development of the livestock value chain hurts all the actors along the value chain.

29. **Well established market and value addition infrastructures accompanied by vertical (value addition) and**

horizontal (productive alliances) coordination between value chain actors through, for example, forward contracts and cooperatives, women groups, youth groups, or clustering, could bring efficiency and predictability to the whole value chain and value chain actors. The project will support (through the CVLD extension services under Component 1) the identification and mobilization of potential value chain participants interested in cooperating as partners and empower them to jointly identify and build more integrated value chains.

30. **The subcomponent will support:** (a) establishing new and strengthening and modernizing existing livestock market and value addition infrastructures**.** This includes: (i) infrastructure capacity building (goods and civil works), including the construction (of new), rehabilitation/renovation (of existing) and equipping (of both existing and new) market infrastructures, and (ii) human capacity building, including trainings, exchange visits, study tours and TA to livestock producers, traders and staff of institutions involved in livestock marketing; (b) the development of vertical and horizontal integration/coordination among livestock value chain actors for production, processing, marketing, and input supplies through productive alliances and partnerships, with due attention to women and youth and possibilities of greening; and (c) establishing livestock market information infrastructure.

31. **Strengthened market and value addition infrastructures will increase market participation, ensure food safety, increase revenues and resilience, and reduce GHG emissions of dehkans.** Further they will facilitate access of livestock farmers, agribusinesses and other value chain actors to energy-efficient storage, processing, transportation, and refrigeration equipment that minimize food losses and waste, as well as improve food safety. Consultations with women and women's groups will ensure that priorities and concerns for women (in terms of distance, safety, access among other things) will be reflected in establishing and/or strengthening climate smart, resilient, and sustainable livestock market and value addition infrastructures. Productive alliances will enhance the integration of dehkans into the livestock value chains, improve access to market and finance as well increase the volume and quality of livestock products produced and sold. The project will support formation of production alliances (through the CVLD extension services under Component 1) by identifying and mobilizing potential value chain participants interested in cooperating as partners and empower them to jointly identify and build more integrated value chains. The technical designs, equipment installed, and human capacity building activities supported by the subcomponent will systematically integrate requirements and specifications for energy use efficiency, smart cooling renewable energy production, and climate resilience. Capacity building activities will include awareness raising on climate risks and knowledge on the interconnectedness of climate risk and animal health as well as food safety.

32. **Subcomponent 2.2: Strengthen border security and quarantine (US$5.0 million).** The objective of this subcomponent is to facilitate trade by enhancing import control through strengthening border security and quarantine and thereby protect the health of the population and animals (including wildlife), as well as ensure food safety. BIPs and field quarantine facilities/stations play a crucial role in this regard. Uzbekistan has 20 BIPs but does not have any field quarantine stations. All BIPs have serious capacity limitations. Moreover, the country does not have a comprehensive border and integrated control strategy. The WOAH PVS mission identified the need to optimize and strengthen/capacitate BIPs, including equipping them with sample collection and related inspection equipment for customs terminals that can be used frequently and serve multiple border posts. The WOAH PVS mission also highlighted the need to establish well equipped field (on-farm) quarantine stations that help to monitor the health status of animals and animal products imported from abroad. In order to execute their responsibilities effectively, however, they will need to be complemented with a comprehensive and integrated border control strategy, a border module for the proposed VIS and biosecurity measures that meet international standards for on-farm quarantine of animals from abroad. They also require veterinarians who have increased capacity particularly on clinical signs and on recognizing diseases of potential risk for the country. The lack of qualified veterinarians who have the capacity to diagnose and detect clinical

signs and recognize diseases of potential risk for the country that are expected to increase in Uzbekistan due to changes in the temperature regime, precipitation amount, and air humidity is alarming. With stronger border security and quarantine, risks related to animals and food can be assessed earlier, traceability can help in zeroing on the source of anticipated possible problems, and the capacity to avert impacts on animals and humans will be strengthened. This is particularly important in a context where climate change is expected to drive up the emergence of new diseases and changes in the distribution of disease vectors and pathogens.

33. **The subcomponent will support:** (a) developing a comprehensive and integrated border control strategy; (b) strengthening BIPs; (c) establishing on-farm quarantine stations; and (d) establishing cross-border collaboration on animal movements and control**.** Strengthening BIPs and establishing quarantine stations include: (i) infrastructure capacity building, such as works i.e., construction and/or rehabilitation of various types of buildings, and goods i.e., the procurement of sample collection and related physical inspection equipment, computers and office equipment, a VIS compatible border inspection module; and (i) human capacity building, such as training of personnel involved in quarantine and border security. The capacity building support, which targets BIPs, and quarantine stations will integrate the concept of emerging diseases and One Health approach to surveillance, prevention, and control of zoonoses and food safety hazards. Support will be provided based on WOAH recommendations as well as the outcome of a detailed capacity needs assessment to be developed during project implementation. The support to the development of a comprehensive and integrated border control strategy will focus on the development of a trade health certificates system that follows international standards and ensures sustainability.

34. **A prerequisite to the development of an efficient animal health, food safety and traceability management system in the animal food production chain is the implementation of a VIS capable for the capture, storage, analysis, and retrieval of data and providing the opportunity for the cumulative gathering of the knowledge and capability for its competent interpretation.** Such a system will enable collecting appropriate data, including quality management and inspection controls, in a structured, predefined format, and facilitate competent analyses and reporting of such data, as well as the improvement of the existing programs and strategies. The role of information system in animal disease diagnosis, surveillance and notification, control of national and international trade of commodities, food safety management, investigation of diseases, predictive microbiology and quantitative risk assessment is of great importance for the quality of veterinary service. Integral part of the VIS is animal disease notification system designed according to and in compliance with international requirements, standards, and recommendation and able to exchange relevant information with similar information systems. With strengthened border security and enhanced quarantine, Uzbekistan will be able to protect the health of its population, animals, and investments as well as ensure food safety. The support, which targets capacity building of BIPs, and the establishment of quarantine stations will be provided based on the outcome of a capacity needs assessment to be undertaken during project implementation. The support to the development of a comprehensive and integrated border control strategy will focus on the development of a trade health certificates system that follows international standards and ensures sustainability.

35. **Subcomponent 2.3: Operationalize AIR&T system (US$33.0 million).** The objective of this subcomponent is to support the government in the implementation (rolling out) of the AIR&T system in Uzbekistan. Appropriate identification and registration of establishments (farms or units where animals are kept), livestock markets, pastures and animals are essential for improvement of disease prevention and control programs as well as facilitating trade and developing breeding strategies. AIR&T will allow the CVLD to conduct detailed planning, monitoring, and evaluation of activities, and to ensure the proper management of suspicious or infected animals. It will also enable the official verification of each establishment’s sanitary status, movement controls, export certification, and support future traceability of animal products. The LSDP financed the preparation of the methodology for AIR&T. The methodology was developed by

reviewing (a) the current legislative base for AIR&T systems, and (b) characteristics of the livestock production systems with particular focus on stock routes, slaughtering, marketing systems, pastures, livestock markets, holding grounds, transport facilities, feedlots, and quarantine stations. The methodology includes a roadmap i.e., step-by-step implementation of the AIR&T system in Uzbekistan and an estimate of the financial resources required to fully implement the AIR&T system and its maintenance. The AIR&T system can also be used as precision livestock farming (PLF) since it allows the use of several technologies used for health and welfare monitoring, weight control, and animal management (identification, registration, and movement control) that can support the livestock keeper in making decisions or even make decisions for the producer.

36. **The subcomponent will support:** (a) procurement of information and communications technology (ICT) equipment, including computers, servers, smartphones, printers, tablets, scanners, and field equipment, including vehicles, ear tags - integrating energy efficiency objectives and specifications throughout; (b) field activities, including coordination mechanisms with relevant national and regional institutions and local authorities, preparation of census staff and materials, conducting the census i.e. cattle census (individual animal) and holding census (all cattle owners); (c) drafting laws and regulations; (d) human resource development, including training and capacity building of staff of the CVLD, field veterinarians, farmers, slaughter house and livestock market workers, police and zootechnicians; and (e) awareness creation, including preparing communication plan, production (and distribution) of printed materials and audiovisuals and social media outlets.

37. **With an AIR&T system in place, livestock producers will be able to better protect, trade and improve their herd.** The AIR&T system helps producers and animal health officials respond quickly and effectively to animal disease events and take necessary mitigation actions. It will enable traceability of products for export and will also help coordination with other services and Ministries for border control and implementation of One Health activities. The AIR&T system will contribute to evidence-based decision-making for productivity and efficiency at the farm level while continuously informing policy and investment decisions to address emerging challenges (including those from climate change) and thus contribute to resilient livestock value chains infrastructures and systems. The system will also improve consumer confidence in food supply by ensuring food safety, including minimizing potential exposure to emerging and climate sensitive diseases.

38. **Component 3: Promote green and resilient livestock value chains (US$160.5 million: IBRD US$90.0 million and IDA US$70.5 million).** The objective of this component is to modernize the livestock value chains and make them greener, less GHG-intensive, and more resilient to shocks and climate change, by improving access to targeted finance for those livestock farmers interested in improving their on-farm climate resilience and in greening of their livestock production. A special focus will be made to support access to finance for productive alliances established under the project as well as smallholder livestock farmers. The component is aligned with Pillar 1 (Responding to Food Insecurity), Pillar 2 (Protecting People and Preserving Jobs), Pillar 3 (Strengthening Resilience), and 4 (Strengthening Policies, Institutions and Investments for Rebuilding Better of the GCRF). The component has two subcomponents: (a) credit line to participating financial institutions (PFIs) for provision of working capital and investment finance to the livestock subsector nationwide for farmers, agribusinesses, productive alliances and other value chain actors, including for climate-resilient and green livestock farming, marketing, distribution, and processing; and (b) capacity building for PFIs on sector-specific loan product development, loan appraisal, environmental and social standards, and monitoring in the livestock subsector.

39. **Subcomponent 3.1: Improve access to finance (US$160.0 million: IBRD US$90.0 million, IDA US$70.0 million).** The objective of this subcomponent is to improve the access to finance for livestock producers interested in improving the climate resilience of their farms and interested in greening livestock production. The credit line will have two

windows. Window 1 will support loans in the amount up to US$1 million to meet the needs of farmers, agribusinesses, productive alliances, and other value chain actors who are generally operating within this scale. Window 2 will be for loans up to US$100,000 targeting dehkans, using more streamlined procedures. The initial allocation is US$110 million under Window 1 and US$50 million under Window 2. The PFIs will need to draw on both windows concurrently and ensure a well-diversified sub-loan portfolio at the PFI as well as the project level. One hundred percent of the credit line investments (sub-loan financing) will include climate change (adaptation and/ or mitigation) measures.

40. **Smallholder livestock farmers lack access to investment financing due to lack of suitable loan products, funding structure of financial institutions characterized by limited long-term fundings and the "investment choices" of the financial sector institutions which tend to favor lending to larger farms/livestock production businesses.** The increasing provision of long-term funding for the sector, targeting the funding towards resilience-improving and greening livestock sector investments and smallholders, and ensuring the PFIs are aware of the specifics of lending to livestock sector can help alleviate these structural constraints and increase flow of loan funds to smallholder livestock farmers. Financial products that are tailored to livestock production cycles and, in particular, to the needs of the smallholder farmers are in short supply, highlighting the need to further support financial institutions in developing specific loan products/services for this segment and in building the capacity of financial institutions in new lending methodologies. Window 2 is deemed, therefore, necessary to fill the credit gap of very small farmers who usually are not able to borrow from the formal financial sector.

41. **In order to encourage downscaling by the commercial banks, a number of simplifications will be proposed for sub-loans in the amount of up to US$100,000**: (a) simplified business plan and documentary requirements; (b) strictly enforcing application of the agreed prior and post-review formats, not requiring full sub-loan applications for the smaller loans; (c) submitting the Statements of Expenditure for the sub-loans up to US$50,000 in a table format, indicating some key parameters; (d) digitizing the sub-loan application process including environmental and social safeguards; and (e) encouraging the use of the refinancing facilities for small loans. Building on the experience gained under several previous credit lines to Uzbek agriculture sector, the subcomponent will be compliant with World Bank Guidance for Financial Intermediary Financing and adopt a set of acceptable Credit Line Guidelines.

42. **The credit line will fund investments that strengthen transition towards sustainable and climate smart production systems:** 100 percent of sub-loans will finance climate change mitigation and/or climate adaptation activities. Positive lists will be provided for both eligible mitigation activities (e.g., feed digestibility and ration balancing, improvement of animal health and breed, animal waste management, biodigesters, pasture management, energy saving) and adaptation activities (e.g., drought- and heat-resistant fodder crop varieties and breeds, water savings, renewable energy, buildings, diversification). The component will also provide financing for integrating renewable energies production along the livestock value chain, for instance, biodigesters and solar panels to power processing plants or temperature control in animal houses. In addition, the subcomponent will include eligibility and evaluation criteria of applications to benefiting women participation.

43. **The project will contribute to availing long-term financing for the livestock sector by providing funding with a 15-year maturity to the banking sector to be revolved in the PFIs towards financing of sub-loans in line with the project objectives.** It is expected that the majority of the sub-loans - as has been the case with the LSDP sub-loans portfolio where investment loans represent over 95 percent of the sub-loan portfolio, will be used for investment purposes. This will be complemented by TA as described in the Subcomponent 3.2 below.

44. ***Potential PFIs***: It is expected that most, if not all active PFIs of the LSDP, including Aloqa Bank, Asaka Bank, Asia

Alliance Bank, Davr Bank, Ipoteka Bank, Quishloq Qurilish Bank (QQB), Turon Bank and Uzpromstroy Bank, would be interested in continuing lending to the livestock sector. The PFIs will be mobilized into the project on the basis of their interest to participate in the implementation of the credit line as well as a due diligence process for any PFIs that are not already active PFIs under another Bank-finance credit line. The criteria for the due diligence and continued maintenance of a PFI status for commercial banks will be similar to those used under previous credit lines. These criteria shall also be used by the PIU to monitor the continued eligibility of the PFIs operating under the Credit Line.

45. ***Flow of funds:*** For the purposes of the credit line, the World Bank loan funds will be channeled through the Ministry of Economy and Finance (MEF) as the Borrower's representative. The implementation of the credit line under Component 3 (Improve access to finance for smallholder livestock farmers, agribusinesses, and other value chain actors) will be carried out by the PIU, which will be established under the CVLD. The former UZAIFSA staff who have extensive experience in implementing World Bank-financed projects, including credit lines, will be maintained in the PIU. They have also been implementing the LSDP. Therefore, there is expected to be limited need for capacity building and equipping the PIU before they are able to start implementation of the SLSDP. The MEF, representing the Borrower; the PIU, representing the CVLD; and each qualified PFI will sign a Subsidiary Loan Agreement for the purposes of implementing the project's credit line. Separate Credit Line Guidelines (CLGs) will determine the criteria, eligible activities, detailed withdrawal procedures, and responsibilities of all parties implementing the credit line. The PFIs will receive the credit line proceeds under the framework of the Subsidiary Loan Agreement and on-lend to eligible beneficiaries for implementation of eligible sub-projects in accordance with the CLG, satisfactory to the World Bank, and their banking considerations.

46. ***Types of investments financed***: A wide range of investments in livestock-related activities will be eligible for financing from the credit line, including, inter alia, heard upgrading, farming, processing, packing, and marketing equipment and infrastructure, cooling facilities and equipment, upgrading of existing infrastructure and equipment required to comply with food safety or market-specific requirements. Agricultural inputs for feed production, such as seed, fertilizer, as well as processing raw materials, consumables, and other items necessary for livestock product production, processing, and trading will also be eligible for working capital financing. Priority will be given to investments that promote climate resilience and emission reduction, such as (a) climate smart technologies and practices including sustainable land/ landscape management, waste management systems to minimize greenhouse gas emissions, pollution, and dissemination of pathogens, and (b) renewable energy supply (bio and solar energy) systems.

47. ***Main Terms and Conditions of the Credit Line:***

(a) Sub-financings will not be used to for any activity involving child and forced labor in any form or land acquisition or resettlement of people or loss of assets or income.
(b) The funds will be available both in Uzbek Soums (UZS) and US Dollars, based on the demand of the sub-borrowers. Most of the sub-loans under Window 2 are expected to be provided in domestic currency.
(c) The PFIs will receive credit line proceeds for up to 15 years, inclusive of a grace period of five years, and repay the principal amount to the MEF over the period of ten years in equal semi-annual payments, upon expiration of the grace period. Any amounts, received as repayment from the sub-borrowers and not needed for repayment to the MEF, the PFIs will revolve internally, providing new sub- loans in compliance with the PDO and the operational guidelines for the credit line. The interest rate to the PFIs will be discussed and finalized during the preparation of the LSDP CLGs.
(d) The PFIs will set their own interest rates and repayment terms to final sub-loan beneficiaries based on their banking considerations. The PFIs will carry out appraisal of sub-loans and sub-borrowers based on the agreed

criteria and will bear the full risk of subsidiary loan repayment.

(e) *The maximum loan size* will be up to US$250,000, and up to US$50,000 for small-holder farmers. Working capital loans will be up to US$30,000 for up to 24 months.

(f) The maximum maturity of the investment sub- loans will not exceed the amortization period of the asset. The actual size and maturity of the loans will depend on the type of investment financed, profitability of the activity, cash-flows generated, collateral, and other banking considerations.

(g) *Maximum financing share*: The project will finance up to 100 percent of the sub-loans. The sub-borrowers will be required to contribute 20 percent of the sub-project financing.

48. **Subcomponent 3.2: Strengthen capacity of PFIs (US$0.5 million).** The objective of this subcomponent is to build the capacity of PFIs, including through trainings, study tours and exchange visits to staff and managers of PFIs so that they can introduce innovative financing instruments such as digital financial services and value chain financing modalities for livestock farmers and agribusiness enterprises. The training program will focus on the use of new financial products to target clients (with a particular focus on smallholder farmers in this case, and on female clients) engaged in livestock production activities, evaluating the suitability and effectiveness of these new financial products, and mitigating the possible risks associated with lending to these beneficiaries. This training will be complementary to and will build on training programs conducted under the LSDP and HDP to the PFI lending staff. The training program will focus on the use of new financial products to target clients (with a particular focus on smallholder farmers in this case, and on female clients) engaged in livestock production activities, evaluating the suitability and effectiveness of these new financial products, and mitigating the possible risks associated with lending to these beneficiaries. The capacity building will focus on the use of new and climate smart financial products to targeted clients, evaluating the sustainability, suitability, and effectiveness of these new financial products, and mitigating the possible risks associated with lending to these beneficiaries as well as risks associated with climate change. Training will also cover how to integrate climate change in the credit line programs, including for example cost-of-fuel savings into financial analyses.

49. **Component 4: Project management and coordination (IDA US$3.88 million).** Activities under this component will support all project management functions. These functions will be undertaken by the project implementation unit (PIU) established under the auspices of the CVLD to manage and coordinate the LSDP. Activities include: (i) strengthening capacity for day-to-day project management of technical, fiduciary, Monitoring and Evaluation (M&E), environmental and social issues; (ii) grievance redress, citizen engagement, and implementation of the communications; and (iii) M&E of project activities, including impact assessments, beneficiary satisfaction surveys, and development of an integrated system for project management and monitoring of project outputs and outcomes.

50. Out of the total project costs of US$240 million, an unallocated amount (IDA US$1.12 million) will be allocated during project implementation.

ANNEX 3: Economic and Financial Analysis and GHG Accounting

INTRODUCTION

1. The Project Development Objective (PDO) is to support the development of a productive, market-oriented, sustainable, and inclusive livestock subsector in Uzbekistan. The expected quantifiable benefits of the project will be a result of: (a) improved access to better and enhanced public livestock support services, including improved enabling environment; and (b) improved access to markets, finance and improved production technologies and practices that are more productive, inclusive, climate smart and resilient to external shocks; and (c) improved and enhanced value addition and competitive livestock value chains. This will be ensured by improved access to remunerative formal markets, and integration of smallholder livestock farmers into livestock value chains, leading to increased production and productivity and improved and equitable returns, while commercial farmers and enterprises will have access to finance accompanied with a comprehensive technical assistance (TA) package. It is expected that the project will be country-wide and demand-driven.

2. The primary beneficiaries of the project include smallholder livestock farmers (dehkans), commercial farmers, and agribusinesses (enterprises) who participate in and benefit from improved livestock value chains. Dehkans are the largest owners (herd) and producers (production) of livestock. The contribution of different existing farm categories to livestock production in the country can be seen from Table 1 and Table 2 (see below). The other beneficiaries of the project consist of: (i) input suppliers and service providers along the value chains supported by the project; (ii) private vets; (iii) staff of CVLD and other stakeholders involved in the implementation of the project, and (iv) the rural unemployed for whom project support is expected to create greater decent employment opportunities at farm and processing levels of targeted value chains.

Table 1: Livestock inventories by farm categories (2017-2020)[55]

'000 number of heads						
Farm category	**Livestock category**	**2017**	**2018**	**2019**	**2020**	**Average%**
Private farms	Cattle	615.9	662.2	708.3	784.5	**5.4%**
Dehkan farms	Cattle	11,675.4	11,983.3	12,071.7	12,169.2	**93.2%**
Enterprises	Cattle	179.7	168.6	169.7	200.6	**1.4%**
	Sub-total	***1,2471.0***	***12,814.1***	***12,949.7***	***13,154.3***	
Private farms	Cows	210.3	230.1	249.6	293.8	**5.4%**
Dehkan farms	Cows	4,085.0	4,351.2	4,366.4	4,373.1	**93.6%**
Enterprises	Cows	41.2	44.7	47.5	62.5	**1.1%**
	Sub-total	***4,336.5***	***,4,626.0***	***4,663.5***	***4,729.4***	
Private farms	Small ruminants	2,166.9	2,461.7	2,691.8	3,032.2	**12.0%**
Dehkan farms	Small ruminants	17,369.9	18,034.7	18,064.1	18,091.3	**82.6%**
Enterprises	Small ruminants	1,104.1	1,084.1	1,151.0	1,335.3	**5.4%**
	Sub-total	***20,640.9***	***21,580.5***	***21,906.9***	***22,458.8***	
Private farms	Poultry	92,63.2	12,146.8	12,299.1	13,295.1	**13.9%**
Dehkan farms	Poultry	44,197.0	47,637.2	51,611.2	52,005.5	**57.7%**
Enterprises	Poultry	21,409.9	26,590.8	23,949.4	24,289.1	**28.4%**
	Sub-total	***74,870.1***	***86,374.8***	***87,859.7***	***89,589.7***	

[55] Agriculture of Uzbekistan, publication of the State Committee of the Republic of Uzbekistan on Statistics, Tashkent 2021, pages 246-261.

3. As can be seen from Table 1 above, nine out of ten cattle and cows, and eight out of ten small ruminants are owned by dehkans during the last four years. However, the pattern is not similar for poultry– almost 58 percent of poultry is owned by smallholders, while one-third is owned by big enterprises.

Table2: Livestock production by farm categories (2017-2020)[56]

Farm category	Product	2017	2018	2019	2020	Average%
'000 tons (life weight)						
Private farms	Meat	69.3	109.5	125.7	112.2	**4.3%**
Dehkan farms	Meat	2,145.9	2,236.5	2,230.9	2,302.7	**91.8%**
Enterprises	Meat	71.6	84.5	117.0	104.7	**3.9%**
	Sub-total	***2,286.8***	***2,430.5***	***2,473.6***	***2,519.6***	
'000 tons						
Private farms	Milk	337.7	397.3	462.0	519.8	**4.1%**
Dehkan farms	Milk	9,641.8	9,995.8	10,156.5	10,372.2	**95.2%**
Enterprises	Milk	68.4	73.3	95.8	84.9	**0.8%**
	Sub-total	***10,047.9***	***10,466.4***	***10,714.3***	***10,976.9***	
Million units						
Private farms	Eggs	695.3	1,079.5	1,142.8	1,048.9	**13.5%**
Dehkan farms	Eggs	4,020.8	4,335.1	4,491.6	4,817.9	**60.2%**
Enterprises	Eggs	1,616.6	2,044.7	2,136.8	1,914.4	**26.3%**
	Sub-total	***6,332.7***	***7,459.3***	***7,771.2***	***7,781.2***	

4. From Table 2 above, it is clearly seen that livestock inventory and production figures are more or less comparable i.e., dehkans own the largest number of animals and account for the largest share livestock production. This is due to the fact that private farms and enterprises take a very small share of the market, however the productivity difference between commercial livestock keepers and smallholders can reach up to 6-7 folds. Moreover, this is exacerbated by the fact that often 60-70 percent of livestock products are used for self-consumption by smallholders.

PROJECT BENEFITS

5. **Quantifiable benefits.** It is expected that the project will lead to increases in production and productivity hence income of all three categories of farms, including dehkan farms, commercial farmers, and agribusinesses (enterprises). Benefits will accrue from: (i) increased livestock production, productivity and volume and value of livestock products sold due to improved enabling environment, enhanced livestock support services, adoption of improved technologies and practices; (ii) increased availability of market information and improved and direct access to formal livestock markets of smallholders; (iii) reduced losses during production and processing of livestock products through innovative technologies; (iv) improved quality and safety of agricultural and food products, thus attracting higher prices as a result of the demand by processors for more reliable outputs; (v) increased traceability of livestock products and trust of consumers; (vi) increased and revived export of selected livestock commodities; (vii) better management and reduced costs of zoonotic diseases due to strengthened capacity of veterinary control entities; (viii) enhanced access to longer-term credit; (ix) increased employment, either for hired or family labor, for both on-farm and off-farm activities; and (x) tax revenues as a result of increased volume of taxable production.

[56] Agriculture of Uzbekistan, publication of the State Committee of the Republic of Uzbekistan on Statistics, Tashkent 2021, pages 262-273.

6. Principal increases in incomes will be largely dependent on dehkans, commercial farmers, and enterprises accessing and adopting improved technologies and practices. The activities to be supported by the project will promote the VCs development, thus improving the access to technologies, market, and finance, supporting linkages and private sector development, and generally creating a favorable enabling environment that encourages the development of a vibrant livestock subsector that helps farmers/rural entrepreneurs to produce more competitive products.

7. **Unquantifiable benefits.** There are also some unquantifiable benefits that could be attributed to the project. Project interventions will provide capacity building and training to the institutional partners leading in the end to the institutional strengthening and sustainability of local and central administrations related to livestock sub-sector. Strengthening central and local planning capacities will also include developing synergies between different interventions and improving coordination with different actors, including donors.

8. The project will generate additional employment opportunities for the rural population in the project area either as newly emerging economic entities, hired labor or as increased household labor requirements for both on-farm and off-farm activities as well as through project supported-works. This is important especially in the light of such economic crises as COVID-19 pandemic and outflow of working migrants from Russia because of Russia's invasion of Ukraine.

9. The above unquantifiable benefits are rather difficult to estimate mainly due to lack of efficient and reliable data. Therefore, the analysis mainly assumes quantifiable revenues generated by participating livestock value chain agents and direct social and environmental benefits (carbon sequestration).

GENERAL ASSUMPTIONS IN THE ANALYSIS

10. The parameters for the models are based on information gathered during the design mission: interviews held with farmers and entrepreneurs, information obtained from donor agencies operating in Uzbekistan, on-going HDP and LSDP projects, and design team estimates. In particular, information on labor and input requirements for various operations, capital costs, prevailing wages, yields, farm gate and market prices of commodities, and input and farm-to-market transport costs were collected by the design team. Conservative assumptions were made both for inputs and outputs, and possible risks have also been considered.

11. **Exchange rate.** The exchange rate used in the financial and economic analysis is fixed at US$1= UZS 11,506[57], with a strong assumption that future inflation in input prices will be outweighed by increase in output prices.

12. **Prices.** Prices for commodities/inputs reflect annual average and those actually paid/received by farmers/entrepreneurs and imply potential risks.

13. **Interest rates.** The on-lending rates to final beneficiaries under the SLSDP are expected to be similar to those negotiated under other on-going HDP, LSDP and FVREDP projects: in UZS from 19 to 21 percent and in US$ from 6.5 to 8.0 percent.

14. **Credit line facility.** Window 1 will support loans in the amount of up to US$1 million in order to meet the credit needs of commercial farmers, agribusinesses, productive alliances, and other value chain actors who are generally operating within this scale. Window 2 will be for loans in the amount of up to US$50,000 targeting dehkans (very small

[57] The Central Bank of Uzbekistan, https://cbu.uz/en/, accessed March 2022.

farmers with up to five dairy cows or equivalent in other animals), using more streamlined procedures.

15. **Lending Terms.** The length of the seasonal or short-term loans is up to one year. Long-term loans for smallholders are expected to be repaid in equal instalments over an up to a five-year period, depending on the investment. The long-term loans were assumed to have a one-year grace period. The enterprises will have a repayment period of seven years with a grace period of three years. Interest on the entire amount outstanding will be paid during the grace period.

16. The models show **incremental revenues and costs** generated by investments financed by the Project. In each case, the results of the investments translate into additional demands for livestock produce from primary producers and processors as well as new permanent and casual jobs.

17. The models compare two scenario – **"With project" (WP)** and **"Without project" (WOP)**.

18. **Discount rates.** The analysis differentiates financial and social (economic) discount rates. The financial discount rate (FDR) of 16.0 percent (which is the weighted averaged deposit rate in the country[58]) is used in this analysis to assess the viability and robustness of investments, which is the current Opportunity Cost of Capital (OCC) to a beneficiary. The selection criterion for the internal rate of return (IRR) is to accept all projects for which the IRR is above the opportunity cost of capital, i.e., 16.0 percent. Using the IRR as the measure, the models' sensitivity to the changes in parameters can be assessed by varying the cost of investments, production costs and revenues. The economic or social discount rate (SDR) of 6.0 percent[59] is applied for the economic analysis, which is a Social Opportunity Cost (SOC).

19. **The shadow exchange rate (SER)** has been calculated at US$1 = UZS 11,795. Standard conversion factor of 0.98 for non-tradeable and 1.03 for tradeable goods have been applied to inputs and outputs when converting financial prices into economic prices.

20. In the financial analysis, such indicators as **increase in net benefits, IRR, NPV and Benefit-cost ratio (BCR)** have been used. The BCR shows the relationship between the relative costs and benefits of each farm/enterprise model, expressed in monetary terms.

21. Under availability of training sessions, extension services, technology support and better input services, it is assumed that the farmers are capable of adopting improved technologies and practices and undertaking improved livestock production and thereby enhancing productions at farm level.

22. Although gender wage gaps exist, on average, the proxy labor is valued at UZS 60,000 both for male and female labor for the sake of the analysis.

FINANCIAL ANALYSIS

23. The financial analysis provides an example of the practical application of the VC approach as well as the findings of the analysis for the indicative dairy and meat value chains. However, the number of value chains to be supported by the project is not limited to these two VCs, it will potentially include beekeeping (apiculture) and fish farming

[58] The Central Bank of Uzbekistan, https://cbu.uz/en/, accessed March 2022.
[59] Globally introduced social discount rate in accordance with the latest World Bank requirements. The social discount rate used for the economic analysis is based on World Bank's estimations, proposed by a standardized methodology. See Discounting Costs and Benefits in Economic Analysis of World Bank Projects, OPSPQ. May 9, 2016.

(aquaculture) VCs as well. Such methodology intends to provide an indication of how the VC approach would be applied in the context of implementation of SLSDP. As such, it does not represent the only element or indication for supporting particular enterprises, sub-sectors and/or activities hence would have to be assessed in conjunction with the other SLSDP eligibility criteria as well.

24. The project management, however, would be required to have a broader perspective for its planning purposes, considering potential value chains, food safety, animal health, social needs, land management, environmental concerns, etc. balancing between the needs of one value chain with those of others and the aspirations of potential beneficiaries. It is expected that a thorough analysis of constraints and opportunities would lead to the type of decisions/responses required for potential value chains.

25. Traditional farm and enterprise models are useful but not sufficient tools for measuring the project's objective of mobilizing investments to accelerate economic development. The models used in this analysis (presented below) are aiming to demonstrate how the project and beneficiaries would apply the VC approach to assess opportunities for and constraints to economic development.

26. A number of indicative economic activities, which may be supported by the SLSDP were identified during the design process. Eight illustrative models were prepared to demonstrate the financial viability of potential investments: three farm models and one processing enterprise models for each of dairy and meat value chains. All models show the prospective benefits and rate of return derived from improved enabling environment, enhanced public livestock support services, and the access to required financing (loans), training, demonstrations, and advisory services. These models were used as building blocks for the dairy and meat value chain models (VCMs).

27. The basis of this analysis is an illustration of the interrelationships between primary producers and rural enterprises (processors) in the value chain potentially to be supported by SLSDP. Specifically, the dairy VCM describes modernization (establishment of new or expansion of existing) of dairy farms due to improved access to finance and improved technologies, including improved breeds, feed and nutrition, husbandry practices, and enhanced livestock public support services (veterinary and animal health, extension and advisory, and research and development) leading to increased production and productivity of dairy farms to meet the demand for milk. The meat VCM describes modernization (establishment of new or expansion of existing) of beef farms or emerging cattle feeding farms due to improved access to finance and improved technologies, including improved breeds, feed and nutrition, husbandry practices, and enhanced livestock public support services (veterinary and animal health, extension and advisory, and research and development) leading to increased production and productivity of beef farms to meet the demand for meat. Moreover, the VCM estimates average incremental net benefits per US$1 of investments that would be used for the calculation of an overall incremental benefit stream of the project.

Dairy Value Chain Model

28. Dairy VCM describes the interrelationships between the milk producers and anchor dairy processor in the dairy value chain. It is assumed that improved access to finance and enhanced public livestock support services would enable the primary producers to invest in improved technologies, including high breeds, animal feed and nutrition, husbandry practices thus leading to a rise in milk production and productivity for satisfying the demand for milk and milk products of the anchor dairy processor.

29. ***Milk Production.*** The viability of the above investments would depend on the assurance of a stable production of quality and safe milk by farmers. To satisfy the demand in milk of the anchor dairy processor the following estimated number of households would be involved in the VC. It is assumed that 188 small dairy farms (and rural households) with about 2 milking cows each would invest in improved breeding (local breed) and improved husbandry in order to increase milk productivity. About 50 small-size dairy farms with 5 cows each (and larger rural households) would invest in improved breeding (pure breed) and improved husbandry in order to increase milk productivity. Another 50 large farms (so called "agri-business") would increase their herds from 30 to 50 cows (purchasing 20 pure breed cows), improve their husbandry practice and increase milk productivity. It is expected that all project supported dairy farms would produce milk of better quality and they would receive a premium price for the supplied milk paid by the dairy processors. They would collectively produce about 14,000 tons of quality milk per year, equivalent to about UZS 39.0 billion.

Figure 1: Dairy farms: sheds constructed by dehkan and commercial farmers. Mission photos, March 2022.

30. With respect to the small dairy farms' investment represented by dehkan households, it is assumed that the farms would use their own resources to finance improved breeding (AI), construction/renovation of a shed, quality feed and veterinary services. This would allow increasing milk productivity for a small farm with local breeds from current 4.5 l/day to 8 l/day and for a small farm with pure breeds from current 7 l/day to 12 l/day and significantly increase production of milk available for sale.

31. It is assumed that a private farm with 30 locally improved cows would access a loan to construct a shed and to purchase additional 20 high breed cows, quality feed and veterinary services. This would allow increasing milk productivity from 12 l/day to 15 l/day.

32. ***Milk Processing.*** The total investment of the facility would be around UZS5.8billion or US$500,000. It is assumed that the enterprise already owns an old building with outdated equipment which processes 11 tons of milk/day, while the new investments would allow the company to increase the processing capacity to 36 tons of milk/day. The investment would be financed through own contribution of UZS1.2 billion (about US$100,000) and a long-term loan of around UZS 4.6 billion (around US$400,000) in Y1 as well as the provision of technical advice. The investment would lead to incremental annual net benefits derived from sales of dairy products (different types of cheese and butter) of a required quality reaching UZS1.1billion at full development (US$98,900 at Y6). Milk collection is considered as part of the business of dairy processors through mobile milk collecting cars. Practice has shown that the milk collection is not financially viable, unless it is owned and driven by the dairy processor. It is envisaged that milk collection and cooling would be an integral part of the dairy processors' business to overcome the issue of financial sustainability and to ensure formal contractual arrangements with the dairy farmers in a long term, however in practice some forms of productive alliances that would work on milk collection and cooling could be also tested within this VCM.

Figure 2: Dairy processing facility. Mission photos, March 2022.

33. The results of separate farm and enterprise models in Dairy VCM are presented in Table 3 below. It can be seen that all of the analyzed models are financially viable with IRRs ranging from 18.7 percent to 53.8 percent, while NPVs range from US$810 to US$16,302.

Table 3: Summary of financial analysis of separate farm and enterprise models in Dairy VCM

Farm Models	Estimated Investment Costs (US$)			Annual Net Benefits at Full Development (US$)			Incremental annual net benefits per 1US$ of investment (US$)	IRR (%)	NPV (US$)
	Loan	Beneficiary Contribution	Total	Without Project	With Project - Full Development	Incremental			
Dekhkan farmer with 2 cows	369	92	461	83	640	557	1.21	53.8%	810
Dekhkan farmer with 5 cows	10,156	2,539	12,695	170	4,612	4,443	0.35	22.8%	1,801
Private farmer (30 to 50 cows)	41,159	10,290	51,449	4,266	25,646	21,381	0.42	18.7%	2,983
Milk Processing (including collection)	400,000	100,000	500,000	4,737	128,873	124,136	0.25	21.5%	16,302

34. ***Summary of Dairy Value Chain Analysis.*** The analysis demonstrates the type of procedure that would be used by the project implementation unit in assessing the potential of proposed investments, both from a poverty alleviation point of view as well as economic potential. The value chain model shows NPV of US$2.1million and IRR of 24 percent. In addition, the investment would lead to the creation of about additional 9 full-time qualified jobs at the enterprise and 35,131 person-days of hired labor at farm level (or 130 person/years). Table 4 summarizes the expected results for this model.

Table 4: Summary of Dairy VC analysis

Indicator	Meat/Beef
Total number of beneficiaries	615
Of whom	
-Farmers	288
-On-farm hired labor	315
-Qualified laborers	12
Total incremental investments ('000 US$)	3,794
Of which	
-Beneficiary contribution	759
Incremental Annual Benefits at Full Development ('000 US$)	
-Total	1,527
-Farmers	1,401
VCM NPV ('000 US$)	2,109
VCM IRR (%)	24
Weighted Annual Incremental Net Benefits per US$ Investment (US$) at Full Development	0.40

Meat Value Chain Model

35. Meat VCM describes the interrelationships between the meat producers and meat processors in the meat value chain. It is assumed that improved access to finance and improved technologies as well as enhanced public livestock support services would enable the primary producers to invest in improved technologies, including high breeds, animal feed and nutrient, improved husbandry practices thus leading to a rise in meat production for satisfying the demand by the processing facility. If in the case of Dairy VCM, the beneficiaries would substitute the existing cows with low productivity in order to purchase high-breed cows, it is assumed that most of the Meat VCM beneficiaries would be engaged in this activity from scratch.

36. ***Meat Production (cattle/beef).*** It is assumed that 618 and 800 small cattle farms (dehkan farmers) would invest in fattening of 2 and 4 cattle heads each, respectively. Seven large cattle private farms would establish feeding lots for fattening of 50 cattle heads each. They would collectively produce 4,770 heads of fatten cattle per year or 1,600 tons of beef, equivalent to about UZS 98.2 billion or US$8.3 million.

Figure 3: Meat VCM producers: dehkan farm, commercial farmer, and agribusiness. Mission photos, March 2022.

37. With respect to the small cattle farms' investment, the model with 2 cattle heads suggests that the farms would be financially sustainable without additional credit resources (IRR is 16.1 percent in with credit scenario vs 34.6 percent without financing). However, the investments costs are still high for a dehkan farmer to start the business with 2 cattle heads from scratch thus (s)he would rely on a credit line.

38. One large cattle private farm (a feeding lot) would attract a long-term loan of UZS 2.4 billion (about US$215,000) to construct a shed and to purchase 50 heads of cattle, quality feed and veterinary services. This would allow producing 17.5 tons of meat (in life weight) per year. This investment would result in incremental annual net benefits of UZS 101 million (about US$ 8,700).

39. ***Meat Processing (slaughterhouse).*** The total investment of the facility would be around UZS 1.7 billion or US$150,000. This would allow the enterprise to annually process 4,770 heads of cattle (or 8 heads/day). The investment would be financed through own contribution of UZS 345 million (US$30,000) and a long-term loan of around UZS 1.35 billion (US$120,000) in Y1 as well as the provision of technical advice. The investment would lead to incremental annual net benefits derived from sales of slaughter services reaching UZS 350 million at full development in Y7 (about US$30,000).

Figure 4: Meat processing steps (steps with sensitive content are not shown). Mission photos, March 2022.

40. The results of separate farm and enterprise models in Meat VCM are presented in Table 5 below. It can be seen that all of the analyzed models are financially viable with IRRs ranging from 16.1 percent to 40.3 percent while NPVs range from US$61 to US$113,453.

Table 5: Summary of financial analysis of separate farm and enterprise model in Meat/Beef VCM

Farm Models	Estimated Investment Costs (US$)			Annual Net Benefits at Full Development (US$)			Incremental annual net benefits per 1US$ of investment (US$)	IRR (%)	NPV (US$)
	Loan	Beneficiary Contribution	Total	Without Project	With Project - Full Development	Incremental			
Farm 1 (2 cattle heads)	2,657.1	664	3,321	0	376	376	0.11	16.1%	62
Farm 2 (4 cattle heads)	12,737.2	3,184	15,921	0	5,457	5,457	0.34	40.3%	6,739
Farm 3 (50 cattle heads)	214,140.6	53,535	267,676	0	53,787	53,787	0.20	21.1%	49,956
Meat Processing	120,000.0	30,000	150,000	0	30,404	30,404	0.20	18.2%	113,453

41. ***Summary of Meat Value Chain Analysis.*** The value chain model shows NPV of US$2.1million and IRR of 24 percent. In addition, the investment would lead to the creation of about additional 7 full-time jobs at the enterprise and 18,000 person-days of hired labor at farm level (or 67 person/years). Table 6 summarizes the expected results for this model.

Table 6: Summary of Meat VC analysis

Indicator	Meat/Beef
Total number of beneficiaries	1,491
Of whom	
-Farmers	1,417
-On-farm hired labor	67
-Qualified laborers	7
Total incremental investments ('000 US$)	16,787
Of which	
-Beneficiary contribution	3,357
Incremental Annual Benefits at Full Development ('000 US$)	
-Total	4,797
-Farmers	4,765
VCM NPV ('000 US$)	11,118
VCM IRR (%)	31
Weighted Annual Incremental Net Benefits per US$ Investment (US$) at Full Development	0.29

ECONOMIC ANALYSIS

Base case scenario: overall project ERR = 20.6 percent, ENPV = US$159.1 million

42. The approach applied in the analysis is not a standard approach, which is based on aggregation of benefits from specific households taking up pre-defined packages of interventions as compared to project costs. In the chosen approach, due to the demand driven nature of the project, representative value chain models are used to estimate potential returns to US$1 of economic investments. The potential range of opportunities for economic advancement in the country varied greatly throughout the area, and it is anticipated that farmers and rural entrepreneurs would encourage diversity in order to accelerate economic advancement. The project would support farmers and entrepreneurs to identify those opportunities, thus generating investments beyond the indicative value chains included in the analysis.

43. Financial prices of locally traded outputs and inputs are converted into economic prices by deducting direct subsidies, taxes and duties and applying conversion factors. Economic prices for imported inputs and outputs and/or traded goods are calculated at their border parity prices. The economic cost of the project is estimated by removing price contingencies and all taxes and duties from the financial cost using conversion factors.

44. The analysis identifies the quantifiable benefits that relate directly to the activities undertaken following implementation of the project components, or that can be justifiably attributed to the project's implementation. The illustrative models described above have been used for calculating the overall benefit stream of the value chain support, on the basis of economic prices. Considering the dairy and meat value chain models as representative, thanks to the improved breeding and feeding activities, milk and meat yields would grow by at least 25 percent due to project activities.

45. **Adoption rate.** Based on similar projects' experience in the country, it was assumed conservatively that at least 80 percent of the investments would achieve the estimated returns, i.e., an 80 percent cumulative adoption rate was applied to the models. Financing flows, including loans have not been undertaken in the calculations as they are already reflected in the project costs or represent transfer payments (duties and taxes).

46. Considering the above examples as reasonable assumptions of the VCs likely to be implemented, an estimated average incremental annual net benefit per 1US$ of investments is used. In particular, an average indicator for the **incremental annual net benefits per US$1 of investments equals to US$0.35 on average.**

47. The incremental net benefits were calculated by multiplying this indicator with the size of estimated investments to value chains development but considering the gradual increase of such benefits over a period of nine years.

48. **The period of economic analysis is 20 years** to account for the phasing and gestation period of the proposed interventions. A conservative scenario is presented in the analysis, and it is indicative and demonstrates the scope of profitability originated from the conditions prevailing at the time of the preparation.

49. **Overall Estimated Return of the project.** Given the above benefit and cost streams, the base case economic rate of return (ERR) is estimated at 20.6 percent. The base case net present value of the project's net benefit stream, discounted at 6 percent is US$159.1 million in economic terms. The summary of base case economic analysis is presented in Table 9.

50. **GHG analysis**. In its 2012 Environment Strategy, the World Bank adopted a corporate mandate to conduct GHG emissions accounting for investment project financing. The quantification of GHG emissions is an important step in managing and ultimately reducing emissions and is becoming common practice for many international financial institutions. To assess a project's net carbon balance, the WB has adopted the Ex-Ante Carbon-balance Tool (EX-ACT) developed by FAO in 2010.

51. An ex-ante assessment of the impact of the SLSDP on the GHG emission has been undertaken using the FAO Ex-Act tool. The net carbon balance is the difference between the gross results of with and without project scenarios achieved for 20 years, including 5 years of project implementation and 15 years of capitalization periods. The SLSDP finances several activities that can be captured with the GHG accounting tool (for more details, see the EX-ACT working file).

52. The project contributes to natural resources management objectives through different ways. For instance, support of the Research Institute of Karakul Breeding and Desert Ecology (Subcomponent 1.4) envisages: a) purchase of equipment for cultivation of pastures with introduction of perennial crops on 15,000 ha (change of the pastures' state from severely degraded to moderately degraded); b) seed breeding, production and distribution at national level (13,000 ha of pastures will be improved from severely degraded to moderately degraded); and c) introduction and distribution of a new variety of pasture crops, specifically melilot in mountainous areas on about 4,000 ha (the pastures' state will be improved from severely degraded to non-degraded). It was also estimated that on these 13,000 ha of land (see (b) above), which are mainly for sheep breeding, about 23,500 sheep will be grazed in with project scenario introducing the control over the number of sheep heads (conservative scenario based on carrying capacity calculations), while in without project scenario the sheep inventories will be growing at 2.9 percent rate annually.

53. Furthermore, for the sake of analysis, the same two indicative value chains (milk and meat) were used in EX-ACT. As official statistics show, the inventories of steers and cows are almost the same, it was thus assumed that the credit line in the amount of US$ 150 million would be split equally between the two value chains (Subcomponent 3.1). To identify the total number of livestock directly affected by the project, the credit line allocation for each value chain was divided by the average cost of each value chain. In WoP scenario, the analysis assumes that the same natural growth rate

of livestock inventories (1.8 percent annually for cattle and 3 percent annually for dairy cows, which are equivalent to a growth of 5,208 and 16,799 heads per year, respectively) would continue, while WP scenario, due to improved productivity and management, the number of livestock purchased with support of project funding will be maintained. It was assumed conservatively that the mitigation in greenhouse gases would be reached due to improved feeding practices (by 10 percent), increased use of specific agents and dietary additives (by 5 percent) and improved breeding (by 5 percent) of livestock. As for sheep breeding, it was similarly estimated as for livestock calculation, using the statistics of sheep inventories growth, which is 2.9 percent or 27,028 heads annually (WoP scenario), while in WP scenario, the sheep inventories will be maintained at carrying capacity of the improved grasslands. The emissions would emanate from the construction of facilities (estimated at 28,000 m^2 of new facilities to be built with an assumption that on average 30 percent of such a building is made of metal and 70 percent is of concrete) as well as energy inputs (estimated at 1,155,000 kWh/year of electricity for all built facilities) for operation (Subcomponent 3.1).

54. Considering the abovementioned, the amount of total net carbon balance estimated at 54,520 tCO2-eq of mitigated emissions (which means that carbon sequestration outweighs emissions within the project) per year at full development or 1,090,399 tCO2-eq during the whole project lifetime. Details of the results are shown in Table 7.

Table 7: GHG analysis results, EX-ACT tool

Project Name	*SLSDP*		**Climate**	*Warm Temperate (Dry)*				**Duration of the Project (Years)**	*20*		
Continent	*Asia (Continental)*	**Dominant Regional Soil Type**		*HAC Soils*				**Total area (ha)**	*32000*		
Components of the project	**Gross fluxes**			**Share per GHG of the Balance**					**Result per year**		
	Without	**With**	**Balance**	**All GHG in tCO2eq**					**Without**	**With**	**Balance**
	All GHG in tCO2eq			**CO_2**			**N_2O**	**CH_4**			
	Positive = source / negative = sink			**Biomass**	**Soil**	**Other**					
Land use changes											
Deforestation	0	0	**0**	**0**	**0**		**0**	**0**	0	0	**0**
Afforestation	0	0	**0**	**0**	**0**		**0**	**0**	0	0	**0**
Other LUC	0	0	**0**	**0**	**0**		**0**	**0**	0	0	**0**
Agriculture											
Annual	0	0	**0**	**0**	**0**		**0**	**0**	0	0	**0**
Perennial	0	0	**0**	**0**	**0**		**0**	**0**	0	0	**0**
Rice	0	0	**0**	**0**	**0**		**0**	**0**	0	0	**0**
Grassland & Livestocks											
Grassland	121,917	-877,800	**-999,717**	**0**	**-999,717**		**0**	**0**	6,096	-43,890	**-49,986**
Livestocks	1,024,323	904,114	**-120,209.8**				**-25,167**	**-95,042**	51,216	45,206	**-6,010**
Degradation & Management											
Forest degradation	0	0	**0**	**0**	**0**		**0**	**0**	0	0	**0**
Peat extraction	0	0	**0**		**0**		**0**	**0**	0	0	**0**
Drainage organic soil	0	0	**0**		**0**		**0**	**0**	0	0	**0**
Rewetting organic soil	0	0	**0**		**0**		**0**	**0**	0	0	**0**
Fire organic soil	0	0	**0**	**0**				**0**	0	0	**0**
Coastal wetlands	0	0	**0**	**0**	**0**		**0**	**0**	0	0	**0**
Inputs & Investments	0	29,527	**29,527**			**29,527**	**0**	**0**	0	1,476	**1,476**
Fishery & Aquaculture	0	0	**0**			**0**	**0**	**0**	0	0	**0**
Total	1,146,240	55,841	**-1,090,399**	**0.0**	**-999716.7**	**29527.3**	**-25167.4**	**-95042.4**	57,312	2,792	**-54,520.0**

55. The estimated shadow price of carbon that will evolve from year to year according to the World Bank Shadow Price of Carbon Guidance Note, the ERR and the ENPV were calculated. The results of scenarios with low carbon price (starting from US$43 and evolving over years), high carbon price (starting from US$86 and evolving over year) and without carbon are presented in Table 8.

Table 8: Project Economic Indicators with Carbon Externalities

Indicator	Without carbon benefits scenario (Base case)	Low carbon price scenario	High carbon price scenario
ENPV (US$ million)	159.1	191.1	222.9
ERR	20.6%	24.1%	28.1%

56. **Sensitivity Analysis.** Economic returns of the base case scenario were tested against changes in benefits and costs and for various lags in the realization of benefits. In relative terms, the ERR is equally sensitive to changes in costs and in benefits. In absolute terms, these changes do not have a significant impact on the ERR, and the economic viability is not threatened neither by the 20 percent decline in benefits nor by a 20 percent increase in costs, since the ERR in both cases remains well above the discount rate. A one-year delay in Project benefits reduces the ERR to 17.4 percent, with which it remains economically viable. The results are presented in Table 9.

Table 9: Sensitivity Analysis

Sensitivity Analysis (20-year period)	Base case	Costs Increase			Increase of Benefits		Decrease of Benefits			Delay of Benefits	
		+10%	+20%	+50%	+10%	+20%	-10%	-20%	- 30%	1 year	2 years
ERR	**20.6%**	18.8%	17.4%	13.8%	22.4%	24.1%	18.7%	16.7%	14.5%	17.4%	15.0%
NPV (Million USD)	**159.1**	149.6	140.1	111.5	184.6	210.0	133.7	108.2	82.8	134.6	111.4

ANNEX 4: Financial Intermediary Financing Guidelines Compliance Note

1. This Financial Intermediary Financing Guidelines Compliance Note is prepared for: (a) a credit line in the amount of US$160 million (Subcomponent 3.1) under the Second Livestock Sector Development Project. This follows a compliance note prepared during the second half of September 2021 for the credit line under the Second Rural Enterprise Development Project (P176017). Given the limited developments in the financial sector in the past five months since the preparation of a similar note and the similar nature of the credit lines, this note will provide the updates on the overall economy and financial sector as needed, but mostly will focus on the justification and design for this new credit line.

I. GENERAL PROJECT OVERVIEW

1.1 Project Summary

2. The SLSDP builds on the LSDP, which was implemented during FY17–22. The new project seeks to further advance, in a comprehensive manner, livestock sector development in Uzbekistan, by strengthening the capacity of public livestock support services for better management and enhanced delivery of services, supporting the development of market and value addition infrastructure thereby improving the access to market of livestock producers, improving the access to finance of livestock farmers, agribusinesses, and other value chain actors. These will further contribute to increased productivity and production, improved access to market, enhanced quality and value addition and increased competitiveness of livestock value chains. Beneficiaries of the project will include staff of public livestock institutions, smallholder farmers, commercial farmers, agribusinesses, and other value chain actors (such as service providers etc.). The project will be implemented nationwide in all regions of Uzbekistan, including the Tashkent City. The credit line will focus on the areas where livestock production is concentrated.

3. The SLSDP development objective is to support the development of a productive, market-oriented, sustainable and inclusive livestock sector in Uzbekistan. The project expects to reach this objective with three technical components and a project management component. Component 1: Strengthen public livestock support services (US$34.5 million) will strengthen the enabling environment and management and service delivery capacity of public livestock support services, such as veterinary and animal health services; extension, and advisory services; and research and development, including educational institutions i.e., universities and colleges. Component 2: Strengthen market and value addition infrastructures and facilitate trade (US$40 million) will aim to improve the market access and value addition of livestock farmers and agribusinesses and enhance import control of animals and animal products. Component 3: Promote green and resilient livestock value chains (US$160.5 million). The objective of this component is to improve the access to finance of dehkans, commercial farmers, agribusinesses, productive alliance members and other value chain actors involved in the livestock value chains. This Component will include a credit line of US$160 million using the modality of Participating Financial Institutions (PFIs). Component 4: Project management and coordination (US$3.88 million)**.** This component will support the implementation, management, monitoring, and evaluation of the project. The total financing of the project is US$240 million (including a US$90 million IBRD loan and US$150 million IDA credit), of which US$160 million have been preliminary budgeted for the credit line.

4. The project complements three ongoing projects related to agrifood sector development namely the Agriculture Modernization Project (AMP) (P158372), Horticulture Development Project (HDP) Additional Financing (P164226), and Fergana Valley Rural Enterprise Project (FVREP) (P166305) that aim to support productivity supporting public services; strengthen the crisis and climate resilience of the agriculture sector; increase domestic food self-reliance and nutritional security; strengthen a foundation for increasing production and export competitiveness of the growing agricultural sector; and improve public institutions' early warning and crises preparedness and response capacity. It contributes to

the development of viable private livestock sector and supports development of productive relationships (as productive alliances) in the sector for improved market access. The project also builds on and draws lessons from livestock operations financed by development partners, including the Asian Development Bank (ADB) and French Development Agency (AFD), which highlighted the need for investments in public goods, improving the management and service delivery capacity of public veterinary and animal health and extension and advisory service providing institutions as well as improving the access to finance of livestock farmers, including dehkans.

1.2 Objectives of the project

5. The project's development objective is to support the development of a productive, market-oriented, sustainable and inclusive livestock subsector in Uzbekistan.

1.3 Flow of funds

6. For the purposes of the credit line, the World Bank loan funds will be channelled through the Ministry of Economy and Finance (MEF) as the Borrower's representative. The implementation of the credit line under Subcomponent 3.1 (provide access to finance for investment by livestock producers) will be carried out by the Project implementation Unit (PIU), which will be established and housed in the CVLD. The former UZAIFSA staff who have extensive experience in implementing World Bank-financed projects, including credit lines, will be maintained in the PIU. They have also been implementing the LSDP and thus have prior experience dealing with livestock sector development. Therefore, there is expected to be limited need for capacity building and equipping the PIU before they can start implementation of the SLSDP. The MEF, representing the Borrower; the PIU, representing the CVLD; and each qualified participating financial institution (PFI) will sign a Subsidiary Loan Agreement for the purposes of implementing the project's credit line.[60] Separate Credit Line Guidelines (CLGs) will determine the criteria, eligible activities, detailed withdrawal procedures, and responsibilities of all parties implementing the credit line. The PFIs will receive the credit line proceeds under the framework of the Subsidiary Loan Agreement and on-lend to eligible beneficiaries for implementation of eligible sub-projects in accordance with the CLGs, satisfactory to the World Bank, and their banking considerations.

1.4 Additional information

7. **Results of the LSDP.** The project builds on the gains and lessons learnt from the LSDP which closed in June 2022. The LSDP improved access to finance of farmers and agribusinesses, increased the productivity of selected livestock value chains, and the volumes and values of livestock products sold, and contributed to job creation in the agribusiness sector. The LSDP, through its credit line component, financed sub-loans that were used to finance investment costs i.e., procurement of animals (pregnant heifers, cattle, sheep, and goats etc.) and farm machinery etc., as well as recurrent costs. The implementation of the credit line was done by the following banks:

[60] A modality of a "treasury bank" was also considered but not adopted under the project. In Uzbekistan, the government has opted for revolving the funds at the PFI. The PIU has a supervisory function of the loan portfolio – technically ensuring that the funds are allocated for eligible sub-loans. The other consideration has been the dialogue on interest rates. A treasury bank would drive up the rates by taking an extra margin which of course would be reflected in the final interest rates to producers.

Table 1: Disbursements under the LSDP, as of March 8, 2022

PFI	SLA Amount Signed (US$ million)	Disbursed (US$ million) **	Disbursed (%)
Aloqa Bank	10.0	10.0	100.0
Asaka Bank	9.65	9.65	100.0
Asia Alliance Bank	8.5	7.8	91.7
Davr Bank	2.5	2.5	100.0
Halq Bank	61.6	61.6	100.0
Ipoteka Bank	11.3	11.3	100.0
QQB*	11.3	11.2	99.1
Turon Bank	11.5	11.5	100.0
Uzpromstroy Bank	16.0	16.0	100.0
Total	**142.3**	**141.5**	**99.4**

* Qishloq Qurilish Bank

** In addition, the PFIs have also started using the finds revolving at their level. Thus, the 9 PFIs financed a total of 47 sub-loans worth US$9,604,924. To date, the total number sub-loans (credit line beneficiaries) amount to 561 and the total credit line investment to US$149.5 million, including investments from repaid loans.

8. The 561 sub-loans in the total amount of US$149.5 million equivalent (inclusive of revolving funds in the amount of US$9.6 million), extended by the Participating Financial Institutions (PFIs) under the project, contributed to increased productivity and enhanced the competitiveness of livestock value chains. For example, among the credit line beneficiaries, milk productivity increased on average from 2,620 (pre-project) to 5,078 litres/cow/lactation period after the sub-project implementation, meat productivity from 2,796.9 to 10,485 tons/year and eggs from 1,161,365 to 1,419, 813 thousand pieces of eggs/year.[61] The total value of livestock products (meat and meat products) sold also increased significantly “with-project”, whereas income of beneficiaries increased from US$18,626 to US$38,973 per annum (not adjusted for inflation.

9. The sub-loans helped beneficiaries establish new and/or expand existing businesses because of which they were able to create a total of 20, 396 new jobs, including 4,423 direct jobs, out of which 1,302 were women jobs; 7,769 seasonal jobs; and 8,204 indirect jobs. The average numbers of jobs created per US$1 million investment were 52 for direct jobs, including 12 for women jobs; 69 for seasonal jobs; and 66 for indirect jobs. These were high compared to horticulture sub-sector, which has already been considered in Uzbekistan to be a sub-sector that generates more and better jobs per US$1 million investment, and in fact much higher than in non-agriculture sectors. The LSDP, through its value chain modernization component, also improved the access to market of dehkans. For example, the LSDP financed a total of 120 value chain development (VCD) grants that smallholders used to procure improved technologies, including (dairy and/or beef) animals; livestock product processing units; farm machinery, including tractors, bailors etc.; transportation (special purpose vehicles); and storage facilities (coolers and milk tankers). The VCD grants helped smallholders increase production and productivity, improve their market access as well as improve the quality of livestock products produced and sold.

10. Most of the beneficiaries of the LSDP were large-scale commercial farmers and agribusinesses, and the number of dehkans who benefited from LSDP interventions, including from credit line investments as well as VCD grants is low.

[61] Data from the progress reports of the project implementing agency.

Thus, out of the 561credit line beneficiaries, only five were dehkans and the rest are commercial farmers and agribusinesses. Through the VCD grants, only 1,200 dehkans were reached (out of the nearly five million dehkans). The preliminary assessment of the VCD grants shows that because of the support, these few dehkans were able to participate successfully in livestock value chains (through establishing Productive Partnerships), gain access to markets (commercialization), improve the quality of products they produced demonstrating the potential impact for operations that will target smallholders. The LSDP invested little in livestock support services, including veterinary and animal health; research, extension, and advisory services; and marketing and value addition infrastructures that are important in transforming the livestock subsector.

11. The new project aims to cover exactly these gaps: being inclusive by targeting dehkans, who play a crucial role in livestock production, and invest in livestock public support services, as well as in market and value addition infrastructures and it aims to do so in a sustainable, inclusive and climate smart way.

12. **Primary beneficiaries**. The project's primary beneficiaries are dehkans, commercial farmers, agribusinesses, productive alliance members and other value chain actors interested in increasing climate resilience and greening of their farms. They will benefit from improved enabling environment and effective and enhanced public livestock support services, including veterinary and animal health, extension, and advisory services; improved, productive, climate smart and inclusive livestock technologies, including breeds, feed and nutrition, animal husbandry, and veterinary and animal health. They will also benefit from access to improved market and value addition infrastructure, finance, as well as enhanced control of import of livestock (live animals) and livestock products. The primary beneficiaries of the credit line will be farmers, agribusinesses, productive alliance members and other value chain actors with a special focus on productive partnership members (the project aims to support establishment of 200 productive alliances) and dehkans, with own land size of up to five ha and owning up to five dairy cows or equivalent.

13. **Approach.** The approach to the credit line design is based on the following three pillars:

(a) **Brings smallholders and productive alliance members into the financial sector fold**, ensuring both access to loans as well as market access through value chain development, to ensure availability of cash-flow for loan repayment. The credit line will include a special window to support smallholder producers, providing them an opportunity to develop their businesses, establish livestock producer cooperatives and ensure other pathways for green and resilient livestock business growth. The credit line will also facilitate introduction of productive alliances established under the project to the country's financial institutions. Support will be provided for smallholder farmers and members of productive alliances to prepare business proposals for financing by the PFIs under Component 2 of the project.

(b) **Maintains the commercial approach to livestock sector development** which will ensure replicability of the models supported under the project. The credit line will facilitate financing through PFIs to a previously underserved groups of producers (smallholder farmers, women farmers, and productive alliance members) which will help ensure commercial and financial viability of these businesses supported under the project.

(c) **Promotes the Private Capital Mobilization (PCM).** The SLSDP will facilitate private livestock sector development[62] by upgrading the institutional capacity of public institutions in the sector, ensuring access to finance for livestock farmers, as well as leveraging the financing provided to mobilize additional private capital into the sector. With the required co-financing by the credit line beneficiaries in the amount of 20 percent of the financing needed for the sub-project implementation, the credit line will help leverage private capital into the livestock sector as well rural areas more broadly. Thus, it is estimated that in addition to the US$160

[62] State Committee of the Republic of Uzbekistan on Statistics, 2020.

million credit line, the livestock farmers and other eligible groups of sub-borrowers will invest at least another US$30 million into their farm development and estimated additional employment creation. Under the previous Bank-financed credit lines (such as the Horticulture Development Project, Livestock Development Project, and the Ferghana Valley Rural Enterprise Development Project) amounting to US$800 million have leveraged more than US$250 million of additional private investment from the sub-borrowers. The sub-projects financed from these credit lines have also created over 40,000 jobs.

14. **Coverage of credit lines in the agriculture sector**. The credit lines that have been provided under previous and ongoing projects have covered those parts of the country where agricultural production is dominant. Under the Horticulture Development Project and the Livestock Sector Development Project, credit lines of around US$ 800 million have financed 1,616 business proposals from small and medium-sized (and a few large) farmers and agro-businesses, and created 40,594 full-time jobs, of which around 30 percent are held by women.[63] The government, therefore, have solid experience in creating new jobs through credit lines for agriculture and rural sector development. This project will similarly focus the credit line in the areas where livestock production is concentrated, throughout the country.

15. **Potential Demand**. Demand for the credit resources to be provided under the SLSDP credit line is expected to exceed the available funding (Table 2 below), given the limited options, particularly of smallholder producers to access finance. Smallholder farmers (in total accounting for 4.8 million farmers in Uzbekistan) dominate the livestock herd (95 percent of cattle, 94 percent of milking cows, 83 percent of sheep and goats and 56 percent of poultry are concentrated on smallholder farms[64] of up to 0.4 ha of own land). Dehkans also dominate livestock production.[65] At the same time their access to finance is very limited, including they are not eligible for state subsidies. Access to finance for the members of the 200 productive alliance members, estimated to be established under the project, will be key to the successful development of their business ventures. Therefore, the interest of potential beneficiaries to access the credit line are significant. On the PFI side, the potential distribution of the credit line, based on the LSDP experience, is in Table 2 below.

[63] Source: HDP and LSDP Monitoring and Evaluation reports.
[64] Source: State Committee of the Republic of Uzbekistan on Statistics, 2020.
[65] They produce 97 percent of the milk, 90 percent of the meat and 60 percent of the eggs, State Statistics Committee, 2021.

*Table 2: Potential demand for funding under the SLSDP**

PFI*	SLA Signed under the LSDP (US$ million equiv.)	Disbursement to date under the LSDP (US$ million equiv.)	Tentative Demand under the SLSDP (US$ million equiv.)
Aloqa Bank	10.0	10.0	15.0
Asaka Bank	9.65	9.65	25.0
Asia Alliance Bank	8.5	7.8	18.0
Davr Bank	2.5	2.5	7.0
Halq Bank	61.6	61.6	n/a**
Ipoteka Bank	11.3	11.3	20.0
QQB	11.3	11.2	20.0
Turon Bank	11.5	11.5	20.0
Uzpromstroy Bank	16.0	16.0	25.0
Total	**142.3**	**141.5**	**150.0*** **

* Please note that additional commercial banks may express interest in participating in the credit line implementation, or not all PFIs of LSDP may participate in the SLSDP. The demand numbers will be prorated/renegotiated accordingly.
** Halq Bank has been disqualified from participation of another credit line due to audit report-related issues.
*** Please note that this is preliminary demand expressed by PFIs, which the project may not be able to fully accommodate. The re-confirmed demand numbers upon the signing of the Subsidiary Loan Agreements (SLA) will be prorated based on the final size of the credit line.

II. COORDINATION BETWEEN THE BANK AND IFC

2.1 Collaboration with IFC

16. Uzbekistan became a member of IFC in 1993. Since 1996, IFC have invested US$170 million to support 31 private sector projects in the financial and manufacturing sectors. IFC's current outstanding portfolio in Uzbekistan stands at US$58 million with investments in the financial and textile sectors, including a US$35 million loan to support the transformation of the state-owned Ipoteka Bank. IFC provides advisory services under six projects designed to assist in privatizing SOEs, including two state-owned banks, transforming the cotton sector, developing the financial market, promoting energy efficiency in the chemical sector, and piloting PPP transaction in renewables and health sectors. IFC has no on-going livestock sector support operations.

III. POLICY REMARKS FOR IFIs

3.1 Macroeconomic Environment[66]

17. Uzbekistan's economic growth was strong at over five percent for the past ten years, except in 2020 when the growth slowed to a positive rate of 1.6 percent due to the COVID-19 global pandemic. While the pandemic hit Uzbekistan's economy especially hard in the first half of 2020 and inflicted considerable hardship, the recession was moderated by strong and timely containment and support measures. These included a forceful public health response and the deployment of a set of fiscal, monetary, and financial measures, made possible by substantial buffers owing to prudent macro-economic policies in preceding years, and thanks also to sizable international support. Similarly, while the

[66] This section is prepared based on data from the IMF and the World Bank.

current account deficit at 5.5 percent of GDP was almost equal in size as in 2019, trade flows were considerably depressed. Inflation continued to gradually decline in 2020, but higher increases in food prices kept overall inflation in the low double digits, ending the year at just over 11 percent. At the end of 2021, inflation was 10 percent (Central Bank of Uzbekistan) and is expected to fall below 10 percent in 2022 and to 5 percent in 2023.

18. IMF notes[67] that Uzbekistan weathered the pandemic relatively well, and a strong economic recovery is underway, thanks to the authorities' quick and forceful actions to save lives and livelihoods While the recovery started already in the second half of 20220, with the rollout of vaccines globally, a recovery of trading partner growth, and building on the domestic recovery, the growth picked up in 2021. Whereas the economy was projected to grow by about 5 percent in 2021 (IMF) earlier in the year, the actual GDP growth rate in 2021 reached 6.2 percent.[68] The projection for 2022 and 2023 will be 5.6 percent and 5.8 percent, respectively.[69] The current account deficit widened slightly by the end of the year (estimated to about 6.5 percent of GDP), as imports recovered faster than exports.

19. Provided the pandemic abates, growth is expected to remain strong in 2022, at about 6 percent. Uncertainty remains high, however, and an intensification of the pandemic, as new variants of the virus emerge, poses a large downside risk. This underscores the need to maintain the momentum in vaccine roll-out to ensure that the majority of the population will be vaccinated. Uzbekistan could also be adversely affected by slower growth in its main trading partners, volatility in commodity prices, particularly of gold, or global price increases.

20. Building on the impressive progress made in recent years, the authorities in Uzbekistan remain firmly committed to continue sound macro-economic policies and advance structural reforms. This will help to ensure strong and sustainable growth in the years ahead, improve people's incomes, and reduce poverty. To ensure fiscal sustainability, the authorities aim to reduce the budget deficit from almost 6 percent of GDP in 2021 to close to 3 percent of GDP in 2022 and beyond. If the pandemic intensifies, however, fiscal consolidation should be delayed, albeit with more selective and better targeted support measures. Uzbekistan has the fiscal space to do so as it remains at low risk of debt distress.[70]

21. Both the IMF and the World Bank have noted the right focus of the authorities on private sector-led growth, adopting a range of measures to level the playing field for private sector players and curb the power of monopolies. It should also be noted that nearly 1 million people additionally dropped below the poverty line in 2020. The GDP per capita (in US$) grew by around 10 percent during 2018-2020 to reach US$1,702 and was expected to grow a further 4.6 percent during 2021 (IMF). With a fast-growing labor force, and creation of new jobs being one of the government's top priorities, new jobs will need to come especially from small and medium-size private enterprises. This requires creating a level playing field for businesses that is firmly governed by the rule of law, opening up markets, enhancing competition, and facilitating trade integration. Ongoing reforms in agriculture, including the liberalization of cotton and wheat prices and the reduction of crop placement requirements, are helping to diversify and boost agricultural production. Essential market institutions need to be established (e.g., an independent energy regulator) or strengthened (e.g., by giving the anti-monopoly agency additional capacity and powers, including allowing it to impose meaningful fines). Greater competition will also mitigate price pressures.

22. The Central Bank of Uzbekistan (CBU) tightened the monetary policy in 2018, raising the refinancing rate from 14 to 16 percent and using foreign exchange sales to sterilize liquidity generated by substantial purchases of domestic gold.

[67] IMF Staff Visit's to Uzbekistan Concluding Report. December 10, 2021.
[68] World Economic Outlook, January 2022.
[69] Ibid.
[70] IMF Staff Visit's to Uzbekistan Concluding Report. December 10, 2021.

The refinancing rate, however, was reduced to 15 percent in April 2020 and again in September 2020 – to 14 percent where it has remained until today. The foreign exchange rates, following the 2017 depreciation, were allowed a full float in 2019, resulting in the depreciation of the Uzbek Sum by 25 percent against the USD since the devaluation in September 2017. The growth rate for Credits to Economy was growing at a very fast pace of around 50 percent until 2019 (it was 58 percent in 2019), driven in part by substantial increase in policy lending before falling to 34.4 percent in 2020 and further to 17.8 percent in 2021. Going forward, credits to economy are expected to maintain more moderate growth rates - 17.6 percent in 2022 (IMF). As part of this slow-down, policy-based lending is expected to fall sharply, from 3.9 percent of GDP in 2018 to 1.2 percent of GDP in 2022.

3.2 Financial Sector Framework

23. Uzbekistan's financial sector is comprised of 33 commercial banks, including 12 state-owned banks and 21 privates, of which six are subsidiaries of foreign banks. Commercial banks have 854 branches and about 1,100 retail offices throughout the country (yet access to financial services for entrepreneurs remains an issue). State-owned banks hold around 87 percent of banking sector capital and 83 percent of banking sector assets, leaving privately owned banks as relatively small niche players. The nonbanking credit organizations' sector is represented by 69 microcredit organizations and 67 pawnshops, assets of which account for less than 1 percent of banking system assets.

24. Overall, the banking sector grew very fast in the recent years, concurrently with the liberalization and reforms in the economy started by the new government in Uzbekistan in 2017, and it continued until the early 2020 when the COVID-19 pandemic set in. The overhaul of the banking sector was also started in 2017 and a series of new laws related to the CBU, banking sector, payment system and foreign exchange system were approved by the Parliament during the first half of October 2019. The 1996 Law "On Banks and Banking Activities" was replaced with a new fit-for-purpose banking law in November 2019, redefining and updating the powers of the CBU with an emphasis on price stability and oversight; and importantly establishing a robust gatekeeper function, providing the CBU with sufficient powers to ensure that private investors seeking to enter the banking sector meet common fit and proper standards, de facto ownership structures are well-understood and monitored continuously, and related party lending is contained. It also empowered the CBU to exercise supervisory judgement in fulfilling its mandate in the face of dynamically evolving banking risks. In February 2021, the methodology for calculating the Liquidity Coverage Ratio (LCR) was strengthened and brough in line with the international standards' requirements. All banks were required to bring their high-quality liquid assets to total assets ratio to 10 percent, as well as bring their high-quality liquid assets to current liabilities ratio to 40 percent.

25. In addition, the new Banking System Reform Strategy approved in May 2020 signals a turning point for the country's banking sector. The new strategy charts the course for the industry's proposed makeover in the next five years and should go a long way toward liberalizing Uzbek banking, introducing greater discipline and transparency, modernizing consumer and corporate lending, and potentially empowering a new class of private investors. The Strategy also includes wide-ranging privatization plans, aiming to bring the share of majority private banks from the current 15 percent to 60 percent of the market, in part by attracting at least three strategic foreign investors to at least three state-owned banks. Several IFIs have been invited to work with some of the largest State-Owned Commercial Banks (SOCBs) to help prepare their privatization. The adopted strategy envisions privatization of at least six SOCBs by 2025, including full privatization of three SOCBs to strategic investors. In addition, the government's 2020–25 banking sector reform strategy focuses on improving the corporate governance of the SOCBs. As part of improving the corporate governance of the SOCBs, more than 20 new and independent board members were appointed in the SOCBs. While these financial reforms, with the authorities improving state-owned banks' governance and starting their privatization are an important start, further efforts are needed to enhance financial intermediation and to reduce the large role of the state-owned banks in the banking system. Two other significant pieces of legislation recently approved are: the National Financial Inclusion

Strategy adopted in June 2021, aimed at enhancing access to finance; and the new law on Non-bank Financial Institutions adopted in April 2022.

26. The COVID -19 crisis adversely affected Uzbekistan's macroeconomic outlook, as well as the business activity and financial sector activity (see Table 3 with the banking sector performance data). While – as IMF notes, banks were resilient during the pandemic, with only a modest increase in non-performing loans, the full effects of the pandemic, and of high credit growth in prior years, on the quality of loans may yet emerge.

Table 3: Profitability Indicators of Banking Sector (system-wide), UZS Billion

	January 1, 2021	**January 1, 2022**
Income and expense of banking sector		
Interest income	37,067	47,392
Interest expense	23,019	30,796
Interest margin	**14,048**	**16,595**
Non-interest income	11,801	17,251
Non-interest expense	3,516	4,944
Operating expense	8,145	10,998
Non-interest income (loss)	**140**	**1,309**
Allowance for probable loan and leases losses	6,354	12,221
Evaluation of non-credit losses	873	333
Net profit (Loss) before Tax	6,961	5,351
Expense regarding income tax	1,318	1,465
Net profit (loss)	**5,642**	**3,885**
Profitability indicators of banking sector		
Return on assets (ROA)	2.2	1.3
Return on equity (ROE)	10.3	6.1
Ratio of net interest income to total assets	3.8	3.7
Ratio of net interest income from loans to total loans	5.1	5.1
Ratio of net interest margin to total assets	4.5	4.2

27. In 2020, as part of COVID-19 mitigation measures, banks provided deferrals for repayment of principles of outstanding credits for a 6-month period (during March - October 1, 2020, period). A total of 27 trillion UZS of loan repayments were deferred during the mentioned period (more than 19 trillion UZS of which were repayments of corporate loans), which comprised about half of the repayments falling in that period. Although the COVID-19 had significant impact on economy and finances, the indicators in the banking sector have not yet seen significant worsening. The non-performing loan (NPL) ratio of the banking system increased to 2.1 percent at the end of 2020 and around 6.2 percent as of August 1, 2021 (including, 6.4 percent on average in state-owned banks and 5.4 percent is the private banks) and further to 5.2 percent as of January 1, 2022 (including 5.4 percent in state banks and 4.1 percent in private banks). Deposits registered a 36 percent growth during (CBU data as of January 1, 2022) and loans grew by 18 percent during the same period. Liquidity ratios of the banking system shot up dramatically during 2021, to 189.6 percent liquidity coverage ratio as of January 1, 2022, and liquid assets to total assets ratio at 17.7 percent. The total regulatory capital adequacy ratio was 17.5 percent and Tier 1 capital ratio was 14.6 percent as of January 1, 2022. Further developments in the banking sector will need to be closely monitored to identify any signing of a worsening situation early.

28. **Due diligence of PFIs.** Given that there have been several World Bank-financed credit lines channelled through Uzbekistan's banking sector, the PFIs (although not all PFIs are participating in all projects with credit lines) have been undergoing due diligence reviews regularly, and as a minimum at the outset of every credit line implementation under a project. In addition, the audited reports from the PFIs are collected and reviewed annually by the Bank's financial sector team. Similarly, commercial banks interested in the implementation of the SLSDP credit line will be required to undergo a due diligence. The due diligence of the PFIs will take place at the outset of the project, on the basis of the audit report of the previous calendar year. It is expected that most of the PFIs that were active under LSDP (Table 4) will be interested in the implementation of the SLSDP credit line, however, the final selection of the PFIs will depend on the due diligence results.

Table 4. Key Indicators of Potential PFIs under SLSDP –active under the LSDP. Unaudited, as of January 1, 2022, UZS billion[71]

No	Potential PFI	Assets	Loans	Capital	Deposit	NPLs
1	Aloqa Bank	12,638	7,754	1,674	6,796	4.1%
2	Asaka bank	50,804	37,685	6,505	10,729	4.8%
3	Asia Alliance Bank	3,266	1,903	397	2,277	7.6%
4	Davr Bank	2,663	2,157	409	1,132	1.0%
5	Ipoteka Bank	40,012	29,046	5,087	15,824	3.3%
6	Quishloq Qurilish Bank	20,708	17,496	2,696	6,492	4.3%
7	Turon Bank	11,010	8,129	1,915	2,838	1.9%
8	Uzpromstroy Bank	56,511	43,148	7,701	12,607	3.8%

3.3 Interest Rates

Deposit Rates

29. Deposit rates in local currency continue to be high in Uzbekistan, particularly in domestic currency. In 2021, weighted average interested rate on all deposits of up to 1 year was 15.0 percent in national currency and 2.8 percent in foreign currency (interest rates on foreign currency loans fell from 3.2 percent in 2020). Weighted interest rates on all deposits above 1 year were 18.3 percent in domestic currency (increase from 17.3 percent in 2020) and 2.8 percent in foreign currency (a reduction from 4.7 percent in 2020). The higher interest rates on deposits above 1 year have, nevertheless, resulted in a limited ability of commercial banks to mobilize longer-term deposits. Based on the CBU data, as of January 1, 2022, deposits with maturity above 1 year represent 28.9 percent of the total volume of deposits (same share as in mid-2021). The share of longer-term deposits has been inching up over the past 10 or so years, however it continues to be limited and the very high cost of these deposits render them of limited use for lending to sectors where returns are more modest (such as agriculture).

Loan Rates

30. As of end of 2021, the weighted average interest rate on domestic currency loans was 20.8 percent (unchanged from January 2021), 11.4 percent on preferential loans, and 6.2 percent on foreign currency loans (down from 7.1 percent at the beginning of 2021). Micro-loan (up to UZS 50 million) rates are around 24 percent (if secured with a salary) and 28 percent for other types of microloans. The typical margins of commercial banks vary between 2 percent and 5 percent. In March 2021 the CBU intervened in the market by setting-up higher credit risk weights for loans with high interest rates

[71] The exchange rate (CBU) as of January 1, 2022, was US$1 to UZS10,837.

(in UZS–above 23 percent for individuals and above 20 percent for legal entities, and above 6 percent in US$). The impact on on-lending rates does not seem to be significant, but it is not fully clear yet.

Other Rates

31. The *Refinancing Rate* of the Central Bank of Uzbekistan was reduced from 16 percent (since November 2018) to 15 percent in April 2020 and further to 14 percent in September 2020 where it has remained since.

Other donors

32. Several IFIs and large financial institutions are active in Uzbekistan, including ADB, IFAD, the World Bank, Islamic Development Bank/Islamic Private Sector Development Corporation, KfW, Landesbank, IFC, Triodos, DEG, European Bank for Reconstruction and Development, EximBank of China. The cost of funds to qualified financial intermediaries from international lenders ranges between six-month LIBOR + 0.7 percent to fixed 4 – 5 percent on US$ resources. On-lending in UZS is very limited, and the interest rates are around 15 percent. Maturity of the funding to the banking sector varies between 5 years (such as the Islamic Private Sector Development Corporation) to 20 – 25 years (ADB and the World Bank), although maturity of more recently (during the past 18 months) signed agreements is 10 – 15 years. The margin of the MEF (in cases when the funding flows through the government) is 1 percent currently.

3.4 Directed Credit

33. **Main Target Groups**. The credit line's primary target beneficiaries are livestock producers interested in improving the climate resilient of their farms and in greening livestock production in the project regions. These enterprises will benefit from the provision of direct technical assistance (TA), facilitation, and access to finance, as well as from improved access to markets because of the capacity building activities to the livestock sector institutions under Components 1 and 2 of the project.

34. **Rationale for Directed Credit**. The SLSDP credit line will be focused on livestock producers interested in improving the climate resilient of their farms and in greening livestock production. Lending for improved climate resilience and greening of the sector are new lending areas for the country's banking sector. Productive alliance concept is a new concept for Uzbekistan's livestock sector and present a learning curve for the country's banking sector in terms of risks it may present. Smallholder livestock farmers lack access to investment financing due to lack of suitable loan products, funding structure of financial institutions characterized by limited long-term fundings and the "investment choices" of the financial sector institutions which tend to favour lending to larger farms/livestock production businesses, tends to be limited. The increasing provision of long-term funding for the sector, targeting the funding towards smallholders, women farmers, productive alliances, green investments, etc., and ensuring the participating financial institutions are aware of specifics of lending to livestock sector can help alleviate these structural constraints and increase flow of loan funds to the sector livestock farmers. Financial products that are tailored to livestock production cycles and to the needs of these special groups of potential sub-borrowers are in short supply, highlighting the need to further support financial institutions in developing specific loan products/services for this segment and in building the capacity of financial institutions in new lending methodologies. Building in the experience gained under several previous credit lines to Uzbek agriculture sector, the subcomponent will be compliant with World Bank Guidance for Financial Intermediary Financing and adopt a set of acceptable CLGs.

35. As mentioned above, under the LSDP, most of the beneficiaries were large-scale commercial farmers and agribusinesses and the number of dehkans who benefited from LSDP interventions, including from credit line

investments, is quite low. The project aims to improve the inclusiveness by targeting dehkans, women farmers, as well as productive alliance members, who play a crucial role in livestock production.

36. The credit line supports the government's agenda on advancing private business growth and aims to contribute to closing an identified financing gap in rural enterprise development. This is in line with the declared priority to address key bottlenecks to private sector solutions reflected in the recently adopted Agricultural Strategy, Banking Sector Strategy, and other strategic development goals of the government, which seek to promote private investments by redefining the role of the state from planner and controller to market facilitator and investor in public goods. These private solutions are expected to demonstrate and ensure sustainability of such support to make a sustainable impact, however, they require more hands-on support at the outset, both technical and financial. The project also supports the on-going financial sector reform and privatization processes, which are moving in the right direction yet will take some time to materialize. To contribute to the capacity upgrading of the financial institutions, the PFIs will also receive support, both in terms of loan capital and complementary capacity building and knowledge transfer activities, particularly on how to lend for small-scale livestock businesses, green technologies, climate resilience investments, productive alliances, and other activities supported by the project. It should also be noted that the PFIs will have the final decision whether they are prepared to finance specific sub-loan proposals.

3.5 Subsidies

37. No direct subsidies are envisaged under the credit line.

IV. ELIGIBILTY CITERIA FOR PARTICIPATING FINANCIAL INSTITUTIONS

38. To become a PFI, commercial banks have to qualify under a due diligence procedure in accordance with a set of operational, financial and management criteria indicated below, and have to sign a tri-partite Subsidiary Loan Agreement (SLA) with the MEF representing the Republic of Uzbekistan and the PIU under the CVLD. In order to maintain its eligibility as a PFI, the commercial banks have to meet the said criteria at all times.

39. Potential PFIs are individually appraised, through a due diligence procedure, by the PIU, in conjunction with IBRD/IDA. A due diligence consultant is hired by the PIU and his/her report to the PIU is a subject to the Bank's no objection. During the detailed due diligence assessment, particular attention will be given to overall lending and risk management capabilities, financial and portfolio performance, and compliance with IBRD/IDA environmental and social standard (ESS9) for Financial Intermediaries. The PFI must have satisfactory financial and management structure, a satisfactory risk-based capital adequacy, an acceptable asset quality and lending performance, adequate liquidity, an environmental and social management system (ESMS), and the organization, management and technical staff and other resources required for the efficient carrying out of the operations. If a commercial bank fails to pass the due diligence or has a negative due diligence outcome, the commercial bank has the right to re-apply upon its estimated readiness to meet the eligibility criteria based on the results of audited statements and other relevant documents.

40. The criteria for the initial due diligence and continued maintenance of a PFI status are provided below. These criteria shall be used by the PIU under the CVLD to monitor the continued eligibility of the PFIs operating under the Credit Line. If a PFI fails to maintain compliance with eligibility criteria (in case of prudential ratios - over a period of two months and more), and unless the PFI meets the following criteria: (a) PFIs has prepared an action plan aimed at bringing the PFI's Official Use compliance with eligibility criteria within a reasonable time-period; (b) the action plan is approved by the relevant management body of the PFI; (c) the action plan is submitted to the CBU (with no negative conclusion received from the latter); and (d) the action plan is submitted to the World Bank and is acceptable to it, the PFI will be

suspended from the program and re-assessed following a six-month period. If the PFI fails to achieve compliance in accordance with the approved action plan, the PFI will be suspended from the program and re-assessed following a six-month period. If the PFI has not achieved compliance within 12 months following the initial suspension, the MEF may, by notice to the PFI, terminate the PFI's participation.

41. **Eligibility Criteria for Commercial Banks**

A. General Standards:

(i) At all times, be in compliance with all banking laws and prudential regulations of the Central Bank of Uzbekistan (CBU).

(ii) Demonstrated interest, capacity, and commitment to servicing the range of clients, who are the intended beneficiaries of the Credit Line of the Project.

(iii) Presence of branches (banking services centers) or mini banks in the project regions or their readiness to open, or the opportunity to provide other types of services to potential sub-borrowers in the project regions.

(iv) Undergo an annual audit that is conducted in accordance with International Standards of Auditing by an independent audit company acceptable to IBRD/IDA for the purposes of audit of financial institutions, with an unqualified audit opinion.

(v) Availability of relevant personnel, skills, material and technical resources and other resources necessary to carry out credit activities within the project.

B. Financial Standards of Prudential Banking:

(i) At all times (including for at least 6 months preceding the due diligence appraisal date), meet the prudential regulations and standards (ratios) issued by the CBU.

(ii) Robust capital adequacy, at all times (including for at least 6 months preceding the due diligence appraisal date) be in compliance with the capital adequacy ratios established by the CBU.

(iii) The exposure to a single borrower or group of connected borrowers shall not exceed the maximum threshold established by the CBU.

(iv) Exposures to related parties to the bank (single or group of connected related parties and exposures to all related parties to the bank) shall not exceed the maximum thresholds established by the CBU.

(v) Presence of positive net income for the current fiscal year, as indicated in unaudited interim financial statements and prudential reports as submitted to the CBU, and the two previous financial years, as indicated in the financial statements prepared in accordance with International Financial Reporting Standards (IFRS) and audited in accordance with international auditing standards (ISA).

(vi) Presence of acceptable asset quality and credit risk management policies, procedures, and skills.

(vii) The aggregate share of Sub-loan portfolio outstanding under the Horticulture Development Project, the Additional Financing of the Horticulture Development Project, the Livestock Sector Development Project, the Ferghana Valley Rural Enterprise Development Project, the Agriculture Modernization Project, the Second Rural Enterprise Development Project and the SLSDP shall not exceed 75 percent of the PFI's capital according to International Accounting Standards.

(viii) At all times (including for at least 6 months preceding the due diligence appraisal date), maintain a sound liquidity profile, as evidenced by liquidity ratios being in compliance with the requirements established by the CBU.

(ix) Presence of sound real loan growth and adequate risk profile which (i) maintain the value of the PFI's capital and (ii) are compatible with sound banking sector development trends.

C. Corporate Governance and Managerial Standards:

(i) Presence of robust corporate governance arrangements in line with the requirements established by the CBU, including a qualified Board of Directors responsible for setting the overall bank policy and perform appropriate oversight of the bank's operations and well-functioning risk management function.[72]

(ii) Presence of a qualified, autonomous, and capable management team.

(iii) Presence of a sound business plan with reasonable credit growth projections and appropriate budgeting and budget control procedures.

(iv) Presence of sound lending policies and procedures, including in respect of the entire credit cycle, including credit origination and approvals, credit administration and monitoring, problem loan management, and loan loss provisioning.

(v) Presence of satisfactory internal control and audit procedures, including accounting principles and procedures, and financial documents, internal controls and reporting, and operational controls, confirmed by independent external auditors.

(vi) No unjustified interest rate risk, as confirmed by the annual audited financial statements.

(vii) Presence of a reliable internal reporting and management information systems capable of providing quality, timely and sufficient information both for managing the bank's operations, performance, and risks, as well as for external parties, including information and data needed for conducting due diligence assessment of potential PFIs according to the Credit Line Operational Manual.

(viii) Have adequate risk management policies and procedures, including in relation to credit risk, liquidity risk, maturity gaps, interest rate risk, foreign currency risks, operational risks, and other relevant risks.

[72] The governance standards will be further detailed in the final version of the Credit Line Operations Manual.

(ix) Absence of any reputational risks, including absence of evidence of being involved in financial fraud, and absence of any other material negative information received by the CBU, Government, external auditors, or any other parties.

D. Environmental and Social Standard Requirements (as per IBRD/IDA ESS9)

(i) Presence of satisfactory Environmental and Social Management System (ESMS), including an Environmental and Social Policy of the PFI.

(ii) Presence of organizational structure, capacity, and competency for implementing the ESMS with clearly defined roles and responsibilities including availability of loan officers responsible for sub-project screening, risk assessment and monitoring.

(iii) Designated senior management representative with overall accountability for environmental and social performance of credit line and all sub-loans financed under it.

V. FINANCIAL INSTRUMENTS UNDER THE PROJECT AND ONLENDING TERMS

42. The project proposes two financial arrangements to support livestock sector development, as well as dedicated TA. The objective of the **Component 3: Promote green and resilient livestock value chains (US$160.5 million: IBRD US$90.0 million and IDA US$70.5 million)** is to modernize the livestock value chains and make them greener and more resilient, by improving access to finance for those livestock farmers interested in improving their on-farm climate resilience and in greening of their livestock production. A special focus will be made to support access to finance for productive alliances established under the project as well as smallholder livestock farmers. The component has two subcomponents: (a) credit line to participating financial institutions (PFIs) for provision of working capital and investment finance to the livestock subsector nationwide for farmers, agribusinesses, productive alliances and other value chain actors, including for climate-resilient and green livestock farming, marketing, distribution, and processing; and (b) capacity building for PFIs on sector-specific loan product development, loan appraisal, environmental and social standards, and monitoring in the livestock subsector.

43. **Subcomponent 3.1: Improve access to finance (US$160.0 million: IBRD US$90.0 million, IDA US$70.0 million).** The objective of this subcomponent is to improve the access to finance for livestock producers interested in improving the climate resilient of their farms and interested in greening livestock production. The credit line will have two Windows. Window 1 will support loans in the amount up to US$1 million to meet the needs of farmers, agribusinesses, productive alliances, and other value chain actors who are generally operating within this scale. Window 2 will be for loans up to US$100,000 targeting dehkans, using more streamlined procedures. Smallholder livestock farmers lack access to investment financing due to lack of suitable loan products, funding structure of financial institutions characterized by limited long-term fundings and the “investment choices” of the financial sector institutions which tend to favour lending to larger farms/livestock production businesses. This is further restricted by the lack of farmer (in particular, smallholder farmer) capacity to prepare bankable business proposals, provide financial records and have assets for collateral. The special Window 2 is deemed, therefore, necessary to fill the credit gap of very small farmers who usually are not able to borrow from the formal financial sector. The initial allocation is US$110 million under Window 1 and US$50 million under Window 2. The PFIs will need to draw on both windows concurrently and ensure a well-diversified sub-loan portfolio at the PFI as well as the project level.

44. The increasing provision of long-term funding for the sector, targeting the funding towards smallholders and ensuring the PFIs are aware of the specifics of lending to livestock sector can help alleviate these structural constraints and increase flow of loan funds to smallholder livestock farmers. Financial products that are tailored to livestock production cycles and to the needs of the smallholder farmers are in short supply, highlighting the need to further support financial institutions in developing specific loan products/services for this segment and in building the capacity of financial institutions in new lending methodologies. The project will also assist potential sub-borrowers with preparation of business proposals and there will be no restrictions for the sub-borrowers to access the guarantee programs existing in the country.

45. In order to encourage downscaling by the commercial banks, a number of simplifications will be proposed for sub-loans in the amount of up to US$100,000: (a) simplified business plan and documentary requirements; (b) strictly enforcing application of the agreed prior and post-review formats, not requiring full sub-loan applications for the smaller loans; (c) submitting the Statements of Expenditure for the sub-loans up to US$100,000 in a table format, indicating some key parameters; (d) digitizing the sub-loan application process including environmental and social safeguards; and (e) encouraging the use of the refinancing facilities for small loans.

46. Building on the experience gained under several previous credit lines to Uzbek agriculture sector, the subcomponent will be compliant with World Bank Guidance for Financial Intermediary Financing and adopt a set of acceptable CLGs. The credit line will fund investments that strengthen on-farm resilience, greening of the livestock sector, as well as provide climate change co-benefits, and 100 percent of sub-loans will include climate change mitigation (e.g., feed digestibility and ration balancing, improvement of animal health and breed, animal waste management, biodigesters, pasture management, energy saving) or adaption activities (e.g., drought- and heat-resistant fodder crop varieties and breeds, water savings, renewable energy, buildings, diversification). The component will also provide financing for integrating renewable energies production along the livestock value chain, for instance, biodigesters and solar panels to power processing plants or temperature control in animal houses. In addition, the subcomponent will include eligibility/ evaluation criteria of applications to benefiting women participation.

47. **Subcomponent 3.2: Strengthen capacity of PFIs (US$0.5 million).** The objective of this subcomponent is to build the capacity of PFIs, including through trainings, study tours and exchange visits to staff and managers of PFIs so that they can introduce innovative financing instruments such as digital financial services, green technology investments, and value chain financing modalities for livestock farmers and agribusiness enterprises. The training program will focus on the use of new financial products to target clients engaged in livestock production activities, evaluating the suitability and effectiveness of these new financial products, and mitigating the possible risks associated with lending to these beneficiaries. This training will be complementary to and will build on training programs financed by the LSDP and HDP to the PFI lending staff. The training program will focus on the use of new financial products to target clients (with a focus on smallholder farmers, female farmers, and productive alliance members) engaged in livestock production activities, evaluating the suitability and effectiveness of these new financial products, and mitigating the possible risks associated with lending to these beneficiaries. The capacity building will focus on the use of new and climate smart financial products to targeted clients, evaluating the sustainability, suitability, and effectiveness of these new financial products, and mitigating the possible risks associated with lending to these beneficiaries as well as risks associated with climate change. Training will also cover how to integrate cost-of-fuel savings into financial analyses.

Tentative Terms and Conditions of the Financing

48. The interest rate to the PFIs shall be equivalent to the base rate, which will be the prevailing interest rate at which the Borrower (i.e., Republic of Uzbekistan) shall have received loan proceeds from the World Bank plus a spread set by

the Borrower from time to time and will need to be acceptable to the World Bank. The on-lending rates to final beneficiaries under the SLSDP are expected to be like those negotiated under other on-going projects: in UZS from 19 to 21 percent and in US$ from 6.5 to 8.0 percent. Tentatively, the formula to be used for setting the interest rates to the PFIs is proposed to be:

(a) The interest rate for Subsidiary Loans denominated in US Dollars shall be equivalent to the base rate, which will be the prevailing interest rate at which the Borrower (i.e., Republic of Uzbekistan) shall have received loan proceeds from the World Bank plus a spread set by the Borrower from time to time, and agreed to by the Bank, to compensate the Borrower for the administrative costs associated with the Subsidiary Loan.

(b) The interest rate for Subsidiary Loans denominated in UZ Soums shall be equivalent to the rate of refinancing of the CBU (the interest rate will vary in accordance with the rate of refinancing of the CBU). This rate will cover all payments to the IBRD/IDA, administrative expenses of credit line, as well as potential currency risks of the Republic of Uzbekistan.

(c) The PFIs will likely also be expected to finance the commitment fee as well as any front-end fees charged by the World Bank on the IBRD portion of the funds.

49. Types of investments financed: A wide range of investments in livestock-related activities will be eligible for financing from the credit line, including, inter alia, heard upgrading, farming, processing, packing, and marketing equipment and infrastructure, cooling facilities and equipment, upgrading of existing infrastructure and equipment required to comply with food safety or market-specific requirements. Agricultural inputs for feed production, such as seed, fertilizer, as well as processing raw materials, consumables, and other items necessary for livestock product production, processing, and trading will also be eligible for working capital financing. The priority will be given to investments that promote climate resilience and emission reduction, such as (i) climate smart technologies and practices including sustainable land/ landscape management, waste management systems to minimize greenhouse gas emissions, pollution, and dissemination of pathogens, and (ii) renewable energy supply (bio and solar energy) systems.

50. Main Terms and Conditions:

(a) *Sub- loans will not be used for any activity involving child and forced labor* in any form or land acquisition or resettlement of people or loss of assets or income.
(b) *Choice of currency*: The funds will be available both in Uzbek Soums (UZS) and US Dollars, based on the demand of the sub-borrowers. Under Window 2, most of the lending is expected in domestic currency.
(c) *The PFIs will receive credit line proceeds for up to 15 years*, inclusive of a grace period of 5 years, and repay the principal amount to the MEF over the period of 10 years in equal semi-annual payments, upon expiration of the grace period. Any amounts, received as repayment from the sub-borrowers and not needed for repayment to the MEF, the PFIs will revolve internally, providing new sub- loans in compliance with the PDO and the operational guidelines for the credit line. The interest rate to the PFIs will be discussed and finalized during the preparation of the LSDP CLGs.
(d) *The PFIs will set their own interest rates and repayment terms* to final sub-loan beneficiaries based on their banking considerations. The PFIs will carry out appraisal of sub-loans and sub-borrowers based on the agreed criteria and will bear the full risk of subsidiary loan repayment.
(e) *The maximum loan size* will be up to US$1 million and US$50,000 for commercial farmers and small-holder farmers, respectively. Working capital loans will be up to US$30,000 for up to 24 months.

(f) *The maximum maturity of the investment sub- loans* will not exceed the amortization period of the asset. The actual size and maturity of the loans will depend on the type of investment financed, profitability of the activity, cash-flows generated, collateral, and other banking considerations.

(i) *Maximum financing share*: The project will finance up to 100 percent of the sub-loans. The sub-borrowers will be required to contribute 20 percent of the sub-project financing.

(ii) A requirement for accessing financing under the demonstration program will be upstream and down-stream contractual relationships within the value-chain.

51. As mentioned above, the PFIs will set their own interest rates and repayment terms to final sub-loan beneficiaries based on their banking considerations. The on-lending interest rate from PFIs to end borrowers will be sufficient to cover (a) cost of funds, (b) administrative expenses, (c) loan loss risk and (d) a profit margin to compensate the PFI for taking the credit risk. This will be stated in the Credit Line Operations Manual. The PFIs will carry out full appraisal of sub-loans and sub-borrowers based on the agreed criteria and will bear the full risk of subsidiary loan repayment.

52. Each subsidiary loan agreement with the PFIs will be signed for a specific amount, based on the demand. Progress of disbursements will be monitored by the PIU under SCLVP and the World Bank team, to recommend flexibility in amending the subsidiary loan agreement amounts in case when some PFIs are much slower than others. The withdrawal procedures are briefly described in the paragraph below. Given the likelihood that several of the PFIs will qualify for participation, it will help ensuring the competitive environment necessary for the sub-borrowers to benefit from competitive terms and conditions of the financing.

53. Withdrawals from the Credit Line. Periodically, as agreed between the PFI and the PIU under SCLVP, PFIs will prepare Statements of Expenditure (SOE), in the agreed format, listing the already financed sub-loans, as well as sub-loans approved by its Credit Committee but not yet financed.[73] The SOE will be submitted together with the one-page Sub-loan Information Sheet for each sub-loan. The Sub-loan Information Sheet will contain the key terms and conditions of the proposed sub-loan. The PIU under SCLVP will review the list of sub-loans and the one-page summaries for every sub-loan to check the eligibility of the sub-loan against the criteria under the project (it is only a "technical" review by the PIU under SCLVP; the financial appraisal of the sub-loan, loan structuring and all banking considerations lie with the PFI). Upon approval, the money will be transferred to the PFI.

54. Prior review of sub-loan applications by the World Bank will be carried out in the following cases: (a) each qualified PFI will submit the first three sub-loan application irrespective of the amount; as well as (b) all sub-loan applications for financing to productive alliances.

VI. MONITORING

55. The compliance of sub-loans with the eligibility criteria, monitoring of the sub-loan files, and the PFI compliance with the eligibility criteria will be ensured by the PIU under CVLD. Regular visits to PFI branches to review the loan files for completeness and visits to borrower sites are two key components of the monitoring of credit line implementation. Based on the agreed procedure, on-site visits to the sub-loan sites are carried out not later than within 4 months from the disbursement of the sub-loan. The work is led by the Credit Line Specialists in the PIU's Regional Offices, supervised by the Component Coordinator at the PIU under CVLD in Tashkent who also does selective on-site monitoring. The

[73] In cases when the PFI does not have an opportunity to extend financing due to the short maturity of the available financing or other considerations.

component will have Monitoring and Evaluation formats (as part of the operational manual to be developed), which will track both the physical implementation of the component, as well as the impact, based on a set of Monitoring and Evaluation indicators. In addition, independent Impact Assessments for the project, also covering the credit line activities, will be done from time to time.

56. Progress reports will be produced quarterly, which will also include reports on monitoring of the financial status of the PFIs, including key performance indicators, such as portfolio quality, capital adequacy, liquidity ratios, etc. The PIU under CVLD also ensures timely collection of the audited reports of the PFIs, in compliance with the provisions of the subsidiary loan agreement. An Environmental Specialist and a Social Specialist will carry out screening of the proposed sub-loans from the environmental and social, respectively, points of view. In addition, continued PFI compliance with the eligibility criteria will be verified by the Bank's team on annual basis, based on the review of the audited statements of the PFIs and other due diligence procedures, as required.

VII. SUSTAINABILITY, BENEFITS AND RISKS

57. **Arrangements after the SLSDP closing**. The credit line funds will continue revolving in the PFIs for a period of 15 years, with a gradual repayment of the funds to the MEF by the PFIs following an agreed grace period, in accordance with the agreed schedule. Interest payments on the subsidiary loans and principal amounts repaid by the PFIs will be channelled to the MEF, which will use the money to repay to IBRD and IDA as the case may be. After the end of the 15-year period, the MEF may choose to on-lend the money back in the banking sector for an extended period under a separate legal arrangement. Agreements will be made with the MEF towards the project closing that, after the project closing, a department in the MEF will be assigned to carry out the monitoring of the Credit Line implementation.

58. **Sustainability of the Operation**. The technical sustainability of the credit line will be ensured through provision of relevant training and hands-on TA to the PFIs. The PFIs will be trained in applicability of the new financial products, assessing the suitability and effectiveness of these new products, and on mitigation of the related risks. The sustainability of the funding that the PFIs will be receiving will be ensured by applying the extensive experience and knowledge of PIU of the CVLD to ensure liaison with and support to the PFIs, efficient and technically sound review of the sub-loan applications and good quality monitoring of the credit line implementation, including site visits and satisfactory application of safeguards. The sustainability of the demonstrations will be ensured by requiring that the financial and commercial viability assessment of the business proposals are assessed by the PFIs, to ensure that only viable business proposals are approved and receive the loans and matching grants under the project.

59. The **benefits** will accrue to PFIs in form of an expanded portfolio in the rural/agricultural market niche, expanded menu of lending products (focusing on small-scale sub-borrower and productive alliance needs), increased capacity for assessing rural/agriculture loans, increased knowledge of suitable and effective financial instruments, and broadened client base. The benefits to sub-borrowers will accrue in the form of improved productivity and profitability because of increased resilience to climate change. The benefits to small-scale livestock farmers, agribusinesses and productive partnerships will be in the form of improved access to finance, improved productivity, resulting from the investments, better access to markets and profitability, and improved income generating opportunities. The improved access to knowledge and new CSA technologies are expected to result in increased on-farm resilience against adverse climate events, which will allow preserving yields and reduction in harvest losses. For the government, the project will bring an opportunity to learn about private sector-led livestock sector development, ensuring financial and commercial viability of the investment made in the sector.

60. **Risks.** Three risks have been associated:

(1) **Risk**: Given the (still) on-going pandemic, there is a risk associated with a possible lack of interest/slow-down in lending.

Mitigation measures: The performance of all on-going credit lines has been very strong to date. Should there be a marked slow-down in the disbursements, the Bank team will engage in the dialogue with the government counterparts on possible measures to strengthen the "preparation" of beneficiaries for borrowing by using more intensively the advisory services. It is also expected that the other activities of the project – such as the institutional strengthening of the livestock sector operations – will facilitate access to market of the livestock producers, thus enabling them to make on-farm investments.

(2) **Risk**: Related to the above, the pandemic may also result in slow-down of economic activity, which would result in lower repayment by existing sub-borrowers, resulting in sub-par loan portfolio quality.

Mitigation measures: This risk will have to be closely monitored to ensure that any possible issues are identified early, and the appropriate remedial measures can be taken timely. Overall, the agriculture and food sector has performed relatively well to date. Lending to agriculture is overall maintained and has even grown slightly – from 10.1 percent of banking sector's loan portfolio at the beginning of 2021 to 10.7 percent at the beginning of 2022 (as a share of a growing bank portfolio). The overall economy is expected to rebound as the pandemic will eventually subside in response to the vaccination efforts. As of March 7, 2022, 47.2 percent of Uzbekistan's population have been fully vaccinated against Covid-19 and 66.2 percent have received the first shot.

(3) **Risk**: The government may decide to reduce the maturity of credit line funds to the banking sector from 15 years to 10, which may impact the interest of the PFIs.

Mitigation measures: This risk will be closely monitored during the remainder of project through the uptake of the credit line. As part of the discussions on the other projects with credit lines, the government had proposed to reduce the maturity of funding to the PFIs to 10 years, which would reduce the ability of the PFIs to revolve funds at their level and use them for new sub-loans in live with the project objectives. To date, eventually an agreement was reached to keep the maturity of funds at 15 years (whereas in the past it was 20 – 25 years). The team expects that a similar 15-year maturity arrangement would be reached on this proposed SLSDP credit line, so the dialogue with the government counterparts will be continued.

(4) **Risk**: Unwillingness of PFIs to lend to the new proposed groups of beneficiaries, in particular smallholder farmers and productive alliance members.

Mitigation measures: Overall, a number of financial institutions have already worked in the livestock sector, under the LSDP credit line, thus have general awareness of lending to the sector. TA to the PFIs designed under the project will be very important to increase their comfort level of lending to these groups of beneficiaries. The project has an expansive TA support to the prospective sub-borrowers under other components of the project, to make sure better-prepared beneficiaries would engage with the PFIs. Introduction of digital finance will help reduce the lending costs.