REPUBLIC OF TAJIKISTAN

STRENGTHENING RESILIENCE OF THE AGRICULTURE SECTOR PROJECT IN TAJIKISTAN

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

April 2021

ABBREVIATIONS AND GLOSSARY

ALC	Agro-Logistic Center
ARAP	Abbreviated Resettlement Action Plan
CC	Civil Code
DCM	Decree of the Cabinet of Ministries
DDR	Diligence Report
DMS	Detailed Measurement Survey
DSEI	Draft Statement of the Environmental Impact
EHS	Environment, Health and Safety General Guidelines
EHSG	World Bank Group Environmental Health and Safety Guidelines
EIA	Environmental Impact Assessment
ES	Environmental Specialist
ESA	Environmental and Social Assessment
ESIA	Environmental and Social Impact Assessment
ESF	World Bank Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	World Bank Environmental and Social Standard
FS	Feasibility Study
GoT	Government of Tajikistan
GRM	Grievance Redress Mechanism
H&S	Health and Safety
HH	Household
IFIs	International Financial Institutions
IP	Indigenous People
IR	Involuntary Resettlement
LAR	Land Acquisition and Resettlement
LC	Land Code
LMP	Labor Management Procedures
MoA	Ministry of Agriculture
MHSPP	Ministry of Health and Social Protection of Population
NGO	Non-governmental organization
OHS	Occupational and Health and Safety
OP	Operational Policy
PAP	Project Affected Persons
PCB	Polychlorinated Biphenyl
PCR	Physical Cultural Resources
PIU	Project Implementation Unit
PMP	Pest Management Plan
POM	Project Operational Manual
PPE	Personal Protective Equipment
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
RT	Republic of Tajikistan
Regional	Regional Working Groups
CEP	Committee for Environmental Protection Under the Government of Tajikistan
SEE	State Environmental Expertise
SEI	Statement of the Environmental Impact
SEP	Stakeholder Engagement Plan
SIA	Social Impact Assessment
SS	Social Specialist
TOR	Terms of Reference
USD	United State Dollar
TJS	Tajik Somoni
WB	World Bank
WBG	World Bank Group

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All prices indicated in the table (Table 5: Preliminary ESF Training Plan) of the framework document as of 2023 are presented without additional financing of the project, and are not valid.

I. Executive Summary

This Environmental and Social Management Framework (ESMF) is prepared for the Strengthening Resilience of the Agriculture Sector in Tajikistan Project. The Project is implemented by the Ministry of Agriculture and funded by the World Bank. The purpose of the Environmental and Social Management Framework is to outline expected environmental and social risks and impacts of the project and to provide a system for monitoring and managing such impacts during project implementation. Additionally, this framework describes institutional roles and responsibilities for managing environmental and social risks under the project, and the feedback and grievance mechanisms by which citizens and other interested parties can interact with the project implementation agency.

Project objective. COVID-19 has exposed the weaknesses of Tajik agriculture and has had a large adverse impact on food security and nutrition. The impact on agricultural production in 2020 was moderated by the fact that farm inputs for the main planting in spring were procured by farmers before the COVID-19 outbreak. However, the adverse impact on the 2021 agricultural production is anticipated to be much larger. The small fiscal space of the Government of Tajikistan (GoT) has become smaller in the aftermath of COVID-19 crisis, reducing the likelihood of another emergency input distribution and improved generation and delivery of agricultural services without external assistance. During the COVID-19 pandemic, the GoT did not have real-time information on food stocks or the structure of actual cropping areas of subsequent planting campaigns to take timely and effective crisis response measures, exacerbating the adverse impact of declined purchasing power of the population as a result of lost jobs and remittances on food and nutrition security. In response, the GoT is launching the proposed Strengthening Resilience of the Agriculture Sector in Tajikistan Project.

The proposed project aims to thereby strengthen the crisis resilience of the agriculture sector, increase domestic food security, strengthen the foundation for increasing production and export competitiveness of the growing horticulture sector, and improve Ministry of Agriculture's and other relevant pubic institutions' early warning and crises preparedness and response capacity. It would also contribute to the development of a viable sector of private micro, small and medium enterprises (MSMEs) in rural areas and generate employment opportunities in regions with few legal alternatives. The proposed project will support: (i) increase the availability of improved seeds, seedlings and planting materials that are farmer-preferred and well adapted to the different agro-ecological conditions of Tajikistan; (ii) improve the access to improved agro-logistic services of farmers and agri-businesses and (iii) strengthen the crisis management i.e. early warning, preparedness and response capacity of selected public institutions.

Project location. The proposed project will be implemented nationwide. The agro-logistic centers (ALCs) will be tentatively located one each in Khatlon, Sughd, and Dushanbe regions selected for their agro-ecological potential, agricultural production patterns, and proximity to major urban market (in the case of Dushanbe). The sub-sectoral focus will be on horticulture. The project builds on and complements to two ongoing projects related to agricultural food sector development. The Agriculture Commercialization Project (ACP) that promotes an increased competitiveness of and inclusion of smallholders in dairy, fruit, and vegetable value chains, and the recently declared effective Rural Economy Development Project (REDP), which supports dairy value chains and productive partnerships and agro-tourism in Khatlon, and Sughd regions.

Project potential environmental and social risks and impacts. Overall, the project will provide a series of positive social and environmental impacts. It would support technical assistance and capacity building activities on improving quality of seeds, all of which would reduce environmental and health risks in agricultural production in the country, while at the same time creating new economic opportunities.

Environmental risks and impacts. The proposed project activities might generate a series of adverse environmental risks and impacts associated with the proposed construction and rehabilitation activities, such as construction or rehabilitation of research institutes and laboratories, construction/rehabilitation of

seed plants, along with investments in infrastructure for agro-logistics centers and extension activities, crop protection and locust control, which might require pest management activities. All these risks and impacts might include increased environmental pollution with waste, noise, dust, air and water pollution, impacts on biodiversity; health hazards and labor safety issues. The potential pest management risks are related to protection of crops and seed production, locust control, and protection of agricultural products in storage or transit that might effect local biodiversity or community health and safety. Additionally, in the case of introducing new seed varieties, risks and impacts related to biodiversity and ecosystem services may arise.

Most of specified risks and impacts are expected to be typical for small and medium scale construction and rehabilitation works, agriculture production, temporary by nature and site specific, and can be easily mitigated by applying best construction practices and relevant mitigation measures.

Social risks and impacts related to the physical footprint of the project are predictable and manageable via measures included in the ESMF and in the Resettlement Policy Framework (RPF) of the project. Direct social risks under the project relate to small scale land acquisition or land use restrictions, as well as to community, health and safety, social exclusion and labor safety risks in project activities. No significant risks related to labor influx, gender-based violence (GBV) or community health and safety are expected under the project, as most project workers will be recruited locally.

Overall project environmental and social risks. Considering the potential environmental and social risks, described above, as well as the high uncertainty over sectoral policy priorities and directions, and diverse areas of potential investments the project's environmental and the social risks are rated ***Substantial***.

Relevance of World Bank Environmental and Social Standards (ESS). The Project will be implemented in accordance with the World Bank Environmental and Social Framework (ESF) including ten Environmental and Social Standards (ESS). The ten ESSs are: ESS 1) Assessment and Management of Environmental and Social Risks and Impacts; ESS 2) Labor & Working Conditions; ESS 3) Resource Efficiency and Pollution Prevention and Management; ESS 4) Community Health and Safety; ESS 5) Land Acquisition, Restrictions on Land Use and Involuntary Resettlement; ESS 6) Biodiversity Conservation and Sustainable Management of Living Natural Resources; ESS 7) Indigenous Peoples / Sub-Saharan African Historically Underserved Traditional Local Communities; ESS 8) Cultural Heritage; ESS 9 Financial Intermediaries; and ESS 10) Stakeholder Engagement and Information Disclosure[1]. ESSes 1, 2, 3, 4, 5, 6, and 10 are relevant to the project. All investments to be financed by this Project will apply national environmental laws and regulations as well as the relevant World Bank environmental and social standards.

Environmental and Social Management Framework (ESMF) respectively, in accordance with the ESS1, has been prepared, which specifies rules and procedures for the activities and subprojects' Environmental and Social Impact Assessment (ESIA) and for preparing adequate Environmental and Social Management Plans (ESMPs). The main goal of the Environmental and Social Management Framework (ESMF) is to define the measures, ways and mechanism for avoiding, minimizing and/or mitigating potential negative environmental and related social impacts that may occur as the result of implementation of the project. The ESMF ensures that the identified subprojects in the course of project implementation will be correctly assessed from environmental and social perspective to meet WB's Environmental and Social Standards alongside with Tajikistan's Environmental and Social Laws and Regulations. The ESMF will guide the ESIA process and in this regard covers the following: (i) rules and procedures for environmental and social screening of project activities and subprojects to be supported under the project; (ii) guidance for conducting subprojects ESIA and/or preparing ~~simple~~ ESMP or ESMP Checklist including monitoring plans; (iii) mitigation measures for possible impacts of proposed subprojects; (iv) safety measures while handling treated seeds and applying pesticides and a template for the Pest Management Plan (PMP); (v) requirements for preventing risks and impacts related to biodiversity and ecosystem services by introducing new seed varieties[2]; (vi) implementation and monitoring arrangements for ESIA/ESMPs; (vii) overview of the capacity of MoA for environmental and social risk management and measures to fill any gaps in capacity.

The ESMF serves also to provide details on procedures, criteria, and responsibilities for subproject

[1] Detailed information on the ESF and ten ESSs can be found at *https://www.worldbank.org/en/projects-operations/environmental-and-social-framework* and *https://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards*

[2] As per FAO guidelines: http://www.fao.org/agriculture/crops/thematic-sitemap/theme/biodiversity/en/

environmental and social screening, preparing, implementing and monitoring of subproject site-specific ESIAs/ESMPs.

Integration of the ESMPs into project documents. All sub-project bidding documents shall include a requirement for implementation of the ESMP/checklist, and the documents shall be attached to the bidding documents and then to the construction contracts. The ESMF requirements will be integrated in the Project Operational Manual while the ESMPs requirements, - in construction contracts for all sub-projects, both into specifications and bills of quantities, and the Contractors will be required to include the cost for ESMP implementation in their financial bids. Based on the ESMF there will be highlighted the roles and responsibilities of all involved parties in the ESA process. Lastly, based on the ESMF and ESMPs requirements, monitoring and evaluation of mitigation/avoidance measures identified in the site-specific review and in the ESMPs will constitute integral part of the subproject implementation, including into them the contracts binding the and the contractors will need to carry out the environmental and social obligations during civil works. Furthermore, all contractors will be required to use environmentally acceptable technical standards and procedures during carrying out of works. Additionally, as specified in the ESMF, the contract clauses shall include requirements towards compliance with all national construction, health protection, environmental and social risk mitigation procedures, and rules on environmental and social protection.

World Bank Implementation Support and ESS Compliance Monitoring. The Bank's environmental and social specialists will participate in regular implementation support mission to ensure smooth implementation of the Project activities in consistency with this ESMF. The GoT is responsible compliance and monitoring of Project activities with National Laws and Regulations, the World Bank ESF and applicable ESSes, and the World Bank Group Environmental Health and Safety Guidelines (EHSG). Regular (or when required, remote) site visits will be carried out to monitor the Project's compliance with the PMP; site specific Integrated Pest Management Plans; the site-specific ESIA/ESMPs prepared for Project activities; and the contractors with good construction practices and their contractor's ESMPs. Additionally, the social specialists will be reviewing the consistency of land acquisition with the requirements of the RPF and Resettlement Action Plans (RAPs) to be prepared for project activities. The Bank task team will provide guidance in preparation and review of the following key environmental and social instruments, such as ESAI/ESMPs, RAPs, RAP Completion Reports, and quarterly progress reports.

Grievance Redress Mechanism (GRM). The Project Grievance Redress Mechanism aims to enable beneficiaries and citizens to register any grievances on all project-related issues of concern. The GRM will operate at the regional and national level. At the regional level, citizens can submit their grievances with the Regional Project Offices in Khatlon and Sughd. If the grievance has not been considered or the complainant has not received a satisfactory response, he/she may file a grievance to the PIU at the national level. Every grievance shall be tracked and assessed if any progress is being made to resolve them. It is expected that project will receive many grievances and should ideally have an electronic system for entering, tracking, and monitoring grievances. The project monitoring and evaluation information system should also include indicators to measure grievance monitoring and resolution.

Public consultations and information disclosure. For ESMF development, project sites were visited and a number of meetings with the main stakeholders were conducted. Comments received during public consultation have been reflected in ESMF. The Stakeholder Engagement Plan (SEP) is an instrument intended to serve as a practical guidance to support public consultation and engagement activities carried out by the MoA in relation to the Project development and implementation. The SEP aims to ensure that the engagement activities are conducted effectively, fairly, and in a transparent manner, cover all relevant stakeholders, as well as employ consultation methods that promote active participation and are appropriate within the local context. It requires inform about the project and communicate the relevant environmental and social data; provide useful and clear information for people affected by the project; conduct public consultations; take into account the views expressed during the public consultations in the implementation of the project.

Public Consultation was held in Dushanbe and Bokhtar on April 21 and April 22, respectively, before finalizing the ESMF (see Annex 7 & Annex 8). Public consultation presented the project's objectives, planning activities, anticipated environmental and social impacts and proposing mitigation measures, compensation measures in the event of any impacts, and grievance redress mechanism to participants. Based on suggestions received during the consultation workshop the ESMF, other environmental and social

instruments include RPF, RAP, Labor Management Procedures (LMP), and Stakeholder Engagement Plan (SEP) will be updated, finalized and published on MoA's website and further disclosed on the external WB website.

II. PROJECT DESCRIPTION

The Project aims to support the GoT in successfully transitioning to a sustainable and inclusive model of agricultural sector growth. The proposed project would help: (i) increase the availability of improved seeds, seedlings and planting materials that are farmer-preferred and well adapted to the different agro-ecological conditions of Tajikistan; (ii) improve the access to improved agro-logistic services of farmers and agri-businesses and (iii) strengthen the crisis management i.e. early warning, preparedness and response capacity of selected public institutions. The proposed project aims to thereby strengthen the crisis resilience of the agriculture sector, increase domestic food security, strengthen the foundation for increasing production and export competitiveness of the growing horticulture sector , and improve MoA's and other relevant pubic institutions' early warning and crises preparedness and response capacity. It would also contribute to the development of a viable sector of private micro, small and medium enterprises (MSMEs) in rural areas and generate employment opportunities in regions with few legal alternatives.

2.1. Project Components

Component 1: Strengthen seed, seedlings, and planting material systems

The objective of this component is to support the development of resilient and vibrant seed, seedling and planting material systems that ensure the availability, in sufficient quality and quantity, of improved, locally adapted, farmer-preferred, climate resilient, and affordable seeds, seedlings, and planting materials. The component envisages to achieve this by supporting the enabling environment, research and development, multiplication and quality assurance of seeds, seedlings and planting materials.

Subcomponent 1.1 Enabling environment: The objective of this subcomponent is to improve the policy and legal environment that supports the development of a vibrant and resilient seed, seedling and planting material systems. The sub-component will support: (i) technical assistance for review of existing policies and legislation with the objectives of (a) identifying policy and legislative gaps and implementation challenges, (b) developing new policies and legislation that advance the development of viable and resilient seed, seedling, and planning material systems, and (c) harmonization of policies and legislations with regional and international standards; and (ii) capacity building of personnel involved in in the development of policies and legislation, including training, participation in workshops and exchange visits. Policy and legislation reviews as well as development of guidelines and regulations will be viewed through the lens of removing barriers and increasing incentives for adopting climate solutions and enabling the private sector to take up a more active role in the development of the seed and seedling industry as well as in developing local climate products. The public sector will take the lead in the development of policies and legislations in consultation with and active participation of the private sector.

Subcomponent 1.2 Research and development: The objective of this subcomponent is to strengthen the capacity of national agricultural R&D institutions, starting from the very low initial level, so that they are engaged in: (i) the development of new technologies; (ii) adaptation of technologies to local social and environmental conditions and to changing circumstances over time (e.g., co-evolution of pests and diseases, degradation of water and land resources and climate change manifestations); (iii) transfer of on-the shelf technologies to end users; and (iv) support to variety maintenance (maintenance breeding). The subcomponent will support building the capacity of research institutions, including: (i) physical capacity building, including research infrastructure;[3] and (ii) human resource development, including on CSA. The support will target research institutions associated with the Tajikistan Academy of Agricultural Sciences (TAAS)[4] and the Tajik Agrarian University (TAU)[5] and build their physical and human capacity in order for them to engage in the development of market- and farmer-preferred, locally adapted, climate resilient

[3] Investments in climate proof and energy efficient infrastructure will be pursued.
[4] Institutions of Tajikistan Academy of Agricultural Sciences include the Pamir Scientific Center for Agriculture; Farming Institute; Institute of Horticulture, Viticulture, and Vegetable Growing; National Center for Genetic Resources; and the Scientific Center for Innovative Technologies and Agricultural Mechanization.
[5] Scientific Research Institute of Biotechnology of the Tajik Agrarian University named after Shirinsho Shotemur.

and affordable technologies and in variety maintenance. The main areas of support include: (i) the procurement of office furniture, IT and laboratory equipment, mobility and farm machinery (tillage, planting, harvesting); (ii) the construction of new and/or rehabilitation of existing office and laboratory buildings, and greenhouses;[6] (iii) the rehabilitation of existing research infrastructure, including irrigation facilities; (iv) technical assistance in support of capacity and capability assessment and development; and (v) human resource capacity development, including short-term training for researchers, specialists and technical assistants, workshops and knowledge exchange visits on topics including CSA.

Subcomponent 1.3 Multiplication: The objective of this subcomponent is to build the capacity of public and private seed farms and nurseries involved in the multiplication of seeds, seedlings, and planting materials.[7] The subcomponent will have two focus areas: (i) physical and human capacity building of seed farms, nurseries and associated stakeholders for enhanced seeds, seedlings and planting materials multiplication, including on CSA; and (ii) purchase of super elite and elite material for commercial multiplication by seed farms and nurseries. The physical and human capacity building support to multiplication will be guided by policies, procedures and regulations that ensure compliance to quality standards through among others high-quality inspection and certification, which will be provided by the public sector. The purchase of seeds, seedlings and planting materials, which will help seed producers and nurseries meet their immediate needs of accessing high quality material for commercial production, pending the longer-term benefits associated with R&D focus of subcomponent 1.2, will also be guided by compliance to quality and standards, which will be provide by the public sector. The GoT will be responsible for the purchase of elite and super elite seeds and seedlings and their subsequent distribution to seed farms and nurseries using the established procedure. The main areas of the physical capacity building support include: (i) construction and/or rehabilitation of storage facilities,[8] office and laboratory buildings, greenhouses, and rehabilitation of existing irrigation facilities;[9] (ii) procurement of office furniture, field and laboratory equipment, vehicles and farm machinery, including seed cleaning machines; (iii) technical assistance in support of capacity and capability assessment and development. The main areas of human capacity building include capacity and capability development of technicians, and personnel through participation in individually targeted training (both short and long-term), workshops, study tours, exchange visits and conferences. The subcomponent will also support the purchase of super elite and elite seeds, seedings and planting materials of high value, locally adapted varieties of GoT identified priority crops, including potato, wheat, and cotton for commercial multiplication by seed farms and nurseries and ultimately their distribution to end users.

Subcomponent 1.4 Quality assurance: The objective of this subcomponent is to build the capacity of institutions and entities involved in quality assurance of seed, seedlings and planting material that are produced (or imported) and sold in Tajikistan. The mandate of ensuring the quality and standards as well as inspection and certification of seeds, seedlings and planting materials produced, multiplied and sold is that of the government, particularly the MoA. The subcomponent will have two focus areas: (i) physical capacity building of quality assurance testing facilities, including laboratories;[10] and (ii) human resource development. The main areas of physical capacity building include: (i) construction of new and/or rehabilitation of existing office and laboratory buildings; (ii) procurement of office furniture, field, laboratory, IT and associated equipment, farm machinery and vehicles as well as inputs essential for the operation of laboratories and other quality assurance promotions and activities. Main areas of support in human resource development include: (i) technical assistance in support of capacity and capability assessment and development; and (ii) training of researchers, laboratory technicians, and personnel associated with quality assurance through participation in individually targeted training (both short and long-term), workshops and conferences.

Component 2: Support investments in agro-logistical centers for horticulture value chains

[6] Investments in climate proof and energy efficient infrastructure will be pursued.
[7] Certified seeds derived from registered varieties are categorised as being "Original Seed" (or the original breeder's seed and also referred to as "Super Elite"), "Elite Seed" (seed used by seed producers to produce commercially available seed used by farmers which may include hybrid or F1 seed).
[8] Investments in storage facilities will be designed with an objective, among others, to reduce exposure of products to extreme weather conditions.
[9] Investments in climate proof and energy efficient infrastructure will be pursued.
[10] Investments in climate proof and energy efficient infrastructure will be pursued.

The objective of the component is to support investments in ALCs to enhance the development of high horticulture value chains and improve their competitiveness and access to high-end markets (e.g. retail chains and export). The investments in ALCs help build resilient food systems, promote diversification, and ensure better market linkages, quality and food safety standards, reduce food loss and waste, and initiate the development of an efficient distribution system network in Tajikistan. The component includes two subcomponents.

Subcomponent 2.1: Support the development and operation of ALCs: The sub-component will support the establishment of three ALCs tentatively located one each in Khatlon, Sughd, and Dushanbe regions, where horticulture production is concentrated, to support primary collection, quality and food safety standards enforcement for local horticulture production and its access to high value outlets. The ALCs will be relatively small in size, with up to US$4 million investment each,[11] reflecting the small market size in Tajikistan and the need for a gradual buildup of the integrated ALC network in Tajikistan. The ALCs in Khatlon and Sughd regions will be designed to provide services mainly for facilitating exports, while the ALC near Dushanbe will be largely servicing the capital of the country with 700,000 consumers. Streamlined processing ALC platforms, including improved and new storage facilities, will reduce the risk of food losses and waste. Availability of ALC services will also trigger more private investments in horticulture, including fruit orchards, which in turn would contribute to the climate mitigation and job creation. Specifically, the sub-component will support: (i) technical assistance for the preparation of feasibility studies, business plans, environmental and social impact assessments, and detailed designs and construction supervision plans for all three facilities; (ii) civil works for the construction of three facilities; and (iii) equipment for operational activities of three facilities – pre-cooling, sorting, grading and packing lines as well as cold storage units and an operational management software. The facilities are expected to be built on state-owned land and will be owned by the State. The ALCs are expected to be managed through a public delegation service contract to a private operator (Tajikistan has a legislation in place for concession agreements and other kinds of private-public partnerships). In case that such arrangement may not be feasible selectively, these would be operated by a public entity.

Subcomponent 2.2: Capacity building for operation and management of ALCs and awareness raising. The subcomponent will support: (i) capacity building of future management staff for operation and management of ALCs through specialized on-job trainings; and (ii) strengthening of GoT's knowledge through information sharing, workshops, and study tours to prepare the ground for future scale-up of investments in a sustainable and integrated food distribution network organized around various ALCs and potentially a Wholesale Distribution Centre in Dushanbe.

Component 3: Strengthen public capacity for crises prevention and management

This component will strengthen the capacity of relevant public institutions on agricultural crises prevention and management, focusing on selected programs, which can significantly enhance resiliency of agricultural sector. It will enhance the public capacity, thereby allowing institutions to have an early estimate of agricultural production and crop yields, determine potential food shortages, and identify crises and take early preparedness and response actions. It will also support climate adaptation and mitigation measures, generating substantial climate co-benefits. Priority areas for strengthening include: (i) real-time monitoring of agricultural production and agrometeorology; (ii) soil testing for improved soil fertility management and precision agriculture; and (iii) crop protection and locust control.

Subcomponent 3.1: Real-time monitoring of agricultural production, land use, and agrometeorology. The objective of this subcomponent is to improve information base and data analysis capacity for effective policy making to ensure more resilient and sustainable development of agriculture. The emphasis will be on collecting critical data on a regular and timely basis on land use and agricultural production using digital technologies and turning that data into a basis for real-time policy actions, including crisis preparedness and response. This subcomponent will have three focus areas: (i) creating a system for regular data collection on agricultural land use/planting decisions using the unified

[11] In Uzbekistan, for comparison, the estimated investment cost of ALC near Tashkent, being established with the support of the ADB project, is US$60 million. The smaller ALCs in Bukhara and Khorezm regions, to be established with the support of the World Bank project, will cost US$35 million each.

database and protocols for data collection at *jamoat*,[12] district, and regional levels; (ii) collecting information about crop vegetation and impacts of climate hazards on agricultural production by using remote sensing technologies; and (iii) building capacity at the institutional level on agricultural production forecasting and early warning that would lead to policy decisions helping with farmers' climate adaptation. The subcomponent will also support generation of real-time agrometeorological information. Informed advisories, alerts and robust early warning systems are essential for farmers and rural dwellers to prepare for and adapt to changes in climate. The project will support two focus areas in this regard: (i) increasing capacity of MoA to collect and analyze location-specific weather information, in collaboration with the Agency for Meteorology; and (ii) providing early warning and timely diagnoses for farmers, which will address the currently delayed and inaccurate agrometeorological information provision, building on the FAO/European Union (EU) pilot in Tajikistan.[13] The project will pay attention to channelling information through technologies that are accessible also to women farmers and agri-entrepreneurs. Main elements of support under this subcomponent would include: (i) human resource development, including training on digital data collection, analyses, and forecasting, workshops, seminars and experience sharing visits; (ii) development of protocols and manuals for data collection in the unified database; (iii) agricultural production forecasting using remote sensing and other data through scaling up the ACP-supported pilot of agricultural production forecasting; (iv) preparation of agrometeorological information materials for farmers and development of distribution channels; (v) establishment of new agrometeorological stations and ICT infrastructure to receive and process data;[14] (vi) procurement of goods and equipment for remote sensing and field data collection and monitoring; (vii) operating expenses for data collection and analyses.

Subcomponent 3.2: Soil fertility management. The objective of this subcomponent is to increase farmers' awareness of their soils, water and biohazards, and success in replacing blanket recommendations with soil test-based recommendations and adoption of climate-smart farming practices (i.e. precision agriculture). This will entail generation of fertilizer use recommendations tailored to specific needs of agro-ecological zones of the country and ensure more efficient use of increasingly expensive fertilizers by farmers. This subcomponent will have three focus areas: (i) enhancing land productivity through improved soil fertility and soil health and addressing land degradation; (ii) building capacity of MoA and other public institutions on climate-smart practices that lead to reduction in greenhouse gas (GHG) emissions and fertilizer use; and (iii) creating the foundation for effective use of innovative remote digital soil scanning and testing in the future. Main elements of support under this subcomponent would include: (i) upgrading soil and water testing laboratory infrastructure, including civil works for buildings,[15] with establishment of a network of central reference and regional laboratories in the state agrochemical stations; (ii) strengthening land mapping and soil testing capacities with investments in technical assistance, equipment, ICT, and software; (iii) improving guidelines/manuals for soil testing and fertilizer use adjusted to different soil types and agro-ecological zones; (iv) promoting soil test kits among farmers for real-time simplified soil monitoring; and (v) building capacity for future use of digital technologies for soil scanning, i.e. portable field-based soil testing equipment for real time advise to farmers on soil fertility management. This subcomponent would also support capacity building to experts, scientists, and farmers in natural resource management through a combination of awareness creation and training; provision of field and office equipment and critical supplies; and operational expenses for field days and hands-on exercises.

Subcomponent 3.3: Crop protection and locust control. The objective of this subcomponent is to strengthen capacity of crop protection and locust control agencies[16] to provide public-nature plant

[12] A *jamoat* is a third-level administrative division, similar to a commune or municipality.

[13] The project "Strengthening Institutions and Capacity of the Ministry of Agriculture and State Veterinary Inspection Service for Policy Formulation" financed by the EU and implemented by the FAO supported the successful introduction of several agrometeorological stations in Tursunzade, Kanibadam and Balkhi in 2019-2020, which could be scaled up by SRASP.

[14] Investment in climate proof and energy efficient infrastructure will be pursued.

[15] Investment in laboratory facilities will be designed with an objective, among others, to use climate-proof and energy efficient materials and reduce exposure to extreme weather conditions.

[16] The project will complement and fill the gaps of the second phase of the regional program on locust management implemented by FAO and financed by the Government of Japan, which started in December 2020. This five-year project will provide support for improving locust management through regional cooperation and strengthening of technical capacities on a wide range of topics, including for the operational use of the Automated System for Data Collection and national Geographical Information System, allowing collection and analysis of standardized field locust data.

protection services and help farmers protect against pests in an environmentally sustainable manner. Warmer temperatures are favourable to pests; and potential climate change-induced threats to Tajikistan include the arrival of new pests and diseases.[17] There will be two focus areas of this subcomponent: (i) investing in broad-scale control measures of locust and other pests; and (ii) investing in human capacity of the public institutions responsible for crop protection and locust control. Tajik farmers incur significant losses from frequent pests, and especially locust invasions, augmented by climate change. Three out of the four provinces of the country are regularly affected by locust infestations, mainly due to the Moroccan Locust. During the past ten years, the locust surveillance area amounted to some 500,000 ha and the area of annual anti-locust treatments ranged from 60,000 ha to 140,000 ha. The scale of this issue has expanded and occurs along almost 4,000 km of borders with the neighbouring countries, including Afghanistan with little, if any, locust control. During outbreaks, locust attacks destroy pasturelands and a wide range of cultivated crops, with the annual loss estimated at US$10-15 million. The real impact is more devasting as the annual locust attacks curtail severely the livelihoods of the poorest segments of the Tajik society. The public sector has a large role to play in delivering services to help farmers reduce these losses, including through better monitoring, prevention, and response. Ex-ante inclusive group discussions to elicit the demand for public sector agricultural information and preferred delivery mechanisms, with emphasis on group discussions with vulnerable (small, young) producers as well as women farmers and other users, will be held. Main elements of support under this subcomponent would include: (i) human resource development, including training and workshops on CSA and Integrated Pest Management (IPM); (ii) upgrading crop protection laboratory infrastructure, including civil works for buildings[18]and procurement of equipment and laboratory reagents; (iii) improving technical capacity of the crop protection and locust control units, with investments in chemicals, other goods, and equipment, to deliver control and eradication services and strengthen field surveillance; and (iv) operating expenses.

Component 4 - Project management and coordination

The objective of this component is to support project management, coordination, M&E, and implementation of environmental and social framework (ESF) instruments and fiduciary aspects of the project. These functions will be undertaken by a project implementation unit (PIU) to be established under the auspices of the MoA. The PIU will also manage the project's grievance redress mechanism (GRM) and citizen engagement activities. Enhanced engagement and outreach activities will improve the outcomes of the project. Component 1 will carry out beneficiary satisfaction surveys (using scorecards and other feedback mechanisms) annually. Components 2 and 3 and the project will also conduct ex ante inclusive group discussions to elicit the demand for ALC functions, and for public sector agricultural information 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 PIU will be staffed with the required specialists, including fiduciary and ESF. Activities to be financed under this component include: (i) PIU staffing; (ii) operational costs, including stationary, fuel, per diem, mobile air time etc.; (iii) goods, including office furniture, IT equipment, vehicles, audio visual etc.; (iv) consultancy and non-consultancy services, including training, workshops, conferences etc. and technical assistance (TA) for various activities e.g. conducting TOT, capacity needs assessment, specification of lab equipment etc.; and (v) implementation, including planning, monitoring (supervision) and evaluation (impact evaluation), report writing, project auditing, donor coordination, etc.).

2.2. Project Beneficiaries

Primary beneficiaries. The project's primary beneficiaries are farmers, both smallholders and larger farms, agribusinesses, exporters, and service providers operating in horticulture value chains. Primary beneficiaries will also be the staff of public institutions, from agricultural researchers and extension officers to the staff working in various MOA departments and agencies and in the local government.

[17] ADB and World Bank. 2021. Climate Risk Country Profile Tajikistan. (draft).
[18] Investment in laboratory facilities will be designed with an objective, among others, to use climate-proof and energy efficient materials and reduce exposure to extreme weather conditions.

Geographic focus and selection criteria. The project will be open to beneficiaries across the country, and the three ALCs will be tentatively located one each in Khatlon, Sughd, and Dushanbe regions selected for their agro-ecological potential, agricultural production patterns, and proximity to major urban market (in the case of Dushanbe). The sub-sectoral focus will be on horticulture.

2.3. The scope and objectives of Environmental and Social Management Framework (ESMF)

As the technical evaluation (e.g., feasibility studies, detailed designs) and specific intervention locations under the project are not identified and/or ready and their specific impacts are not known by project appraisal, a framework approach is adopted. Respectively, in accordance with the ESS1, an Environmental and Social Management Framework (ESMF) has been prepared. which specifies rules and procedures for the activities and subprojects' Environmental and Social Impact Assessment (ESIA) and for preparing adequate Environmental and Social Management Plans (ESMPs). The main goal of the Environmental and Social Management Framework (ESMF) is to define the measures, ways and mechanism for avoiding, minimizing and/or mitigating potential negative environmental and related social impacts that may occur as the result of implementation of the project. The ESMF ensures that the identified subprojects are correctly assessed from environmental and social perspective to meet the WB's ESF and EHSGs requirements alongside with Environmental and Social Laws and Regulations of the Republic of Tajikistan for adequate mitigation residual and unavoidable impacts (if any).

ESMF provides guidelines for the development of appropriate mitigation and compensation measures for adverse impact caused by project activities. In this document the background/context, the policy and regulatory framework are described as well as environmental and social impacts of possible subprojects. This includes Environmental and Social Impact Assessment (ESIA) procedures and guidelines, institutional arrangements, consultation and disclosure procedures.

The ESMF will guide the implementation of project activities by the following:

(a) A detailed chapter on Integrated Pest Management (IPM) with an assessment of current pest management practice in Tajikistan; recommended actions by the project to help address short-comings (if any) identified in that assessment; lists of pesticides banned by national law or prohibited by the ESF and ESSs; and, as an annex, a PMP for the project.
(b) Generic guidelines and procedures to avoid, mitigate, or minimize adverse environmental and social impacts of the potential activities.
(c) A description of implementing arrangements including details on how environment and social risks, will be managed.
(d) The criteria for determining acceptable environmental and social risks and pest management procedures for the proposed sub-projects.
(e) Spelling out national rules and procedures for use of agricultural chemicals and pesticides.
(f) Descriptions of the environmental and social screening or pest management screening processes that will help to define the required site-specific ESF instruments.
(g) Checklists for preparing site-specific Environmental and Social Impact Assessments/Environmental and Social Management Plans (ESIAs/ESMPs).
(h) ESMP checklists for the small- and medium scale construction and rehabilitation for seed laboratories, local seed banks and agri-logistics centers envisaged by the project.
(i) Environmental and social monitoring and reporting requirements.
(j) A section on proposed capacity building activities to help the implementing agencies comply with the ESF.
(k) Supply chain risk management requirements.

Annexes to be the part of ESMF:

i. Rules, criteria and procedures for environmental and social screening of project activities and subprojects to be supported under the project;
ii. guidance for preparing site specific ESIA/ESMPs for larger facilities; and
iii. ESMP check-lists for the smaller interventions like facility or laboratory repair/rehabilitation or

construction of small facilities or laboratories on existing campuses. ;

The policy and regulatory framework consider the compliance with the national laws and WB requirements. ESA guidelines and procedures serve to define the responsibilities for sub-project preparation, screening, appraisal, implementing and monitoring. With the help of these guidelines the requirements for the sub project Environmental and Social Management Plans (ESMP) will be outlined.

The ESMF serves also to provide details on procedures, criteria, and responsibilities for subproject environmental and social screening, preparing, implementing and monitoring of subproject specific ESIAs. Towards addressing the potential resettlement impacts, the MoA has developed a Resettlement Policy Framework (RPF). The key objective of the Resettlement Policy Framework is to provide a framework to appropriately identify, address and mitigate adverse socioeconomic impacts that may occur due to the implementation of subprojects that involve the involuntary acquisition of land and the subsequent resettlement of affected families.

III. REGULATORY FRAMEWORK FOR ENVIRONMENTAL AND SOCIAL ASSESSMENT

3.1. Tajikistan National Environmental Legislation and Procedures

Tajikistan has a well-developed environmental legal and regulatory framework. Current environmental legislation in Tajikistan includes statutory acts and laws on the following:

- Protection of the environment;
- Ecological audit and monitoring;
- Protection of flora and fauna;
- Environmental information and education;
- Soil, water, and air quality;
- Biological safety;
- Human health and safety; and
- Waste and chemicals management.

These laws, along with the regulations approved by the Government, create a favorable legal framework for environmental protection and for the use and protection of the country's natural resources. They also enforce the rights of citizens to environmental safety, organic products, eco-friendly environment, access to environmental information, and the possibility of investing (moral, material, and financial) to improve the ecological situation in the country.

Environmental legislation in the Tajik Republic includes the Constitution and codes and laws on air quality, noise, mineral resources, land management, forests, health and safety, and waste and chemicals management. The *Tajikistan Framework Environment Law* was adopted in 1993, enacted in 1994, and amended in 1996, 1997, 2002, 2004, and 2007, and replaced by a new law in 2011. The *Water Code w*as enacted in 2000 and amended in 2008, 2009, 2011 and 2012. The *Land Code* was enacted in 1996 and amended in 1999, 2001, 2004, 2006, 2008, 2011, and 2012. The *Forest Code* was enacted in 1993 and amended in 1997 and 2008.

Other important environmental legal acts, laws and regulations relevant to the project are listed in Table 1.

Table 1: Relevant Environment, Health, and Safety Laws in Tajikistan

Law	Enacted and Amended	Responsible Agency	Brief Description
Law on Environmental Protection	No.760 enacted on August 2011	CEP and its subdivisions at the district level	The Law defines the state principles of environmental protection and sustainable social and economic development, guarantees of human rights for healthy and friendly environment, law enforcement strengthening, prevention of negative impact of business and other operations on the environment, management of rational use of nature resource and securing environmental safety. Chapter 6 requires an Environmental Impact Assessment and Chapter 7 specifies requirements for the location, design, construction, reconstruction and commissioning of enterprises, buildings, and other facilities.

Law	Enacted and Amended	Responsible Agency	Brief Description
Law on Environmental Impact Assessment	No.1448 enacted on 18 July 2017	CEP and its subdivisions at the district level	The Law establishes the legal and organizational framework for assessing environmental impacts, relationship with state environmental expertise, and the procedures for registering and classifying environmental impacts on the environment.
Law on Environmental Monitoring	No. 707 enacted on 25 March 2011	CEP and its subdivisions at the district level	The Law defines the organizational, legal, economic and social bases for ensuring environmental monitoring in the Republic of Tajikistan and regulates relations between state authorities, self-government bodies of settlements and villages, public associations and citizens in this area.
Law on Environmental Information	No. 705 enacted on 25 March 2011	CEP and its subdivisions at the district level	The Law defines the legal, organizational, economic and social basis for providing environmental information in the Republic of Tajikistan, promotes the right of legal entities to receive complete, reliable and timely environmental information, and regulates relations in this area.
Law on Environmental Expertise	No. 818 enacted on 16 April 2012	CEP and its subdivisions at the district level	This Law defines the principles and procedure for conducting environmental expertise and is aimed at preventing the harmful impact of planned economic and other activities on the environment and related social, economic and other consequences of the implementation of the object of environmental expertise.
Land Code of the Republic of Tajikistan	Enacted in 1996, last amended in 2016	Committee on Land Management and Geodesy (CLMG) and its subdivisions at the district level	Land legislation governs the relations of land use and protection, land use and property relations, which arise from getting (acquisition) or conveying land use rights.
Law on Special Protected Areas	Enacted on 26 December 2011, last amended in 2014	State Institution on Specially Protected Natural Areas of Forestry Agency and its subdivisions in the districts	The Law defines the legal, organizational, and economic principles of specially protected natural areas and establishes the assignments, activity operations, and zoning.
Law on Plant Quarantine and Protection	No. 1567 enacted on 2 January 2019	CEP and its subdivisions at the districts; Ministry of Agriculture (MOA); Forestry Agency (FA); Tajikistan Academy of	The Law defines the legal, organizational, and economic basis for plant quarantine and protection, conducting quarantine phytosanitary measures, handling plant protection products, and is aimed at preserving agricultural products, protecting the health of people, animals, and the environment

Law	Enacted and Amended	Responsible Agency	Brief Description
		Sciences (TAS)	
Law on Protection and Use of Plants	Enacted on 17 May 2004, last amended in 2008	CEP and its subdivisions at the districts; MOA; and TAS	The Law establishes the state policy on the protection and efficient use of plants; defines legal, economic, and social principles governing the preservation and reproduction of plants.
Law on protection of plant varieties	Enacted on 29 December 2010, last amended in 02 January 2018	Ministry of Agriculture (MOA); Tajikistan Academy of Sciences (TAS)	The Law regulates the legal protection of plant varieties and defines the legal basis for the granting and protection of the breeder's rights.
Law on collection, conservation, and rational use of genetic resources of cultural plants	Enacted on 01 August 2012	Ministry of Agriculture (MOA); Tajikistan Academy of Agricultural Sciences (TAAS)	This Law establishes the legal framework for state policy in the field of genetic resources of cultivated plants and their wild relatives, and regulates relations regarding their collection, conservation, research and rational use for the purpose of conducting the agricultural industry, ensuring food, environmental and biological security, carrying out research , breeding, educational activities, as well as ensuring the safety of social, cultural and historical heritage in the interests of the present and future generations.
Law on seed production	Enacted on 05 January 2008, last amended in 23 November 2015	Ministry of Agriculture (MOA); Tajikistan Academy of Agricultural Sciences (TAAS)	This Law establishes the legal basis for the production or reproduction, processing, certification, sale of seeds, seedlings and plants, as well as the organization and conduct of registration of varieties and seed control.
Forestry Code of the Republic of Tajikistan	Enacted on 2 August 2011	FA; CEP and its subdivisions at the districts; MOA	The Law regulates the protection, possession, sustainable use, and reproduction of forests in Tajikistan. It defines prohibited activities in protected forest zones and their regimes and conditions when undertaking allowed activities in the utilization zone of forests and their regimes.
Law on Conservation and Usage of Historical and Cultural Heritage	Enacted on 3 March 2006	Ministry of Culture; TAS; CEP; FA	The Law provides the legal framework for conservation and use of historical and cultural heritage objects in Tajikistan as being national property of the Tajik people.
Law on Subsoils	Enacted on 20 July 1994, last amended in 2013	Geology Head Office; CEP	The Law regulates the use and protection of subsoils for the interest of present and future generations.

Law	Enacted and Amended	Responsible Agency	Brief Description
Law on Soil Conservation	Enacted on 16 October 2009	CEP; CLMG; MOA	The law defines main principles of state policy, legal framework of public authorities, individual and legal entities for the efficient and safe use of soils, preservation of quality, fertility and soil protection from negative impacts and regulates the variety of relationship related to soil protection.
Water Code	Enacted on 20 October 2000, last amended in 2012	CEP, Ministry of Energy and Water Resources (MEWR), MOA; Geology Head Office; MOH	The aims of the Water Code are: (i) protection of state water fund and state water fund lands for the improvement of the population's social condition and environment; (ii) water pollution control, impurity, depletion, prevention, and control of water adverse effects; (iii) enhancement and protection of water objects; (iv) strengthening legality and rights protection of individuals and legal entities in the water management field.
Law on Protection of Atmospheric Air	Enacted in 1995 and amended on 28 December 2012	CEP; MOH; Hydrometeorology Agency	The Law regulates the relations of individuals and legal entities, irrespective of ownership form, with the aim of conservation, rehabilitation of atmospheric air, and securing environmental safety.
Public Health Code	Enacted on 30 May 2017	MOH	The Code regulates public health relations and aims to implement constitutional rights and health protection of citizens. Chapter 17 of the Code secures sanitary and epidemiological safety
Law on Production and Consumption of Waste	No. 109 enacted on 10 May 2002, last amended in 2011	CEP; MOH; State Unitary Enterprise on Municipal Housing and Utilities (SUEMHU)	The Law regulates the relations arising from the process of waste generation, collection, storage, utilization, transport, and deactivation and landfilling of wastes and state management, supervision and control of waste management. It aims to prevent the negative impact of production and consumption wastes on the environment and human health, and when handling these, their involvement in economic and production turnover as an additional stock source.
Law on Inspection of Economic Entities	No. 1269 enacted on 25 December 2015	State Inspection of Technical Supervision, CEP, MOLME	The Law establishes the legal basis for conducting inspections, the procedures or conducting them, the rights and obligations of business entities, officials of inspection bodies, and is aimed at protecting the health, legal rights, and interests of citizens, the environment, national security, and protection of the

Law	Enacted and Amended	Responsible Agency	Brief Description
			activities of the audited business entities, regardless of ownership forms.
Protection of Population and Territories from Natural and Man-made Emergencies	Enacted on 15 July-2004	Committee for Emergency Situations and Civil Defense (CESCD) and its structural subdivisions	The Law defines the organizational and legal framework for the protection of the population and persons without citizenship in the territory of the Republic of Tajikistan, as well as the lands, interiors, water, airspace, animals and plants, and other natural resources of Tajikistan; objects of industrial and social purpose; and environment from natural and man-made emergencies. It regulates public relations on prevention, occurrence and development of emergencies, reduction of damages and losses, elimination of emergency situations and timely notification of populations in danger zones during natural and man-made emergencies.
Law on Wildlife	Enacted on 5 January 2008	CEP; MOA; Academy of Sciences; FA	The Law regulates public relations in the protection, restoration, and reasonable use of wildlife; and establishes the legal, economic, and social framework for the protection and restoration of wildlife resources.
Labor Code of the Republic of Tajikistan	Enacted on 23 July 2016	MOLME; MOHSPP	The Code regulates labor and other relations and is directly aimed at the protection of the rights and freedoms of the parties in labor relations, securing minimal guarantees of labor rights and freedoms
Law on Fire Safety	Enacted on 20 April 2008, last amended in 2010	Main Department of the State Fire Prevention Agency (SFPA) of the Ministry of Internal Affairs (MIA)	The Law defines the general legal, economic, social, and organizational principles of fire prevention in Tajikistan; regulates the relations between state authorities, local authorities, organizations, other legal entities irrespective of organizational and legal forms as well as between public entities, officials, and citizens of the Republic of Tajikistan, foreign citizens, and persons without citizenship.

3.1.2. Environmental Assessment Framework

Framework environment law. The *Law on Environment Protection No. 208* (2011) states that national environmental policy should prioritize environmental actions based on scientifically proven principles and integrates nature preservation and sustainable resource use with economic development. The Law defines applicable legal principles, protected objects, and the competencies and roles of Government, local

authorities, public organizations, and individuals. It also stipulates measures to secure public and individual rights to a safe and healthy environment and requires a combined system of ecological expertise and environmental impact assessment to reach a decision on any activity with potential adverse environmental impacts.

The Law defines environmental emergencies and ecological disasters and prescribes the order of actions in such situations, defines the obligations of officials and enterprises to prevent occurrences and eliminate consequences, and the liabilities of the persons or organizations that damage the environment or otherwise violate the Law. The Law establishes several types of environmental enforcement: state control, ministerial control, enterprise control, and public control. State control is performed by the CEP, the Sanitary Inspectorate of MOHSPP, the Inspectorate for Industrial Safety, and the Mining Inspectorate. Public control is carried out by public organizations or trade unions and can be exercised with respect to any government body, enterprise, entity, or individual.

State ecological expertise. The Law on Environment Protection No. 208 (2011), the Law on State Ecological Expertise (2011), and the Procedures on Organization and Performance of Environmental Assessment (2014) stipulate that all types of economic and other activities shall be implemented in accordance with environmental standards and norms and shall have sufficient environmental protection and mitigation measures to prevent and avoid pollution and enhance environmental quality. They define a state ecological expertise (SEE) process that examines the compliance of proposed activities and projects with the requirements of environmental legislation and standards and the ecological security of the society. SEE is a mandatory cross-sectoral process that must be scientifically justified, comprehensive, and objective. It precedes decision making about activities that may have a negative impact on the environment.

Financing of programs and projects and decisions on siting, construction, or reconstruction are allowed only after a positive SEE finding has been issued. If these requirements are violated, the CEP and/or other duly authorized control bodies may terminate construction until necessary improvements are made. SEE for investment projects is the responsibility of the CEP and its regional offices.

Environmental assessment administrative framework. The *Law on Environmental Protection* (2011) states that SEE is to be conducted by the State Committee for Environment. A unit in the ministry is entrusted with guiding and managing both EIA and SEE.

EIA studies. Preparation of an environmental impact assessment (EIA) study is the responsibility of the project proponent. EIAs are to analyze the short- and long-term environmental, genetic, economic, and demographic impacts and consequences of projects and must meet the standards of other sectors and environmental media line agencies (sanitary epidemiological, geological, water, etc.).

Environmental clearance. The CEP is the authority responsible for the state's review of EIAs and the environmental clearance of civil works.

3.1.3 Environmental Assessment Requirements of Tajikistan

Tajikistan does not specify environmental assessment categorization criteria. There are two laws in the country that stipulate all aspects of environmental assessment: (i) *Law on Environmental Protection* (2011); and (ii) *Law on Ecological Expertise*. Chapter V, Articles 3539 of the *Law on Environmental Protection* (2011), introduces the concept of state ecological review (literally, state ecological expertise or SEE), which seeks to examine the compliance of proposed activities and projects with the requirements of environmental legislation and standards and ecological security of the society.

The following activities and projects are subject to state ecological review:

- Draft state programs, pre-planning, pre-project, and design documentation for economic development;
- Regional and sector development programs;
- Spatial and urban planning, development, and design;
- Environmental programs and projects;
- Construction and reconstruction of various types of facilities irrespective of their ownership;

- Draft environmental quality standards and other normative, technology, and methodological documentation regulating economic activities; and
- Existing enterprises and economic entities.

An EIA is a component of the SEE, as set out in the 2011 *Environmental Protection Law* and in the 2012 *Law on State Ecological Expertise*, which comprise both the department within the CEP and the process. Conducting the EIA is the responsibility of the project proponent. The state ecological review, which comprises the process component only for all investment projects, is the responsibility of the CEP and its regional offices. Furthermore, according to the 2012 *Law on State Ecological Expertise*, all civil works, including rehabilitation, should be assessed for their environmental impacts, and the proposed mitigation measures should be reviewed and monitored by the CEP.

According to the 2012 *Law on Ecological Expertise*, ecological expertise is intended to prevent negative impacts on the environment as a result of a proposed activity, forecast impacts from activities that are not considered as necessarily damaging to the environment, and create databases on the state of the environment and knowledge about human impact on the environment.

The *Law on Ecological Expertise* and the *Law on Environmental Protection* envisage two types of ecological expertise: SEE and public ecological expertise, which are not given equal importance. While SEE is a prerequisite for beginning any activity that may have an adverse environmental impact, public ecological expertise becomes binding only after its results have been approved by a SEE body.

The SEE body is authorized to invite leading scientists and qualified outside specialists to participate in the review. Approval should be issued within 30 days, unless the project developer agrees to an extension, and remains valid for two years, if the decision is positive. For very complicated projects, the term of consideration and approval can be extended till 60 days.

According to the *Law on SEE*, the public ecological expertise of economic activities or other activities, the implementation of which can negatively impact the environment or population living in the relevant area, can be carried out by any public organization and citizen. They have the right to send the proposals to the responsible government bodies concerning environmental issues of implementing planned activities and to receive information on the results of the conducted SEE from relevant responsible bodies. The materials reflecting the public expertise delivered to the experts' commission should be taken into consideration in the preparation of the conclusion of SEE and decision making on the realization of the SEE object. Public ecological expertise is carried out under the state registration of application of public organizations. The registration can be done by local executive authorities (within seven days) in place where the expertise activities are planned. Public organizations, which are organizing the SEE, should inform the population of the initiation of the expertise and its results.

The legal and regulatory system for EIAs also includes:

- Procedure of EIA (adopted by the *Resolution of the Government of the Republic of Tajikistan No. 509* of 1 August 2014);
- Procedure to implement SEE (approved by the *Resolution of the Government of the Republic of Tajikistan No. 697* of 3 December 2012);
- Guidelines on the composition and order of development of content and structure of the documentation to be submitted for review (SEE), as well as coordination and approval of all projected budget or investment estimations, design drawings or documentation that must be developed in coordination with the SEE, buildings and structures and EIA chapters, Strategic Environmental Assessment (SEA) and feasibility documents; and
- List of objects and types of activity for which preparation of documentation on EIA is mandatory (adopted by the *Resolution of the Government of the Republic of Tajikistan No. 253* of 3 June 2013).

The elaborated existing normative legal base is intended for determination of legal basis for project implementation and their compliance with state requirements for environmental protection and mitigation of environmental impact.

In the Republic of Tajikistan, the organizations with most responsibility for environmental monitoring and

management are the CEP, the Sanitary Inspectorate of MOHSPP, the Inspectorate for Industrial Safety, and the Mining Inspectorate. An environmental licensing system exists in relation to handling hazardous waste and mineral extraction. An environmental permitting system regulates the use of natural resources.

The *Environmental Protection Law* states that a SEE should be conducted by CEP, which is the authorized state environmental protection body. The CEP has a comprehensive mandate that includes policy formulation and inspection duties. It has divisions at the *oblast* (region), city, and *rayon* (district) levels in the form of Departments of Environmental Protection within the *khukumat* (local administration) at each city or *rayon/district*.

3.1.4. EIA Procedure

Governing laws and activities subject to state ecological (or environmental) expertise (SEE) that may involve an EIA or activities subject to SEE may involve the conduct of an EIA.

The following impact types are considered in EIA:

- *Direct impact*, immediately influenced by the main and subsidiary types of planned activities within the territory of the site;
- *Indirect* impact influenced by intermediate (secondary) factors emerging as a result of project implementation; and
- *Cumulative impact*, which is of specific nature and emerges within the project implementation period.

EIA are reviewed by the state environment expertise in conformity with the assessment objective and classification up to 60 days.

The decision on determining the appropriate procedure for SEE of EIA documents is taken by the authorized agency within a period of not more than 10 days after submission of the documents for registration. The decision on SEE related to EIA documents is obligatory for implementation by the Client for any planned economic or other activity.

There are four categories of environmental impact of facilities subjected to SEE and EIA: I, high risk; II, medium risk; III, low risk; and IV, local impact. Requirements and terms of SEE and EIA differ according to the category of a facility.

3.2. Key National Social Legal Provisions and Citizen Engagement

Law on Freedom of Information is underpinned by Article 25 of the Constitution, which states that governmental agencies, social associations and officials are required to provide each person with the possibility of receiving and becoming acquainted with documents that affect her or his rights and interests, except in cases anticipated by law.

Per the *Law on Public Associations*, a public association may be formed in one of the following organizational and legal forms: public organization, public movement, or a body of public initiative. Article 4 of this law establishes the right of citizens to found associations for the protection of common interests and the achievement of common goals. It outlines the voluntary nature of associations and defines citizens' rights to restrain from joining and withdrawing from an organization. August 2015 amendments to this legislation require NGOs to notify the Ministry of Justice about all funds received from international sources prior to using the funds.

Law on Public Meetings, Demonstrations and Rallies (Article 10) bans persons with a record of administrative offenses (i.e. non-criminal infractions) under Articles 106, 460, 479 and 480 of the Code for Administrative Offences from organizing gatherings. Article 12 of the Law establishes that the gathering organizers must obtain permission from local administration fifteen days prior to organizing a mass gathering.

Land Code contains basic provisions on land acquisition for public and state purposes. The Code allows the state to seize the land from land users for the needs of projects implemented in the interests of state and

at the state scale, and describes methods, system and order of protection of rights and interests of persons whose land is subject for withdrawal for the purposes of the project, and provides for the complex of compensatory measures to cover the land users' losses. The Regulation about an order of compensation of the land users' losses and losses of agricultural production, approved by the Resolution of the Government of the Republic of Tajikistan # 641, dd. 30th December, 2011, establishes concrete and detailed order of reimbursement of the land users' losses.

Law on Physical and Legal Entity Addresses contains legal provisions on established information channels for citizens to file their complaints, requests and grievances. Article 14 of the Law sets the timeframes for handling grievances, which is 30 days from the date of receipt.

Labour Code prohibits forced labour (Article 8). The Labor Code also sets the minimum age at which a child can be employed as well as the conditions under which children can work (Articles 113, 67, and 174). The minimum employment age is 15, however, in certain cases of vocational training, mild work may be allowed for 14 year olds (Article 174 of the Labor Code). In addition, there are some labour restrictions on what type of work can be done, and what hours of work are permissible by workers under the age of 18. Examples of labor restrictions include: those between 14 and 15 cannot work more than 24 hours per week while those under 18 cannot work more than 35 hours per week; during the academic year, the maximum number of hours is half of this, 12 and 17.5 hours, respectively. These limitations are consistent with the ILO Convention on Minimum Age. In addition, Law on Parents Responsibility for Children's Upbringing and Education makes parents responsible for ensuring their children not involved in heavy and hazardous work and they are attending school.

3.3. Pest management in Tajikistan and regulation of agrochemicals usage.

Main issues of pest management[19]. A detailed analysis of the current pest management practices in Tajikistan pointed to several inadequacies that would continue to constrain sustainable agriculture production. These inadequacies are identified as follows[20]:

- Absence of a Government policy on IPM to provide the framework and environment for promoting the development and implementation of integrated pest management strategies for cotton;
- Domination of the current pest management system by over-reliance on chemical pesticides;
- Weak practical knowledge and understanding by farmers, field crop protection agents and extension workers of the local agro-ecology of the agricultural production system, integrated factory nutrient management, of pests and their natural enemies and their interactions. And of the role of natural enemies in the natural regulation of pest populations;
- Absence of field training of farmers on the safe handling, storage and use of chemical pesticides;
- Inappropriate arrangements for the delivery of training to farmers in the proper methods of spraying agricultural fields with chemical pesticides and in the maintenance of application equipment;
- Lack of supply and distribution of appropriate protective gear to protect farmers from the hazards of pesticides while spraying their agricultural fields as well as lack of appropriate field training and effective dissemination of information on the use of protective gear and absence of a coordinated system of providing technical advice to the farming community on the handling and proper maintenance of protective gear;
- Inadequate field training and information dissemination to the user community of the hazards associated with improper handling, use and storage of chemical pesticides;
- Weak pesticide regulatory mechanisms such as quality control facilities, residue analysis, and poor capacities to enforce pesticide regulations.

Existing pest management practices. Currently, dehkan farmers use a number of cultural methods to control insect pests including[21]:

- Tillage practices, including deep tillage to bury straw and vegetation to deprive

[19] This section was prepared mostly by using the results of the EAs done within the WB FPSP and ADB Sustainable Sub-Sector projects
[20] WB Farm Privatization Support Project. Environmental Assessment, vol. II Integrated Pest Management Manual, pag.
[21] WB Farm Privatization Support Project. Environmental Assessment, vol. II Integrated Pest Management Manual pag.

pests from sites of over-wintering /hibernation.

- Burning straw and crop waste to deny pests over-wintering sites, and convert straw into organic matter.
- Manual weeding of crop fields in most dehkan farms.
- Cutting and burning of diseased or egg/insect infected leaves.
- Use of lure boxes to collect worms and caterpillars, e.g., pheromone traps for bollworms in cotton.
- Handpicking of eggs, caterpillars and larvae during periods of high infestation.

Used Chemical Control Methods. Although Tajikistan was one of the leaders of biological crop pest control during the Soviet era, today most of the pest control is undertaken through chemical means, mostly because of unavailability of beneficial insects from bio-control facilities. Studies and field visits have indicated heavy reliance on chemical control methods, especially in the lower valleys with cotton mono-culture. The main issues in using chemical control methods are the following[22]:

- Use of WHO Class 1 and unregistered chemicals purchased on the black market;
- Inappropriate handling – storage, use, and safety in pesticides application;
- Improper disposal of waste and chemical packaging;
- Inadequate enforcement of laws and regulations on labelling and sales of agricultural chemicals;
- Low level of awareness amongst officials, farmers, and chemical resellers/traders of IPM;
- General lack of awareness of environmental and health implications of improper use of pesticide.

Current use of pesticides. It is known during the 1970s and early 1980s pesticide use especially for cotton production was extremely intensive with an average of annual application of 24.1 kg per ha, on cotton fields. The highest levels of pesticide application have been recorded in Vakhsh Valley where it reached 48 kg per ha. The list of used pesticides included 74 brand names, 25 percent of which are highly toxic and 38 percent of a medium toxicity. The highly toxic pesticides included butifos, nitrofen, tiodan and fosalon[23]. During the 1990s pesticide use was low due to the collapse of the Soviet agriculture system and the civil war and stands at approximately 6 to 10 percent of the level before independence.

Permitted pesticides in the country. The Chemical Security Commission of Tajikistan (the body in charge of issuing authorization of pesticides usage in the country) issued a list of agro-chemicals permitted on the territory of Tajikistan[24]. Among them the following pesticides are currently used on cotton: (a) Karate – "ICI" (Zeneka), [insecticide]; (b) Omite – Crompton, [insecticide]; (c) Sumi-Alfa (esfenbalerat); (d) "Sumimoto", [insecticide]; (e) Sumithion "Sumimoto Chemical", [insecticide]; (f) Folicur (tebuconazole)—Bayer [fungicide]; (g) Talstar 10% (bifentrin), FMS, SMA [Insecticide][25].

Regulation of pesticides import and usage. Tajikistan does not produce pesticides and use only imported ones. As mentioned above, the Chemical Security Commission manages the system of registration, testing and control of imported pesticides. The Commission also approves new pesticides upon application from producers or distributors. Lack of funding for enforcement agencies and a black market for agricultural chemicals combined with a rather weak control over imported substances (largely because of remoteness of border check-points and insufficient training provided to customs inspectors) make control of imported agro-chemicals largely inefficient. In addition, matters are made worse by corruption - making possible import and use of banned and expired agro-chemicals with serious environmental and health consequences.

54. Pesticide management at the farmer level. Currently, the majority of dehkan farmers do not have special

[22] Ibidem
[23] United Nations Economic and Social Council. Environmental Performance Reviews of Tajikistan. First Review, 2004.
[24] See *Annex* --..
[25] Asian Development Bank. Sustainable Cotton Sub-Sector Project Environmental Review. 2006, March, conducted by N.Nadiradze

facilities to store pesticides and other agro-chemicals. Therefore, dehkan farmers usually store their pesticides in the basements of their houses or in small tool sheds in their yards.[26] The majority of dehkan farmers cannot afford to buy high quality pesticides, sprayers or protective clothing. Although, some dehkan farmers have pesticide sprayers, these sprayers are outdated and cannot be safely used. No protective clothing/equipment (gloves, glasses, masks, boots or robes) is used by dehkan farmers when they spray cotton or other crops with pesticides. Containers and packaging, especially from locally (illegal) or regionally manufactured (Uzbekistan, China) products are insufficiently labeled sometimes with labels in unfamiliar languages especially on products smuggled by local traders. Therefore, basic safety precautions for handling, application and disposal are often illegible and/or overlooked.

Integrated pest management. Currently there is no in place a Government policy on IPM to provide the framework and environment for promoting the development and implementation of integrated pest management strategies for cotton sector. Consequently at present, there is a complete lack of governmental support with regard to development and implementation of alternative methods for pest management especially because of lack of budgetary resources.

Pesticides and fertilizers handling, use, transportation and storage are regulated by a number of legal documents (*see table 2*).

Table 2. Laws and regulations related to agrochemicals usage in Tajikistan

- Law on Environment Protection (2011);
- Law on Ecological Expertise (2012);
- Law on the Factories Quarantine Law (N5, 12.05.2001), of 2001, revised in 2003.
- Law on Production and Safety Implications of Pesticides and Agro-chemicals law dated April 22, 2003.
- The Decree on Factory Quarantine (N38, 4.02.2002) concerning creation of the Government Inspection (service) on factories quarantine of 2002.

The *Law on Environment Protection* indicates the necessity of applying the minimum permissible standards of agro-chemicals in agriculture and forestry to ensure compliance with the minimum permissible amounts in food, soil and water. The specially adopted law in the domain (Law on Production and Safety Implications of Pesticides and Agro-chemicals) prohibits use of biologically and environmentally persistent pesticides and products known to be carcinogenic, mutagenic, teratogenic, embrio- and gonadotoxic in compliance with the International List of potentially toxic chemicals of the UN Environmental Program. This law also regulates distribution, use, and disposal of pesticides.

The *Law on Ecological Expertise (2012)* and the Resolution on the Establishment of the Commission for Chemical Safety (2003) set up the legal framework for the registration and use of pesticides and other chemicals. These substances and compounds should undergo mandatory State testing in laboratories and production (field) facilities to assess their biological, toxicological and environmental characteristics. If the testing results are positive, the substance or compound must be registered with the Commission for Chemical Safety and included in the List of Chemical Substances and Biological Compounds that are permitted for Use. The Commission manages the system of registration, testing and control of pesticides[27]. It is chaired by a deputy Prime Minister and includes representatives of, among others: the Committee for Environmental Protection, the Ministry of Health and social protection of population and the Ministry of Agriculture. A working group prepares the meetings of the Commission. The Commission approves a list of pesticides upon application from producers or distributors. A new list of chemicals is being prepared.

[26] The POPs project team. According to Mr. Juraev, in the fall Khujand police arrested a man and confiscated 500 tons of smuggled pesticides from Uzbekistan. Saks with pesticides were stored in the man's basement.
[27]UN Economic Commission for Europe: Tajikistan Environmental Performance review, 2017 http://www.unece.org/env/epr/studies/Tajikistan/welcome.htm

Quarantine[28]. In 2001, a technical review workshop on Union of Independent Governments (countries of former Soviet Union) and Baltic's countries published data about quarantine and phytosanitary conditions in the countries of the former Soviet Union. The agreement about coordination in field of factories quarantine for indicated above countries was signed on November 13, 1992 in Moscow. In 1997 during the 6th Conference countries agreed to accept a unified list of pests to be quarantined, to common quarantine rules for import, export and transit of goods, and provide information data about distribution of pests on countries territory. Not much changed since then. In 2001 Government of Tajikistan enacted a Factories Quarantine Law (N5, 12.05.2001), and in 2002 – a decree on measures on factory quarantine (N38, 4.02.2002) – for Government Inspection (service) on factories quarantine.

The qualifying requirements for physical and legal entities of the Republic of Tajikistan operating with application of the pesticides by aerosol and fumigation methods are[29]:

- Application and handling are regulated in terms of the availability of special machinery and equipment for the pesticides application ensuring the safety and quality of chemical treatment;
- the availability of special storages for the pesticides complying with the sanitary and epidemiologic rules and norms,
- construction norms and rules,
- requirements of fire safety;
- compliance with environmental requirements,
- sanitary and epidemiologic rules and norms,
- safety and labor protection; individual protective facilities,
- fire extinguishing equipment;
- qualified staff with corresponding education and training having experience of practical work on the pesticides application by aerosol and fumigation methods.

For storage and disposal, special landfills are used to dispose expired and banned pesticides and their packaging. The state environmental control authority is responsible for issuing the permit to construct the landfills and neutralize the pesticides. Neutralization of the pesticides procured at the expense of the state budget is the responsibility of the MoA and local state authority (local budget). Legal and physical entities the activities of which are linked with the state phytosanitary control objects are obliged to neutralize the pesticides. However, in Tajikistan there are only 2 sites formally approved by the Committee for Environmental protection for storage or disposal of unused pesticides or their packaging in Vahksh and Konibodom.

3.4. National Sectoral Legal Framework

Tajikistan also has key policies and strategies which detail road maps for the country's short-term and long-term development. Of relevance to the seed and seedling sectors was the 2009 Program for the Development of the Seed Sector 2010 – 2014 and more recently the National Development Strategy (NDS) 2015-2030[30] which set priority areas for development.

National Development Strategy (NDS) 2015-2030: Of relevance to the seed and seedling sectors these included:

- Ensuring economic and physical access to food through sustainable growth of the agro-industrial sector;
- Diversification of agricultural production, including the introduction of innovations, increasing the attractiveness of the sector, especially for Dehkan farms, through the formation and strengthening of value chains;

[28] WB Tajikistan Community Agriculture and Watershed Management Project. (CAWMP), Pest Management Plan. 2004.
[29] WB Tajikistan Farm Privatization Support Project (FPSP) Integrated Pest Management Plan, 2005
[30] Government of the Republic of Tajikistan. 2016. National Development Strategy of the Republic of Tajikistan for the Period to 2030.

- Increasing access to improved seeds and fertilizers on the domestic market, increasing the production of agricultural commodities through motivation to use new agricultural methods and technology; and
- Development of the agricultural products market and overcoming barriers to direct market access for agricultural producers.

Table 2. Government policies and agreements relating to seed and seedling certification, production, and importation[31].

#	Policy	Purpose	Responsible Authorities
1.	The Agricultural Reform Programme of the Republic of Tajikistan 2012 - 2020	The scope of agricultural reform shall be to ensure food security, provision of the population with safe foodstuffs, reduction of food imports, granting more possibilities to farmers in increasing their income and profits.	Ministry of Agriculture, working group for Agricultural Reform
2.	Resolution "On Regulation about the Food Security Committee under the Government of the Republic of Tajikistan" of December 29, 2017, No595	Stipulates that the Committee has control over importation of pests and diseases and control over the import, transit and export of GMOs.	Food Safety Committee
3.	Governmental Decree No. 438 validating the Program of the Development of Seed-growing Sector in the Republic of Tajikistan for the period of 2016-2020. (2016)	Promotion of seed production with a view improve the quality and production of seed.	Ministry of Agriculture
4.	Governmental Decree No. 793 validating the Program of Development of Gardening and Viticulture for 2016 – 2020. (2015)	Allocation of investments in the sector.	Multi-departmental
5.	Governmental Decree No. 724 Validating Programs of the Development of the Pasture of the Republic of Tajikistan for 2016 – 2020. (2015)	Improving the condition of grazing pastures and the provision of fodder crops (derived from seed).	Ministry of Agriculture
6.	Strategic Programme for Climate Resilience. (2015)	Strategy for climate change including agriculture and sustainable land management.	Government
7.	Governmental Decree No. 727 validating a Program for the Organization and Restoration of Refrigerators and Cold Stores for Storage of Agricultural Products in the Republic of Tajikistan for 2015-2019. (2014)	Aimed to increase the efficiency of storage of agricultural products including fruit and vegetables.	Government
8.	Agreement on Multilateral Interstate Specialization of Production and Supply of Seeds of Varieties and Agricultural Crop Hybrids, Planting Material of Fruits, Berries and Grapes".	Standards for seed and planting material for multilateral trade.	Ministry of Agriculture

Major laws and standards relating to seeds/seedling and seedling certification, production and importation are mentioned in Table below.

Table 2: Sectoral Legislation

#	Legislation/Standard/Policy	Purpose	Responsible Authorities
1.	Law of the Republic of Tajikistan On	Certification and conduct of	Ministry of Agriculture

[31] Tajikistan National Investment Plan for the Agriculture Sector Assessment of the Seed and Associated Systems of Tajikistan, 2020

	Nursery, dated January 2, 2020 No. 1669	nurseries	
2.	Law of the Republic of Tajikistan On Seed Sector 2008 No.355, amended 2015.	Governance of the seed sector	Ministry of Agriculture
3.	Order on Seed Quality Control and Certification 2010 No.132	Standards for seedling certification and process of certification.	Ministry of Agriculture
4.	Governmental Decree No. 595 validating the Regulation on Committee for Food Security under Government of the Republic of Tajikistan.	Authorizing the committee to control and setting standards for seeds and seedlings.	Committee for food security
5.	Law of the Republic of Tajikistan On Conformity Assessment	Ensuring the identity of the rules and procedures for certification for domestic and foreign production.	Ministry of Agriculture
6.	Law of the Republic of Tajikistan on the Protection of Plant Varieties 2018, No. 1482.	Plant Variety Protection (PVP)	Ministry of Agriculture, Republic Commission on zone adaptation of plant species
7.	Order on Testing, Registration and Protection of Plant Varieties 2011 #144	Plant Variety Protection (PVP)	Ministry of Agriculture, Republic Commission on zone adaptation of plant species
8.	Law of The Republic of Tajikistan On Grain, 2006 No. 200	This law governs production, cleaning, storage and sale of grain, quality management of grain as food, forage, and use as seed grain.	Ministry of Agriculture
9.	Standard RT 1033-2000 Seedlings of Pome and Stone Fruit Crops and Persimmons. Varietal and Planting Qualities.	Standards for seedling certification and process of certification.	Ministry of Agriculture, TAJIKSTANDARDS Authority
10.	Law on Quarantine and Plant Protection No. 1567	Plant quarantine of imported material	Ministry of Agriculture, TAJIKSTANDARDS Authority
12.	Law of the Republic of Tajikistan On Seed Production	Testing, registration and protection of plant varieties	Ministry of Agriculture
13.	Law on Food Security (2010)	Determine the main directions of state policy in the sphere of ensuring food security as integral part of state security.	Government
14.	Law No. 1289 on Dehkan Farms. (2016)	Provides for the legal basis for the establishment and activities of Dehkan farms. Dehkan farms are to be entrepreneurship performing production, storage, processing and trade of agricultural commodities.	Ministry of Agriculture
15	Law of the Republic of Tajikistan About Biological Safety March 1, 2005 No. 88 (as amended of the Law of the Republic of Tajikistan of 30.07.2007 No. 330)	Provides for the development, production, testing, export and release at the market and in the environment the genetically modified organisms.	Food Safety Committee

3.4. International Treaties and Obligations

Under the Republic of Tajikistan unified (monist) legal system, international agreements and treaties, once ratified or acceded to by the Government, have the same force as national legislation.

Tajikistan is party to several international environmental conventions and protocols. It has passed state laws

to implement the terms of these international conventions, with the provision that, *"If an international treaty to which Tajikistan is a party is inconsistent with this law, then the provisions of the international treaty shall prevail."*

International environmental conventions. In recognition of its global responsibilities, Tajikistan is a party to several international environmental conventions. The major ones are shown in Table 14.

Table 3: Relevant International Environmental Conventions

International Convention	Year of Accession
UN Convention on Biological Diversity (CBD), 1997. Related updates to the CBD are: Cartagena Protocol on Biosafety to the Convention on Biological Diversity, 2004; Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, signed in 2011 and ratified in 2013.	1997
UN Framework Convention on Climate Change, 1998; A related update is the Kyoto Protocol accessed on 29 December 2008 and entered into force on 29 March 2009.	1998
UN Convention on Combating Desertification (UNCCD)	1997
Vienna Convention for the Protection of the Ozone Layer, 1996 and updated by the Protocol on Substances that Deplete the Ozone Layer (Montreal), 1998; London Amendments to Montreal Protocol on Ozone Depleting Substances, 1998; Copenhagen Amendments to Montreal Protocol on Ozone Depleting Substances, 2009; Montreal Amendments to Montreal Protocol on Ozone Depleting Substances, 2009; Beijing Amendments to Montreal Protocol on Ozone Depleting Substances, 2009.	1996
Convention on International Trade in Endangered Species of Fauna and Flora (CITES)	2016
Stockholm Convention on Persistent Organic Pollutants (POPs) (ratified 2007); Related updates: 2009 amendments listing 9 new POPs, 26 August 2010; 2011 amendment listing endosulfan, 27 October 2012; and 2013 amendment listing HBCD, 26 November 2014.	2007
UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage	1997
Aarhus Convention (joined 2001); A related update is the Kiev Protocol on Pollutant Release and Transfer Registers to the Convention on Access to Information on 21 May 2003.	2003
Bonn Convention on the Conservation of Migratory Species of Wild Animals (joined 2001); A related update is the Bukhara Deer Memorandum, 2002.	2001
International Convention for the Protection of New Varieties of Plants UPOV Convention (1961), as revised at Geneva (1972, 1978 and 1991)	2012

Other relevant international agreements ratified by Tajikistan are:

- *Occupational Safety and Health Convention*, 1981
- *Working Environment (Air Pollution, Noise and Vibration) Convention*, 1977

3.4. FAO requirements

Food and Agriculture Organization of the United Nations (FAO) developed Environmental and Social Management Guidelines (2015) with 9 Environmental and Social Standards (ESSs). The nine ESS standards set out specific requirements relating to different social and environmental issues. Projects approved and supported by FAO must meet these environmental and social standards.

ESS 3 defines Plant Genetic Resources for Food and Agriculture (PGRFA) as the entire diversity of the plants used, or with the potentials to be used, in agriculture for the production of food, fodder, and fiber.

The standards recognizes that the application of the Cartagena Protocol on Biosafety to the CBD results in safeguards that ensure that the handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology do not have adverse effects on biological diversity and/or pose risks to human health.

ESS 3 covers any activities that require seeds and planting materials to be used in projects, developed or transferred even if the propagules were not supplied through the particular action through conventional or modern biotechnologies.

FAO's actions should not erode genetic diversity. FAO will thus avoid or minimize:

- Introduction of new crop varieties on a large scale, which can 'displace' other crops and varieties with the immediate consequence of diminished diversity of crops and varieties grown by farmers - with implications for nutrition - and ultimately a disruption of the intricate interactions between host plants and associated pests and diseases possibly also affecting the resilience of the system.
- Introduction of crop varieties arising from genetic modification which could, through geneflow, lead to the transfer of the transformation events into other varieties or closely related species.

Since some of the project works are related to seeds quality improvement which may include cultivation of new types, national requirements on seeds import and general FAO requirements on handling hybrid seeds should be applied.

Efficiency rates of pesticide application are even lower than for fertilizer, with some estimating that less than 0.1% of pesticides applied to crops actually reach the intended pest The remainder accumulates in soils, where it may filter into ground or surface water and prove toxic to micro-organisms, aquatic animals, and humans. Accumulated pesticides in soils may harm arthropods, earthworms, fungi, bacteria, protozoa, and other organisms that contribute to the function and structure of soils. Exposure of birds to pesticides can cause reproductive failure, or even kill them directly in high enough doses. Domesticated livestock may also be affected by exposure to pesticides.

Once pesticides enter an ecosystem, they may persist for long periods. Furthermore, pesticides that enter the food chain may undergo biomagnification, whereby accumulated concentrations in the tissues of organisms are many times higher than in the surrounding environment.

3.5. World Bank's Environmental and Social Standards and their requirements

The World Bank is committed to supporting Borrowers in the development and implementation of projects that are environmentally and socially sustainable, and to enhancing the capacity of Borrowers' environmental and social frameworks to assess and manage the environmental and social risks and impacts of projects. To this end, the Bank has defined specific Environmental and Social Standards (ESSs), which are designed to avoid, minimize, reduce or mitigate the adverse environmental and social risks and impacts of projects. ESSs define the material standards of protection, procedural requirements, and individual rights of the project-affected communities, which borrowers must comply with and whose fulfilment the World Bank supports and works with borrowers to ensure compliance during implementation. The standards carry over numerous environmental and social requirements.

The Environmental and Social Framework (ESF) enables the World Bank and Borrowers to better manage environmental and social risks of projects and to improve development outcomes. It was launched on October 1, 2018[32]. The ESF offers broad and systematic coverage of environmental and social risks. It makes important advances in areas such as transparency, non-discrimination, public participation, and accountability—including expanded roles for grievance mechanisms. It brings the World Bank's environmental and social protections into closer harmony with those of other development institutions. The ESF consists of:

- the World Bank's Vision for Sustainable Development

- the World Bank's Environmental and Social Policy for Investment Project Financing (IPF), which sets

[32] *https://www.worldbank.org/en/projects-operations/environmental-and-social-framework*

out the requirements that apply to the Bank

- the 10 Environmental and Social Standards (ESS), which set out the requirements that apply to Borrowers

- Bank Directive: Environmental and Social Directive for Investment Project Financing

- Bank Directive on Addressing Risks and Impacts on Disadvantaged or Vulnerable Individuals or Groups

The WB Environmental and Social Standards (ESSs) are the followings:

- ESS 1: Assessment and Management of Environmental and Social Risks and Impacts;
- ESS 2: Labor and Working Conditions;
- ESS 3: Resource Efficiency and Pollution Prevention and Management;
- ESS 4: Community Health and Safety;
- ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
- ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities;
- ESS 8: Cultural Heritage;
- ESS 9: Financial Intermediaries; and
- ESS 10: Stakeholder Engagement and Information Disclosure.

The requirements of these ESSs and their implications for the current project are presented in Table 3 below.

This ESMF found that 7 ESS are relevant to the proposed project activities, namely ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, and ESS 10

Table 3. The WB Environmental and Social Standards relevant to the Project

ENVIRONMENTAL AND SOCIAL STANDARDS (ESS)	RELEVANCE RATE	MAIN REQUIREMENTS	ADDRESSING ESSs
ESS 1. Assessment and Management of Environmental and Social Risks and Impacts	Relevant	ESS1 sets out the Borrower's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs). As required by this standard, the ESIA should be conducted based on current information, including a description and delineation of the project and any associated aspects, and environmental and social baseline data at an appropriate level of detail sufficient to inform characterization and identification of risks and impacts and mitigation measures. The assessment evaluates the project's potential environmental and social risks and impacts, with a particular attention to those that may fall disproportionally on disadvantaged and/or vulnerable social groups; examine project alternatives; identify ways of improving project selection, siting, planning, design and implementation in order to apply the mitigation hierarchy for adverse environmental and social impacts and seek opportunities to enhance the positive impacts of the project.	This ESMF prepared by the Project shows that, overall, the project will provide a series of positive social and environmental impacts. It would support technical assistance and capacity building activities on improving quality of seeds which would reduce environmental and health risks in agricultural production in the country, while at the same time creating new economic opportunities. The project may generate some adverse environmental impacts associated with potential pesticide use, the construction and/or rehabilitation of public buildings and laboratories, seed farms and factories (as waste, noise, dust, air pollution, health hazards and labor safety issues). Other environmental impacts may be associated with operation of the ALCs (potential organic waste) or investments in infrastructure for extension activities. The impacts of pesticides usage and locust control can be mitigated by the PMP, which would include Locust prevention and eradication; cotton production; horticultural production; seed centers; vector control at ALCs and agricultural storage facilities, etc.). The construction impacts can be easily mitigated by applying good construction practices and following the provisions of the Environmental and Social Management Plans. As before project appraisal, it is not possible to identify all activities and the subprojects that will be financed, in accordance with the ESS1, the borrower prepared an Environmental and Social Management Framework (ESMF), which specifies rules and procedures for the activities and subprojects' Environmental and Social Impact Assessment (ESIA) and for preparing Environmental and Social Management Plans (ESMPs).
ESS2. Labor and Working Conditions	Relevant	ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker- management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working	In compliance with ESS2, the Labor Management Procedures (LMP) have been prepared to describe main labor requirements and risks associated with project implementation and to help the MoA to determine the resources necessary to address labor issues. The Project will encompass the following categories of workers: direct and contracted workers.

		conditions. ESS2 applies to project workers including fulltime, part-time, temporary, seasonal and migrant workers. Considering specified requirements, the Borrower must develop and implement written labor management procedures applicable to the project. These procedures should set out the way in which project workers will be managed, in accordance with the requirements of national law and this ESS. The procedures should address the way in which this ESS will apply to different categories of project workers including direct workers, and the way in which the Borrower will require third parties to manage their workers in accordance with ESS2.	LMP provides an overview of labor use in the project, legislative framework governing labor employment in Tajikistan and a gap analysis with that of the World Bank's ESS 2, key potential labor risks and mitigations measures, implementation arrangements, roles and responsibilities, and procedures are outlined. Worker grievance mechanism set up and contractor management requirements are presented in the last two chapters. It also includes OHS requirements during the COVID-19 pandemic situation and a reference to the WBG's Environmental Health and Safety Guidelines that do apply to this project. The link can be found here: *https://www.ifc.org/wps/wcm/connect /topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines*
ESS3 Resource Efficiency and Pollution Prevention and Management	Relevant	ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention and GHG emission avoidance, and mitigation technologies and practices have become more accessible	The ESMF includes sections on Pollution Prevention and Management with a focus on those issues which might arise while conducting civil works for facilities construction and rehabilitation activities. Assessment of associated with civil works risks and impacts and proposed mitigation measures related to relevant requirements of ESS3, including raw materials, water use, air pollution, hazardous materials, organic and hazardous waste included ESMPs as relevant. In the case of improper usage of pesticides in agriculture production, the project might cause not only environmental pollution but also harmful effects on the farmers health. Considering this, the project Component 3 provide recommendations on safety Locust control while implementing Pest Management Activities, the issues integrated into the ESMF along with all other works relevant to these issues that were supported under the project.
ESS4: Community Health and Safety	Relevant	ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities. ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to	To address environmental risks and impacts that might affect community Health and Safety, the ESMF includes assessment of work-related health risks; works and road safety; excessive noise and dust levels, site safety awareness and access restrictions; and labor influx. All these issues were required to be included in the site specific ESMPs to be prepared once the investments are identified. ESMPs required that fencing should be installed around all construction sites and areas where there is a risk to community health and safety. Contractors developed and adhered to Codes of Conduct, including requirements for

		people who, because of their particular circumstances, may be vulnerable.	respectful behavior and interaction with local communities and within work sites, prohibition from engaging in illicit activities, sexual exploitation and abuse, or sexual harassment (SEA/SH), forced or child labor. Additional activities to prevent and mitigate risks of SEA/SH, COVID-19 to be conducted by implementation agency, include establishing GBV sensitive grievance redress mechanism, training and awareness-raising for staff, contractors, and local communities (neighboring sites of construction sites) on SEA/SH risks, available support services, Codes of Conduct to be followed by implementation agency staff and contractors, and available GBV-sensitive grievance redress mechanism. COVID-19 Management plan to be developed as part of HS management plan and followed by Contractors and followed. The Stakeholder Engagement Plan includes the public awareness and educational campaign before the project activities launch, including community outreach before pesticide use, planning around other, non-project activities that could be affected by massive pesticides (particularly bee keeping, poultry, etc.). Outreach activities will be implemented considering the Covid-19 precautions. Increased exposure of farmers and their families to dangerous agrochemicals could also be considered as a significant community health and safety risk. Farmers' exposure mainly occurs during the preparation and application of the pesticide spray solutions and during the cleaning-up of spraying equipment. Farmers or their family members who perform manual labor in areas treated with pesticides can also face major exposure from direct spray, drift from neighboring fields, or by contact with pesticide residues on the crop or soil. This kind of exposure is often underestimated. The project-specific Pest Management Plans to be prepared during the project implementation will address these issues. Furthermore, as per requirements of this ESMF, site specific ESMPs will include the necessary measures to ensure efficient waste management and prevent inadvertent spread of animal diseases along with training requirements in this regard. Additionally, the activities to be provided under the locust control will provide clear requirements on ensuring safety while implementing Pest Management Activities associated with

			pesticides. Also, in this regard, the ESMF will include a template for a Pest Management Plan to be used by farmers and/or agricultural research institutions, in the cases when the project will support these activities.
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant	ESS5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood), or both. The term "involuntary resettlement" refers to these impacts. Experience and research indicate that physical and economic displacement, if unmitigated, may give rise to severe economic, social and environmental risks: production systems may be dismantled; people face impoverishment if their productive resources or other income sources are lost; people may be relocated to environments where their productive skills are less applicable and the competition for resources greater; community institutions and social networks may be weakened; kin groups may be dispersed; and cultural identity, traditional authority, and the potential for mutual help maybe diminished or lost. Where involuntary resettlement is unavoidable, it will be minimized and appropriate measures to mitigate adverse impacts on displaced persons (and on host communities receiving displaced persons) will be carefully planned and implemented.	The new construction will invariably require 'lands', but it will be limited to 2-3 facilities. While the project is expecting that the Government will make available lands, due diligence is required to ensure that there are no resultant physical; and/ or economic displacements. The MoA will prepare a Resettlement Policy Framework (RPF) to guide activities in this regard. The RPF will define the procedures for: (i) acquiring land (after all technical alternatives have been exhausted), (ii) dealing with any residual impacts from land acquisition (i.e. identifying, establishing the valuation of, and compensating people that suffer economic losses or loss of private property), (iii) monitoring and verification that policies and procedures are followed, and (iv) grievance redress mechanisms. Where resettlement-related impacts have been identified, site-specific RAPs will be prepared by the MoA/PIU in accordance with the RPF.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant	ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services. ESS6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. All habitats support complexities of living organisms and vary in terms of species diversity, abundance and importance. This ESS also addresses sustainable management of primary production and harvesting of living natural resources.	This ESS is relevant. Overall, most of the activities envisaged by the project are small in scale and expected to be carried out within the settlements - in the case of rehabilitation of agricultural research laboratories and no impacts on natural habitats are expected. At the same time, as Subcomponent 1.3 aims to the acquisition, production and multiplication of seeds, seedlings, and other planting materials, it can pose some risks and impacts related to biodiversity by introducing new varieties. To minimize these risks, the project ESMF provides the requirements for addressing these risks, as per Food and Agriculture Organization of the United Nations (FAO) guidelines. As specified in the ESMF document, FAO has

		This standard aims to safeguard natural habitats and their biodiversity; avoid significant conversion or degradation of critical natural habitats, and to ensure sustainability of services and products which natural habitats provide to human society.	developed Environmental and Social Management Guidelines (2015) with 9 Environmental and Social Standards (ESSs) which set out specific requirements relating to different social and environmental issues. The FAO ESS 3 defines Plant Genetic Resources for Food and Agriculture (PGRFA) as the entire diversity of the plants used, or with the potentials to be used, in agriculture to produce food, fodder, and fiber. Also it is important to consider how pesticide and other agrochemicals can effect local flora and fauna and propose relevant prevention measures and where it may be appropriate to prohibit them (if the sites planned for application of pesticides/agrochemicals are close to critical habitats, protected areas, IBAs, Ramsar sites, wetlands and water sources, etc.)
ESS8: Cultural Heritage	Not relevant	ESS8 recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. It sets out measures designed to protect cultural heritage throughout the project life cycle.	ESS 8 is not relevant, but as a precautionary measure, chance find procedure is included in the ESMF and will be part of mitigation measures to be provided in site-specific ESMPs.
ESS10: Stakeholder Engagement and Information Disclosure	Relevant	ESS 10 recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. The client will engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a timeframe that enables meaningful consultations with stakeholders on project design. The nature, scope and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts. In consultation with the Bank, the Borrower will develop and implement a Stakeholder Engagement Plan (SEP) proportionate to the nature and scale of the project and its potential risks and impacts.	Project-affected parties include farmers, including dehkan farms and household plot owners, on whose farms activities may be implemented, and the general public in communities in which project activities will take place. Farmer's organizations and cooperatives should also be considered as project-affected parties as their activities may directly affected by the project. Other interested parties include local authorities, agri-business sector representatives, and central level authorities, including but not limited to: Ministry of Agriculture; Dehkan Farms and Household Plots; the State Plant Quarantine Inspection; Agricultural Inspection; Agriculture Research Institutes; Ministry of Industry Innovations. Mapping of other interested parties such as other government agencies, academia institutions, NGOs, specific Farmers Associations, has been conducted as part of the preparation of Stakeholder Engagement Plan. A SEP has been developed and includes full stakeholder mapping, outlines the activities and timeframe for engaging with different stakeholder groups throughout the life of the project, defines roles and responsibilities, human resources and budget needed for implementing SEP activities. The SEP has been prepared with inputs from stakeholders with applying of COVID-19 precautionary measures during consultations.

IV. NATIONAL INSTITUTIONAL FRAMEWORK

4.1. National Institutions involved in the Environment Sector

In order to create an effective system of governance strategic planning and sustainable socioeconomic development of the country and in accordance with Article 69 of the Constitution, the environmental institutional and management system has been established by the GoT which includes various state agencies. Tajikistan's current environmental institutional and management system includes the following institutions:

- Parliament,
- Presidential Administration,
- Committee for Environment Protection (CEP) under the Government of Tajikistan,
- State Committee of Statistics,
- Ministry of Agriculture,
- Ministry of Energy and Water Resources,
- Ministry of Healthcare,
- Ministry of Economic Development and Trade,
- Ministry of Finance,
- Agency for Land Reclamation and Irrigation,
- Tajik Standard Agency,
- Tajik Forestry Agency,
- Tajik Meteorological Service under CEP,
- Tajik Academy of Science and its research Institutes,
- Tajik Academy of Agricultural Science and its research institutes, and
- other minor institutions.

A brief description of key institutions and their role within the public administration is provided below:

The Environmental Protection Agency (EPA) of Tajikistan (namely the Committee for Nature Protection of the Tajik Soviet Socialistic Republic) was established for the first time in August 1989. Its mandate included coordination of the activities related to environmental protection among government agencies and the control over natural resource use, land protection, subsoil, forests, water, and other resources. In 1994 EPA's legal status was improved and reorganized into the Ministry of Nature Protection of the Republic of Tajikistan with the same mandate. However, 10 years later due to restructuring of the GoT the Ministry became again a State Committee for Environmental Protection and Forestry (SCEPF) in 2004. The EPA mandate was expanded slightly by including the former Forestry Management agency. In 2006 due to further restructuring of the GoT EPA was merged with the Ministry of Agriculture, which became the Ministry of Agriculture and Environmental Protection. EPA's mandate within the new Ministry was kept the same. During 2008 EPA became the Committee for Environmental Protection (CEP) under the Government of the Republic of Tajikistan.

CEP coordinates all activities related to environmental protection among GoT and oversees natural resources use, land protection, subsoil, forests, water, and other resources. The decisions of CEP are considered mandatory for all legal entities and individuals. Currently CEP has a total of 400 staff of which about 50 in Dushanbe Headquarter.

The Parliament of Tajikistan plays a key role in determining policies, strategies and rules for sectors that may affect and be affected by environmental factors. It consists of two chambers - *(Majlisi Namoyandagon)*, Lower Chamber, and (*Majlisi Oli)*, Higher Chamber. The Parliament involves relevant executive agencies related to environmental and social risk management which overview relevant sectoral legislation with active role in endorsing supporting laws and regulations (sub-laws).

Several committees are of particular relevance:

- The Ecological Committee, which oversees environment-related legislation;
- The Education Committee, which oversees the Law on Environmental Education and laws regarding post-secondary education and professional (vocational) training; and
- Sectoral committees covering environment-sensitive sectors, for example Agriculture Committee, which will be essential to integrating environmental social risk management issues into agriculture, land use, water, and other policies. Parliament's facilities include an information library for members of the Lower Chamber that contains more than 16,500 publications. Among 63 Parliamentarians, 6 are members of the Ecological Committee which work directly on environment-related legislation.

The Ministry of Agriculture (MoA) develops and coordinates agricultural and regional policy, strategic plans, state and sectoral programs in the agricultural sector. Beyond that, the Ministry oversees a significant segment of the economy that is vulnerable to climate change, land degradation, POPs, biodiversity and other areas. The Ministry has a total of 3.583 staff; 104 of them work in the central management unit, in Dushanbe.

MoA also oversees the activities carried out by the Academy of Agricultural Sciences, which serves as the scientific and coordination centre for agrarian science in Tajikistan. The Ministry is also linked with the Tajik Agrarian University consisting of nine faculties. Both of these provide opportunities for applied research and knowledge transfer. The activities of the Academy of Agricultural Sciences are directly relevant to various environmental issues.

The Ministry of Economic Development and Trade (MEDT) is the government agency with task in overseeing the system of state economic planning and forecasting and facilitating the effective implementation of socio-economic development priorities in Tajikistan. One of the main tasks of this Ministry is to develop and implement economic development programs and strategies of the Republic of Tajikistan with the aim of reducing poverty and stabilizing socio-economic conditions. According to governmental regulations, the Ministry of Economy is to be included in all working groups that develop sustainable strategies, plans and budgets. Representatives of the Ministry are headed the editing group to prepare the country's National Development Strategy and the Poverty Reduction Strategy. The Ministry also monitors the implementation of the two strategies. Among its other roles, MEDT is one of the co-executive bodies of the National Action Plan for Climate Change Mitigation.

The Ministry of Finance aside from economic and financial functions is responsible to review and approve the budgets of state agencies including those related to the environment and climate change.

The Ministry of Industry and Innovative Technology is involved with environmental issues despite its role as Designated National Authority for Clean Development Mechanism projects conducted under the Kyoto Protocol of the UNFCCC in Tajikistan. The Ministry is responsible for data flow coordination, monitoring, and analysis under the National Development Strategy process.

The Ministry of Energy and Water Resources is responsible for the water policy in the country. It is involved in almost all emerging policies in the country, including the discussion of program action plans focusing on the environmental protection. The Ministry is participating in the development of the national water strategy based on the Millennium Development Goals. The National Water Strategy includes the development of energy sources without negative environmental impact. The activities of the Ministry are interlinked with the construction of hydropower plants and their reservoirs in areas related to trade-off between development and environmental issues with the strategic purpose of: a) providing the necessary flow regulation during the fluctuation and changes in water volume; b) reducing the negative impacts of silt on existing reservoirs; and c) reducing the potential negative impacts of construction of new reservoirs.

According to the Public Health Law, the ***Ministry of Health*** provides sanitary-epidemiological services to

the public. It conducts the state sanitation-epidemiological supervision, carries out activities on environmental safety, environmental protection and sanitation as well as develops national industry health norms, regulations and hygiene standards. The Ministry has an affiliated research institute, the Institute of Epidemiology and Sanitation, and it also manages about 73 sanitary- epidemiological observation stations. The State Epidemiological Service is an independent agency participating in a WHO regional project on health and climate change. The project team has drafted a Strategy for Health and Climate Change.

The Ministry of Education deals with environmental issues because of its mandate under the Law on Environmental Education, which instructs it to develop and carry out environmental education projects. The Ministry oversees schools, which can serve as effective entry points for awareness about climate change issues.

The Ministry of Transport is responsible for the implementation of transportation policy. The environmental impact of the transport infrastructure, as well as transport traffic. At the same time the impact of the climate change on the state of road infrastructure is considered considering roads and bridges washout by mudflows and avalanches. Additionally, the Ministry is relevant to environmental issues because of its participation in the development of a National Strategy for Sustainable Transport.

The State Committee for Land Use, Geodesy, and Cartography was established in 2011 and is responsible for developing land use policies and reforms. It is one of the main agencies being responsible for the enforcement of the Land Code. The Committee's functions include:

- Monitoring of land resources;
- State control on efficient use and conservation of land;
- Introduction of land inventory;
- State registration to legal land use;
- Promotion of rational ways of the land use;
- Definition of land tax and land use fees for violation of land legislation;
- Participation in decision-making regarding the rehabilitation of degraded land; and
- The preparation of documents for the distribution of land among various executive agencies.

In addition, the Committee oversees two institutes that conduct applied research relating to land use change, including land use inventories and mapping. The Committee has a main office in Dushanbe with approximately 70 staff and district level offices with nearly 200 staff.

The Committee for Emergency Situations and Civil Defense is the government agency with the task for disaster risk reduction and response and coverage of climate-induced natural disasters. The Committee conducts reviews and analysis of disaster risk assessment in light of climate change, and it has a department that focuses on evacuation and re-settlement. In terms of facilities, the Committee has its headquarters in Dushanbe and representatives in every region and district of the country. The Committee has its own training facilities, and it offers in-service training for its employees. It also has its own chemical-radiometric laboratory. It participates in several CIS-wide initiatives to share good practice, and it has previously used international experts on an extended-term basis through technical assistance projects with good results.

The Agency of Land Reclamation and Irrigation (ALRI) is responsible for sustainable operation of the national irrigation system and the land reclamation. It also monitors the use of water resources, being responsible for the distribution of water to farmers for agricultural purposes and provides data on water consumption to the Committee of Environmental Protection. Finally, the Agency is in charge of the operation and infrastructure maintenance of irrigation and rural water supply. It has offices in Dushanbe and also oversees the Institute of Water Improvement.

The Academy of Sciences is the main source of scientific information and data that possesses highly-qualified specialists and researches. Fifteen research institutes including the Institute of Water Problems,

Hydropower, and Ecology are operational under the umbrella of the Academy. The institute has the capacity to develop long term action plans in different sectors of the economy, and Academy researchers are involved in developing the National Action Plans on biodiversity and climate change mitigation. The Academy includes institutes that conduct researches related to the environment (climatology, glaciology, hydrology, radiation safety, hydropower, biodiversity conservation and water resource management); fourteen institutes are located in Dushanbe, and 1 is located in GBAO.

4.2 National Institutions involved in Social Risk Management

Identified government institutions to be engaged in the project implementation are outlined in Table 4 below. They are divided into categories based on at what administrative level(s) the institutions represent: national, oblast, and district authorities.

Table 4: Relevant Government Institutions

Institution Category	National level	Oblast (region)	Rayon (district)	Role and Engagement
Government Administrations	Cabinet of Ministers	Governor's office	District and town administrations, including chairman's office	Approvals and strategic planning Land management issues and child/forced labor monitoring
Line Ministries and Agencies	Ministry of Agriculture (MoA)	Oblast Agricultural Department	District Agricultural Department	Implementation agency, responsible for project operations
	Labour Inspection under the Ministry of Labour, Migration and Employment	Regional Department	District Department	Controls compliance to occupational safety norms and rules, labor conditions and rights
	The State Committee for Architecture and Construction (SCAC)	Chief Oblast Architect	Chief District Architect	Controls compliance to the construction standards for social infrastructure and Local Master Plans
	State Committee for Land Management and Geodezy	Regional Department for Land Management and Geodezy	District Department for Land Management and Geodezy	Land Certification Issues
	Women and Family Affairs Committee	Regional/Oblast Department for Women and Family Affairs	District Office for Women Affairs	Support women engagement and GBV prevention and Gender Action Plan implementation

Institution Category	National level	Oblast (region)	Rayon (district)	Role and Engagement
				support

V. BASELINE INFORMATION

5.1. Physical Resources

Topography and geology. Tajikistan has a mountainous terrain that accounts for 93% of its land area. Its rugged topography ranges from a few hundred meters to 7,000 meters above sea level (masl). China borders the Eastern Pamir Plateau and Uzbekistan borders the Fergana Basin in the north Kyrgyzstan Border. The main elements of Tajik geography are the following: the Kuramin Mountain Range and the Mogoltau Mountains, Fergana Depression, Hissar-Alai Mountains (the South Tian Shan), the depressed area in southwestern Tajikistan (Tajik depression), and Pamir. Altitudes range from 300-7,495 meters above sea level (masl) (Figure 1). The modern relief of Tajikistan is the result of activities of alpine tectonic movements of the earth surface and the denudation process. The majority of plain territories in the country are the broad areas of river valleys or the vast depressions between the mountains. Most of the country's population is concentrated in these particular areas along with the main fields of industrial production and agricultural potential of the country.

Figure 1: Elevation Map of Tajikistan

Seismicity. Tajikistan is located near the border between the Eurasian and the Indian plates, a region where relatively large earthquakes occur. It is a country of intense tectonic movements and high seismicity.

According to records of the International Institute of Seismology and Earthquake Engineering, there have been seven earthquakes with a magnitude of over 6.5 with epicenter in Tajikistan since 1900 (Table 15). There are many earthquakes near the Afghanistan border in southern Tajikistan. Earthquakes are dependent on many factors: geotechnical conditions, nature of the soil, presence of groundwater, landforms, etc. Major seismic zones in Tajikistan are with 7, 8, and 9 degree seismic intensity on the MSK-64 scale[33] (Table 16). In each of these zones, earthquakes at the mentioned levels are possible. Most southern districts are in seismic Zones 7 or 8. Northern districts are in Zone 8, except for Mastchoh District, which is in Zone 7. Dushanbe, the districts of Republican Subordination, and Gorno-Badakhshan Autonomous Region (GBAO) are in Zone 9. The seismic map of Tajikistan showing the subproject locations is shown in Figure 2.

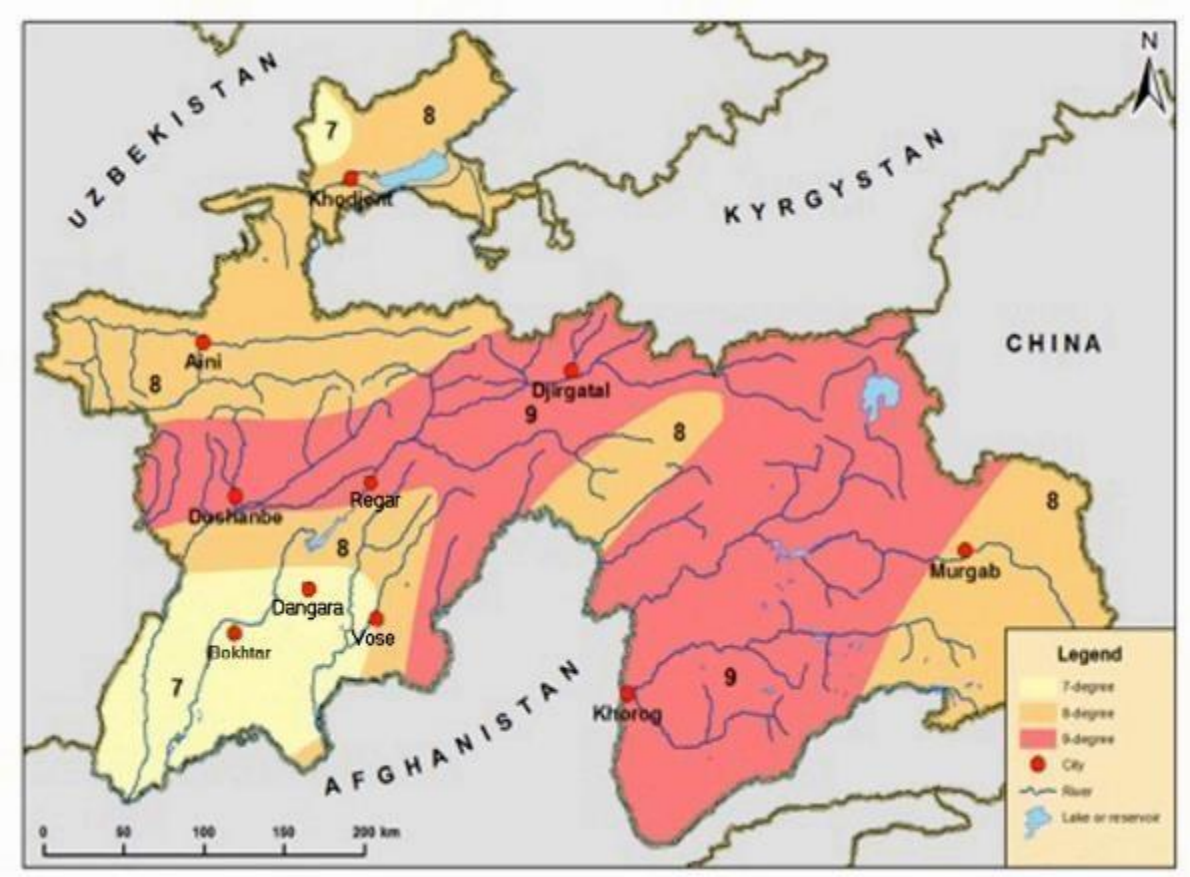
Table 5: Major Earthquakes in Tajikistan from 1907-2015

Date	Place	Latitude	Longitude	Deaths	Injuries	Magnitude	Comments
2015-12-07	Gorno Badakhshan Autonomous Region	38.26	72.77	2		7.2	Many homes destroyed
2012-05-13	Districts of Republican Subordination	38.61	70.35	1		5.7	Many buildings destroyed / livestock killed
2011-07-19	Fergana Valley	40.05	71.44	14	86	6.2	
2006-07-29	Khatlon Province	37.26	68.83	3	19	5.6	
1989-01-22	Gissar	38.47	68.69	274	Many	5.3	
1985-10-13	Kayrakum (Guliston)	40.3	69.82	29	80	5.9	Extreme damage / many homes destroyed
1984-10-26	Djirgital *Rasht Valley	39.16	71.33			6.1	Moderate damage / some homes destroyed
1949-07-10	Gharm (Rasht)	39.2	70.8	7,200		7.5	
1930-09-22	Dushanbe	38.4	68.5	175		6.3	

Source: National Geophysical Data Center (NGDC).

[33] This normative map of seismic zoning was compiled in 1978 by A.M. Babayev, T.A. Kinyapina, K.M. Mirzoev, R.S. Mikhailova and G.V. Koshlakov under the guidance of S.Kh. Negmatullaev

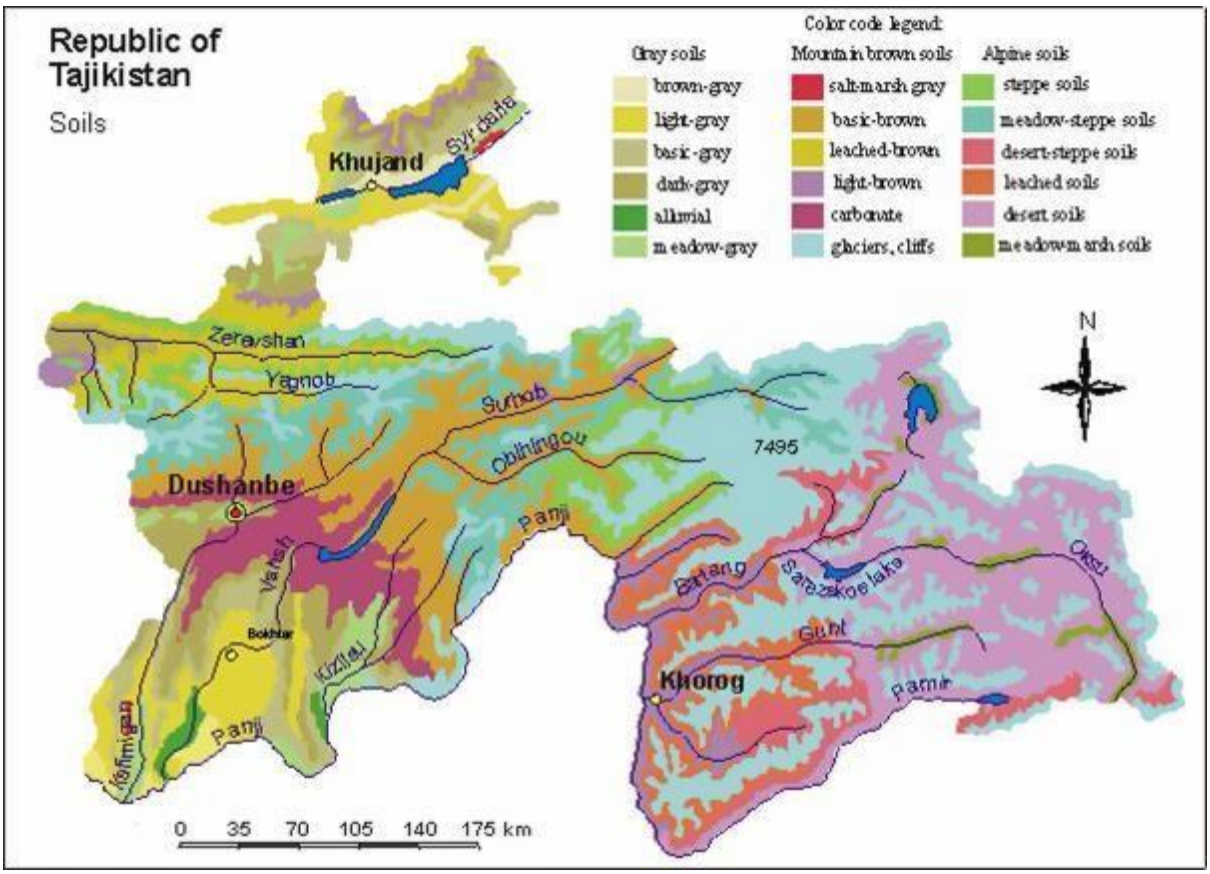
Figure 2: Seismic Map of Tajikistan



Soils. As a typical alpine country, Tajikistan has vertical variability of soil cover. Three major vertical belts of soil distribution can be found in the country: (i) gray soils of valleys and idle fields; (ii) brown soils of middle belts of mountains; and (iii) soils of highlands. There is a distinguished gradient from the more humid northern part of the study area to the very dry southern part. The soils of the study area are highly productive, with much of the area used for agriculture. In the dry southern part of the subproject area, agricultural use is, however, only possible when soils are irrigated. Soil erosion is a major environmental concern throughout the country due to seismic activity, steep slopes, the fragility of soils, and human activities such as inappropriate livestock management, the removal of protective vegetative cover, and poor water management practices.

Soil profiles are typically loess, loamy sands, and loamy soils, occasionally bench gravel of the upper quaternary age, classically formed through wind deposition over arid or semi-arid areas. Soils are brown-gray, light gray. The humus layer of the loess and loamy sands is fairly fertile and agriculture is possible. For these soils to be converted into agricultural use, they require irrigation and the mineral fertilizers (Figure 3).

Figure 3: Soil Map of Tajikistan



Air quality. The problem of air quality is one of the basic ecological issues of industrial and urbanized areas in Tajikistan. The main stationary sources of air pollution in Tajikistan are mining, metallurgy, chemical industries, buildings, mechanical processing, light industries, heat and power generation, and agriculture.

In 2005, the share of motor transport emissions was 170,300 tons (t) or 83 % of the total amount of pollutants released into the atmosphere. Motor transport is the main source of substances accumulating in the atmospheric surface layer. Products of fuel combustion are released to the atmosphere and generate smog. Old vehicles with increased toxic gas emissions comprise 30-40% of the total number of vehicles for road transportation. The exhaust emissions include about 200 chemical components and dangerous substances such as carbon monoxide, nitrogen oxide, hydrocarbons, lead, etc.

Typically, a vehicle with an internal combustion engine using 1,000 liters (l) of fuel emits about 200 kilograms (kg) of carbon monoxide, 20 kg of nitrous oxides, 1 kg of ash and solid particles, and 200-400 g of lead components. In urban conditions, emissions from road transport potentially rise because of frequent changes in operation mode and traffic jams. Illegal burning of leafage, street litter, and household wastes contributes to the pollution of urban atmospheric air. It is dangerous as leaves absorb harmful elements and heavy metals, such as lead, while household wastes contain rubber, plastic, and other organic substances that emit 40 harmful and toxic components when burning. The emission of harmful substances into the atmosphere potentially affects many natural and societal objects not depending on the pollution source and distance. As a result of air pollution, cultural values, vulnerable ecosystems, agricultural lands, and population might be damaged.

Climate. Tajikistan has three major climate zones: continental, subtropical, and semiarid, with some desert

areas. The climate changes drastically according to elevation, however. The location of the country in the middle of Eurasia, its remoteness from oceans and seas, and proximity to deserts predefine its climate, which can be characterized as continental, with considerable seasonal and daily fluctuations in temperature and humidity. The climate in the central and southwest regions of Tajikistan is characterized by rather hot summers and mild winters. The cold period lasts for 90-120 days, and the warm period, 235-275 days. Of the annual precipitation, 75-85% occurs from December to May. The country‘s very complicated relief structure, with huge variations in elevation, creates unique local climates with great temperature differences, as shown in Figures 35-37. The country's capital, Dushanbe, and Khatlon provinces, are classified as having a continental climate, where it is hot and dry from June to September in the plains with a maximum temperature exceeding 35˚C. On the other hand, snow is observed from December to February with minimum temperatures below 0˚C.

Wind. Tajikistan is characterized as having few strong winds from large-scale lows, such as typhoons, although there are relatively many seasonal winds with dust. The wind speed is similar to that in South Asia at about 40 m/sec (mps). The wind direction and average wind speed in the subproject areas are shown in Table 18. Since the Rogun site is located on a hill, which is hit directly by the wind, the design wind speed should be higher than for the other sites.

Table 6: Wind Direction of the Cardinal Points and Average Wind Speed (m/sec)

Location / Wind Direction	N	NE	E	SE	S	SW	W	NW
Dushanbe	1.9	1.5	1.9	1.8	1.6	1.6	1.9	1.7
Khujand	2.2	4.6	4.5	2.2	3.1	5.7	3.9	2.1
Bokhtar	1.6	1.4	1.6	2.2	2.0	1.6	1.5	1.6

Source: Construction Climatology (MKC 23-01-2007, Table 10).

Figure 4: Climatological Map of Tajikistan

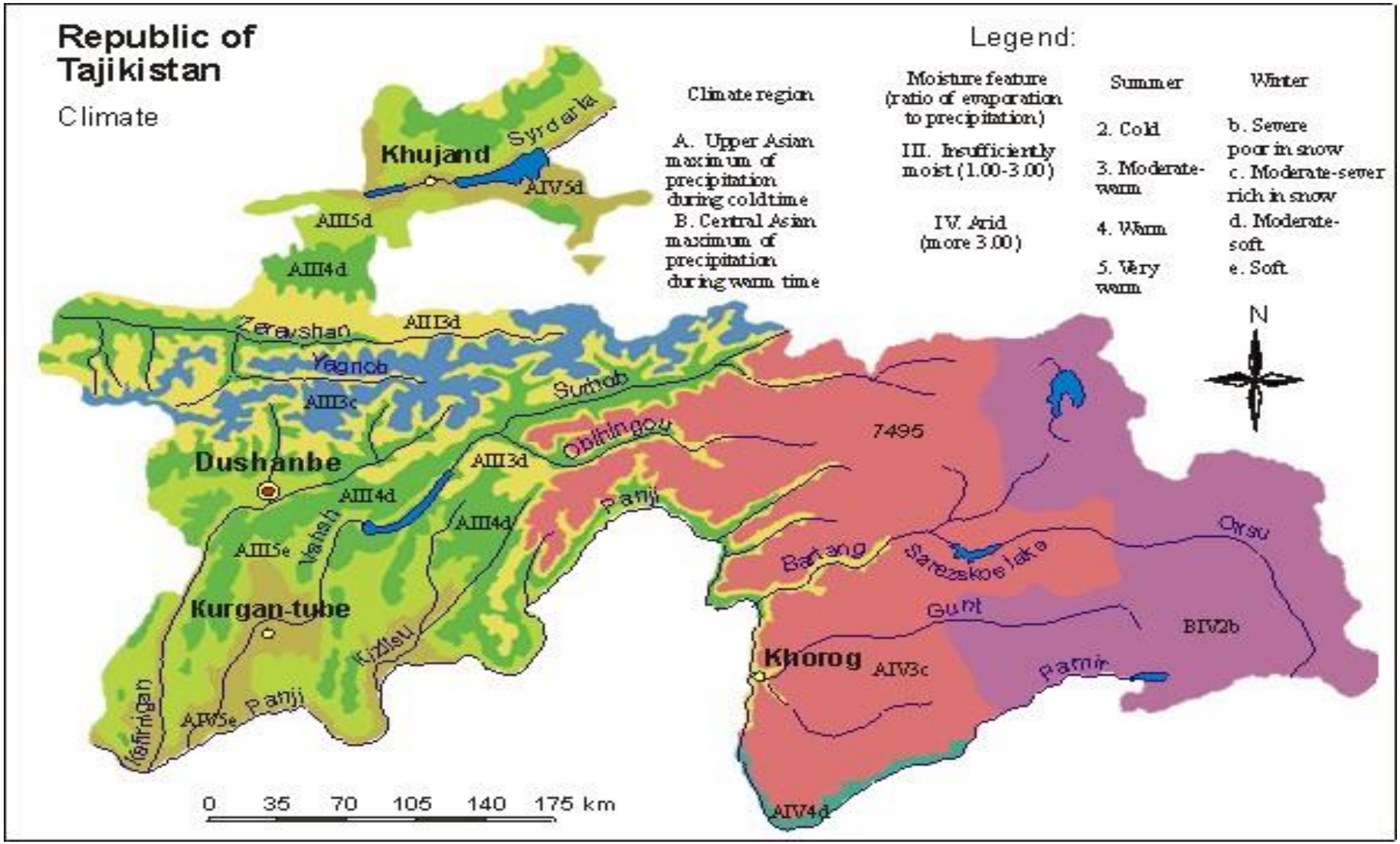


Figure 5: Average Annual Temperature Map of Tajikistan

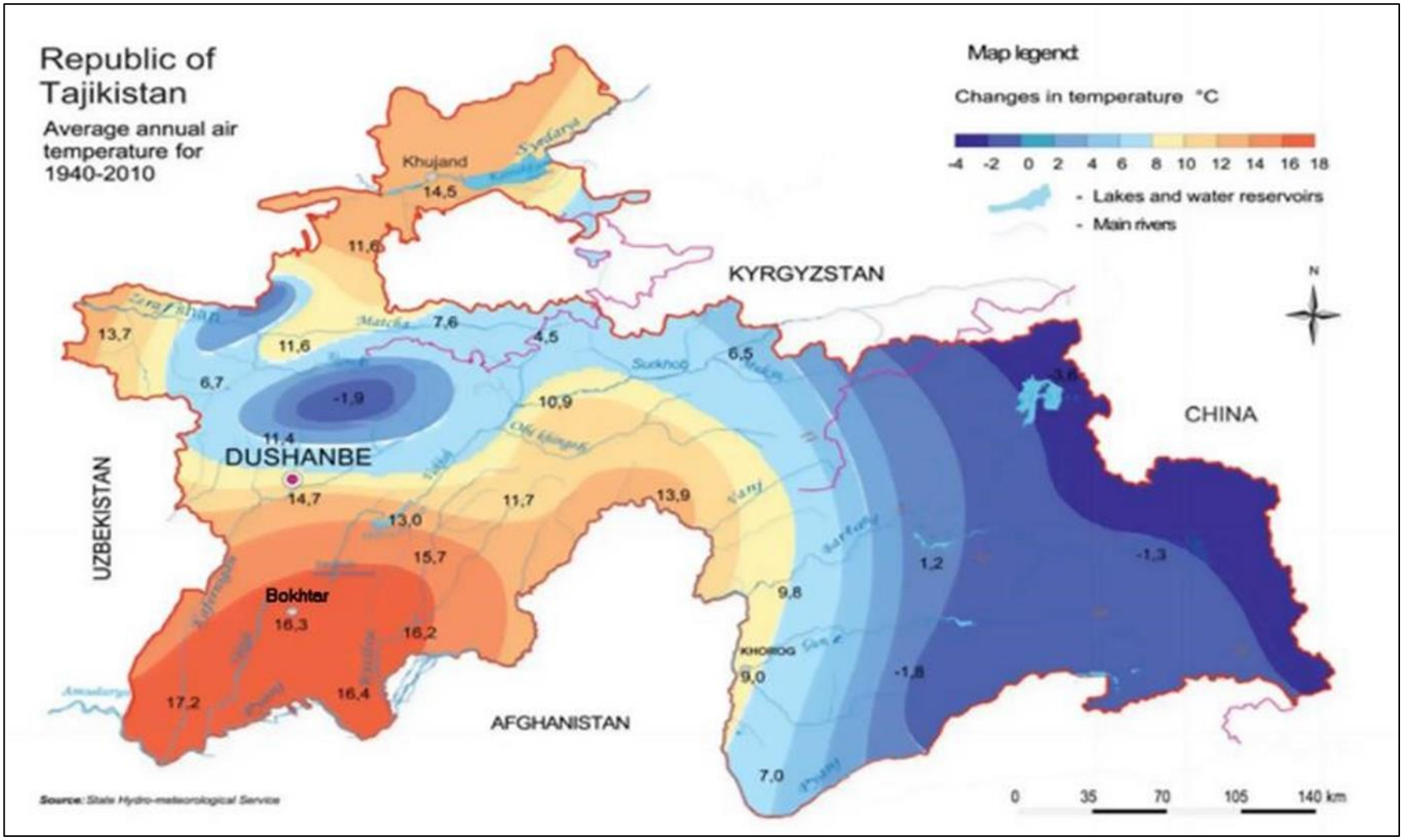
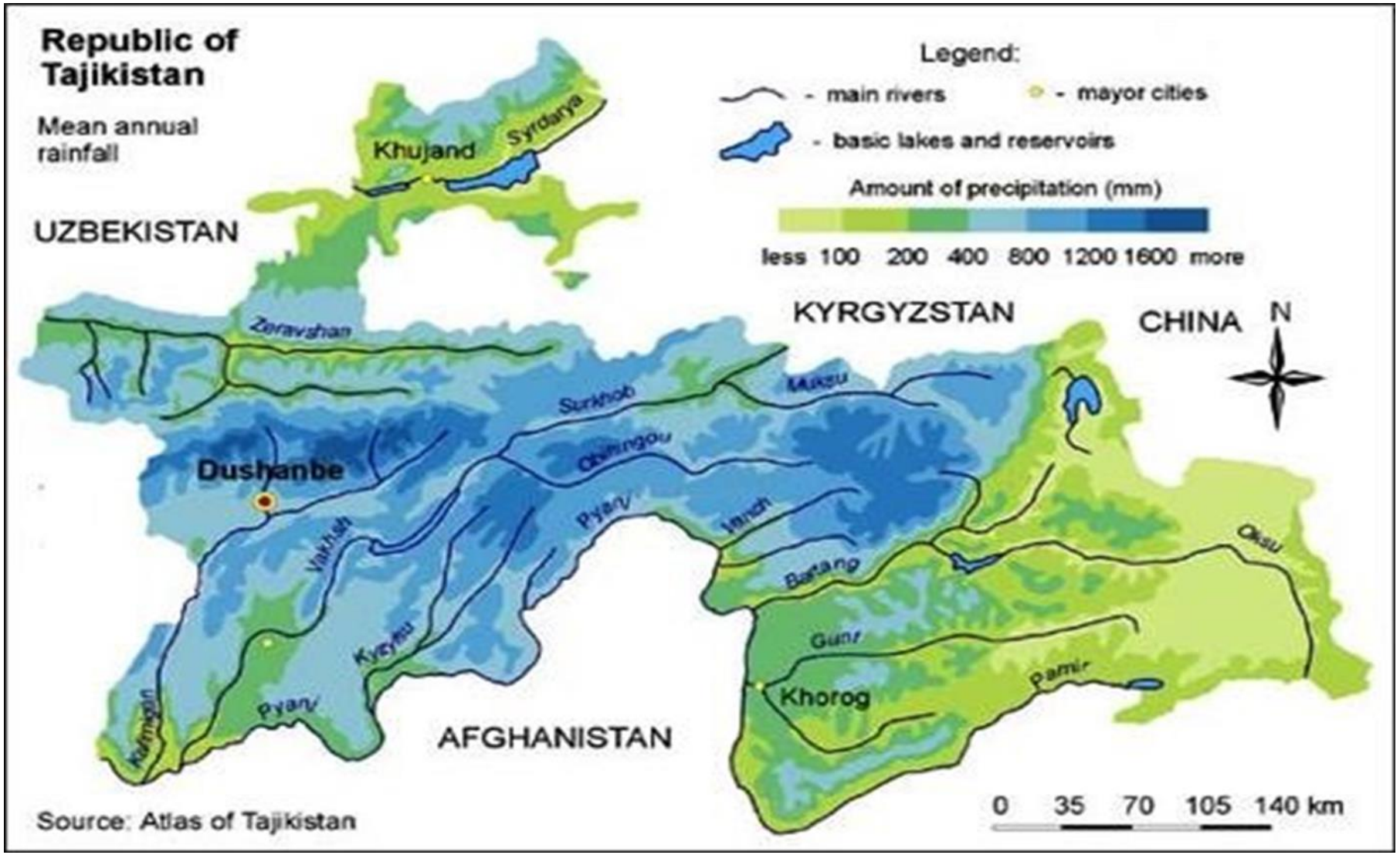


Figure 6: Mean Annual Precipitation in Tajikistan



Hydrology. The rivers of Tajikistan are important sources of fresh water for the Aral Sea. The glaciers and permanent snow feed the rivers of the Aral Sea basin with over 13 cu km of water a year. The major rivers are: (i) Syr Darya with a total length of 2,400 km, which flows for 195 km across the Fergana Valley in the north; (ii) Zaravshan, which runs through central Tajikistan; and (iii) Kafirnigan, Vakhsh, and Panj rivers, all of which together drain more than 75% of Tajikistan's territory. Groundwater reserves are extensive in the Gissar valley. Aquifers are located at depths of 5-40 m, generally.

5.2. Ecological Resources

While Tajikistan is home to a wide diversity of animals, birds, vegetation, and habitats, biodiversity in the subproject areas is low as the subprojects are located in urbanized areas. No important, rare, endangered, or protected species or critical habitats are found in the project affected areas. Urban vegetation includes ornamental trees and shrubs (e.g., sycamore, elm, plain trees, *ligustigum*, maple, poplar, pine, *microbiota spp*., cedar, Chinese rose, Russian silverberry, etc.) and orchard/garden fruit-bearing species (e.g., mulberry, apple, fig, apricot, cherry, walnut, pomegranate, grape, Pontic hawthorn, Albert's pearl bush, and dog rose). No protected or biodiversity-rich areas exist within the vicinity of the subproject areas.

Floral communities. The Hissar Valley is characterized by rich vegetative cover. The vegetation of the Vakhsh Valley can be attributed to the desert and steppe (300-800 masl) belt and the low-mountain (800-1,300 masl) belt, as well as the river valley belt. The Vakhsh River with its tributaries form three floodplain terraces. The surrounding hills and mountains are of relatively low elevation, ranging from 1,000-1,500 masl, on average. The highest peak is Mundy-Tau at 2,227 masl. The natural vegetation consists mainly of short meadow grass and sedges as well as other herbaceous vegetation. Some are planted to almonds and pistachios. Natural vegetation has been severely destroyed or altered by the influence of anthropogenic factors. Vakhsh Valley is the most important region of Tajikistan for agricultural cultivation, with cotton as the predominant crop.

Fauna. The fauna of Tajikistan is characterized by a great genetic diversity. Mountain fauna are richer than in the plains and contain a substantial number of European-Siberian and East Asian elements. The fauna of the hot, lowland deserts comprise plenty of Indo-Himalayan, Ethiopian, and Mediterranean species. Figure 7 shows the distribution of rare mammals in Tajikistan.

Figure 7: River Basins in Tajikistan

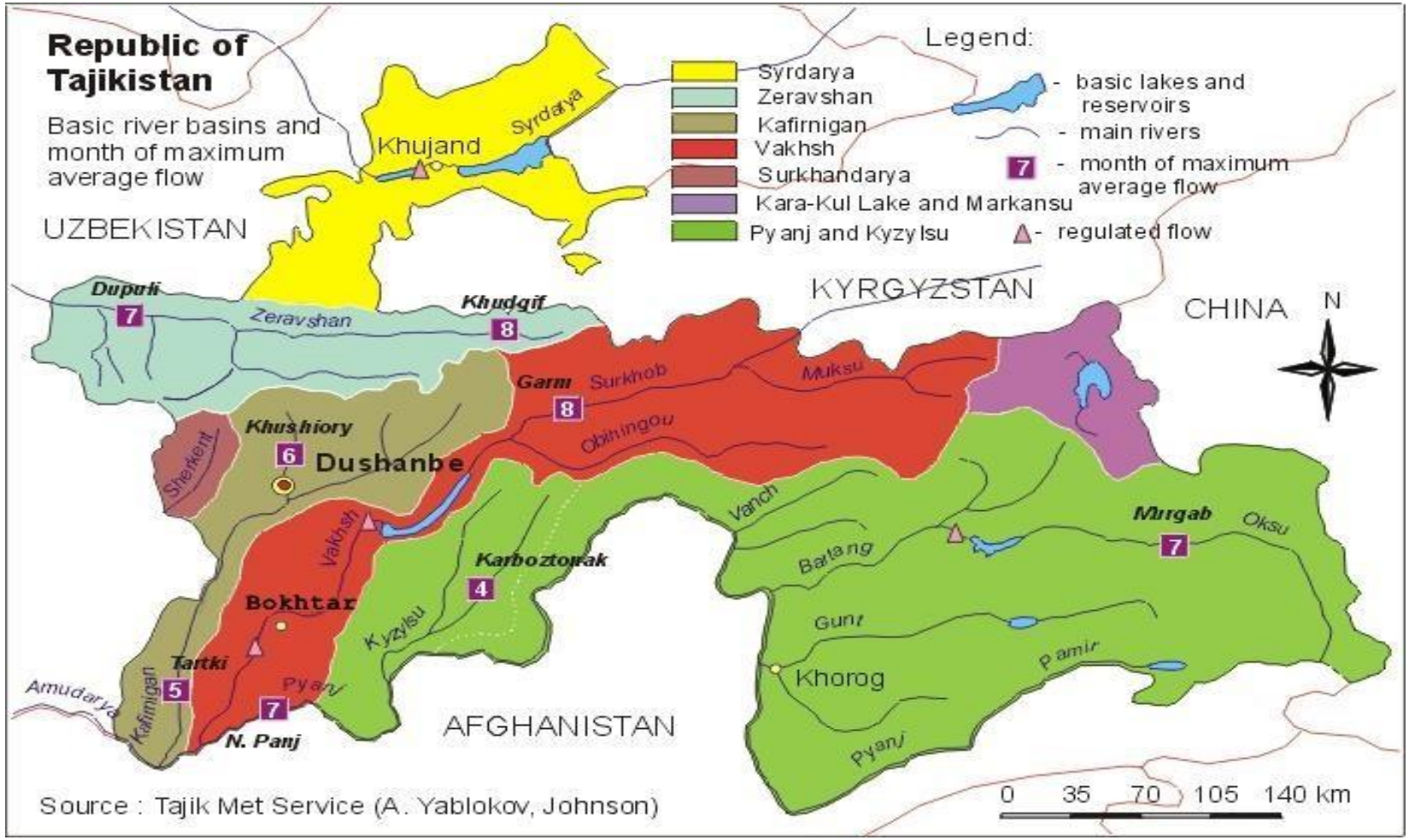


Figure 8: River Network in Tajikistan

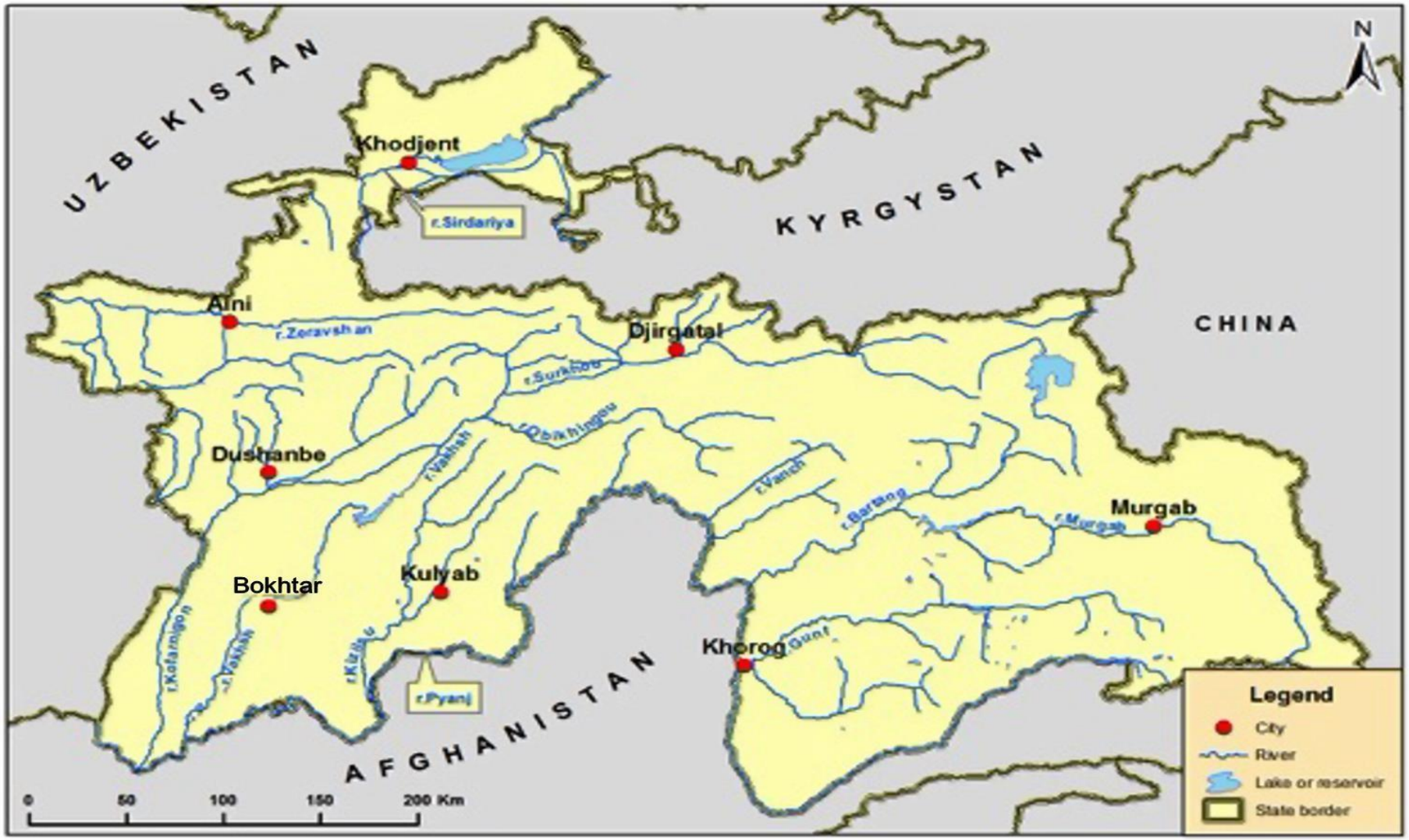


Figure 9: Vegetation of Tajikistan

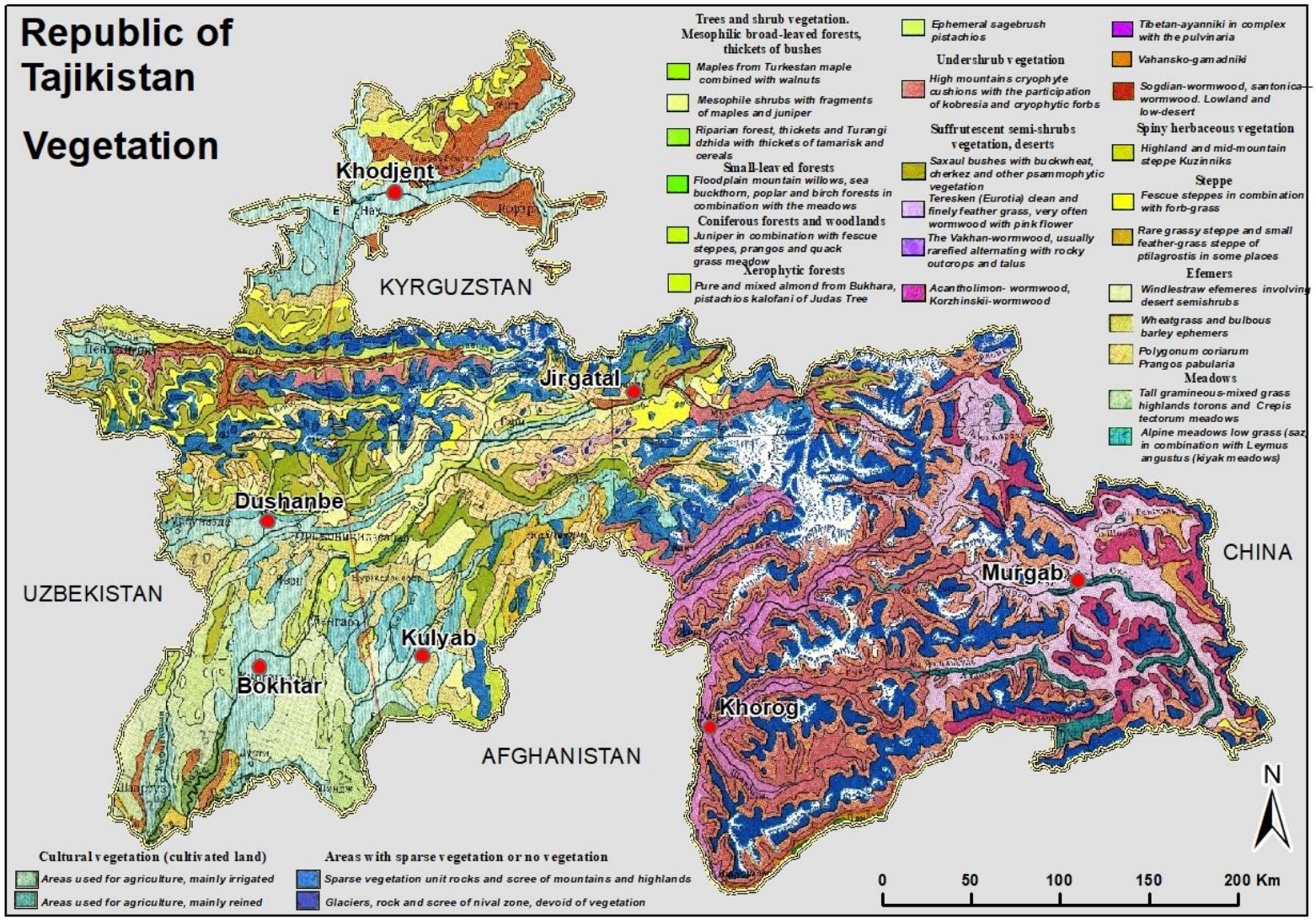
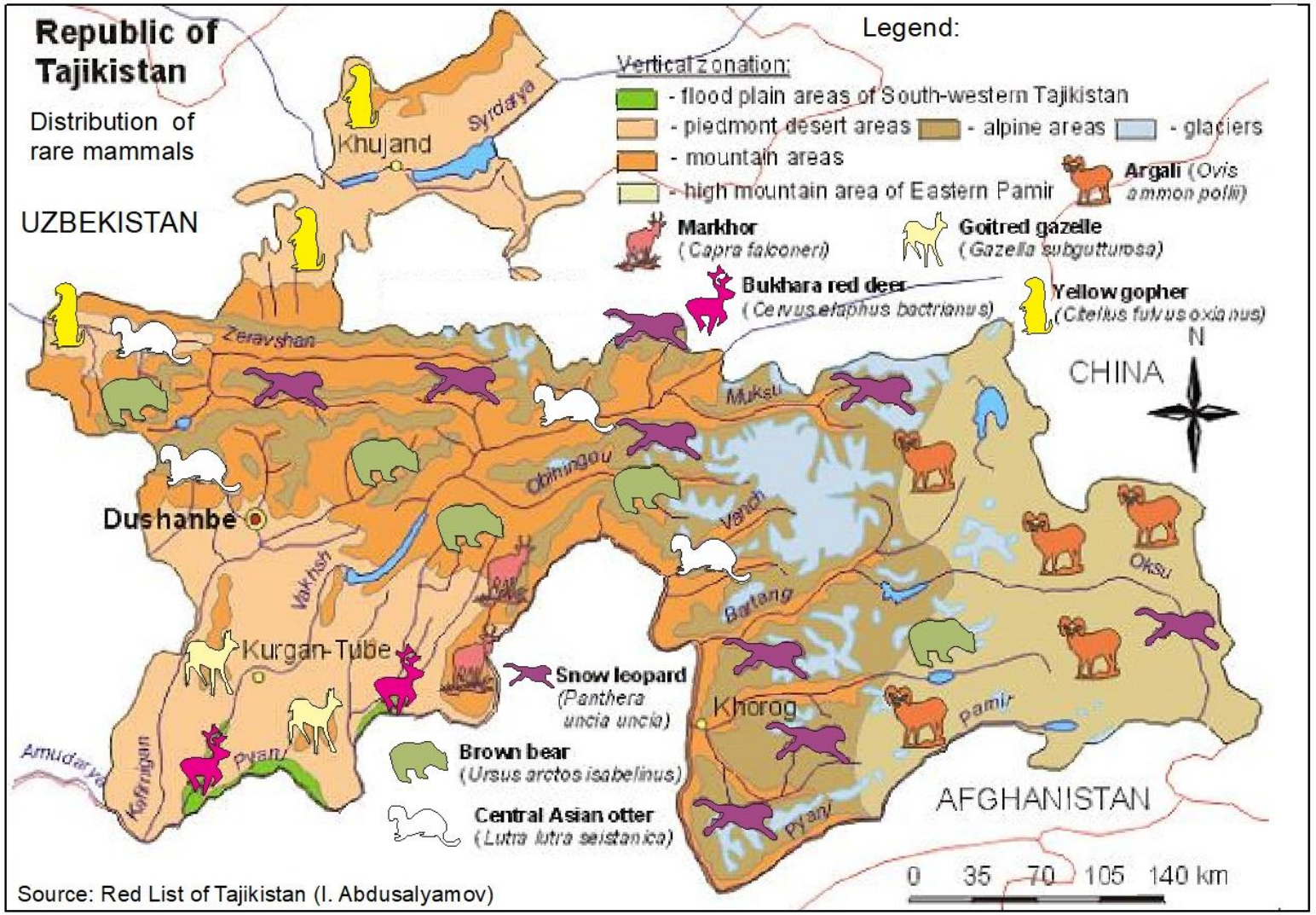


Figure 10: Distribution Map of Rare Mammals in Tajikistan



5.3. Social and Economic Characteristics

5.3.1 Population

The Republic of Tajikistan is one of the countries with a rapidly growing population; in 2019, it reached 9.1 million people (49% of them are women, 40.6% are children under 18 and 66% are young people under 30). The average permanent population in Tajikistan has increased from 6.1 million., people (2000) to 9.1 million people (2019), or 49 percent. About 74 percent of the population lives in rural areas. The population of Tajikistan is very young.

Table 7: Population of Tajik regions based on census and latest official estimates

Name	Capital	Area A (km²)	Population Census 1979-01-12	Population Census 1989-01-12	Population Census 2000-01-20	Population Census 2010-09-21	Population approx. 2019-01-01
Tajikistan	Dushanbe	141,400	3,801,357	5,109,000	6,127,493	7,564,502	9,126,600
Dushanbe	Dushanbe	100	500,966	605,135	561,895	724,844	846,400
GBAO	Khorog	62,900	126,783	160,860	206,004	205,949	226,900
Sughd	Khujand	25,200	1,194,683	1,558,158	1,871,979	2,233,550	2,658,400
Khatlon	Bokhtar	24,700	1,220,949	1,701,380	2,150,136	2,677,251	3,274,900

5.3.2 Economy

Agriculture is the main economic activity in regions where the majority of the population lives in rural areas. The main crops and agricultural products are cotton, cereals, oilseeds, potatoes, carrots, onions, cucumbers, cabbage, melon, vine, milk, wool, honey and eggs. Vegetable gardens and small farms are also considered an important part of the local economy. These include apples, peaches, apricots, almonds, pears, pomegranates, mulberries, and walnuts grown in homesteads in addition to crops. Cotton makes an important contribution to both the agricultural sector and the national economy. Cotton accounts for 60 percent of agricultural output, supports 75 percent of the rural population, and uses 45 percent of irrigated arable land. Cotton is a cash crop that is widely grown in the project's target areas, but it involves high levels of irrigation and chemicals, while many local farmers make small profits from its sale (compared to intermediaries and dealers). With the declared freedom to cultivate agricultural land has declined dramatically, giving way to other crops preferred by farmers. The irrigation infrastructure inherited at the end of the Soviet era suffered from a lack of investment in routine maintenance, which led to the gradual loss of cultivated land and damage to embankments, water intakes, and canals.

About 45 percent of the country's irrigated land is located in the Khatlon region. Cotton is the main crop grown in the area and accounts for 60 percent of the country's cotton crop. Its industry is represented by 334 enterprises specializing in chemical production, production and processing of agricultural and food products, as well as steel production. The Sughd region has 38% of the irrigated land in the country, together with the Khatlon region, they make up 83% of all irrigated land in Tajikistan. Its industry is represented by 459 enterprises. Sughd region has important industries such as uranium deposits, reservoirs, textile enterprises, gold mining and coal mining plants. The province's production rate is 31.5% of the country's total industrial output. About 44% of rice yield accounts for Zeravshan and the Ferghana valleys in Sughd oblast. In the North of the country, apricots, pears, plums, apples, cherries, pomegranates, figs and nuts are produced. Crops grown mainly include grain, wheat, barley, maize, rice, beans, potatoes, vegetables, fruits, grapes, forage, etc. The soils are mainly gray-brown serozems (gray soils), brown-carbonate and ermine. The regions of Republican subordination are engaged in the production of construction materials and agricultural products, mainly vegetables and fruits.

Tajikistan is renown as being the centre of diversity for a large number of grain cereals, legumes, vegetables and melons, spices, and fruit. It is also considered a source of unique accessions of wheat, pistachio, apricots, pears, spinach, apples, pomegranate, and figs[4]. With the drive towards maximizing crop production and the subsequent monocropping, the diversity of accessions used by farmers has decreased to the extent that some have been lost while others are in danger of being lost. Without proper maintenance of the genetic resources additional consequences could include the loss of diversity. Maintaining variety

diversity is essential in supporting crop breeding programs in the future[34].

The ten major crops by planting area account for 86% of the total planting area and include wheat, cotton, barley, apples, potatoes, grapes, watermelons (includes melons), onions, maize, and tomatoes, all of which, with the exception of some apples and grapes, are generally propagated from seed. Overall wheat and cotton account for 53% of the total area cultivated.

5.3.3 Migration and Employment by Gender

Most Tajik people are forced to combine subsistence agriculture, labor migration and shuttle trade in order to earn a living. People try to find different ways of earning income by working in villages or elsewhere as a driver, a day laborer, shopkeeper, tailor, obstetrician, shepherd, etc. The labor market at the local and district level is very limited, and the pay for temporary work is very low. Therefore, the most significant way to generate income is labor migration- mainly to Russia. The increase in migration since independence has created both challenges and opportunities for women. According to the interviews, the wives of migrant workers assume the role of head of household after the departure of their husbands and make most of the decisions. From numerous individual examples, it can be said that migration also led to an increase in the number of female headed households (abandoned or divorced women) in Tajikistan. The right to make individual decisions in households, for example, concerning agricultural production, remains with men, and it is granted based on age, merit and experience. Women do most of the domestic and agricultural work in rural areas, in particular in areas where there is a migratory outflow among men. The proportion of officially registered labor migrants averages 5% in the Khatlon region and over 10% in the target regions of GBAO.

A different level of migration is observed in the villages, where it makes up about 10% of the working population of villages. Mostly local residents migrate to the Russian Federation. Most migrants (over 90%) are men who go abroad for seasonal work. There are also people who leave for several years, or, as they are often called, long-term migrants. Despite the fact that only 10-15% of the total population of villages migrate, they send relatively high incomes to their households. The level of labor migration and its growth is associated with unemployment, which reaches 60% of the total working population of the community.

Significant unemployment has led to large-scale migration, especially among men who leave women to manage their households, which makes them responsible for supporting their families, as well as for other household duties and caring for children. By the age of 25 years, 70% of women become inactive, which means that they do unpaid work at home, compared with 20% of men who also become inactive by this age. Over 43% of Tajik women do unpaid housework, work in the garden or care for other family members compared to 9% of men. The proportion of households managed by women is growing, often due to labor migration. A third of men aged 20 to 39 years emigrate for most of the year or more, and about 41% of men divorce their Tajik wives after leaving the country. According to the results of the divorce proceedings, about 80% of Tajik women are denied property rights and alimony. Women are forced to cope with the situation by performing, in addition to their traditional roles of caring for children and senior family members, traditionally male responsibilities, such as maintaining and maintaining the household, caring for fields and animals. These additional responsibilities limit their participation in education and income-generating activities outside the home. In addition, women's paid employment is hampered by a significant decline in the number of preschool educational institutions, especially in rural areas, which is the result of the collapse of the socialist system and the civil war in the country.

5.3.4 Women Role in Agriculture: Gender Action Plan

Tajikistan recognizes ensuring food security and simultaneously developing the agricultural sector as critical for strengthening the country's economy and the same are reflected in national strategies on poverty reduction and livelihoods improvement. National programs emphasize on paying particular attention to not only poverty but also access to key resources such as education, healthcare and entrepreneurship opportunities. These have become prominent as rural population, and agricultural labor, have become increasingly feminized in recent years due to significant and substantial male out-migration which used to happen till Covid-19 pandemic occurred. Yet, the rural women have limited access to key resources,

[34] Muminjanov, H. 2008. State of Plant Genetic Resources for Food and Agriculture (PGRFA) in the Republic of Tajikistan.

agricultural inputs and opportunities, bringing to the fore gender equality as a critical issue in agriculture. In this backdrop, several efforts are underway to address this, however, significant gaps are still evident. One of the reasons for these gaps, as brought out by analytical studies (ASA) conducted by ADB and FAO, is a lack of clear gender dis-aggregated data to aid in identifying barriers to gender equality more precisely which thence can be fed into the policies and programs. These ASAs have helped in creating a broad understanding of the 'gender in agriculture' in Tajikistan.

Looking back in times, low salaries and the scarcity of jobs in rural Tajikistan used to drive over 800,000 people, mostly men, to migrate out of the country in search of employment. Over 95% of such migration is to the Russian Federation. Such high levels of male out migration resulted in substantial increase in women's responsibilities in agriculture, in addition to managing household tasks. Women's participation in the labor markets of formal and informal jobs is mainly due to multiple demands on their time and energy where no family, community, or state-run support services exist. Informal jobs are those not registered or properly accounted and do not provide an official working status or social protection (pensions and social support for children); they do however, provide some flexibility and additional income, which is at times the main source of household income. This flexible and informal labor supply seemed to suit many production businesses that need low-paid workers, specially, agriculture. The outmigration of males in the agriculture sector-led to increased involvement of female labor -- an increase in women's participation rates in the agriculture sector, either as self-employed or as agricultural wage workers.

The role of Tajik women in agriculture, thus, falls under three categories: (i) agricultural wage or daily workers, (ii) women managing kitchen gardens, and (iii) Dehkan (family-based farm) farmers. These roles may overlap, especially the role of women as caretakers, small agricultural producers within their homes, and visible role as wage or daily workers that are often not recognized in official statistical reports. In 2018, 69% of women in Tajikistan were officially employed in the agriculture sector, compared to 41% of men. Yet, based on subjective perceptions of study respondents as wage or daily workers, women make up over 80% of agricultural labor.[35]

As stated earlier, detailed and explicit dis-aggregated data does not exists, yet, many of the recent analytical enquiries indicate that women, despite, high participation in agriculture, suffer from limited to access to key resources such as land, credit and livestock, as well as information including technologies and management practices. These characteristics are similar to that of such developing countries where agriculture is underperforming. This gets further substantiated by the fact that Tajikistan ranks 123rd of 149 countries on the global gender gap index, scoring lowest on women's economic participation and political empowerment.[36] The jobs women hold have little protection, security, or earnings. Higher female participation is a sign of a wider spectrum of labor opportunities as well as greater sensitivities to economic, social, and political events and the growth of women's power as decision makers.

Access to Land. In Tajikistan, access to land has a specific legal meaning. There is no private land ownership, but individuals have the right to use land through land tenure. In this gender profile, "ownership" of land refers to land use rights that are conveyed to individuals whose names are included on land certificates and licenses. Rural households typically have small plots, or kitchen gardens, close to the house, and may also have access to other types of land plots, for example, independently-held farmland (Dekhan farms) or presidential lands (land that was transferred to rural households through presidential decrees, in order to bolster the size of garden plots that were smaller than the national minimum). Although there has been significant gender sensitive reform of the Land Code, and eff orts to improve women's access to land in practice, the prevalence of traditions and customs mean that land certificates are most often registered only in the name of the male head of household. Women's lack of access to land is underpinned by several forms of inequality. Women often lack information about their rights to land as members of collective farms or about the process of land registration. Other women do not have the means, either financial or in terms of time resources, to undertake the registration process.

Despite their dominating role in agriculture, rural women lack access to land, finances, knowledge, and production inputs. Women do not have equal access to land in terms of land size. Legally, men and women have equal access to land,[37] but actual possession by women is very low. Women have bureaucratic barriers

[35] A Study of Women's Role in Irrigated Agriculture in the Lower Vakhsh River Basin, Tajikistan, ADB, 2020
[36] World Economic Forum. 2018. The Global Gender Gap Report.
[37] "The economy of Tajikistan shall be based on various forms of ownership. The state shall guarantee freedom of economic

in validating their land certificates and obtaining access to their land plots. Women are not excluded from possessing **land** in legal terms; however, in practice, they may be restricted in accessing and managing land, water, and other agricultural services. Available statistics of Khatlon and Sughd provinces show that few women own and manage farms (see Table 8. Sample Data on Female Farms in 4 districts in Khatlon). Some women received their land shares through the de-collectivization process or inherited from their parents. However, not all were able to get full rights to use the land. Many women still have their certificates with the farm manager who has the full right to decide on production and receive the benefit. The shareholders can legally take out their land from the large collective farms, but there are many uncertainties as to which land plot will be provided and obstacles in registering as entrepreneurs or Dehkan farmers.

Table 8: Sex-Disaggregated Number of Dehkan Farm Members of Water Users Associations of Yovon, A. Jomi, Khuroson, and Jayhun Districts of Khatlon[38]

Number of Dehkan Farms	Number of Dehkan Farms Led by Females	Portion of Dehkan Farms Led by Females (%)	Portion of Dehkan Farms Led by Males (%)
5,094	425	8.3	91.7

Decision Making at Households. Conventionally, males conduct all the decision-making within Tajik households. However, due to male outmigration, women have become de facto heads of the household and decision makers. Land plots may be left to be operated by female heads, given for use of close relatives or rented out. In some cases, males formalize the land rights in the name of their wives to prevent additional problems during their absence. Male respondents assume that authorities may treat female farmers better, especially if the actual land rights owner is a seasonal labor outmigrant. This arrangement may be considered beneficial to women, but men or other family members may still keep control and decision-making power. In practice, female Dehkan farmers make most of the production decisions alone or with the support of male family members, especially on buying quality seeds and fertilizers. At the same time, intra-household hierarchies among female members exist. Elder women are best positioned to make decisions that are accepted by other household members.

Access to Financial Services. Rural women are limited in their access to financial services and, except for those who own a farm (with a legal status), most do not have bank accounts. Some families with labor migrants use local formal and informal individual operators to transfer money. The reasons for families using such operators are related to accessibility and swiftness of transfers. If such solutions are not available locally, people may travel to the village or town centers to make the transfers via a bank branch. As an alternative, women from the same neighborhood (mahalla), groups of relatives, or wage workers often form of self-support groups, which help to accumulate necessary funds for urgent expenses. Such informal financial instruments allow women receive accumulated cash deposited by the group members and does not include any interest to be paid back. These groups consist of 10 to 15 members who are mostly colleagues at work such as teachers or hired workers and may be formed among several neighbors.

Access to Productive Resources and Information. Human, financial, and social capital constraints as well as traditions and norms hinder Tajik rural women access to new knowledge and skills. Although there are many different types of associations and groups in the agriculture sector, ranging from self-help groups to formal Dehkan groups, very few women participate in them. This is an unfortunate participation rate because these (informal and formal) groups deliver extension, training, and even credits.[39] This is reflected also in women's use of new technologies and access to productive resources and information, which are lower than men's. Female-headed households are also less likely to own their assets (instead they share equipment, or rent), and they use less inputs in their land. Constraints on women's access to and control

activities, entrepreneurship, equality of rights, and the protection of all forms of ownership including private ownership [Article 12]....Everyone shall have the right to ownership and inheritance…. [Article 32]." Government of Tajikistan. 1994. Constitution of the Republic of Tajikistan (amended 2003).

[38] Four Districts located in the Lower Vakhsh River Basin. A Study of Women's Role in Irrigated Agriculture in the Lower Vakhsh River Basin, Tajikistan, ADB, 2020

[39] USAID. 2014. AgTCA Tajikistan: Agricultural Technology Commercialization Assessment. USAID Enabling Agricultural Trade project. June 2014.

over resources, such as technologies and inputs, limit the success and sustainability of development. Deep seated perceptions and social norms about male and female roles in the household and agriculture cast women as lacking skills and knowledge either as farmers or farm managers.[40]

Project's Gender Related Activities. The project well recognizes that women play a critical and significant role in Tajikistan's agriculture. Further corroborates that addressing the gender gaps is essential to accomplish fully the development objectives. The Project will focus on closing the gender gap related to access of market, and information and services related to agri-logistics, such as sorting, cooling, storage, and packaging. It will reach out with information and awareness raising campaigns to women farmers and agri-entrepreneurs (on topics such as services offered, benefits of using ALC services, etc.) through means that are accessible to women so as to facilitate women's use of ALCs services. For example, given the low penetration of mobile telephony in rural areas, and especially for women,[41] the project can explore disseminating information through television, as 96 percent of rural households own one.[42] The project will have one result indicator to monitor actions related to Component 2, specifically PDO level indicator Female clients benefitting from ALC services; and it will disaggregate other indicators for gender (specifically Clients satisfied with quality of services provided by ALCs, and Clients who report that the two-way channel for feedback and response works). The ALCs are also expected to provide employment opportunities for rural women, including, but not limited to, processing and sorting personnel - tasks often attractive for women.

In line with this, a need for a Gender Action Plan (GAP) is proposed to be prepared which would help in promoting women's socio-economic advancement and empowerment through interventions at both macro and micro levels. The ultimate objective of the plan is to ensure that the project is able to serve women's strategic and practical needs. Ensure that women are given an opportunity to participate in the project and are represented in key planning and management structures. Scope of the GAP, however, will be restricted to the project's boundaries and as mapped around key seed production centers and value chain facilities. The GAPs' preparation will be led by PIU with the help of external consultants and would include the following processes.

1. Identify key seed production centers and value chain facilities. Map geographically the area of influence (district, jamoat, village or mahalla).
2. Conduct a rapid social assessment in the target areas – identify the role and functions currently played by different stakeholders (women, men, extension agencies, researchers etc..) in agriculture.
3. Ascertain the difficulties / deficiencies as expressed by different sub-groups of stakeholders as well as their expectations.
4. Prepare a Gender Map – outlining the role played in the farming by women vis-à-vis women at different stages of farming and identify Gender Gaps. Special focus would be on unearthing 'technology' requirements of women such as to reduce their workload (drudgery).
5. Gender mapping will need to be done at the level of the participating institutions too – Research, Extension, and other departments/ agencies.
6. Draw a plan of action to address the gaps. These will include capacity building programs (to be conducted at different levels); and Information, Education and Communication (IEC) campaigns.

5.3.5 Forced and Child Labor in Agriculture: Cotton Production

Historical Background. Between the 11th and the 16th century, Tajikistan was heavily ruled by the Turks, Mongols and Uzbeks. The Russian Empire took over Tajikistan from the Uzbeks. During that time (1897-1917), the nation experienced many economic and political advances, including the introduction of cotton. A revolt against Russian forces began in 1916 which eventually led to the transformation of Tajikistan into

[40] USAID. 2014. AgTCA Tajikistan: Agricultural Technology Commercialization Assessment. USAID Enabling Agricultural Trade project. June 2014.
[41] Only 54 percent of women own a mobile phone, with mobile phone ownership much lower in rural areas (48 percent) than in urban areas (71 percent). Source: Statistical Agency under the President of the Republic of Tajikistan, Ministry of Health - MOH/Tajikistan, and ICF. 2018. Tajikistan Demographic and Health Survey 2017. Dushanbe, Tajikistan: SA/Tajikistan, MOH/Tajikistan, and ICF. Available at http://dhsprogram.com/pubs/pdf/FR341/FR341.pdf.
[42] FAO, 2016. National Gender Profile of Agricultural and Rural Livelihoods – Tajikistan.

a full Soviet republic in 1929. During the 1980s a social movement began that led to Tajikistan's declaration of sovereignty in 1991. However, civil war soon broke out. The war lasted five years (1992- 1997) and resulted in nearly 50,000 lives lost, 500,000 people homeless, a crippled economy, and a legacy of political corruption and violence.[43] As a result, human rights issues came to the forefront - freedom of media religious pursuit, political intolerance, labor standards and actions by security forces. In particular, forced labor and child labor in the cotton sector received global attention. Consequently, Tajikistan took decisive steps on all front- legal, institutional and regulatory—towards eliminating forced and child labor. While the risks of child labor deployment have been on a secular decline, nevertheless, monitoring continues. Acknowledging such efforts, the proposed project would like to lend a hand to Tajikistan's child labor monitoring efforts.

Child Labor Risks. Child labor is often defined as work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development. It refers to work that is mentally, physically, socially or morally dangerous and harmful to children; and/or interferes with their schooling by depriving them of the opportunity to attend school; obliging them to leave school prematurely; or requiring them to attempt to combine school attendance with excessively long and heavy work. The worst forms of child labor involve children being enslaved, separated from their families, exposed to serious hazards and illnesses and/or left to fend for themselves on the streets of large cities – often at a very early age. Whether or not particular forms of "work" can be called "child labor" depends on the child's age, the type and hours of work performed, the conditions under which it is performed, and the objectives pursued by individual countries.

Legislation on Labor Rights. Tajikistan is in full compliance with the international treaties on labor standards. Labor rights provisions are stipulated in the Labor Code of Tajikistan. Forced Labor: Article 8 of the Code prohibits forced labor except when performed during military service and in extreme circumstances. The Civil Code of the Republic of Tajikistan (Chapters 800-802) states that contractual obligations can be changed only by the mutual agreement of all parties, and it is prohibited to place additional obligations on the parties. Article 35 of the Constitution of Tajikistan prohibits forced labor and involvement of women and children in hazardous and underground work. It also guarantees the right to labor, free choice of profession, protection of labor, and social guarantees from unemployment and equal wages for equal work.

Tajikistan is also a party to numerous international human rights treaties to protect workers, including the following United Nations (UN) and International Labor Organization (ILO) conventions: • UN International Covenant on Civil and Political Rights; • UN International Covenant on Economic, Social and Cultural Rights; • UN Convention on the Rights of the Child; • ILO Convention on Minimum Age (1973); • ILO Convention on the Worst Forms of Child Labor (1999); • ILO Convention on Forced Labor (1930); and, • ILO Convention on Abolition of Forced Labor (1957). According to the Constitution of Tajikistan and the Law on International Legal Acts of 1999, Tajikistan recognizes several international agreements as a fundamental element of the country's legal system.

Labor Code of the Republic of Tajikistan sets the minimum age at which a child can be employed as well as the conditions under which children can work. The minimum employment age is 15, but in certain cases of vocational training, mild work may be allowed for 14-year-olds (Article 174). In addition, there are some restrictions on what type of work can be done by workers under the age of 18, and what hours of work are permissible. Examples of labor restrictions include that those between 14 and 15 cannot work more than 24 hours per week while those under 18 cannot work more than 35 hours per week; during the academic year, the maximum number of hours is half of this, 12 and 17.5 hours, respectively. These limitations are consistent with the ILO Convention on Minimum Age. In addition, Law on Parents Responsibility for Children's Upbringing and Education makes parents responsible for ensuring their children not involved in heavy and hazardous work and they are attending school.

The Labour Code provides specific stipulations for students; work hours are restricted to only half of those allowed for non-student minors, and students are entitled to supplementary paid vacations, shorter working hours, and other privileges. Further, Article 19 of the Labour Code prohibits the disruption of the direct duties of education professionals and involvement of pupils and students in agricultural and other labour activities not related to the academic process. Chapter 26, Paragraph 4 of the Law of the Republic of

[43] Labor Conditions in the Tajikistan Cotton Industry, 2007 https://laborrights.org/sites/default/files/publications-and-resources/Tajikistan_report1007.pdf

Tajikistan "On Education" states: "In educational institutions, regardless of organizational legal forms and form of ownership, it is prohibited to divert pedagogical workers from performing their primary responsibilities, involve students, pupils, learners, post-graduate students to agricultural and other works not related to education and upbringing."

The Economy. Tajikistan is widely recognized as the poorest of the post-Soviet republics. The civil war of -- severely affected the country's economic and physical infrastructure, causing a decline in already frail industrial and agriculture production. points. Tajikistan's economy is mainly driven by agriculture and depends highly on the export of cotton both as a source of income and employment. Agriculture accounts for 48% of employment and 23% of GDP.[44] As of 2019, the country's GDP was $8.1 billion.[45]

Tajikstan's Cotton Industry. Tajikistan's only commercial crop – cotton- contributed 15% of the country's exports, 39% of tax revenues, and 22% of the GDP, and employs 50% of the country's labor force in 2007.[46]

History of Cotton Production in Tajikistan prior to the country's independence, the Soviet Union provided all financing for the country's cotton industry. The Soviet Central Planning Authority set production quotas for the country each year. Tajikistan's Ministry of Agriculture was given inputs including infrastructure services to plan production for the year. Agro Prom and the Ministry of Agriculture were responsible for allocating the capital necessary to meet target quotas established by the government to local administrators known as Khukumats. The targets given to the Khukumats were based on the determined quality and production capabilities decided by the Ministry, however the Khukumats paid little attention to these recommendations and simply passed unrealistic quotas on to farm managers. The farm managers were nominated by Khukumats and elected by their workers, who received salaries. Both the farm managers and workers received in kind basic necessities or other products at subsidized prices. The raw cotton was transported to assigned ginneries for further processing and then to the appropriate Soviet authorities. Meticulous production records were kept whereby payments were made back to AgroProm against the farmer's account. Farmers did not meet the allocated quotas were generally replaced. After the civil war, the government lacked the resources necessary to sustain cotton production. As a result, independent financers emerged to provide an alternative means of financing for the country's industry. Newly restructured farms enter into contracts with these futures companies, who provide inputs up front on credit to the farmers. In exchange, farmers were expected to produce a certain amount of cotton destined for predetermined gins. Once the raw cotton is processed into lint for export, the farmer's account is credited based on the prevailing price on the Liverpool Stock Exchange. If the farmer does not deliver the expected amount of cotton, debt is incurred with accruing interest.

Land reform, liberalization of the cotton sub-sector, the write-off of farmer cotton debts and reduced local government interference in farmer decisions ("freedom to farm") have been the focus of reforms since 2007. Results from the RICA survey (2013) demonstrate that freedom to farm is now a reality for majority of farmers in Tajikistan. Eighty-seven percent of crop producers report that they are "free to decide what crops to grow and how much land to allocate to each crop". Less than 1% of crop producers report that they are forced to sell to designated buyers by either local government or creditors. The land reform progressed further with the number of dehkan farms reaching more than 164,000 in 2017 (5.5 times more than in 2012) with 80 percent of arable land now under private dehkan farms (TajStat 2018). The reduction of land allocated to cotton and the associated increase in production of other crops affords further proof of the progress made with freedom to farm. Cotton production has now stabilized at around 180,000 ha, well below the post-independence peak of 293,600 ha in 2004. Around 80% of cotton production occurred in private relatively smaller size dehkan farms.[47]

Cotton Growing Regions Tajikistan is separated into five administrative regions/provinces. The two main cotton producing regions are the Khatlon region and the Sughd (Leninobod) Region. While 93% of Tajik land is mountainous, nearly seven percent (7%) of the country's arable land is located in the Sughd and Khatlon regions. According to the World Bank, 73% of Tajikistan's total population lives in these two regions. Within these two regions, the poverty rates vary; 17.5% of the population are considered "poor" in Sughd and 32.7% in Khatlon (2018). The Sughd region is located in the northwest corner of the country

[44] https://pubdocs.worldbank.org/en/209521554997976969/Tajikistan-Snapshot-Apr2019.pdf
[45] https://pubdocs.worldbank.org/en/417161587043463422/Tajikistan-Snapshot-Apr2020.pdf
[46] https://laborrights.org/sites/default/files/publications-and-resources/Tajikistan_report1007.pdf
[47] Tajikistan Resilient Irrigation Project (P175356), Concept Paper, 2021

well known as the Fergana Valley, bordering Uzbekistan to the west and Kyrgyzstan to the east. There are sixteen different districts in the area, most of which are the country's most fertile cotton producing land. The Khatlon region is the most populated region and is located in the southwest region of Tajikistan and includes about 25 different districts. Afghanistan borders the region to the southeast and Uzbekistan boarders Khatlon to the west. Russia is consistently Tajikistan's primary export market, holding nearly 30% of the market share. Tajik cotton fiber is also sold on the Liverpool Cotton Exchange, and to brokers in Latvia and Switzerland. Other CIS countries such as Uzbekistan and Kazakhstan are among the top importers of Tajik cotton fiber.

Over the past decade, ILO's third-party monitoring (TPM) has demonstrated Tajikistan's major progress in eradicating child labor and forced labor in the country. The Child Labor Monitoring System (CLMS) in Tajikistan has been developed in phases and piloted during 2008-2018, and it has become one of the main factors in decreasing the number of working children and eliminating the worst forms of child labor.[48] The country accomplishments are as follows:

- The National Children's Rights Commission (NCRC) under the Government of the Republic of Tajikistan was established in 2001.
- The Child Labor Monitoring Department at the Ministry of Labor (2009) was created which performs methodological analyses and trains the specialists who monitor child labor and collect statistics and other information study changing trends and other factors associated with them in the CLMS and promote effective methods for reducing child labor and preventing its worst forms throughout the country's regions.
- A pilot CLMS program was created and deployed in agriculture and in urban informal sector in 12 cities and districts;
- Child Labor Monitoring Commissions (CLMC) were established under targeted local executive state authorities as stipulated by decisions of the regional administration chairpersons. The committees included all the local executive authorities responsible for protection and observance of the rights of all children, including working children. Specialists from the Children's Rights Department who coordinate monitoring of child labor in each administrative district were among the committees' members. Monitors who are specialists in monitoring child labor work directly with children involved in the labor market. Analysis of the activities of the child labor monitoring committees or commissions within local executive state agencies has demonstrated that it is more efficient to monitor child labor at the level of administrative districts. The local authorities and structures – the Children's Rights Commission, the Department of Education, the Department of Internal Affairs – are responsible for dealing with child labor at the district level. They are able to promptly identify new locations where children work, take steps to recover children from the worst forms of child labor and redirect them without delay.[49]

Established in 2012 the Interdepartmental Coordinating Council on the Elimination of the Worst Forms of Child Labor (ICC) operates under the Ministry of Labor, Employment and Migration (MLEM), which is responsible for implementation of ILO technical and fundamental Conventions. Subordinate departments of the MLEM as well as the State Supervision Service for Labor, Employment and Social Protection are responsible for monitoring the labor market, including child labor monitoring. The MLEM has been made responsible for coordination of implementation of the National Program for Elimination of the Worst Forms of Child Labor in the RT for 2015–2020. The ICC includes representatives of the Ministry of Labor, Ministry of Education and Science; Ministry of Culture; Ministry of Health and Social Welfare; Ministry of Justice; Ministry of Finance; Ministry of Internal Affairs; Ministry of Agriculture; as well as representatives from the National Children's Rights Commission; Children's Rights Ombudsman; Statistics Agency; Federation of Independent Trade Unions of Tajikistan and its committees; Employers' Association; Committee on Women and Family Affairs of the Government of the RT; Youth Committee; and international organizations, interdepartmental commissions, and civil society organizations. The ICC is convened periodically every 6 months. Urgent issues concerning the implementation of the National Program for the Elimination of the Worst Forms of Child Labor and the results of statistical surveys,

48 Some Best Practices Employed in the Project "Combating Child Labor and Human Trafficking in Central Asia – Commitment Becomes Action" implemented in Tajikistan, 2019
https://www.ilo.org/wcmsp5/groups/public/---europe/---ro-geneva/---sro-moscow/documents/publication/wcms_717019.pdf
49 https://www.ilo.org/wcmsp5/groups/public/---europe/---ro-geneva/---sro-moscow/documents/publication/wcms_717019.pdf

evaluation and monitoring are considered during its sessions.

The 2012 Child Labor Survey held by the Agency on Statistics of Tajikistan in collaboration with ILO-IPEC stated that there were 2.2 million of children aged between 5 to 17 years in Tajikistan. Of them 23.4 percent or 522,000 were working children. The highest level of child employment (45.5 percent) was registered among boys aged between 15 to 17 years. However, the level of employment is also rather high among children aged between 5 to 11 years (26.9 percent). Although the child employment level is high, the school attendance rate remains no less high. It makes almost 100 percent among children aged between 7 to 15 years, while in the 16-to-17-year-old age group it reduces to 83.6 percent. Children more often combine their school studies with unpaid work in households. More than 20 percent of them combine school studies, work in households with paid employment. Thus, in the 16-to-17-year-old age group the share of children, who attend only school, makes up a mere 5.2 percent.[50] The 2016 Labor Force Survey implemented by the Agency on Statistics stated that there were 957,000 of children aged between 12 to 17 years in Tajikistan. Of them 13.1 percent or 125,000 were working children. Working children rate has decreased from 23% in 2012 to 13% in 2016.[51]

The Government of Tajikistan endorsed National Action Program (NAP) on Elimination of the Worst Forms of Child Labor for 2015-2020 outlining steps towards the elimination of hazardous forms of child labor for children aged below 18. This document defines the Government's policy on the social phenomenon of child labor and has ensured persistent and effective efforts to address it. Also the Government was approved the official list of jobs with harmful and hazardous working conditions for which it is prohibited to employ persons under the age of 18 and the maximum permissible loads that may be lifted by hand (Government Resolution #169, 2014). It includes such agricultural subsectors, like cotton watering and processing, greenhouses, tobacco collection and processing, shepardship and silk production. The supervision on implementation of the Government Resolution is assigned to the State Supervision Service for Labor, Migration and Employment under the MLME.

In April 2018 the National Action Plan for Implementation of Recommendations in the Third and the Fifth Annual Reports of the RT on the Implementation of the Convention on the Rights of the Child for 2018–2022 was approved, and its Paragraph 31 stipulates the measures suitable for combating illegal forms of child labor and implementation of child labor monitoring in all cities and regions by the MoLME and the Commission on Child Rights under the Government of the Republic of Tajikistan. Considering the efforts taken and improved context, the systematic child labor violations can no longer be considered a serious concern.

Project's Child Labor Monitoring Measures. The project emphasizes and supports the approved regulations on forced labor and reduction of child labor and elimination of its worst forms. The project will support measures to ensure no forced labor and child labor is used within the project activities. To this effect, appropriate and adequate monitoring efforts will be made. However, as of now, the project's geo print is not known. So, difficult to draw measures in detail. So, approach and methodology towards monitoring child labor will be elaborated in the Project's Operational Manual during the implementation. Broadly, the measures would hover in and around places wherein project will intervene. They are likely to be the following: seed production centers, logistic support centers and research and development centers. The monitoring will be supplemented/ complemented with appropriate need-based capacity building programs.

- *Project Institutions*. All the agencies participating in the project will be obliged to comply with all the legal provisions which are elaborated in the LMP, a reference to this effect is also made in the ESCP.
- *Generic Capacity Building*. Specifically, project will develop synergy with the district level children rights departments in raising awareness of local dehkan farms on legal restrictions on the use of child labor; and capacity building of regional project offices (RPOs) in monitoring of child and forced labor at the project sites. For this purpose, PIU will collaborate with specialists and labor inspectors from the Ministry of Labor, Migration and Employment (MLME) to: (i) provide regular trainings to khukumats and RPO staff on labor practices and use of monitoring tools; (ii) monitor and report on any cases identified; and (iii) implement a public awareness campaign on labor rights, practices, and grievance redress mechanisms. The PIU will build an internal communications

[50] *http://no-childlabour.tj/ru/Child%20labor%20statistics%20in%20the%20Republic%20of%20Tajikistan/*
[51] Agency on Statistics, 2017

channel with MLME's State Supervision Service to report on cases of forced and child labor submitted through the Project's GRM and facilitate the investigation process.

- The PIU will also engage with the *Employers' Association Republic of Tajikistan and National Association of Dehkan Farms of Tajikistan* to raise awareness of farmers and agricultural employers on legal restrictions on the use of child labor and forced labor.
- Making use of *CSOs and NGOs*.
- The PIU will also try and explore how *ILO and UNICEF* could be involved in the project's efforts.

5.3.6 Poverty and Vulnerability

Despite various efforts to promote growth and development in Tajikistan, the country is still hampered by high levels of poverty and limited economic opportunities. In Tajikistan, 27.4% of the population lives below the national poverty line in 2018. There are significant variations in the poverty rates among the regions with poverty being predominantly the rural phenomena. The average poverty rate for urban areas is 21.5%, while the same indicator for rural areas was 30.2% in 2018. By regions, the lowest poverty rate is in Sughd, which is 17.5%, and the highest is 33.2% in the Districts in Republican Subordination, while in GBAO the poverty rate was 27.7%.[52]

Poverty rates fluctuate considerably during any given year resulting from the availability of the employment and remittance income. Job creation was slow and unable to keep pace with a fast-growing population.

The issue of the working poor continues to be one of the dominant features of poverty in Tajikistan. Half of the employed in the domestic labor market are poor. Almost 80 percent of the working poor live in rural areas. Low labor incomes and high prevalence of temporary work arrangements, informality (no labor contract), and unpaid work are the main reasons there are so many working poor.

Migration, mostly in the form of temporary work abroad, has become one of the key strategies for households to cope with poverty. The analysis indicates that a quarter of households have at least one migrant abroad. In households that have migrants, remittances account for as much as 35 percent of household consumption—and even more for the households in the lower deciles of the consumption distribution. The Tajikistan migration model is one of predominantly seasonal low-skill migration, with 96 percent of the migrants heading to Russia, and of those, 55 percent worked in the construction sector, and another 30 percent in other low-skill jobs.[53]

Against a background of high poverty and low employment, Tajikistan runs a rudimentary social protection (SP) system dominated by old-age and disability pensions. The largest program in terms of coverage is the old-age pension, which is received by one-third of households. Total social assistance spending is very low—at 0.5 percent of GDP it is the lowest in the ECA Region—and programs are small in size and benefit coverage. Less than 1 percent of households receive any of the smaller social assistance benefits, such as the gas and electricity compensation. To improve the SP system and its impact on poverty, the Government of Tajikistan introduced a targeted social assistance to achieve a higher coverage of the poor and vulnerable, though they are considered very small payments.

[52] *https://www.worldbank.org/en/news/infographic/2019/10/17/poverty-in-tajikistan-2019*
[53] Jobs and Skills Assessment, 2018

VI. PROJECT ENVIRONMENTAL AND SOCIAL IMPACTS

The project will generate positive social and economic benefits through the creation and maintenance of the necessary infrastructure. However, certain types of activities that will be financed under the project may result in several adverse environmental impacts, mainly during the construction phase of the planned sub-projects. These impacts will be related to waste generation, noise, dust and air pollution, impacts from possible pesticide use, health and safety risks, etc. It is expected that they all be typical of small-scale construction/rehabilitation work, temporary in nature and site-specific, and they can be easily mitigated by applying the best construction methods and appropriate mitigation measures.

A summary of potential environmental and social risks and impacts during the implementation of the project that, along with the recommended mitigation measures, is presented in Table 4 below. The proposed measures can be used to develop site specific ESMP for selected subprojects.

6.1. Potential environmental impacts and risks

The project will generate a series of environmental impacts and risks:

Identified impacts of pesticides on soil and groundwater contamination and on the health of farmers. Some existing studies on pesticides exposure have shown an increased incidence of respiratory diseases, rheumatism, malignant neoplasm of the digestive system, nephritis, gastric ulcers and nervous diseases in the areas with high pesticide concentrations presumably located near depositories. However, there is no reliable data to support this statement. It is considered that excessive and uncontrolled application of pesticides in agriculture during the Soviet era has led to significant contamination of soil, water and other environmental media. According to some documents, concentration of pesticides in food products during the 1970s and 1980s was 7 to 10 times the Maximum Allowable Concentration (MAC) . There is no reliable information on the current levels of soil/ground water contamination by used pesticides. Similarly there are no evidences and data about the pesticides health impacts. It is widely considered that dehkan farmers cannot afford to buy pesticides on their own and thus such impacts are minimal. Even when dehkan farmers have access to pesticides, i.e. supplied by investors; the concentrations the dehkan farmers apply are usually lower than required . At the same time, everybody agrees that there are instances when dehkan farmers apply cheap but ineffective or obsolete pesticides that do not eliminate pests but damage micro-flora of the topsoil. Since there is no reliable information on soil/groundwater contamination, health impacts, it is possible to assume that inadequate transportation, storage, and application of pesticides can potentially cause soil and groundwater contamination as well as the health o farmers.

Waste generation will take place during the construction phase and during civil (construction/repair) works and the dismantling of the premises and individual building elements. Waste generation - two types of waste are expected to be generated because of project work implementation: non-hazardous and hazardous. Non-hazardous wastes will be represented by construction wastes, which will be generated during construction/repair works. Storage of such waste in areas close to populated areas and untimely or inappropriate disposal can effect air quality, dust generation and affect neighboring communities. In addition to this waste, used welding rods, packaging materials and wood will also be generated. Generally, most of the waste that will be generated at this stage relates to recycled waste and its timely and correct disposal will ensure minimal environmental impact. Construction waste as well as other waste (paper, glass, plastic, etc.) should be classified into separate containers. Hazardous waste - can be generated at the stage of functioning of such sub-project as technology transfer (demonstrations at the extension service and on farmers' plots, demonstration orchards and greenhouses. As indicated in Table 4, special attention should be paid to the handling of pesticides. Waste disposal sites should be carefully selected at the construction site, and waste classification and recycling rules should be prepared in environmental management plans.

Waste Management Plan will be prepared to adequately handle all types of waste generated during Project implementation.

Air pollution is mainly expected to be caused by dust and construction equipment emissions. Dust generation will occur during the majority of construction/rehabilitation activities related to excavation, traffic, renovation of buildings, etc. In particular, the risk of dust pollution will increase in windy weather. The magnitude of the impact will increase when construction/rehabilitation works are carried out in the

vicinity of a populated area. Given the nature of most of the works, this impact is expected to be short-term, low-risk and can be mitigated by implementing the measures recommended in Table 24. However, additional measures (most often watering, installation of a dust screen) may be required for subprojects involving the dismantling of existing buildings. Particular care should be taken when coming into contact with toxic asbestos dust, which may occur when removing thermal insulation or roofs containing asbestos gaskets. Personnel should wear protective masks. Adverse impacts can be prevented by applying best construction practices and appropriate mitigation measures.

Noise pollution can occur mainly during the operation of the equipment and the movement of trucks. Noise levels are not expected to exceed the established limits during project activities. Noise pollution can be mitigated by using recommended measures. Given the specific nature of the project, vibration is not expected to affect human health and structural integrity as there will be no significant vibration generation activities. Sanitary Norms CH 2.2.4/2.1.8.562-96 are used in Tajikistan to ensure acceptable noise levels for residential areas. These rules and regulations establish permissible noise parameters for residential and public buildings and residential development of inhabited areas created by external and internal sources and the noise level should not exceed 55 dB(A) during the day and 45 dB(A) at night.

Surface water pollution. Earthworks, oil storage, storage of hazardous materials will be sources of pollution of river water if the watercourse is nearby. Leakage of oil, hazardous materials, debris, and household waste can lead to chemical contamination. All fuel and chemical storage facilities (if any) should be located on a sealed basis inside the bund and protected by a fence. The storage area should be located away from any watercourse or wetland. The base and bund walls must be impermeable and have sufficient capacity to hold 110% of the tank volume. Do not dispose of lubricating oil and other potentially hazardous liquids in the ground or in water bodies.

In the event of an accidental spill, immediate cleaning will be carried out. All cleaning materials must be stored in a safe place on the site where hazardous waste can be disposed of. The surface water treatment plan should be carefully planned during the feasibility study to meet the discharge water quality standard. A sedimentation basin, neutralization tank, and standby tank should be prepared for inundation. The plan is included in site-specific environmental management plans.

Soil contamination. Leakage of fuel, lubricants, debris and pit latrines can cause soil contamination. A possible source of soil contamination should not be located near a natural source. The surface runoff from the construction site should be removed. All surface tanks with fuel and lubricants will be equipped above the ground and the integrity of their walls will be monitored at all times. Rules for registration, treatment and storage of hazardous materials, a soil pollution prevention plan and a fire safety plan shall be prepared in environmental management plans.

Pollution with asbestos dust - asbestos dust generating during demolishing of old roofs from rehabilitated/re- innovating buildings may cause a serious risk for health of people living in houses next or close to construction sites.

For such cases prior conduction construction works, contractor will have to develop a special Asbestos Management Plan in template provided in Annex 1. The Asbestos-Containing Materials Management Plan (ACMMP) describes and evaluates the risk of contractors (and others) encountering asbestos-containing material (ACM) at the Project construction sites during the implementation stage of the project; and it provides a procedure for dealing quickly and safely with any ACM that may be found. The WB ESS 3: Resources Efficiency and Pollution Prevention requires that WB-funded projects apply pollution prevention and control technologies and health and safety measures that are consistent with international good practice, as reflected in international standards such as the IFC/World Bank Environmental, Health and Safety General Guidelines (2007). If national legislation differs from these standards, the borrower is required to achieve whichever is more stringent. The only regulation of Tajikistan on asbestos, the regional multi-state agreement, Interstate Standard GOST 12871-93 signed by Tajikistan, regulates interstate trade and transport of chrysotile asbestos. However, the procedure does provide clear description of handling ACM, therefore, the ACMMP follows the World Bank Guidelines

The main principles of the ACMMP is (i) prompt and effective action to contain and deal appropriately with the ACM (including safe management and disposal); and (ii) maintaining the safety of site personnel and the general public at all times. The ACMMP is designed for use by Contractor, RPCU and the Project Implementation Unit (PIU) to manage the ACM risk over the project as a whole, and by contractors to deal efficiently with any ACM they or their workers encounter. The procedural element of the ACMMP is

therefore designed to provide straightforward instructions that can be easily and quickly understood without the need for specialist knowledge and without referring to other sources.

Loss of vegetation - all design works will be carried out within existing facilities, no significant impact on flora is expected.

Chance finds - some of the project cities are located in places where presence a chance of finding archeological heritage. It is expected that during construction of agro-logistic centers, new laboratories on borders which would involve significant excavations, movement of earth, or other changes in the physical environment, during which unexpectedly might be found physical cultural resources. To address this issue all such subprojects' ESMP, will have special clauses in all contracts for civil works on "chance finds procedure" which will set out how chance finds associated with the subproject will be managed.

6.2. Impact on biodiversity

It is anticipated that some of the project activities may lead to the impacts on biodiversity due to use of chemicals (pesticides and herbicides) and introduction of new variety of hybrid seeds. Under the project **no GMO** seeds will be used.

6.3 Potential Social Impacts and Risks

In general, project areas are essentially different regions and are exposed to common risks of instability and conflict, which will affect the final results of the project. Thus, the project areas are characterized by: (i) geographical risks - inter-regional and inter-district risks; (ii) economic risks - high unemployment, especially among young people, and a significant dependence of household incomes on remittances, which is subject to external economic conditions and fluctuations; (iii) social exclusion; and (iv) institutional risks - insufficient client potential in applying SES. Social exclusion and institutional risks are specific to a "project". As a result, the following issues become relevant in the context of the project:

6.3.1 Resettlement Impacts

Access restrictions. The second and third components involve civil constructions, some anew and others repairs and rehabilitation. At the implementation stage there will be some social consequences caused by construction. Construction work within the framework of some local infrastructure projects may result in a not significant restriction of access to houses, land, or other private or public property. Construction and / or reconstruction may also cause certain inconvenience to the population. The ESMP for individual buildings prepared as part of the project should include, if necessary, measures to mitigate potential adverse impacts and risks, and the construction of public buildings should be carried out at each construction site before the start of construction of civil facilities.

Land Acquisition. The new construction will invariably require 'lands', but it will be limited to 2-3 facilities. While the project is expecting that the Government will make available lands, due diligence is required to ensure that there are no resultant physical; and/ or economic displacements. Since locations are not defined yet, the MoA/PIU has prepared a Resettlement Policy Framework (RPF) to guide activities in this regard. The RPF defines the procedures for: (i) acquiring land (after all technical alternatives have been exhausted), (ii) dealing with any residual impacts from land acquisition (i.e. identifying, establishing the valuation of, and compensating people that suffer economic losses or loss of private property), (iii) monitoring and verification that policies and procedures are followed, and (iv) grievance redress mechanisms. Where resettlement-related impacts will be identified, site-specific Resettlement Action Plans (RAPs) would be prepared by the MoA/PIU in accordance with the RPF. Project activities that will cause physical and/or economic displacement will not commence until site specific RAPs or abbreviated RAPs (ARAPs) acceptable to the Bank will be consulted upon and implemented.

6.3.2 Social Exclusion Risks

Establishing a 'seed' system warrants not only development of appropriate farmer friendly technologies (which includes knowledge, skills and management practices) but also disseminate them country wide. Technology development and dissemination needs to be effective and inclusive, reaching out to the nook and corners of the country as well as different sub sections of the farming community including marginal/ small farmer households, women and other vulnerable sections. So one of the key challenges for the project will be to ensure 'inclusion'. However, exclusion may happen due to differentials in: (i) geography – given the vast expanse of the farming community and that some of the terrain is mountiinous and remote, on the Afghanistan border, it is likely that some areas may not be covered by the project; (ii) scale of farming – large and richer elite farmers may receive preferential treatment; (iii) absorption capacity - technologies developed may be more friendly to large farmers; and (iv) administrative expediency and economy in reaching out to the 'elites' vis-à-vis huge social intermediation efforts required for mobilizing as well as capacitating the vast number of small and marginal farmers across the country.

The risk of exclusion will be addressed to a large extent through a Stakeholder Engagement Plan (SEP) supplemented with community mobilization plan and an effective information and education campaign (IEC).

Disadvantaged and vulnerable groups under the project are likely to include farmers in remote areas and women groups, especially women engaged in seasonal agricultural work, female-headed households and women farmers who by virtue of constraining social norms and social networks may find it harder to obtain information about the project benefits. SEP will envision measures to ensure that disadvantaged and vulnerable groups have equal opportunity to obtain information and benefit from project activities, as well as have channels for grievance and redress if negatively affected. Such activities will include tailored awareness and information campaigns including targeting women and mahalla-level meetings which community members of all backgrounds and remote areas can join, distributing information materials through multiple channels such as media, social media, and mahalla leaders, emphasizing the rules and principles of equity and non-discrimination for example in relation to employment opportunities in all training and consultation activities.

6.3.3 Labor Risks

The project proposes some small/ medium scale infrastructure for the construction or rehabilitation of genetics banks, seed laboratories and agri-logistics centers; therefore, the majority of contractors are expected to be from the local vicinity. The expectation is that the majority of labor will be locally hired with the exception of a few skilled workers. The labor camps will be small in size and no residential labor camps are anticipated at this stage.

The risk of child labor/forced labor is considered to be limited, as based on the national legislation the contractors have to comply with the minimum age of employment and mutually agreed written contracts. However, according to the Tajik Labour Code, the persons between 14 and 16 years old may also be employed with reduced working hours, for employment that is not considered heavy or hazardous, and with parental permission and outside the school hours. For civil works no child labour is allowed; for agricultural works farmers might engage their 14 above children at home plots outside the school hours, however the agricultural workers are not considered the project workers as per ESS2 definition.

The SEA/SH risk is assessed as moderate mostly due to the status of national Gender-Based Violence (GBV) legislation, gender norms, and the rural location of most project activities. The SEP will also describe the project-specific Grievance Mechanism (GM) which will accept, review, and seek to resolve any project related concerns or feedback, and be easily accessible to project-affected parties and local communities, among other stakeholders. GM will have a special window to address SEA/SH complaints such as to ensure privacy and dignity of the affected persons.

The MoA/PIU will prepare Labor Management Procedures (LMP), which outlines the type of project workers, labour conditions and associated labour risks, as well as mitigation measures. Provisions will be also made to train and hire as many as possible workers from local communities where the activities are taking place.

6.3.4 Health and Safety of Workers and Community

For workers - Safety and health non-compliance may create a risk for construction workers. The Contractors will have to follow Occupation Safety and Health rules, which include among others strictly implementation established norms and procedure H&S which depends on type on conducting works, usage of PPE, training activities and monitoring. In addition, all workers need to be introduced to working procedure with hazardous materials (such as asbestos materials, etc.). Contractors have to provide workers with appropriate living conditions: safe water supply, washing conditions, rooms for rest and etc.

For community - Inadequate lighting and fencing of construction sites inside of settlement areas can be dangerous for pedestrians and vehicles especially during the night-time. Increasing of traffic due to trucks and vehicles movements to construction sites may cause inconvenience for local population as well. In addition, some construction/rehabilitation activities will cause temporary blockage of household access. Untimely and inefficient disposal of solid waste and improper sanitary conditions generated by the construction workers at construction sites and labor camps may cause pollution of the surrounding environment and affect the health of local people. Moreover, a movement of heavy tracks may destroy or deteriorate conditions of roads inside settlements.

Increased *exposure of farmers and their families to dangerous agrochemicals* could also be considered as a significant risk. Farmers' exposure mainly occurs during the preparation and application of the pesticide spray solutions and during the cleaning-up of spraying equipment. Farmers or their family members who perform manual labor in areas treated with pesticides can also face major exposure from direct spray, drift from neighboring fields, or by contact with pesticide residues on the crop or soil. This kind of exposure is often underestimated. The site-specific Pest Management Plans to be prepared during the project implementation will address these issues.

Mitigation Measures

Mitigation of environmental impact. *Table 4* presents the Environmental and Social Management Matrix which stipulates along with the summary of the main potential impacts on the environment and social sphere, on the health of farmers, communities, proposed mitigation measures. Potential adverse impacts will be mitigated primarily through information dissemination, capacity building, avoidance and preventive activities. In this regard the updated ESMP also contains: (a) *safety measures for handling treated seeds and fertilizers*. Environmental concerns with distribution of the seed material and fertilizer are related to the possibility that the seed material might be used for consumption. Seed material that has been treated with agro-chemicals will be dyed and will contain a repellent and/or emetic to prevent use of the seed material for consumption. The training (which will be provided as part of the assistance packages) should ensure that local populations are informed of the meaning of these dyes, and the repellents to avoid ingestion of possibly treated seed material; (b) *mitigation of potential pest management activities*. These will also include capacity building, information dissemination and public awareness and trainings on pest management along with demonstrational activities on most important agricultural crops; and, (c) *information dissemination and training activities* concerning safe handling of treated seeds, fertilizers and pesticides for the involved participants – farmers, local and district authorities. Additionally the ESMP contains also an outline of a *training program on sustainable land use practices*, including information about full implications of mono-culture on soil fertility, land degradation and crops quality. All proposed trainings are aimed at minimizing the potential impacts of supplied seed and fertilizer packages and further application of pesticides and should ensure that there will be no wastes in the result of their usage, that transport and handling, as well as application, are made in a safe and effective manner. The trainings are also will provide the knowledge on types of pests, most effective methods of pest management, basic information on permitted and prohibited pesticides and other learned lessons.

Safety measures for treated seed usage and handling

Minimizing of risks for treated seeds usage. Although the chemically treated seeds have important benefits, they also pose certain risks associated with accidental expose of environment and of farmers during their inappropriate handling and usage. These risks can be minimized by providing relevant training on proper use of seed treatment pesticides. The following recommendations contain main safety requirements in this regard.

General remarks. The treated seeds should be handled with care. They should not be GMO. Product labels must provide information on safe their handling and application. The seeds users always should read the label and follow instructions precisely. The label also should provide the applicator with information about first aid, potential environmental hazards, as well as for their use and proper storage. The treated seed users must also strictly follow the personal safety measures, described below.

Treated seeds label. Treated seeds must be associated with a label which contains the following information:

- Warning statement; such as Danger—Keep out of Reach of Children or Poison— Handle With Care;
- Type of seed and treatment rate;
- Kinds of pests controlled;
- Safety precautions in handling and use of treated seed;
- Disclaimer or warranty clause;
- Mixing instructions;
- Compatibility remarks;
- Antidotes;
- A caution statement if the substance used in the treatment in the amount remaining with seed is harmful to humans or wildlife.
- Procedure to follow in case of an accident. and
- The name, address, and phone number of a responsible party to contact in case of problems

In presenting this information should be taken into consideration the following: (a) the information should be in type no smaller than 8 points indicating that the seed has been treated; (b) only the commonly accepted, coined, chemical or abbreviated chemical (generic) and name of the applied substance and rate of application should be used; (c) seed treated with a "restricted use" toxic substance shall be labeled as "poison treated" in red.

Treated Seed. Treated seeds storage and handling requirements include the following:

- Must be stored in a dry, well ventilated location separate from untreated seed;
- Should never be stored in bulk storage bins that might also be used for edible grain storage;
- Be stored in special multiwall (3- or 4-ply) or tightly woven bags. Some polyethylene or foil-lined bags are also good containers for treated seed;
- Make sure seed is thoroughly dry before bagging, as excessive moisture can cause rapid deterioration of the seed;
- Clearly label the seed (as described above) to indicate the type of seed treatment;
- Strictly prohibit their usage for food, feed, or oil purposes;
- Must be planted at an agronomically acceptable seeding rate;
- Surface treated seeds application without incorporation present a hazard to humans and animals and is illegal.
- Careful planning of the quantity of seed is essential, since disposal of treated seed may be a problem. One solution is to plant any unwanted seed and then disk it after it emerges if you do not want the crop. Otherwise, treated seed may have to be disposed of as a solid waste.
- Planter hoppers should be filled outdoors.

Personal Safety. It is always necessary to use caution when handling treated seeds and remember that exposure to seed treatment pesticides may cause a wide range of acute and chronic toxic reactions in people. When handling seed treatment pesticides:

- Read and become familiar with the label for each pesticide that you use. Make certain that these documents are readily available at all times, and refer to them in the event of an accident;
- Avoid inhaling pesticide dust or vapor, and always protect skin and eyes from exposure;
- Use proper protective equipment recommended by the pesticide label. Consider wearing goggles, rubber gloves, and a rubber apron, even when the product label does not specifically require it;
- Wash thoroughly with soap and water after handling treated seed and before eating or smoking;

- In case of exposure, immediately remove any contaminated clothing and wash the affected area thoroughly with soap and water;
- When using large amounts of seed, change clothing frequently enough to avoid buildup of pesticides;
- No matter how tired you may be, shower immediately after work and change all clothing.
- Wash clothing thoroughly (separate from the family wash) before reuse.
- The distributing of treated seeds personnel must be provided with protective clothing such as (a) coveralls, (b) cap, (c) protective glasses, (d) rubber apron, (e) rubber boots, (f) rubber gloves, and (g) respirator designed for use with the material. A safety shower should be installed in the immediate vicinity of the seeds distribution place.
- The distribution places of seeds should be isolated and not operated in the vicinity of other personnel or farm commodities that are to be used for food, feed or oil.
- Do not run contaminated water into stream or public sewer, but discharge into a shallow ground pit.

Hazards associated with the disposal of unused treated seed and empty treated seed containers. In order to avoid any hazards in these cases it is necessary to respect the following rules:

- Do not reuse empty treated seed containers and bags.
- Destroy them and low germinating seed by mutilation and burying at least 50 cm deep in an isolated area away from water supplies.

Safety measures for mineral fertilizers usage and handling

General remarks. Similarly as in the case of treated seeds, fertilizers usage may provide important benefits, they also pose certain risks associated with accidental expose of environment and of farmers during their inappropriate handling and usage. To avoid adverse environmental impacts while using mineral fertilizers it is necessary to comply strictly with a series of requirements, stipulated in the existing legal documents as well as in the fertilizers Guidelines for their handling. The rules and procedures of production, storage, transportation and usage of the mineral fertilizers are reflected in a relatively small number of documents, and most of them were adopted at the time of the USSR. The main stipulations of these documents with regard to environmental and health safety issues are presented in the *Annex 10*. The numeration of the articles and points in each normative act is similar to the original document.

Main requirements. The usage of different mineral fertilizers should be done depending on such factors as type and quality of the soil, type of the crop, system of crop rotation, weather and climate conditions, ways and terms of their application. To ensure this, special information dissemination and training activities will be developed under the project (see point 98). At the same time, a series of requirements of proper fertilizers handling should be enforced.

Provisions with regard to fertilizers storage:

- Keep stocks of fertilizers, and soil amendment materials to the minimum required.
- Ensure that the storage facility is appropriately secured.
- Fertilizers, and soil amendment materials are not to be stored in contact with ground surfaces.
- Storage areas/facilities are to weather-proofed and able to exclude runoff from other areas.
- Do not store in close proximity to heat sources such as open flames, steam pipes, radiators or other combustible materials such as flammable liquids.
- Do not store with urea.
- Do not contaminate fertilizers, and soil amendment materials with other foreign matter.
- In case of fire flood the area with water.
- If augers are used to move the material ensure that any residue(s) in the immediate area is cleaned up.
- Dispose of empty bags in the appropriate manner.

Provisions with regard to fertilizers field usage:

- Keep fertilizer amounts to a minimum and covered to avoid unnecessary expose to open air.
- Keep spreaders and air seeders that are left in the field overnight covered.
- Cover spreader and air seeders between jobs.
- Ensure that the drill, air seeder and/or fertilizer box is completely empty at the end of each day. If the drill, air seeder and/or fertilizer box cannot be fully emptied fill to capacity prior to storage for the night.
- Do not store dry urea with dry ammonium nitrate.

Ensuring minimization of hazards associated with inappropriate handling and usage of fertilizers:

The Table below provides information about typical hazard scenarios that that may arise in conjunction with the procurement, handling and storage of fertilizers as well as the recommended measures to control the potential risks.

Typical hazard scenarios and recommended measures

Likely Hazard Scenario	Recommended Control Strategy
Spillage	• Ensure all storage areas and/or facilities are secure and appropriate. • Ensure all fertilizer products can be contained within the storage area and/or facility selected • Provide appropriate equipment and materials to clean up a spillage
Transportation and delivery of goods	• Cover any loads of fertilizer products whilst in transit • Ensure that deliveries of fertilizer products are made at appropriate times • Do not accept any containers of fertilizer products that are damaged and/or leaking • Ensure that any spillages that occur during delivery are cleaned up appropriately.
Drift of dust from storage areas and/or facilities	• Keep fertilizer products covered and/or sealed • Clean up spillages promptly • Keep "in use" stocks to the minimum required • Staff responsible for storage areas and/or facilities to will ensure that the drift of dust beyond the perimeter is kept to a minimum.
Storage areas - Floors	• Keep floor surfaces swept clean of fertilizer to prevent tracking by people and/or vehicles beyond the perimeter. • Sweep up and dispose of spillages in a timely and appropriate manner
Cross contamination of product	• Keep each fertilizer product will in a separate storage container and/or position within the facility and/or area.
Confusion of Product	• Maintain an accurate storage manifest/register. • Keep products and blends are segregated at all times. • Ensure all storage bays and bins are clearly labeled. • Ensure all storage, loading and blending plant and equipment is cleaned from all residues when changing from one product to another. • Do not store product in bags that are not correctly stamped
Occupational Health and Safety	• Contact between fertilizer products, people and livestock will be minimized.
Risk Assessments	• Risk Assessments are required to be conducted on the procurement, storage and handling of fertilizer products.
Contact with people and livestock	• Managers will develop, implement and monitor the effectiveness of hazard management procedures • All persons using fertilizer products are to adhere to the University's hazard management procedures and adopt safe working practice and ensure that direct contact with fertilizer and the inhalation of fertilizer dust is minimized. • Managers are to ensure that staff and students are made aware of any State, Federal, local and industry regulations which have to be observed.
Personal Protective Equipment	• Staff/students must be provided with appropriate PPE when using fertilizer products.

Lack of appropriate warning safety signage and information	• Managers must ensure that appropriate safety warning signs and/or information is displayed/available regarding nature of hazards and risk control measures.
Poor housekeeping and/or routine maintenance	• All staff are responsible for implementing sound housekeeping practices in storage areas and arranging regular routine maintenance for all equipment used.
Defective &/or unserviceable plant & equipment	• Conduct regular inspection & testing of equipment and infrastructure to identify what maintenance requirements
Incorrect or inappropriate mixtures of product	Fertilizer blends to be prepared using the right raw materials in the appropriate proportions. All products will be loaded into spreaders etc in the right condition to the right weight.
No training	• Staff will undertake appropriate training.
Lack of appropriate records &/or documentation	• All relevant records and documentation to be kept and maintained eg training records, risk assessments, maintenance schedules, recipes for fertilizer blends, MSDS's etc.

Mitigation of potential impact of the pest management

Generally mitigation of potential pest management impacts relies on a series of measures dealing with: (a) policy and institutional strengthening; (b) capacity building; (c) information dissemination and public awareness; and (d) targeted investments in improving pest management infrastructure. The proposed within this project activities would cover mostly capacity building and information dissemination, training and public awareness, along with demonstrational activities on Integrated Pest Management. The Table 4 contains a special matrix with the proposed activities in this regard, expected results, and performance indicators.

6.3.5 Institutional Capacity to Comply with new ESF

Insufficient capacity to apply ESSs at national and local levels (participatory planning, project management and supervision). Considering that the implementing agency and line ministries have limited experience in applying ESSs, and local authorities and local construction organizations do not have experience in implementing ESSs, training seminars will be held on environment and social procedures related to the project (reduction of environmental risks, environmental and social screening and environmental and social management plans).

Table 4: Potential Environmental and Social Impacts and Mitigation Measures

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
COMPONENT 1: STRENGTHEN SEED, SEEDLING AND PLANTING MATERIAL SYSTEMS							
1	Subcomponent 1.1 Enabling environment	No environmental impact Ineffective and unsystematic stakeholder engagement	-	Limited coverage of non-state actors by IEC	Moderate	Stakeholder Engagement Plan will be developed, implemented and reported.	negligible
2	Subcomponent 1.2 Research and development Civil works, such as the construction of new and/or rehabilitation of existing office and laboratory buildings, development and rehabilitation of research infrastructure e.g. irrigation facilities, greenhouses, lath houses, etc.	Impact from cutting/clearing of trees and other vegetation	Low	Trees and vegetation at the site	Moderate	Cutting of trees will be undertaken as per approved design and only upon approval. The cutting of trees will be avoided as much as possible and damage to vegetation minimized.	negligible
		Impact on historical and archaeological sites such as damage to relics and artefacts during the conduct of the works	Low	Archaeological artefacts and cultural heritage sites	Low	Contractor will ensure that the workforce is briefed that in the event of accidental finds of relics, they should immediately cease any works in the area and promptly report the find to their supervisor.	negligible
		Temporary disruption of existing community roads, pathways, and access	Low	Residents and owners of commercial/ businesses in the surrounding areas	low	Walking access will be maintained to the affected properties and access routes. Particular attention will be given to ensuring safety along roads and paths used by locals. The contractor will be required to immediately rehabilitate the excavated areas and any damaged road and path sections.	negligible

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Air pollution from dust (PM10 and less) and air emissions from earthworks and movement of vehicles posing nuisance and health risk to nearby communities.	Moderate	Residents and owners of commercial/ businesses in the surrounding areas	Moderate	• The contractor will be required to cover materials with tarpaulin or other suitable materials while in transit to avoid spillage of materials. • Earthen roads, particularly roads near residences, commercial and agricultural business areas will be moistened during dry and dusty conditions. • Speed limits will be imposed on construction vehicles. • Construction equipment and vehicles will be regularly maintained to control air emissions during vehicle operation	**Minor**
		Noise and Vibration from operation of construction equipment causing excessive noise, resulting in nuisance to the communities.	Low	Workers and residents and owners of commercial/ businesses in the surrounding areas	Moderate	• Construction activities, particularly operation of noise generating equipment, will be limited to daytime. • Noise suppression devices will be installed in noise generating equipment. • Drivers will be required to minimize blowing of horns and to comply with speed limits.	negligible

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Contamination of the soil and nearby water courses may result from the utilization of hazardous materials. Improper handling, storage or utilization of hazardous materials poses a significant health risk to the workers and residents of nearby settlement areas;	Moderate	Workers and nearby residential areas, aquatic and terrestrial ecosystems	Substantial	• Ensure that safe storage of fuel, other hazardous substances consistent with national and local regulations to prevent soil and water contamination. • Fuel storage tanks to be on impervious surface with bund to catch spills, bund shall have holding capacity of 110% of tank capacity. Fuel tanks etc shall not be located within 50 m of a water course. • Ensure all storage containers are in good condition with proper labeling; • Used oil and other residual toxic and hazardous materials shall be disposed of in an authorized facility off-site; • Ensure availability of spill cleanup materials (e.g., absorbent pads, etc.) specifically designed for petroleum products and other hazardous substances where such materials are being stored; Spillage, if any, will be immediately cleared with utmost caution to leave no traces, Spillage waste will be disposed at approved disposal sites.	**Minor**
		Generation of construction waste such as excavated soil	Low	Project site land	Low	• Contractor to develop and implement Waste Management Plan • Surplus excavated material/cut soil from construction will be used as backfill material for low-lying portions per site development plan	negligible

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Generation of construction wastes such as solid wastes, inert construction wastes, during construction will result in the pollution of land and receiving water bodies.	Low	Land and any nearby receiving body of water (drainage channels) Exceedance of local capacity to treat or dispose of such waste	Low	• Appropriate segregation bins or areas for construction wastes will be provided. • The storage of all hazardous materials including fuels will be secure and controlled. • Recyclable construction wastes, such as wood, steel, and scaffoldings, will be reused or sold to junk shops. • Solid waste will be collected and disposed in the approved disposal site in the city.	negligible
		Impacts on community health and safety such as from accidents risks to surrounding communities from vehicles transiting territory adjacent to the residential buildings near the site.	Low	Local residents	Moderate	• Contractor to develop a Traffic Management Plan. • Signage and appropriate speed limits • Requiring suppliers that delivery vehicles transporting construction materials are maintained in a safe operating condition, loads are to be secured and all loads with fugitive materials (e.g. excavated soil and sand) are to be covered with tarpaulins. • All drivers and machinery operators act responsibly.	negligible

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Occupational health and safety hazards from operating and using heavy machinery, refueling hazards, traffic accident hazards	Moderate	Construction workers, contractors, suppliers	Moderate	• The contractor will be required to implement the construction health and safety plan in accordance with the World Bank EHS • Guidelines (http://www.ifc. org/ehs guidelines) as a minimum standard. Contractor will appoint an EHS officer to ensure implementation of the plan. • Workers will be provided with a safe working environment including conduct of safety induction, safety equipment appropriate for the task in which they are employed, medical and first aid facilities provided together with a person qualified in first aid.	negligible
		Labor risks, including child/forced labor, labor influx, SEA/SH	Low / Moderate	Project workers and communities	Low	• All contractors will be required to comply with LMP. • All civil works contracts will include standard Codes of Conduct that include measures to prevent SEA/SH. • The Contractors will sign written labor agreements with all contract workers, including Code of Conducts to be part of their labor contracts;	NS

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Increased exposure to dangerous agrochemicals during preparation and application of the pesticide spray solutions and during cleaning-up of spraying equipment.	Substantial	Farmers or their family members who perform manual labor in areas treated with pesticides can also face major exposure from direct spray, drift from neighboring fields, or by contact with pesticide residues on the crop or soil.	Substantial	The Pest Management Plan acceptable to the Bank to be prepared, consulted upon and implemented during project implementation will address these issues.	low
		Low absorption capacity among project beneficiaries, as large farms are better off	Substantial	Social exclusion	Substantial	Technologies to be developed will be more friendly for diverse range of beneficiaries/farmers	Low

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Covid19 virus outbreak	Substantial	Construction workers, contractors, suppliers	Substantial	• Check the health certification of worker before joining the site and hold briefing at the beginning to discuss on Covid-19 virus. • Assign focal point to implement and monitor prevention measures (appoint medical staff) • Restrict entry to all visitors during the epidemic • If a worker or any other individua feels ill, they must stay home. • Take the temperature of all personnel and ensure they wash their hands before entering the construction site. • At the construction site, all people must: o Avoid handshakes, hugs and nay other forms of close contact o Maintain a minimum distance of 2 meters at all times o Avoid touching face without washing hands • - The contractor must provide in sufficient quality liquid soap, alcohol-based gel, dry hand-wash agent, disposable towels and tissues; located stations for hand washing at various point of the site; closed containers or bags for disposable towels and tissues; masks, disposable gloves and protective glasses; remote or tape thermometers.	low

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Impact on community health and safety from access and intrusion of unauthorized personnel.	Moderate	Local people	Substantial	Watchmen/security personnel will be hired to secure the facilities on a 24-hour basis. This will minimize the safety risks to the community.	NS
	Equipping (of both new and existing) facilities	Packaging materials waste	Moderate	Local people	Substantial	• Separation of waste into recyclable and non-recyclable; • Recyclable waste shall be passed out / sold to relevant organizations; • Non-recyclable waste shall be disposed at municipal landfills; • Avoid the waste storage outside the territory of the facility; • Ensure timely disposal of all waste (within 1 day).	low
	Subcomponent 1.3 Multiplication (i) civil works, such as the construction and/or rehabilitation of storage facilities, office and laboratory buildings, greenhouses, irrigation and	The same as for Component 1.2					

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
	other facilities (ii) procurement of office furniture, field and laboratory equipment, vehicles and farm machinery (iii) consultancy services (iv) capacity building and capability development of technicians, and other associated personnel through participation in individually targeted training	Packaging materials waste No environmental impact Procurement of seedings and planting materials may cause introduction of alien invasive species	Low Low	Local people Local biodiversity	Low Moderate	• Separation of waste into recyclable and non-recyclable; • Recyclable waste shall be passed out / sold to relevant organizations; • Non-recyclable waste shall be disposed at municipal landfills; • Avoid the waste storage outside the territory of the facility; Ensure timely disposal of all waste (within 1 day). Acquisition from certified vendors Acquisition of locally adapted and climate resilient varieties Quarantine of planting materials	negligible
	Subcomponent 1.4 Quality assurance (i)civil works, such as the construction and/or rehabilitation of office and laboratory buildings, greenhouses, irrigation systems and other facilities; (ii) procurement of office	The same as for Component 1.2					

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
	furniture, field, laboratory, IT and associated equipment, farm machinery and vehicles as well as inputs essential for the operations of laboratories and other quality assurance promotions and activities, (iii) consultancy services (iv) capacity and capability development of researchers, technicians and other personnel associated with quality assurance through participation in individually targeted training (both short and long-term), workshops and conferences.	Packaging materials waste No environmental impact No environmental impact	Low	Local people	Moderate	• Separation of waste into recyclable and non-recyclable; • Recyclable waste shall be passed out / sold to relevant organizations; • Non-recyclable waste shall be disposed at municipal landfills; • Avoid the waste storage outside the territory of the facility; • Ensure timely disposal of all waste (within 1 day).	low

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
COMPONENT 2: SUPPORT INVESTMENTS IN AGRO-LOGISTICAL CENTERS FOR HORTICULTURE VALUE CHAINS							
	Subcomponent 2.1: Support the development and operation of ALCs (i) technical assistance for the preparation of feasibility studies, business plans, environmental and social impact assessments, and detailed designs and construction supervision plans for all three facilities; (ii) civil works for the construction of three facilities; and (iii) equipment for operational activities of three facilities	The same as for Component 1.2					
		No environmental impact					
		Packaging materials waste	Low	Local people	Substantial	• Separation of waste into recyclable and non-recyclable; • Recyclable waste shall be passed out / sold to relevant organizations;	negligible
		Resettlement impacts	Moderate	Small scale land acquisition and/or temporary land acquisitions	Moderate	• Site-specific RAPs acceptable to the Bank will be prepared, consulted upon and implemented by the MoA/PIU in accordance with the RPF	Low
		Generation of organic waste and how it will be handled;	Moderate		Substantial	• Generation of organic waste and how it will be handled;	low
		Ensuring ODS are not used for refrigeration facilities being constructed;	Moderate		Moderate	• Ensuring ODS are not used for refrigeration facilities being constructed;	low
		Water and wastewater management during operation of the facilities.	Moderate		Low	• Water and wastewater management during operation of the facilities.	low

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
	Subcomponent 2.2: Capacity building for operation and management of ALCs and awareness raising	Social exclusion as diverse groups may get excluded by the project activities/results /benefits due to remote locations, lack of proper knowledge and skills to access and use improved technologies, non-affordable seed products and services No environmental impact.	Substantial	Exclusion of diverse range of small and medium farms and individual farmers as well as other vulnerable sections	substantial	Will be addressed to a large extent through a well-crafted Stakeholder Engagement Plan (SEP) supplemented with community mobilization plan and an effective IEC campaign. SEP will include measures to ensure that disadvantaged and vulnerable groups have equal opportunity to obtain information and benefit from project activities, as well as have channels for grievance and redress if negatively affected. Such activities will include tailored awareness and information campaigns including targeting women and mahalla-level meetings which community members of all backgrounds and remote areas.	low
COMPONENT 3: STRENGTHEN PUBLIC CAPACITY FOR CRISES PREVENTION AND MANAGEMENT							
	Subcomponent 3.1: Real-time monitoring of agricultural production	No environmental impact					
	Subcomponent 3.2: Agrometeorological information services for farmers	No environmental impact					
	Subcomponent 3.3: Soil testing for soil fertility management	No environmental impact					

No	Project components And activities	Impact Description	Impact Severity	Expected Environmental and Social Risks and Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
	Subcomponent 3.4: Crop protection and locust control	Pollution of soil by chemicals	Moderate	Pesticides may exert harmful effects to micro-organisms, as a result of which plant growth may be affected. Accumulation is residues of pesticides in higher concentrations are toxic. Pesticides persistence in soil and movement into water streams may also lead to their entry into foods and create health hazards.	Substantial	If activities will be related to use of chemicals – PMP included in the ESMF • Biological methods of pest control can reduce the use of pesticides and thereby minimize pollution.	**low**
COMPONENT 4: PROJECT MANAGEMENT AND COORDINATION							
	The objective of this component is to support project management, coordination, M&E, citizen engagement, and implementation of environmental and social framework instruments and fiduciary aspects of the project.	Insufficient capacity to apply ESSs at the national and local levels	Substantial	Implementing agency, line ministries, local authorities and local contractors have limited experience in implementing ESSs	Substantial	E&S Risk Management Capacity Building Training Plan will be developed and implemented	low

VII. ENVIRONMENTAL AND SOCIAL ASSESSMENT RULES AND PROCEDURES

According to WB ESF each project has to comply with national Environmental and Social regulatory framework and WB Environmental and Social Standards (ESS). The next para provides guidance on actions required for environmental and social assessment in accordance with national legislation and WB ESSs. To conduct Environmental and Social Assessment the following tools could be applied:

Environmental and Social Impact Assessment (ESIA) - is an instrument to identify and assess the potential environmental and social impacts of a proposed project, evaluate alternatives, and design appropriate mitigation, management, and monitoring measures. In some cases, for small scale project Partial ESIA could be conducted in order assess its location relative to the protected areas or presence of habitats. Indicative outline of ESIA is presented in Annex 2.

Environmental and Social Management Plan (ESMP) - is an instrument that details (a) the measures to be taken during the implementation and operation of a project to eliminate or offset adverse environmental and social impacts, or to reduce them to acceptable levels; (b) the actions needed to implement these measures. Example of ESMP is presented in Annex 3.

ESMP Checklist - simplified ESMP which as a rule used for construction and for reconstruction activities with more typical impacts. Example of ESMP is presented in Annex 4.

Pest Management Plan (PMP) - Special plan which is applied for activities related to use, handling and storage of pesticide and herbicide in a manner avoiding/minimizing impact on human health and environment. Example of PMP is presented in Annex 5.

Organic Waste Management procedures for managing organic waste related to agricultural production, transport, and storage.

Besides these WB's EA tools, national environmental documentations must be prepared as part of national Environmental Impact Assessment. Content of national environmental documentation is presented in further paras.

7.1. Environmental assessment procedure

7.1.1. Main stages of national EA procedure

Basic EA Laws. There are two laws in the country that stipulate all aspects of the EA: (a) Law on Environment Protection; and (b) Law on Ecological Expertise and (c) Law on the Environmental Impact Assessment. The Chapter V, Articles 35-39 of the Law on Environment Protection (2011), introduces the concept of state ecological review (literally, state ecological "expertise" – SEE) which seeks to examine the compliance of proposed activities and projects with the requirements of environmental legislation and standards and ecological security of the society. The mentioned laws stipulate the mandatory cross-sectoral nature of SEE, which shall be scientifically justified, comprehensive, and objective and which shall lead to conclusions in accordance with the law. SEE precedes decision-making about activities that may have a negative impact on the environment. Financing of programs and projects is allowed only after a positive SEE finding, or conclusion, has been issued. The following activities and projects subject to state ecological review: a) draft state programs, pre-planning, pre-project, and design documentation for economic development; b) regional and sectoral development programs; c) spatial and urban planning, development, and design; d) environmental programs and projects; e) construction and reconstruction of various types of facilities irrespective of their ownership; f) draft environmental quality standards and other normative, technology, and methodological documentation that regulates economic activities; g) existing enterprises and economic entities, etc. The laws stipulate that all types of economic and other activities shall be implemented in accordance with existing environmental standards and norms and shall have sufficient environmental protection and mitigation measures to prevent and avoid pollution and enhance environmental quality. The EA studies analyzing the short- and long-term environmental, genetic, economic, and demographic impacts and consequences shall be evaluated prior to making decisions on the sitting, construction, or reconstruction of facilities, irrespective of their ownership. If these requirements are violated, construction will be terminated until necessary improvements are made, as prescribed by the

Committee for Environmental Protection and/or other duly authorized control bodies, such as sanitary, geological, and public safety agencies.

Environmental Impact Assessment. An Environmental Impact Assessment (EIA) study is a component of the State Ecological Expertise, as set out in the 2011 amendments to the Environmental Protection Law. In 2012 the new Law "On Environmental Expertise" was adopted. In pursuance of this law, the Government subsequently adopted the following:

- the Procedure of environmental impact assessment (adopted by the Resolution of the Government of the Republic of Tajikistan as of 01.11.2018 №532): Guidelines on the composition, order of development, coordination and approval of design estimates for construction of facilities, buildings and structures and EIA chapters, SEA and feasibility documents;
- A List of objects and kinds of activity for which preparation of documentation for environment impact assessment is mandatory (adopted by the Resolution of the Government of the Republic of Tajikistan as of 01.11.2018 №532). The List is very extensive: it contains 180 types of activities, grouped according to four environmental impact categories: from A (in Cyrillic sounds A) "high risk" to Г (in Cyrillic sounds G) "local impact"). If the facility/activity is not included in the list, then it is not required to pass either an EIA or a SEE.

The EIA is the responsibility of the project proponent. The Procedure for carrying out the EIA (Government Resolution No. 532 of 2018) establishes general requirements for the contents of the EIA documentation. The State Ecological Expertise for all investment projects is the responsibility of the Committee for Environmental Protection under Government of Tajikistan (CEP) and its regional offices. Furthermore, according to the 2012 Law on the State Ecological Expertise, all civil works, including rehabilitation, should be assessed for their environmental impacts and the proposed mitigation measures reviewed and monitored by the CEP. The Law “On Ecological Expertise” and the “Procedure on Environmental Impact Assessment” of 2013 lays down the principles of performing the EIA in Tajikistan. According to this law, national and interstate power lines are considered activities with potentially high environmental risk. CASA-1000 Project is categorized an interstate transmission/power line project, hence requires an Environmental Impact Assessment (EIA) studies[54] to be prepared by the entity developing such a project.

Together with a detailed project description, the EIA study is the basis to go for the environmental permit and must be submitted to the Committee. As a rule, the Committee prepares an expertise to the project within one month. In preparation of this expertise, all subdivisions that might be involved in the project do participate. With this expertise, the permission is given, is not given or given with requirements and obligations that must be followed by the company during construction and/or during operation. If the Committee concludes that an environmental permit cannot be given because e.g. limit values are exceeded or other environmental aspects are not sufficiently mitigated, the developer can change its design and submit the impact assessment again.

Types of Ecological Expertise. According to the 2011 Law on Ecological Expertise, ecological expertise is intended to prevent negative impacts on the environment as a result of a proposed activity, forecast impacts from activities that are not considered as necessarily damaging to the environment and create databases on the state of the environment and knowledge about human impact on the environment. This Law and the Law on Environment Protection envisage two types of ecological expertise – State ecological expertise and public ecological expertise, which are not given equal importance. While State ecological expertise is a prerequisite for beginning any activity that may have an adverse environmental impact, public ecological expertise becomes binding only after its results have been approved by a State ecological expertise body. The State Ecological Expertise is authorized to invite leading scientists and qualified outside specialists to participate in the review. Approval should be issued within 30 days, unless the project developer agrees to an extension, and remains valid for two years, if the decision is positive. For very complicated projects the term of consideration and approval can be extended till 60 days. According to the Law on SEE the public ecological expertise of economic activities or other activities implementation of which can negatively impact the environment of population which live in relevant area can be carried out by any public organization and citizen. They have right to send the proposals to the responsible government bodies concerning environmental issues of implementation planned activities; to receive information on results of

[54] Resolution of the Government of the Republic of Tajikistan dated June 3, 2013, № 253 “On the list of objects and types of activity that requires developing materials on environmental impact assessment”

conducted state ecological expertise from relevant responsible bodies. The materials reflecting the public expertise delivered to the experts' commission should be taken into consideration under preparation of conclusion of state ecological expertise and decision making on realization of expertise object. The public ecological expertise is carried out under the state registration of application of public organization. The registration can be done by local executive authorities (for 7 days) in place where the expertise activities are planned. The public organizations which are organizing this expertise, should inform the population of initiation of expertise and then on its results.

Screening categories. The laws on Environment Protection and EE stipulate the Government will approve a list of activities for which the full Environmental Impact Assessment is mandatory. The List of 2018 contains 180 types of activities, grouped according to four environmental impact categories (from (A) "high risk" to (Г (in Cyrillic)) "local impact"). The current system of environmental impact assessment does not provide for any preliminary assessment of the project to decide on the need for an EIA (screening), nor to define the scope of the issues covered and the content of EIA materials as specific procedural steps. The List of objects and activities for which the development of EIA materials is required is very detailed and, in the opinion of government bodies, for this reason there is no need to procedurally consider the issue of carrying out an EIA in each specific case.

EA administrative framework. The Environmental Protection Law states that a SEE should be conducted by the CEP, which is designated as a duly authorized state environmental protection body. It has a comprehensive mandate that includes policy formulation and inspection duties. The CEP has divisions at oblast (region), city and rayon (district) level, in the form of Departments of Environmental Protection (DEPs), within the Hukumat (local administration) at each city or rayon. A small unit in the ministry is entrusted with guiding and managing both EIA and SEE. EIA preparation is the responsibility of the proponents of public- and private-sector projects, who, in addition to complying with various environmental standards, procedures, and norms, shall meet the standards of other sectors and environmental media line agencies, such as sanitary-epidemiological, geological, water, etc.

Public participation. Article 12 of the Environment Protection Law proclaims the right of citizens to live in a favorable environment and to be protected from negative environmental impacts. Citizens also have the right to environmental information (Article 13), as well as to participate in developing, adopting, and implementing decisions related to environmental impacts (Article 13). The latter is assured by public discussion of drafts of environmentally important decisions and public ecological reviews. Public representative bodies have an obligation to take into consideration citizens' comments and suggestions. The Law on the EE also provides the rights to the citizens to conduct a Public Environmental Expertise (art. 7). On 17 July 2001 Tajikistan acceded to the 1998 Aarhus Convention, the provisions of which have priority over domestic law that also stipulates the rights for Public EE. The public has the right to request public hearings to be carried out. For category "A" and "B" projects, the authorized state body should develop a stakeholder engagement plan with the possibility of conducting consultations and taking into account the opinions of citizens.

In Tajikistan disagreements are resolved through Jamoats' (Hukumats') grievance mechanism or appeal to court. A grievance redress mechanism (GRM) capable of receiving and facilitating the resolution of affected persons' concerns and grievances related to the project is required as a formalized way for the PMUES to identify and resolve concerns and grievances.

Environmental norms and standards. Norms are set for air and water pollution, noise, vibration, magnetic fields and other physical factors, as well as residual traces of chemicals and biologically harmful microbes in food. The exceeding of their thresholds results in administrative action, including financial sanctions. Several ministries determine environmental quality standards, each in its field of responsibility. For example, admissible levels of noise, vibration, magnetic fields and other physical factors have been set by the Ministry of Health and social defense of population.

Implementation and compliance. Several legal acts establish liability for violations of environmental laws, which can be enforced by several State bodies. In particular, the 2010 Code of Administrative Violations establishes administrative liability for organizations, their officers and individuals for a range of violations, from the careless treatment of land to violation of the rules for water use or water protection or failure to comply with a State ecological expertise. The administrative sanctions for environment related violations can be imposed by the administrative commissions of hukumats, courts, the CEP's inspectors, the Veterinary Inspectors of the Ministry of Agriculture, and the State Committee for Land Management and

Geodezy. The most common administrative sanction is a fine of up to 10 minimal monthly salaries for individuals and up to 15 minimal salaries to officers of organizations. The 1998 Criminal Code covers crimes against ecological safety and the environment, such as violations of ecological safety at work, poaching, and spoiling land, violation of rules for the protection and use of underground resources. The maximum fine is up to 2,000 minimal monthly salaries and the maximum sentence is up to eight years in prison.

When detecting violations of environmental legislation, the CEP authorities apply penalties in accordance with the following articles of the Administrative Code of the Republic of Tajikistan. Namely:

- Article 223. Violation of standards, rules, regulations, instructions and other environmental requirements for the protection of the environment and the rational use of natural resources;
- Article 224. Release (discharge) of polluting substances into the environment with excess of standards or without a permit, waste disposal, physical and other harmful effects
- Article 232. Violation of environmental protection requirements during transportation, disposal, use, disposal (dumping) industrial, household and other wastes into the natural environment.

The fines can only be witnessed by the local CEP authorities

7.2. Social assessment procedures

Social screening is a Mandatory Procedure for the identification of possible involuntary resettlement in accordance with ESS 5 of the World Bank. The Implementing Agency will undertake social screening of each proposed subproject.

The social screening is the one of the key steps in identification of further resettlement planning in the projects. The social screening serves to ensure that the process for screening remains simple and concise. A version of the Social Screening Form is attached in Annex 7. Specific questions based on each activity of the project might be added as seen relevant by external consultants and the PIU Social Development Specialist. The list of project activities that have potential resettlement issues will then be subjected to a comprehensive sensitization and consultation process with the potentially impacted communities and the outcome of this process would be documented for each subproject.

The list and the outcome of the consultative process for each site/project activity on the list would then be sent to the respective implementing agencies in the jurisdiction mandated to confirm, approve, disapprove, refer for further consultation and/or take a final decision on each proposed site/ project activities. Carrying out the screening process in this way is designed to give it the integrity and transparency it needs to allow all stakeholders to have confidence in the process.

For project activities that do not have any resettlement issues and do not trigger ESS 5, the provisions of a RPF / social provisions of the ESMF does not apply and the reference is the Environmental Focus of the Environmental and Social Management Framework ESMF.

The screening and categorization of impact on involuntary resettlement will be initiated by PIU either with its own social specialist and other relevant staff or, if there are no such skills, with the help of external consultants. The social screening report will be prepared by the Consultant or RIU's Social Development Specialist and reviewed by authorized person of the Implementing Agency and PIU Director for clearance. The Social Development Specialist and Director at the PIU will finally endorse the social screening and confirm the necessity to develop the Resettlement Action Plan for the proposed sub-project as described in the project's RPF.

Resettlement Action Plan (RAP) is a resettlement instrument (document) to be prepared when subproject locations are identified. RAPs contain specific and legally binding requirements to be abided by to resettle and compensate the affected party before implementation of the project activities causing adverse impacts. Outline of the RAP is enclosed Annex 8 of the RPF.

VIII. INSTITUTIONAL ARRANGEMENTS AND CAPACITY FOR ESMF IMPLEMENTATION

8.1. Project coordination

The Agency for Implementation of Project the Ministry of Agriculture of the Republic of Tajikistan (MOA). The MoA will have an overall responsibility for coordinating all aspects of the project, including contributions by the different relevant ministries and agencies participating in the project's implementation. The main responsibilities of the MoA will include project oversight, coordination, planning, technical support, financial management, procurement support and monitoring and evaluation. The MoA will be accountable for authorizing and verifying all project transactions and will work closely with the World Bank's Task Team during project implementation. To fulfill its responsibilities, the MoA will use the institutional mechanisms established for the implementation of ACP, including the ACP implementation Unit (ACP-PIU) and Project Steering Committee (PSC) and establish others as deemed necessary.

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

The PSC, chaired by the Minister of Agriculture, 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: (i) establishing policy guidelines and providing overall oversight and strategic guidance; (ii) review of project's progress towards the PDO, (iii) review and approve the Annual Work Plans and Budgets (AWP&Bs) submitted by the PIU, (iv) review and approve annual implementation performance report prepared by the PIU and overseeing the implementation of corrective actions, and (v) 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 on the basis of 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 determined in the Project Operations Manual (POM).

Project Implementation Unit (PIU). The MOA and PSC will be supported by the PIU. The PIU to be established under the MOA, will be responsible for the project management and coordination. In addition to the PIU in Dushanbe, the MoA will also establish two regional project offices (RPOs) - one in Sughd and one in Khatlon. The PIU and RPOs will be staffed, equipped, and strengthened to support project management and coordination. They 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 following up fiduciary and ESF aspects of the project implementation and provision of support to the implementing institutions. The Environmental and Social Specialists will be recruited on permanent basis at the PIU. These specialists will have significant agricultural and pest management experience. RPOs will recruit part time consultants to cover ESF issues in the fields. The composition of PIU staff, including specialization, responsibility, salary scale and benefits and incentives e.g. annual and sick leave etc. will be detailed in the POM.

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 Minister of Agriculture, would be responsible for providing technical advice to the ACP-PIU on the quality of implementation reports and special studies, guidelines, documentation of best practices, and M&E reports. More specifically, the PTC will be responsible for: (i) reviewing, providing recommendations and advise on improving the AWP&Bs submitted by the ACP-PIU, (ii) providing technical advisory services on implementation modalities, (iii) providing institutional capacity building to the ACP-PIU and to relevant implementation entities, (v) 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.

8.2. ESF Institutional Capacity Building Activities

The ESF instruments requires special knowledge from the beneficiaries and all project participants at each stage of the project. To ensure the effective implementation of the project and a clear understanding of the requirements for environmental and social risks managements to comply with the new WB ESSs, an ESF Training Plan is proposed under this project. The program provides training in both general environmental policy principles of the World Bank, relevant national legislation, and in certain specific aspects relevant to this project. It is planned to conduct training and provide information on such topics as the introduction of ESMF, reporting on ESMF/ ESMP, as well as on specific topics such as the use of pesticides in agriculture, integrated pest management, handling, storage and dispose of chemicals.

MoA has experience in implementation of investment projects funded by various IFIs. Under these projects sets of training were provided as a part of capacity building. Nevertheless, taking into account specificity of the project, a wide range of planning activities it is essential to increase capacity of implementation agency to comply with the new ESSs requirements.

For the said purpose, prior to commencement of construction work, MoA will hire a Consultant with knowledge of the national environmental and social management requirements, as well as substantial knowledge of the provisions and requirements of the World Bank's ESSs, who will develop training materials and trainings themselves. The training will include key WB requirements, national rules and procedures for E&S risk management, as well as case studies in this regard. All developed training materials, after the first series of trainings by the Consultant will be transferred to the Implementing Agency for further application.

During discussions with stakeholders it was revealed that it would be helpful to harmonize content of national Environmental Assessment procedures and Content of the EA report with WB requirements for ESMP. Particularly, inclusion of ESMP in the national EA report would simplify process of environmental documents preparation.

The proposal for capacity-building of the Project on environmental and social risk management will cover the following activities:

Table 5: Preliminary ESF Training Plan

	The name of the training	**Time and estimated duration**	**Target group**	**Arranger**	**Estimated cost**
1.	Review of WB ESSs and their implementation during the project cycle. National environmental requirements for project preparation and implementation	During the first year of the Project implementation Duration - 0.5 days	PIU Staff, including regional project offices, PTC	Consultant	1,500 US dollars
2.	Implementation of ESMF, ESMP, RPF, ARAP/RAP, LMP, SEP, GRM	Prior to selection of sub-projects Duration - 2 days	PIU Staff, including regional project offices, PTC	Consultant	2,000 US dollars
3.	Implementation of ESMF, ESMP, social screening	Prior to selection of sub-projects Duration - 2 days	Local stakeholders in two regions	Consultant	2,000 US dollars

4.	Integrated pest control and management	Prior to the sub-projects' implementation 1 day and during project implementation	E&S Specialists of PIU, PIU Regional Offices, farmers, ALCs, PTC	Consultant, PIU	Per 1,000 US dollars at the beginning and in the middle of the project. Total 6,000 US dollars for 3 regions
5.	GBV training and awareness-raising / implementation of GBV action plan	Half-day workshops at the regional level at the beginning and in the middle of the project	MOA staff Contractor and Supervisor Local government/ mahallas/ community members	Consultant, PIU	1,000 USD per each activity, Total 6,000 USD for 3 regions
6.	E&S Performance Reporting	During the first half year of the Project implementation Duration - 0.5 days	PIU Staff, including regional project offices, PTC members	Consultant	1,500 US dollars
	TOTAL				17,000 USD

IX. MONITORING AND REPORTING ACTIVITIES

9.1. General requirements for environmental and social monitoring and reporting

Environmental and social monitoring during the implementation of sub-projects shall contain information on key environmental and social aspects of sub-projects, their impact on the environment, social consequences of impacts and the effectiveness of measures taken to mitigate the consequences. This information allows the PIU/RPOs to monitor the performance of implementation of environmental measures, assess the effectiveness of mitigation measures, and allow timely implementation of corrective action(s) that need to be observed how often, where and by whom monitoring shall be carried out.

Monitoring of the implementation of environmental measures shall be carried out by PIU Environmental Specialist and Regional Project Offices. Representatives of the Committee of Environment Protection may also be involved in monitoring. The aim is to verify the main points of compliance with the ESMF, the progress of implementation, the scope of consultations and the participation of local communities. The standard checklist prepared during the evaluation studies will be used for the activities report. In the medium term of the project implementation and at the end of the project, an independent audit will be carried out in the field of environmental, social, health and safety. The audits are necessary to ensure that (i) the ESMF has been properly implemented and (ii) mitigation measures are identified and implemented accordingly. The audit will be able to identify any amendments to the approach to the ESMF to improve its effectiveness.

Monitoring for social risk management measure part will be done on the continuous basis by the PIU Social Development Specialist to ensure, that there is no any unanticipated impact during construction works on land, productive assets, illegal users, people's livelihood, assess to the assets etc. Monitoring will also cover health and labor issues, as well as stakeholder engagement activities. If some issues are identified, the mitigated measures will be proposed in the progress reports or separate Corrective Action Plans (CAP) (details are presented in the below section on the Environment and Social reporting).

9.2. Environmental and Social Monitoring

To ensure implementation of the environmental measures specified in the ESMP, the monitoring shall be carried out as follows:

- *Visual monitoring - during the construction stage of the sub-projects* Environmental and Social Specialists shall continually monitor the performance of ESMP. This will be achieved through monthly inspections of construction / reconstruction projects by specialists throughout the whole construction period. The Specialists have the right to suspend work or payments if the contractor breaches any obligation on ESMP implementation. For monitoring, it is recommended to use special check lists, that can be compiled based on ESMP with the attachment of photos from the monitoring site.

  For functioning facilities, the ESF Specialists shall verify the timeliness of the contractors' reporting on discharges to water bodies, air emissions and solid waste, which the contractors shall submit on a periodic basis to the regional ecology and environment protection committees.

- *Instrumental monitoring of environmental quality*, such as air and water quality. Taking into consideration the types of activities that will be implemented within the framework of this Project, instrumental monitoring may not be carried out. However, in the case of complaints of violations or inconveniences from the local population, instrumental measurements of air or water quality shall be carried out by the PIU through the hiring of a certified laboratory. In case of national standards exceeding, the contractor shall be obliged to take additional measures to reduce the detected exceedances to meet the standards.

Environmental and social issues included in the mitigation framework are monitored by designated specialists through the PIU. Although the environmental and social impacts are expected to be not significant, the potential negative impacts on the environment are planned to be prevented or mitigated during the construction and operation phases. Monitoring is based on impact / mitigation / monitoring issues

as defined in the ESMP and/or ESMP checklists of subprojects. Observation monitoring will be carried out through weekly audits of the environmental performance by contractors throughout the construction period. The PIU has the right to suspend work or payments if the Contractor is in breach of any of its obligations to implement an ESMP.

Separately, the World Bank experts will also annually visit certain sites to monitor the compliance. As has been mentioned above, in the case of non-compliance, Regional Specialist / PIU will investigate the nature and cause(s) of the non-compliance and, if necessary, decide what is necessary to ensure the compliance with the sub-project or financing shall be suspended.

8.3. Environmental and Social Performance Reporting

Environmental and social performance, including monitoring, shall be properly documented and reported. In accordance with national legislation for the facilities under construction each contractor shall keep a log with information on HSE training for workers and another log for the registration of accidents during construction works. In the case of instrumental monitoring, the original records of the results of the required instrumental environmental monitoring (air and water quality) shall also be stored in a separate file for records.

For sub-components related to construction / rehabilitation, it is recommended that contractors, with the assistance of the PIU, develop a format (checklist) for site inspection to optimize the environmental and social supervision process before commencement of the works. The format can be in the form of a checklist with a list of mitigation measures to be implemented at construction sites, the status of their implementation and some explanations on the status of implementation, as required. On monthly basis the contractor will present short reports on ESMP implementation. The list of measures that are checked by the E&S Specialists when visiting the site shall correspond to the measures specified in the ESMP for the controlled sub-project. Information on the results of the monitoring on the construction / rehabilitated facilities shall be submitted to the Regional Specialist to the PIU on a quarterly basis. Based on received from the Regional Specialist's reports on semiannually basis the PIU will prepare a brief report on ESMF and ESMPs implementation to be included in the regular progress reports to be submitted to the WB.

Monitoring reports during the project implementation will provide information on key environmental and social aspects [55] of the project activities, especially regarding environmental impacts and the effectiveness of mitigation measures. Such information will allow the PIU and the World Bank to evaluate the success of measures to mitigate the consequences within the framework of project supervision, and allow, if necessary, to take corrective actions.

The sub-projects ESMP monitoring section will provide:

(a) details of monitoring measures, including parameters to be measured, methods used, sampling locations, frequency of measurements; and
(b) monitoring and reporting procedures: to (i) ensure early identification of conditions requiring mitigation measures; and (ii) provide information on the progress and results of mitigation.

The PIU will provide brief information on the implementation of the ESMF and the environmental and social activities of the sub-project as part of the progress reports to be submitted to the WB every six months.

If social monitoring identified any impacts, it should be mitigated immediately. If there is an impact on land, productive assets, illegal users, people's livelihood, assess to the assets etc. the construction works should be stopped and the PIU needs to be informed immediately. A Corrective Action Plan (CAP) needs to be developed. The CAP should contain information on the sub-component of the project, status of the civil works, impact types and social impact assessment, proposed mitigation measures. CAP should be prepared by the sub-component implementer and approved by the PIU. All unanticipated impacts under the subproject, which have been occurred out of the RoW, should be compensated/mitigated by the Contractor. This needs to be reflected in the bidding documents. All impacts in the RoW should be compensated by the

[55]Including the impact on the labor force, gender issues, impact on socially vulnerable groups, stakeholder and community engagement, social conflicts, GRM, impact on land resources and others.

Subproject Implementer.

PIU Monitoring and Evaluation Specialist is responsible for overall compilation of progress and results. It is suggested that semi-annual reports and quarterly unaudited IFRs will be submitted to WB. These reports should include the scorecards of communities on project implementation and success along with financial records, project implementation records, social audit meetings, and feedback and grievances received. Results measurements are outcomes defined in the results framework and set of output indicators defined in POM. The PIU will be responsible for producing a completion report. All environmental and social issues are monitored and supervised by PIU or Regional Specialist. Despite of insignificant social impacts, the potential negative impacts must be prevented or mitigated during construction and operation stages.

Environmental and social monitoring system starts from the preparation phase of the sub-component of project through the operation phase in order to prevent negative impacts of the project and observe the effectiveness of mitigation measures. This system helps the WB and the MoA to evaluate the success of mitigation as part of project supervision and allows taking an action when needed. The monitoring system provides technical assistance and supervision when needed, early detection of conditions related to mitigation measures, follows up on mitigation results, and provides information of the project progress. Monitoring Plan identifies monitoring objectives and specifies the type of monitoring, and their link to impacts and mitigation measures. Specifically, the monitoring section of the ESMP provides: (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements; and, (b) monitoring and reporting procedures to: (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

8.4. Occupational Health and Safety (OHS) issues reporting

OHS issues must be covered in all supervision and monitoring activities. That means specifically observing whether the enterprise adheres to good OHS practices, asking whether all employees have received OHS training, whether there have been any incidents, checking logs and the availability and use of protective and preventative equipment. Respectively, the ESF sections of all progress reports include statements indicating that the PIU have checked occupational health and safety issues, and existing procedures in this regard, and asked if there have been any serious incidents or fatalities. Similarly, the PIU will ensure that at the project launch workshop and in the operational manual contain adequate provisions for occupational health and safety.

Any incidents occurring on project sites and/or within project-supported activities should be reported immediately, e.g., by the contractor to the employer, PIU and subsequently to MOA. All incidents should be reported to the World Bank no later than 48 hours from their occurrence.

Details on any incidents that have occurred, or lack thereof, will be provided in regular progress reports to MOA and the World Bank. The relevant text on OHS to be included in the progress reports might be as follows: The project has reported X Occupational Health and Safety (OHS) incidents since its start. Of these, X are classified as SEVERE, X as SERIOUS, and X as INDICATIVE. All incidents are confirmed accounted through the Environment and Social Incident Response Toolkit (ESIRT) (see below). During this mission period, the PIU checked with all contractors and consultants under all project activities, if any OHS incidents occurred, either reported or not yet reported. The PIU found (EITHER) (i) no new incidents occurred during this supervision period, or (ii) X incidents occurred (include classification, brief description of event and follow-up actions, and confirmation event was reported via SIRT)]. Monitoring activities during the report period found that OHS practices have been observed / partially observed / not observed. The following deficiencies were found: The following recommendations have been made to [XX Contractor / farm / business]

The World Bank Environment and Social Incident Response Toolkit helps to manage incidents

consistently by providing clear guidance on how to classify the incident's severity, how to provide a proportional response according to severity, and clarifies roles and responsibilities. ESIRT also requires a root cause analysis to be done by the Borrower when there is a severe incident.

"Incident" is defined as an accident, incident, or negative event resulting from failure to comply with identified risk management measures OR conditions that occur because of unexpected or unforeseen

environmental or social risks or impacts during project implementation. Examples of environmental or social incidents include: fatalities, serious accidents and injuries; social impacts from labor influx; sexual exploitation and abuse (SEA) or other forms of gender- based violence (GBV); major environmental contamination; child labor; loss of biodiversity or critical habitat; loss of physical cultural resources; and loss of access to community resources. In most cases an incident is an accident or a negative impact arising if the contractor does not comply with the WB security policy or unforeseen events which occurred during the Project implementation.

The WB ESIRT does not replace monitoring procedures and implementation of regular monitoring of the implementation of the project ESF provisions. The document includes the following six stages of the incident management and reporting process:

Stage 1. Initial informing about the incident. The contractor, executor, supervisor, is informing the PIU, local authorities, the WB, the public, providing urgent health care and providing the necessary safety measures for workers. All measures must be taken immediately. In parallel, all necessary data about the incident are collected - its scope, degree of danger to public health and environment, location, cause of occurrence, duration, what decisions are taken by the Executor, what actions should be taken next, etc.

Stage 2. Assess severity of the incident. The Executor (should promptly provide information to the WB about the incident and its degree of danger.

Stage 3. Notification. The Executor is preparing an incident notification for the WB. Submission of a notification in the event of an incident should be determined when signing a contract with the Contractor.

Stage 4. Investigation of the incident. The Executor provides any information requested by the WB and does not prevent to visit the incidence scene. The Executor is also obliged with the assistance of the Contractor to analyze the causes of the incident and to document the information received. The Executor may need to involve external experts in investigation of the incident. The term of the investigation should not exceed 10 days after the incident. The findings of the investigation should be used by the Executor and the Contractor to develop corrective actions and draw up a corrective action plan (CAP) to avoid any future repetition of what happened. Besides, the conclusions should be submitted to the WB.

Stage 5. Corrective Action Plan. The Executor develops a CAP with specific actions, responsibilities, implementation dates and monitoring program and discusses it with the WB. In case of serious incidents, the WB and the Executor agree on a set of measures to eliminate the major causes of sources for such incidents. The CAP indicates actions, duties and terms that should be performed by the Executor and the Contractor. The Executor is responsible for implementation of the CAP. The CAP may include development or modernization of technical measures to protect the environment and prevent further pollution, conduct training, including on issues of emergency health care, compensation for insurance claims of injury or death. If the WB considers that the CAP measures are not effective, and/or the Executor has shown unwillingness or inability to take corrective measures, the WB may consider a decision on complete or partial suspension of the loan payments until such actions are taken, or in some cases it may consider a question of cancellation of the whole or part of the Project after its suspension. Such decisions of the WB are transferred to the PIU and the Ministry of Agriculture authorities to determine the appropriate actions of the WB.

Stage 6. Monitoring execution of the CAP. The Executor performs the CAP, monitors execution of individual CAP items and provides a report on implementation to the WB.

It will be mandatory for all project participants immediately report on the OHS (on severe and serious) incidents (by contractors - to employer, by sub-borrowers -- to PFIs, by project implementing entity - to the World Bank). It is required that World Bank is to be notified about each severe and serious incident within 24 hours.

For supervision of OHS issues during the project implementation which include civil works, the PIU Environmental Specialist may use, as appropriate, the “Health, Safety and wellbeing inspection Checklists” see Annex 9.

8.5. Integration of ESMF into the project documentation

The ESMF requirements will be integrated in the Project Operational Manual while the ESMPs

requirements, - into construction contracts for all sub-projects, both into specifications and bills of quantities, and the Contractors will be required to include the cost for ESMP implementation in their financial bids. Based on the ESMF there will be highlighted the roles and responsibilities of all involved parties in the ESA process. Lastly, based on the ESMF and ESMPs requirements, monitoring and evaluation of mitigation/avoidance measures identified in the site-specific review and in the ESMPs will constitute integral part of the subproject implementation, including them into the contracts binding the and the contractors will need to carry out the environmental and social obligations during civil works. Furthermore, all contractors will be required to use environmentally acceptable technical standards and procedures during carrying out of works. Additionally, as specified in the ESMF, the contract clauses shall include requirements towards compliance with all national construction, health protection, ESF procedures, and rules on environmental and social protection.

The provisions of the ESMF will be used for the following:

(i) Inclusion of the ESMF requirements into the Operational Manual of the project;
(ii) The inclusion of environmental guidelines, ESMP into the construction contracts for individual sub-projects, both in the specification and in the bills of work, sub-borrowers shall include the cost of ESMF implementation in their financial proposals;
(iii) The allocation of subsequent responsibility of ESMF within the framework of the PIU;
(iv) Specifying mitigation and prevention measures during the implementation of selected sub-component of the projects;
(v) Monitoring and evaluation of mitigation/prevention measures identified in the site- specific review and in the ESMP. The required mitigation measures will be an integral part of the sub-project, including contracts requiring contractors to meet environmental and social obligations during construction.

All contractors shall use environmentally acceptable technical standards and procedures during the work. In addition, the contract provisions shall specify the requirements for compliance with all national building codes, health, protective procedures and regulations, as well as environmental protection.

Contractors, for the ALCs and major rehabilitation works shall prepare a Contractors ESMP based on the ESIA/ESMP prepared as part of the bid preparation.

IX. GRIEVANCE REDRESS MECHANISM

9.1. Grievance Redress Mechanism (GRM)

Grievance procedures will be required to ensure that PAPs are able to lodge complaints or concerns, without cost, and with the assurance of a timely and satisfactory resolution of the issue. The procedures also ensure that the entitlements are effectively transferred to the intended beneficiaries. Stakeholders will be informed of the intention to implement the grievance mechanism. The GRMs will be devised to comply with the national legislation as well as the international standards, they typically address both environmental and social issues. Complaints and grievances can be addressed through the following levels:

First Step: Regional Grievance Management Groups (RGMG) will be established in Khatlon and Sughd Regional Project Offices (RPOs) to address and resolve complaints in collaboration with enablers at the local level within 14 days of receiving complaints. The GRM focal point will be responsible for maintaining grievance and feedback logs. If the issue cannot be resolved at the regional level, then it will be escalated to the national level. Local governments will be fully coated in reaching out to the local communities and individuals and provide intermediation support, in general, and airing grievances, in particular.

Second Step: If the Regional Grievance Management Groups are not able to resolve the grievance within a 14-day period, the complaints should be presented to the MoA PIU at the national level. National Grievance Management Group (NGMG) represented by the E&S specialists, M&E specialist, engineers and other relevant specialists, will be chaired by the PIU Director. The NGMG will make a final decision after the assessment of the case and will be a careful preparation of the decision by the PIU resettlement and environmental representative. Grievances must be heard and resolved within 14 days of submission of the complaint. The PIU will also file all the project specific grievances from other regions and target districts, where no RPOs are in place.

Third Step: If no solution is reached within 14 days at PIU level, the project affected people (PAPs) can further submit their case to the appropriate court of law.

The Grievance Logs along with the Grievance Redress Forms are maintained on site with all the complaints registered in the logs and tear-off stubs left with the PAPs to allow for adequate and transparent redress process. Project affected persons can air their grievances either on their own or through local jamoat and khukumat representatives. *Anonymous complaints related to project activities are also entertained by the project specific GRM*.

The leaflets containing information on the Project as well as contact addresses/phone numbers to be contacted are shared and available at the level of targeted districts, and jamoats. The Grievance Logs along with the Grievance Redress Forms are maintained on site with all the complaints registered in the logs and tear-off stubs left with the PAPs to allow for adequate and transparent grievance redress process.

GRM will be established in such a way that among others: (i) it is easily accessible to all and as nearest as possible; (ii) grievances are encouraged in any form (verbal/ written) and including anonymous requests too; (iii) composition of the Grievance authorities is inclusive and beset with requisite authority; and (iv) bound by appropriate protocols in terms of time to address, communicate, and maintain log viz., is a repository.

Grievance Logs. The Grievance Focal Points (GPFs) will maintain local grievance logs to ensure that each complaint has an individual reference number and is appropriately tracked, and recorded actions are completed. When receiving feedback, including grievances, the following is defined:

- Type of appeal;
- Category of appeal;
- People responsible for the study and execution of the appeal;
- Deadline of resolving the appeal; and
- Agreed action plan.

The GFPs will ensure that each complaint has an individual reference number and is appropriately tracked,

and recorded actions are completed. The log should contain the following information:

- Name of the project affected party, his/her location and details of his / her complaint;
- Date of reporting by the complaint;
- Date when the Grievance Log was uploaded onto the project database;
- Details of corrective action proposed, name of the approval authority;
- Date when the proposed corrective action was sent to the complainant (if appropriate);
- Details of the Grievance Group meeting (if appropriate);
- Date when the complaint was closed out; and
- Date when the response was sent to the complainant.

9.2 Monitoring and Reporting on Grievances

The PIU M&E Specialist will be responsible for:

- Collecting and analyzing the qualitative data from GFPs on the number, substance and status of complaints and uploading them into the single project database;
- Monitoring outstanding issues and proposing measures to resolve them; and
- Preparing quarterly reports on GRM mechanisms to be shared with the World Bank.

Quarterly reports to be submitted by World Bank shall include Section related to GRM which provides updated information on the following:

- Status of GRM implementation (procedures, training, public awareness campaigns, budgeting etc.);
- Qualitative data on number of received grievances \ (applications, suggestions, complaints, requests, positive feedback), highlighting those grievances related to the involuntary resettlement and number of resolved grievances, if any;
- Quantitative data on the type of grievances and responses, issues provided and grievances that remain unresolved;
- Level of satisfaction by the measures (response) taken;
- Any correction measures taken.

9.3 World Bank Grievance Redress System

Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB'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 WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

X. ESMF DISCLOSURE AND PUBLIC CONSULTATION

ESMF and RPF preparation has been highly participatory. Some consultations have been held with various stakeholders including the public communities, local/ district/ regional authorities, other departments and service providers. The draft ESMF and RPF in English and Russian languages were posted on the MOA PIU website on April 23, 2021 (https://www.moa.tj, *www.pmutacp.tj*). The final versions will be officially submitted to the World Bank for disclosure in English on the WB external webpage by _____. The English and Russian versions will be also redisclosed on the website of the MOA PIU. The Client will follow Citizen engagement and Stakeholder Consultations during COVID-19 pandemic per the World Bank's guidelines: *https://www.worldbank.org/en/news/factsheet/2020/12/01/citizen-engagement-and-stakeholder-consultations-during-covid-19.*

The final version of this document will be used by respective government agencies and other Project stakeholders during the project implementation. Minutes of the virtual disclosure workshop to be held will be enclosed in Annex X.

Annex 1: PEST MANAGEMENT PLAN

Following review of the Environment Screening Checklist submitted by the applicant for a sub-project loan, the PFI Loan Officer and/or PMU Environmental Specialist will determine if the applicant needs to prepare a PMP. This determination would be made on the basis of toxicity of the pesticides to be used and the environmental risks posed by the activity. When, a determination is made that a PMP is to be prepared by the sub-project loan applicant, a two stage process would be applied towards the preparation of the PMP.

Stage A: Additional Information Request

The applicant would provide the following information:

1. ***Types and application of pesticides***

(i) What are the pesticides that are to be purchased, including name of product, type of formulation, concentrations of the active ingredient?
(ii) Where are the pesticides to be purchased from, including name of store and location?
(iii) What are the quantities of pesticides to be purchased and the package sizes and quantities in each package?
(iv) What type of equipment is to be used to apply the pesticides
(v) Are applicators trained in the proper and safe use of the pesticides?

2. ***Purpose and appropriateness of pesticides***

(i) What crops to you plan to use the pesticide?
(ii) What pests and/or diseases are to be controlled by the pesticide?
(iii) What non-chemical pest control measures have been used in the past to control the pests and/or diseases mentioned in (ii) above?
(iv) How often is the pesticide to be applied and in what quantities in any given application?
(v) How will the timing of the application of the pesticide be decided?
(vi) Have you been trained or received advice on non-chemical pest control or integrated pest control (IPM)?
(vii) If not trained, how do you plan to obtain assistance, advice or training in pesticide application quantities and methods; calibration of spraying equipment; use of protective gear; storage and disposal methods, etc.

3. ***Handling, storage and disposal of pesticides***

(i) How will the pesticides be transported to the project site?
(ii) Where will the pesticides be stored in the farm?
(iii) Will the storage location of the pesticide be secured / locked and who will have access to these stores?
(iv) How will animals, children and unauthorized persons be excluded from access to the storage areas?
(v) Where will mixing of pesticides happen and what precautions will be taken to keep the storage and pesticide mixing areas away from grain stores and production areas?
(vi) How will excess unused and mixed pesticide products be disposed of?
(vii) How will empty pesticide containers be disposed of?

(viii) How will pesticide records in terms of purchase, use and disposal be maintained?

4. ***Environmental Aspects***

(i) Are pesticide application areas near water bodies, wetlands or areas of known natural habitats?

(ii) Are there know natural pollinators found in the vicinity of the application areas? If so what precautions would be used to ensure that non-target beneficial species are not harmed?

Stage B: Preparation of Pest Management Plan

Based on the information provided by the subproject loan applicant, the PFI Loan Officer (if necessary, in consultation with PMU Environmental Officer) will identify the risks associated with the application of the pesticide and the more important and most practical mitigation measures that need to be applied, including any complementary measures using non-chemical control measures. The PFI Loan Officer will advise the applicant on the scope and nature of the PMP to address potential impacts of the subproject activities. If needed, the PFI Loan Officer and/or PMU Environmental Specialist can advise the loan applicant on professional services that could be obtained for completion of the subproject specific PMP. Typically, the outline of the PMP would be the following The proposed outline for PMP:

(a) **Aims and objectives** of PMP (provides information on extent and severity of pest and diseases in the crops to be grown);

(b) **General area of Project intervention and main crops (**should provide data on land use and soil, water resources, layout of facilities, etc.)

(c) **Existing practices/experience** for pesticide use and pest management in Tajikistan; Current and anticipated pest problems (***Review of Existing Pest Management Practices and Capacity*** which should provide data on current practices (chemical and non-chemical) in control of the particular pests and diseases, including lists of pesticides banned by national law or prohibited by the ESF ESSs, constraints and track record and extent to which pest and diseases of fruit and agricultural crops have been managed and controlled; and reasons for enhanced pesticide applications through the proposed subproject loan.)

(d) **Legal Framework**: relevant National/Regional and International Policies/Conventions ratified by Tajikistan; Guidelines on the use of pesticides, fertilizers/agrochemicals;

(e) **Relevant WB ESF ESSs** for pest management;

(f) **Institutional Framework (**e.g. government agencies/local authorities and others responsible to enforce pest management and control, etc.)

(g) **Major activities** (e.g. surveillance, spraying methods/monitoring, livelihood protection activities, etc)

(h) **Public Complaints and Grievance Redress Mechanism** (GRM);

(i) **Stakeholder Engagement and Disclosure** of the PMP;

(j) **Criteria for pesticide selection and use including types & amount; choosing pesticides for locust campaign);**

(k) **Pesticide use by crops (crop type, pest/disease, dose…);**

(l) **Pesticide waste management approaches**

(m) **E&S, occupational health** risks associated with importation, transportation, storage, distribution and use of pesticides, particularly locust control;

(n) **Mitigation measures to avoid and manage those risks and impacts;**

(o) **Guidance/best practices on pest quality control**

(p) **Procedures for pesticides handling, packaging storage, disposal (**provides information

on the types, amounts and nature of the pesticides to be purchased and used and the current and proposed handling, application, storage and disposal methods for the pesticides)**;**

(q) **Capacity building/training for personnel on application of pesticides (Capacity, training and knowledge of the safe application and use of pesticides provides information on existing knowledge and capacity of staff and personnel in the safe use and application of pesticides and identification of gaps in training and knowledge for improving capacity);**

(r) **Institutional arrangements and** roles and responsibilities;

(s) **Monitoring and reporting approaches;**

(t) **Coordination Responsibilities;**

(u) **Activity plan and Budget;**

(v) **Other findings/information that are specifically relevant to the Project**

(w) **References;**

(x) **Annexes and respective Checklists;**

(y) **….**

Potential risks and hazards associated with application and use of pesticides in subproject loan would provide information on the environmental and human health impacts associated with the handling, application, storage and disposal of pesticides under the subproject loan, including potential impacts on non-target beneficial species, soil and water and natural habitats.

Mitigation Measures to avoid and manage potential pesticide impacts that would provide information on the following:

- For locust management, it is important to strengthen the system of surveillance, early detection and response to prevent potential risks and avoid adverse implications;
- Mechanical and physical control, cultural and biological control measures, if any that can be used in conjunction with or without pesticide applications to suppress or reduce the severity of the target pest or disease to be controlled;
- Chemicals and chemical procedures that will be used to control pests and diseases, conditions under which the chemicals will be used, including climatic conditions, vegetation conditions, timing of applications, to improve the effectiveness of the pesticide and reduce its environmental impacts as well as specific measures to be employed to protect sensitive ecosystems, aquatic systems and ground water;
- Management of health and safety aspects that would define measures to ensure safe handling, transport, application, storage and disposal of pesticides so as to reduce environmental and health risks;
- Measures that would be introduced for public safety and protection during pesticide applications;
- Measures to track and monitor pesticide use and effectiveness in controlling desired pests;
- Measures to be undertaken to create awareness, improve information flow and improve capacity of farm workers on the hazards on the unsafe use, handling and storage of pesticides and measures for reducing such risks, as well as options for integrated pest management;
- Measures to be taken to obtain technical support for pest management and safe use and application of pesticides, when necessary;
- Budget estimate for implementation of the PMP.

Annex 2: SOCIAL SCREENING CHECKLIST

	Activities	Yes	No	Notes
1	Acquisitions of land, buildings (residential and business)			If "Yes", and answers other questions "No", provide relevant documents, available for the final sales transaction
2	Acquisitions or expansion of the business, which will be implemented by the demolition/ relocation homeowners, renters, formal and informal user assets			If yes, provide more details
3	Acquisition of assets, which will cause the loss of access of people or a particular community/groups, especially ethnic minorities to: · Natural resources · The traditional habitat · The traditional activities · Communal utilities			If yes, provide more details
4	Acquisitions/or expansion of a business that can promote/increase the risk of: 1. Violation of the labor code and laws including the use of child labor 2. Harassment of ethnic minority groups in the areas of project (related to their identity, dignity and livelihoods of the system of subsistence, cultural identity) 3. Human trafficking and forced labor			If yes, provide more details
5	Will there be land acquisition using eminent domain law?			If yes, provide more details
6	Will there be permanent or temporary loss of shelter and residential land due to land acquisition?			If yes, provide more details
7	Will there be permanent or temporary loss of agricultural and other productive assets due to land acquisition?			If yes, provide more details
8	Will there be losses of crops, trees, and fixed assets due to land acquisition?			If yes, provide more details
9	Will there be permanent or temporary loss of businesses or enterprises due to land acquisition?			If yes, provide more details
10	Will there be permanent or temporary loss of income sources and means of livelihoods due to land acquisition?			If yes, provide more details

11	If land or private property is purchased through negotiated settlement or willing buyer-willing seller, will it result in the permanent or temporary removal or displacement of renters, or leaseholders?			If yes, provide more details
12	If land or private property is purchased through negotiated settlement or willing buyer-willing seller, will it result in the permanent or temporary removal or displacement of informal land-users (people without legal rights on the land) or squatters?			If yes, provide more details
13	Will the project involve any permanent or temporary restrictions in land use or access to legally designated parks or protected areas and cause people or any community to lose access to natural resources, traditional habitats, communal land, or communal facilities?			If yes, provide more details
14	Will the project use government land or any public land or property, which will require the permanent or temporary removal of informal occupants or users (residential or economic)?			If yes, provide more details

The Social Development Specialist confirms that the assigned land / proposed subproject

☐ Has Involuntary Resettlement (IR) impact, a Resettlement Action Plan is required
☐ Will not have IR impact

Completed by (full name and contacts): _____

Signature: _____ Date:_____

Annex 3: INDICATIVE OUTLINE OF ESIA/ESMP

Where an environmental and social impact assessment is prepared as part of the environmental and social assessment, it will include the following:

(a) Executive Summary

- Concisely discusses significant findings and recommended actions.

(b) Legal and Institutional Framework

- Analyzes the legal and institutional framework for the project, within which the environmental and social assessment is carried out, including the issues set out in ESS1, paragraph 26[56]
- Compares the Borrower's existing environmental and social framework and the ESSs and identifies the gaps between them.
- Identifies and assesses the environmental and social requirements of any co-financiers.

(c) Project Description

- Concisely describes the proposed project and its geographic, environmental, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power supply, water supply, housing, and raw material and product storage facilities), as well as the project's primary suppliers.
- Through consideration of the details of the project, indicates the need for any plan to meet the requirements of ESS1 through 10.
- Includes a map of sufficient detail, showing the project site and the area that may be affected by the project's direct, indirect, and cumulative impacts.

(d) Baseline Data

- Sets out in detail the baseline data that is relevant to decisions about project location, design, operation, or mitigation measures. This should include a discussion of the accuracy, reliability, and sources of the data as well as information about dates surrounding project identification, planning and implementation.
- Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions.

[56] 27 ESS1, paragraph 26, states that the environmental and social assessment takes into account in an appropriate manner all issues relevant to the project, including: (a) the country's applicable policy framework, national laws and regulations, and institutional capabilities (including implementation) relating to environment and social issues; variations in country conditions and project context; country environmental or social studies; national environmental or social action plans; and obligations of the country directly applicable to the project under relevant international treaties and agreements; (b) applicable requirements under the ESSs; and (c) the EHSGs, and other relevant GIIP.

- Based on current information, assesses the scope of the area to be studied and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences.

- Takes into account current and proposed development activities within the project area but not directly connected to the project.

(e) Environmental and Social Risks and Impacts

- • Takes into account all relevant environmental and social risks and impacts of the project. This will include the environmental and social risks and impacts specifically identified in ESS2–8, and any other environmental and social risks and impacts arising as a consequence of the specific nature and context of the project, including the risks and impacts identified in ESS1, paragraph 28.

(f) Mitigation Measures

- Identifies mitigation measures and significant residual negative impacts that cannot be mitigated and, to the extent possible, assesses the acceptability of those residual negative impacts.

- Identifies differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable.

- Assesses the feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of proposed mitigation measures, and their suitability under local conditions; and the institutional, training, and monitoring requirements for the proposed mitigation measures.

- Specifies issues that do not require further attention, providing the basis for this determination.

(g) Analysis of Alternatives

- Systematically compares feasible alternatives to the proposed project site, technology, design, and operation—including the "without project" situation—in terms of their potential environmental and social impacts.

- Assesses the alternatives' feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of alternative mitigation measures, and their suitability under local conditions; and the institutional, training, and monitoring requirements for the alternative mitigation measures.

- For each of the alternatives, quantifies the environmental and social impacts to the extent possible, and attaches economic values where feasible.

(h) Design Measures

- Sets out the basis for selecting the particular project design proposed and specifies the applicable EHSGs or if the ESHGs are determined to be inapplicable, justifies recommended emission levels and approaches to pollution prevention and abatement that are consistent with GIIP.

(i) Key Measures and Actions for the Environmental and Social Commitment Plan (ESCP)

- Summarizes key measures and actions and the timeframe required for the project to meet the requirements of the ESSs. This will be used in developing the Environmental and Social Commitment Plan (ESCP).

(j) Appendices

- List of the individuals or organizations that prepared or contributed to the environmental and social assessment.
- References—setting out the written materials both published and unpublished, that have been used.
- Record of meetings, consultations and surveys with stakeholders, including those with affected people and other interested parties.

The record specifies the means of such stakeholder engagement that were used to obtain the views of affected people and other interested parties.

- Tables presenting the relevant data referred to or summarized in the main text.
- List of associated reports or plans

Annex 4: ENVIRONMENTAL SOCIAL MANAGEMENT PLAN (Example)

General Remarks. If an ESIA is required, then the ESMP should be an Annex to the ESIA. For smaller activities, only an ESMP or ESMP checklist is required. An Environmental and Social Management Plan (ESMP) should outline the mitigation, monitoring and administrative measures to be taken during project implementation to avoid or eliminate negative environmental and social impacts.

Description of the of the Environmental and Social Management Plan

The Environmental and Social Management Plan (ESMP) identifies feasible and cost-effective measures that may reduce potentially significant adverse environmental impacts to acceptable levels. The plan includes compensatory measures if mitigation measures are not feasible, cost-effective, or sufficient. Specifically, the EMP (a) identifies and summarizes all anticipated significant adverse environmental impacts (including those involving indigenous people or involuntary resettlement); (b) describes--with technical details--each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; (c) estimates any potential environmental impacts of these measures; and (d) provides linkage with any other mitigation plans (e.g., for involuntary resettlement, indigenous peoples, or cultural property) required for the project.

Monitoring

Environmental monitoring during project implementation provides information about key environmental aspects of the project, particularly the environmental impacts of the project and the effectiveness of mitigation measures. Such information enables the borrower and the Bank to evaluate the success of mitigation as part of project supervision, and allows corrective action to be taken when needed. Therefore, the EMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the EA report and the mitigation measures described in the EMP. Specifically, the monitoring section of the EMP provides(a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

Capacity Development and Training

To support timely and effective implementation of environmental project components and mitigation measures, the EMP draws on the EA's assessment of the existence, role, and capability of environmental units on site or at the agency and ministry level. If necessary, the EMP recommends the establishment or expansion of such units, and the training of staff, to allow implementation of EA recommendations. Specifically, the EMP provides a specific description of institutional arrangements - who is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). To strengthen environmental management capability in the agencies responsible for implementation, most EMPs cover one or more of the following additional topics: (a) technical assistance programs, (b) procurement of equipment and supplies, and (c) organizational changes.

Implementation Schedule and Cost Estimates

For all three aspects (mitigation, monitoring, and capacity development), the EMP provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the EMP. These figures are also integrated into the total project cost tables.

Integration of ESMP with Project

The borrower's decision to proceed with a project, and the Bank's decision to support it, is predicated in part on the expectation that the EMP will be executed effectively. Consequently, the Bank expects the plan to be specific in its description of the individual mitigation and monitoring measures and its assignment of institutional responsibilities, and it must be integrated into the project's overall planning, design, budget, and implementation. Such integration is achieved by establishing the EMP within the project so that the plan will receive funding and supervision along with the other components.

The Environmental and Social Management Plan format provided in **Form below.** It represents a model for development of an EMP. The model divides the project cycle into three phases: construction, operation and decommissioning. For each phase, the preparation team identifies any significant environmental impacts that are anticipated based on the analysis done in the context of preparing an environmental assessment. For each impact, mitigation measures are to be identified and listed. Estimates are made of the cost of mitigation actions broken down by estimates for installation (investment cost) and operation (recurrent cost). The EMP format also provides for the identification of institutional responsibilities for "installation" and operation of mitigation devices and methods.

To keep track of the requirements, responsibilities and costs for monitoring the implementation of environmental mitigation identified in the analysis included in an environmental assessment a monitoring plan is necessary. A **Monitoring Plan format** is provided in **Annex 4** and includes a row for baseline information that is critical to achieving reliable and credible monitoring. The key elements of the matrix are:

- What is being monitored?
- Where is monitoring done?
- How is the parameter to be monitored to ensure meaningful comparisons?
- When or how frequently is monitoring necessary or most effective?
- Why is the parameter being monitored (what does it tell us about environmental impact)?

In addition to these questions, it is necessary to identify the costs associated with monitoring (both investment and recurrent) and the institutional responsibilities.

When a monitoring plan is developed and put in place in the context of project implementation, the PMU will request reports at appropriate intervals and include the findings in its periodic reporting to the World Bank and make the findings available to Bank staff during supervision missions.

Environmental and Social Management Plan Format

Phase	Environmental Impact	Mitigating Measure(s)	Cost		Institutional Responsibility		Remarks
			Install	Operate	Install	Operate	
Construction							
Operation							
Decommissioning							

EXAMPLE OF AN ENVIRONMENTAL AND SOCIAL MONITORING PLAN

PHASE	WHAT is the parameter to be monitored?	WHERE is the parameter to be monitored?	HOW is the parameter to be monitored??	WHEN is the parameter to be monitored? (frequency)?	WHY is the parameter being monitored?	COST	RESPONSIBILITY
Designing	Implementation of ESMP guidelines (RECOMMENDATIONS)	Design project for construction, reconstruction and adaptation.	Review of elaborates and adaptation designs.	Prior approval for construction as part of project monitoring program.	Recommended due to national legislation requiring a construction permit.	Should be part of the Project	CEP Designer, Contractor
	Resettlement impacts and risks	Target sites	Social screening of the proposed sites	After the technical designs are finalized	To comply with ESS5	Project Management costs	MoA PIU/PROs
Construction	Parameters given in construction permit - all special conditions of construction issued by different bodies	Main Project documentation	A part of regular inspection by the Ministry of Environment and the Construction Inspection	During construction and prior to issuance of the Operation permit	Regular review stipulated in the Law, and if any public complaint is sent to the Ministry of Environment, or the Construction Inspection.	Included in the construction phase, costs of Contractors	Supervision Engineer, inspectorate of the CEP and Construction Inspection

PHASE	WHAT is the parameter to be monitored?	WHERE is the parameter to be monitored?	HOW is the parameter to be monitored??	WHEN is the parameter to be monitored? (frequency)?	WHY is the parameter being monitored?	COST	RESPONSIBILITY
	Construction waste management (including hazardous)	Supporting documents for waste, which is submitted to the competent communal enterprise	A part of regular inspection by the Ministry Environment Construction Inspection	After reporting on waste management	Needed in accordance with the waste-related regulations	Expenditure of the Ministry Environment and the Construction Inspection and low costs for the Contractor	Supervision Engineer, inspectorate of the CEP and Construction Inspection
	Labor conditions and contracts, OHS, Worker GRM	Onsite observations, Contractor office	Site visits, desk review	During construction	To comply with ESS2	Project Management costs	MoA PIU
	Community Outreach, GRM	Neighbouring communities, PROs	Community meetings, GRM logs	During the field site visits	To comply with ESS10	Project Management costs	PIU and its Regional offices
Operation	Waste management	Based on the supporting documents for waste, which is submitted to the Ministry of Environment	Reports to the Ministry of Environment	After reporting to the Ministry of Environment on waste management.	Should be monitored in line with the regulations on waste management.	Costs of the project beneficiary and the Ministry of Environment	Project beneficiary, competent communal company and the CEP
	Community Outreach, GRM	Neighbouring communities, PROs	Community meetings, GRM logs	During the field site visits	To comply with ESS10	Project Management costs	PIU and its Regional offices

ACM MANAGEMENT PLAN (Example)

A. Introduction

1. Management plan for asbestos-containing materials (hereinafter referred to as ACMMP), describes and assesses the risks of contractor organizations (as well as others) that have discovered asbestos-containing materials (hereinafter ACM) at construction sites during the project implementation period; and also, the plan provides procedures for the rapid and safe handling of any ACM that can be detected.

B. Risk Assessment

Risk

2. Asbestos is a fibrous material of natural origin, widely used in buildings and other infrastructure in the 20th century; the material is strong, resistant to heat and fire. The general use of asbestos was in the production of slate sheets, asbestos cement (hereinafter AC) pipes, as well as in some parts of cars. The risk of asbestos for human health began to be widely understood at the beginning of the 20th century from the 1980s onwards, increasing the number of countries that had begun to restrict, and then its use was banned. The supply and use of ACM is currently banned in most countries, although it is not yet prohibited in the Tajikistan.

3. Inhalation of asbestos fibers can lead to serious and fatal diseases, including lung cancer, mesothelioma (internal mucosa cancer), asbestos pneumoconiosis (inflammatory lung disease). The health safety risk generally increases with prolonged and repeated exposure, but the "US Occupational Safety and Health Act" (hereinafter referred to as OSHA) states that there is no "safe level of exposure" for any type of asbestos fibers[57].

4. At workplaces, risks are usually the greatest, if the production of work with ACM is carried out in buildings or other enclosed premises, and also where the material is dry, old, or broken. This is because the collapsing ACM, as well as the cut or chipped edges of even a new material, can be fibrous (where the fibers are easily separated), especially when they are touched.

C. Urgent measures

5. If an ACM is found on a facility, the Contractor should take the following actions:

   a) Stop all work within a radius of 5 m from the place of ACM, evacuate all personnel from the territory of this section;

   b) Mark the border of the territory within a radius of 5 m with a columnar safety fence, an alarm tape and easily visible warning signs notifying about the presence of asbestos;

   c) Inform the Project Engineers, as well as the Environmental Supervision Specialists, in order to organize an object inspection without delay.

[57] Health and Safety Management. US Department of Labor. "Safety and health issues: Asbestos." (2014)
Skammeritz, E. et al. "The impact of asbestos and survival during malignant mesothelioma: A description of 122 consecutive cases in a professional clinic." International Journal of Occupational and Environmental Medicine (IJOEM), Volume 2, No 4 October 2011

6. Project Implementation Institution is needed to:

Notify the State Administration of Sanitary and Epidemiological Supervision.

D. Equipment

7. In order to remove asbestos from the construction site, the Contractor shall be provided with the following equipment:

- Signal tape, strong fencing posts and warning signs;
- Shovels;
- Water supply and hoses equipped with garden sprinklers;
- A bucket of water and rags;
- Bags of transparent, durable polyethylene with strings;
- Containers for asbestos-containing waste (empty, clean, sealed metal drums, with a clear designation - "contained asbestos").

E. Personal protective equipment (PPE)

8. All personnel involved in the process of handling ACM should be dressed in the following type of outfit, which must be provided by the Contractor:

- One-time overalls, equipped with a hood;
- Boots without laces;
- New gloves made of durable rubber;

Respirators are usually not required if only a few fragments of the ACM are present in a small area, and if the ACM is in a humid environment

- In a large area with severe contamination, a respirator (not dust masks) is required, with a protective factor of 20 or more (eg a respirator with a RZ filter);

It is not allowed to smoke, eat, or drink on an object with an ACM content.

F. The procedure for preparing the work site

9. These procedures should be followed when working with ACM pipes (which includes cutting, drilling, clamping, etc.), in order to minimize fiber emissions during labor activity. All workers, technical personnel and outsiders should understand the requirements of these procedures before carrying out any work with the ACM sheets. The supervisor should be responsible for coordinating activities to ensure the use of personal protective equipment when necessary. It is necessary to draw up a written document available to workers at the work site that will determine the location of the ACM pipes and any other hazardous materials.

10. Before the entrance (exit) of the work area, locker rooms for personnel equipped with airtight containers for storing contaminated disposable coveralls should be organized. Contaminated clothing must be disposed of. Repeated use and cleaning with compressed air is prohibited.

11. A protective tape with the following warning should be placed around the work area at all entrances to the work site, using fasteners to hold it in place (such a fence must be in place immediately before performing any work):

- CAUTION ASBESTOS
- NO ENTRY FOR UNAUTHORISED PEOPLE
- ENTRY ONLY IN RESPIRATORS AND PROTECTIVE CLOTHING.

12. Workers must have (at minimum) a half face-piece respirator with combination cartridges for particulate (P100) and organic vapours (OV). No single use respirators are allowed. Workers shall inspect and clean their respirators prior to each use. Workers must be fit tested and properly trained in the use, limitations, and maintenance of their respirators.

13. Labelled asbestos waste bags must be available and placed in the work area for disposal of protective coverall suits and contaminated waste such as sponges and rags.

14. Construction areas should be allocated to the individual site for garbage collection from the demolition work. Containers temporary storage of asbestos-containing waste must be sealed with tight-fitting lid and be labeled accordingly "asbestos".

G. Disposal

15. ACM if any should be disposed of safely at a local hazardous-waste disposal site if available, or at the municipal dumpsite after making prior arrangement for safe storage with the site operator.

a) The Contractor must arrange for the disposal site operator to collect the sealed asbestos waste containers if any as soon as possible and store them undisturbed at the disposal site.

b) At the end of construction Contractors must arrange for the disposal site operator to bury all ACM containers in any in a separate, suitably-sized pit, covered with a layer of clay that is at least 250 mm deep.

I. Personal Decontamination

16. At the end of each day, all personnel involved in handling ACM must comply with the following decontamination procedure:

a) At the end of the decontamination operation, clean the boots thoroughly with damp rags;

b) Peel off the disposable overalls and plastic gloves so that they are inside-out and place them in a plastic sack with the rags used to clean the boots;

c) If a disposable respirator has been used, place that in the plastic sack, seal the sack and place it in an asbestos waste container;

d) All personnel should wash thoroughly before leaving the site, and the washing area must be cleaned with damp rags afterwards, which are placed in plastic sacks as above.

J. Clearance and Checking-Off

17. The decontamination exercise must be supervised by site supervisors (engineering or environmental).

18. After successful completion of the decontamination and disposal, the DSC Supervisor should visually inspect the area and sign-off the operation if the site has been cleaned satisfactorily.

19. The contractor should send a copy of the completion notice to the Project Implementation Institution, with photographs of the operation in progress and the site on completion.

J. Training

20. Environmental Specialist may hire the specialized companies to conduct training on ACCMP implementation for Contractors staff and RPCU and PIU. The training will include a session focusing on ACM, which covers:

- Risks of contact with ACM;
- Responsibilities for dealing with ACM on project's construction sites;
- The Project's ACMMP and the Protocol for site clean-up;
- Awareness-raising for the contractors' workforce.

Annex 5: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN CHECKLIST

ENVIRONMENTAL /SOCIAL SCREENING			
Will the site activity include/involve any of the following:	**Activity**	**Status**	**Additional references**
	Building rehabilitation	[ ] Yes [ ] No	See Section **B** below
	New construction	[ ] Yes [ ] No	See Section **B** below
	Individual wastewater treatment system	[ ] Yes [ ] No	See Section **C** below
	Historic building(s) and districts	[ ] Yes [ ] No	See Section **D** below
	Acquisition of land or loss of assets[58]	[ ] Yes [ ] No	See Section **E** below
	Hazardous or toxic materials[59]	[ ] Yes [ ] No	See Section **F** below
	Impacts on forests and/or protected areas	[ ] Yes [ ] No	See Section **G** below
	Handling / management of medical waste	[ ] Yes [ ] No	See Section **H** below
	Traffic and Pedestrian Safety	[ ] Yes [ ] No	See Section **I** below
	Labor Conditions and OHS	[ ] Yes [ ] No	See Section J below
	Occupational Health and Safety of Workers	[ ] Yes [ ] No	See Section K below
	Community outreach and GRM	[ ] Yes [ ] No	See Section L below
	Community health and safety	[ ] Yes [ ] No	See Section M below

ACTIVITY	**PARAMETER**	**MITIGATION MEASURES CHECKLIST**
A. General Conditions	Notification and Worker Safety	The local construction and environment inspectorates and communities have been notified of upcoming activities The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works) All legally required permits have been acquired for construction and/or rehabilitation All work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment. Workers will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots) Appropriate signposting of the sites will inform workers of key rules and regulations to follow.
B. General Rehabilitation and /or Construction	Air Quality	During interior demolition use debris-chutes above the first floor Keep demolition debris in controlled area and spray with water mist to reduce debris dust Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site

[58] The project will support construction of new buildings only when the construction will not result in the taking of land resulting in: involuntary land acquisition or displacement of third parties using land; loss of assets or access to assets; or loss of income sources or means of livelihood, whether or not the affected persons must move to another location. Investors will be required to have landownership title as well as has to prove the land at the moment of subprojects application is not occupied or used even illegally.

[59] Toxic / hazardous material includes and is not limited to asbestos, toxic paints, removal of lead paint, etc.

Activities		Keep surrounding environment (sidewalks, roads) free of debris to minimize dust There will be no open burning of construction / waste material at the site There will be no excessive idling of construction vehicles at sites
	Noise	Construction noise will be limited to restricted times agreed to in the permit During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible
	Water Quality	The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers.
	Waste management	Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. Construction waste will be collected and disposed properly by licensed collectors The records of waste disposal will be maintained as proof for proper management as designed. Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos)
C. Individual wastewater treatment system	Water Quality	The approach to handling sanitary wastes and wastewater from building sites (installation or reconstruction) must be approved by the local authorities Before being discharged into receiving waters, effluents from individual wastewater systems must be treated in order to meet the minimal quality criteria set out by national guidelines on effluent quality and wastewater treatment Monitoring of new wastewater systems (before/after) will be carried out
D. Historic building(s)	Cultural Heritage	If the building is a designated historic structure, very close to such a structure, or located in a designated historic district, notify and obtain approval/permits from local authorities and address all construction activities in line with local and national legislation Ensure that provisions are put in place so that artifacts or other possible "chance finds" encountered in excavation or construction are noted, officials contacted, and works activities delayed or modified to account for such finds.
E. Acquisition of land or loss of assets	Activity will not eligible	If the activity will result in the taking of land resulting in: involuntary land acquisition or displacement of third parties using land; loss of assets or access to assets; or loss of income sources or means of livelihood, whether or not the affected persons must move to another location it will not be financed.
F. Toxic Materials	Asbestos management	If asbestos is located on the project site, mark clearly as hazardous material When possible the asbestos will be appropriately contained and sealed to minimize exposure The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust

		Asbestos will be handled and disposed by skilled & experienced professionals If asbestos material is be stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately The removed asbestos will not be reused
	Toxic / hazardous waste management	Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information The containers of hazardous substances should be placed in an leak-proof container to prevent spillage and leaching The wastes are transported by specially licensed carriers and disposed in a licensed facility. Paints with toxic ingredients or solvents or lead-based paints will not be used
G. Affects forests and/or protected areas	Protection	All recognized natural habitats and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities. For large trees in the vicinity of the activity, mark and cordon off with a fence large tress and protect root system and avoid any damage to the trees Adjacent wetlands and streams will be protected, from construction site run-off, with appropriate erosion and sediment control feature to include by not limited to hay bales, silt fences There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas.
H. Disposal of medical waste	Infrastructure for medical waste management	In compliance with national regulations the contractor will insure that newly constructed and/or rehabilitated health care facilities include sufficient infrastructure for medical waste handling and disposal; this includes and not limited to: Special facilities for segregated healthcare waste (including soiled instruments “sharps”, and human tissue or fluids) from other waste disposal; and Appropriate storage facilities for medical waste are in place; and If the activity includes facility-based treatment, appropriate disposal options are in place and operational
I Traffic and Pedestrian Safety	Direct or indirect hazards to public traffic and pedestrians by construction activity	In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public. Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public.

J. Labor Conditions	Child and Forced Labor, Working conditions, Worker GRM	*Labour relations*: The workers involved are considered to be the contractor's labor force and therefore the following requirements must be met: - Child labor (children under 18 years of age) to perform any type of work at the facility is completely prohibited; - Attraction of community members as public works within "khashars" is prohibited; - The contractor signs contract with each worker, which will have rights and obligations with observance of labor norms, that is • 8-hour working day, and if it exceeds the set time, take into account extra-time with appropriate payment; • 40-hour work week; • 1 hour for lunch; - The Contractor shall sign with each worker a code of conduct consistent with international practice which should be followed, otherwise dismissal of workers and collection of proportionate financial penalties are possible; - Raise workers' awareness of the general principles of communication management with the local population; - Organize access of workers to toilets and areas for hand washing, which should be provided with hot and cold water, soap and a hand dryer in sufficient volume; - Develop a system for workers grievance redress. *Living conditions:* Given that planned work is short-term, unskilled workers should, whenever possible, be recruited from local communities, and women should be recruited to do light work. If local workers will be involved in the work, then there is no need to provide jobs for temporary residence, but there is need to provide them with adequate conditions (sleeping places, kitchen, showers, toilets, etc.). If workers from other regions or cities and villages who do not have their homes in the place of repair work will be involved in the work, then the contractor must provide them with housing. Housing must be provided with the following conditions: - Bedrooms with beds; - Kitchens with the ability to cook food, store food; - Sanitary conditions (shower or bath, toilet, place where clothes can be washed); - In the cold season - heating; - Central power supply.
K. Occupational Health and Safety of Workers	Covid prevention measures, safety measures	*Health protection*: - At the construction site, it is necessary to have a medical first aid kit for persons who have been injured. - Daily measurement of the temperature of employees before the start of work on the construction site. - Regular activities with all employees at the construction site regarding compliance with the

		requirements for COVID-19 prevention; *Safety of employees:* -Provide safety training prior to commencement of each type of work and regularly check safety compliance. - Provide special clothing (masks, gloves and safety glasses, for repair work also helmets and protective shoes), personal protective equipment, tools, materials; - Provide necessary equipment for high-altitude works (temporary fences, safety belts and ropes, etc.)
L. Community Outreach	Public relations and Grievance Redress Mechanism	The contractor will appoint one of his employees as a contact person who is responsible for communication with the local community, as well as for receiving complaints / complaints from the local community. The contractor is obliged to consult with local communities to resolve conflict situations between interested parties, including between workers and local communities. Inform the nearby population about the repair schedule. Limit construction work at night. Provide a Grievance Redress Mechanism for stakeholders and communicate information to them.
M. Community health and safety	Exposure to dangerous agrochemicals	Prepare, consult and disclose the site-specific Pest Management Plans Implement and report on information and education campaigns among farmers or their family members who perform manual labor in areas treated with pesticides, and can also face major exposure from direct spray, drift from neighboring fields, or by contact with pesticide residues on the crop or soil.

Annex 6. Agrochemicals permitted on the territory of Tajikistan (approved by Decision N4 of Chemical Security Commission of Tajikistan, June, 11, 2004)

A. Insecticides and acaricides

Aktellik 50% к.э.(pirimifosmetil) ICA “Zeneka”) England
Alfasupermethrin-tryton 10% (permethrin) - France
Apollo 50%(klofentizin) – Shering, Germany
Applaud (buprofezin), 25% - “Nippon Kayaky”, Japan
Arrivo (cipermetrin), 25% - FMS, SMA
Benzophosphat (30%) (fozalon), Pussia
Be–58 (dimetoat), 40% “Bitterfeld” Germany
Buldok 2,5% - Baier, Germany
Buldok 12,5% - Baier, Germany
Vismetrin (permetrin), 25% - -Russia
Volaton (foksim), 50% - «Baier», Germany
Geksasulfan (endosulfan) 30% - India
Danitol (fenoropatrin) 10% - «Sumimoto», Japan
Deltafos 36% - Baier Germany
Decis (deltamitrin) 2,5% - “Russel Uklaf” France
Dilor (betadihydrogeptachlorine), 80% Russia
Dimilin (diflubenzuron) 25% “Dufar”, Holland
Dimilin (diflubenzuron) 48% “Crompton (Uniroyal Chemical)”
DNOK (Dinitroortokrezol) 40% - Russia
Zolon 35%, (fozalon) “Ron-Pulenk”, France
Zolon 30%, (fozalon) “Ron-Pulenk”, France
Incegar 25% (fenoksikarb) “Ciba”, Switzerland
Kallipso 48% - Baier Germany
Karate 5% (lyambdacigalotrin) – “ICI” (Zeneka) England
Confidor 20% - Baier, Germany
Croneton 50% (etiofencarb) – Baier, Germany
Mavric 2^E 25% (fluvalinat) – “Sandoz”, Switserland
Malathyon 57% - Fufanon, Denmark
Neoron 50% (Brompromilat) – Skiba, Switserland
Nissoran 10% (geksitiazoks) – Nippon Soda, Japan
Nitrafen 60% (nitroalkilfenolat), 60%, Russia
Oltingygidi kyftashuda - Uzbekistan, Turkmenistan
Oltingygird, 80% - Ukraine
Omite 30%, (propargit) «UNIROYL», SMA
Omite 57% (propargit) «UNIROLL CHEMICAL», England
Omite 570 EW, 57% (P) «CROMPTON (UNIROYAL CHEMICAL»)
Preparates N30, 30A, 30C, 30CC, 30M, 36%, Russia
Patriot 12,5% - Baier, Germany
Polo 50% - «Singenta», Switserland
Sunmite 20% (piridaben) “Nissan Chemical”, Japan
Simbush, 25% “Zenaka”, England; “Ser-Italy”, Italy
Siperkil, 25%, “Mitchel Kots”, England; “Bharat”, India
Solphak 10% (syfnutrin) – “Baier”, Germany
Sonet 10% (geksafluron) – “Daw Elanko”, SMA
Sumi-Alfa (esfenbalerat) 5% “Sumimoto”, Japan
Sumi-Alfa (esfenbalerat) 20% “Sumimoto Chemical”, Japan
Talstar 10% (bifentrin), FMS, SMA
Tiodan 35%, (endosulfan) “Hoechst”, Germany

Tiodan 50% (endosulfan) “Hoechst”, Germany
Trebon 30% (etofenprox) – “Mitzui Toyatzu”, Japan
Festak 10% (alfametrin) - :Shell”, England
Fenval 20% (fenvalerat) – “Searle”, India
Fenvalerat 20% - “Kharda Chemical”, India
Fenio 20% (fenvalerat) - :Pesticides”, India
Fozalon 35% (fozalon) – Russia, «Astra», Horvatiya
Furi 10% (zetametrin) – FMS, SMA
Khostakvik 50% (kheptenofos) – “Hoechst”, Germany
Sherpa 25% - “Ron-Pulenk”, France
Eim 12% - “Ciba”, Switzerland
Ekamet 50% - “Sandoz”, Switzerland
Endocell 35% - India

B. Fungicides
Alto 4Cosc, 40% (ciprokonazol) – “Sandoz”, Switzerland
Arcerid 60% (metalakcil+policarbicin), Russia
Afugan 30% (pirazofos), “Hoechst”, Germany
Byleton 25% (triadimeffon), “Baier”, Germany
Boricid 70% (sulfur+policarbicin), Russia
Derozal 50% (carbedazim), “Hoechst”, Germany
Karatan FN-57, 18,25% (dinocap) – “Rom va Haas”, SMA
KMAX 50% (2-carbometoxiaminochinazol), Uzbekistan
Copper sulfate 98% (copper sulfate), Uzbekistan
Green vitriol (iron sulfate) 53%, Uzbekistan
Calcium polisulfid
Sulfatimis + calcium hydroxide
Nitrafen 60% (citroalkilfenolat), Russia
Oxichom (oxadixil + copper oxychloride), 80%, Russia
Sulfur, 30%, Ukraine
Previkur 60%, “Baier”, Germany
Raxil 6% - “Baier” Germany
Ridopolichom 60% (metalaxil + policarbicin), Russia
Saprol 20% (triforin), “Shell”, England
Scor 25% (difenconazol), “Ciba”, Swizerland
Sportak 45% (prochloraz), “Shoring”, Germany
Tilt 25% (propiconazol) – “Ciba”, Switzerland
Topaz 10% (penconazol) – “Ciba”, Switzerland
Topcin-M 70% (tiofanatmetil) “Nishlen Soda”, Japan
Flamenko 10% - “Baier”, Germany
Folikur BT 22,5% - “Baier”, Germany
Copper oxychloride 90%, Russia
Copper oxychloride 50%, “Cuvrokvium Corporation”, SMA
Euparen 50% (dichlofluand), “Baier”, Germany

C. Chemicals for seed treatment
Agrocit 50% (benomal), “Chinoi”, Hungary
Apron 35, 38, 9% (metalaxil) – “Ciba”, Switzerland
Baytan 15% (triadimenol), “Baier”, Germany
Bronotac 12% (bronopol) – “Shering”, Germany
Vindidat 98% (potassium viniloxietilditiocarbamat), Russia
Vitavax 75% (carboxin) – “Uniriyal”, SMA
Derozal 50% (carbendazim), “Hoechst”, Germany
Nitrafen 60% (nitroalkilfanolat), Russia
Ortus, 5%, “HEXOH”, Japan
P-4, 65% - SLR “Agrokim”, Uzbekistan
Policarbicin 80% (complex of salts of etilenbisditiocarbamin + etilentiuramdisulfat, 1:8), Russia

Sumi-8 2% (dinikonazol) – “Sumimoto”, Japan
Formalin 40% (formaldehyd), Russia
Fundazol 50% (benomil), “Chinoin”, Hungary

D. Biological chemicals
Agri 50% (deltaendotokcin bisilusa turingisa) – “Ciba”, Switzerland
Baktospein (bisilusa turingisa), “Dufar”
Bitoksibacillin (exotokcin bisilusa turingisa), Russia
Virin-OS (granulez virus + poliedroz virus of autumn warm), Russia
Virin-XS (granulez virus + poliedroz virus of autumn warm), Russia, Moldova, Uzbekistan
Gomelin (bisilusa turingisa), Russia, Belorussia (White Russia)
Dendrobacillin (bisilusa turingisa, dendrolimus variety), Russia
Dipel (bisilusa turingisa, kurstaki variety), “Ambot”, SMA
Lepidocid (bisilusa turingisa, kurstaki variety), Russia
Trichodermin (trichoderma, trichodermin, veridin, glitokcil), Uzbekistan
Trichodermin-BL (--»--), Russia, Moldova
Turingin-1,0,3% (exotokcin bisilusa turingisa, turingensis variety), Russia
Turingin-2 10% (exotokcin bisilusa turingisa, turingensis variety), Russia
Turicid (bisilusa turingisa), “Sandoz”, Switzerland

E. Herbicides
Alirox 80% (ERTS) 72% + antidot AD-67), “Shagrochem”, Hungary
Acenit 50% (acetochlorus), “Nitrochemistry”, Hungary
Bazagran 48% (bentazon), BASF, Germany
Banvel 48% (dikamba), “Sandoz”, Switzerland
Basta 20% (ammonium gluphosinat) , “Hoechst”, Germany
Gazargard-50, 50% (prometrin), “Ciba”, Switzerland
Dalapon 85% (dalapon), Bashkirdistan
Dual 96% (metolachlorus), “Ciba”, Switzerland
Zellek 12,5% (galoksifonetoksietil), “Daw-Elanko”, SMA
Zellek super, 12,5% (galoksifonetoksietil), “Daw-Elanko”
Zenkor 70% (metribuzin), “Baier”, Germany
Kotoran 80% (fluometuron), “Ciba”, Switzerland
Kotofor 80% (diprometrin), “Ciba”, Switzerland
Nitran 30% (trifluralin), Bashkirdistan
Olitref 25% (trifluralin), Hungary
Ordam 6E 72% (molinat), “Zeneka”, England
Pantera, 40g/l – “Croipton (Uniroyal Chemical)”
Partner 22,5% - “Baier”, Germany
Pakhton 80% (diprometrin), Bashkirdistan
Penitran 33% (pendimetalin), Bashkirdistan
Prometrin 50%, “APT”, Italy; “Okason”, Italy; “Astra”, Horvatiya; Romeniya, Bashkirdistan
Propinat 85% (dilapon), Bashkirdistan
Puma-Super, 7,5% - “Baier”, Germany
Roundup 360 g/l – “Baier”, Germany, “Registartions Ltd”, England
Risan 50% (bentiocarb), Bashkirdistan
Rozalin 50% (5-chlor-2-metilbenzimidazol), Uzbekistan
Saturn 50% (bentiocarb), “Kumiai Chemical”, Japan
Sonalan 33% (etalfluralin), “Daw Elanko”, SMA
Stomp 33% (pendimetalin), “Cianamid”, SMA
Totril 22,5% (ioxynil), “Ron-Pulenk”, France
Treflon 24% (trifluralin), “Daw-Elenko”, SMA
Fluometuron 80% (fluometuron), “Chemo Complex”, Germany
Furore Super 7,5% - “Baier” Germany
Fuzilad 25% (fluazifonbutil), 12,5% - “Zeneka”, England
Eradican 6E 72% (ERTS 72% + antidot) – “Zeneka”, England
Yalan 72% (molinate) - Bashkirdistan

Yalan 60% (molinate) – Bashkirdistan
Yalan 10%, 10% (molinate) - Bashkirdistan

F. Defoliants and desiccants
Basta, 14% - «Hoechst», Germany
Gemetrel, 60%, Uzbekistan
Dropp, 50% - «Shering», Germany
Dropp-Turbo, 20% - «Shering», Germany
Sihat, 70,5%,Uzbekistan
Finish 450 g/l – «Baier », Germany
Hayot, 85%, Uzbekistan
Harvaid 25P, 250 g/l. «Uniroyal», SMA
Manganese chrorate, 60%, Uzbekistan
Calcium chlorate, chloride, 42%, Russia
Calcium chlorate, chloride, 62%, Russia

Annex 7: Minutes of Meeting of Public Consultation in Dushanbe

ПРОТОКОЛ

Презентации Рамочного документа управления социально-экологическими рисками и воздействиями по проекту «Усиление устойчивости сельского хозяйства Таджикистана» (P175952) для обсуждения и предложений».

21 апреля 2021 года г.Душанбе

На презентации приняли участие: сотрудники МСХ РТ и районных управлений сельского хозяйства (г.Гисар, г.Турсунзаде), директор ГУП «Точикнихолпарвар» Асоев И., директор ГУП «Нихолпарвар» г.Турсунзаде Турсунов И.С., заместитель директора ОО Кухистон Нассырджанов Салим, представитель ОО Экологический фонд Таджикистана Юсупджонов Ф., национальный консультант САР при МСХ РТ Раджабова Н.С, другие ответственные сотрудники министерства. Всего на презентации приняло участие 25 человек. (Список участников прилагается в приложении 1).

Консультантом по вопросам охраны окружающей среды Дадобаевым Д.С. была сделана презентации по Рамочному документу управления социально-экологическими рисками и воздействиями.

Рамочная модель управления экологическими и социальными охранными мерами была представлена посредством слайдов Power Point, содержащих краткое содержание документа вместе с предлагаемыми мерами по предотвращению и смягчению последствий воздействий. В своей презентации Дилшод Дадобаев рассказал о проекте, его целях и задачах, компонентах, направлениях и его потенциальном экологическом и социальном воздействии в процессе реализации проекта. Он подчеркнул важность вопросов защиты окружающей среды и о том, что воздействия вследствие реализации проекта включают в себя загрязнения воздуха и слоя земли, вызванные строительными работами, использованием пестицидов и химикатов для борьбы с саранчой. Земляные работы в ходе проведения строительных работ могут также оказать неблагоприятное воздействие на растение, и может привести к вырубке деревьев.

Презентатор кратко ознакомил с Социально экологическими стандартами Всемирного Банка и отметил стандарты применимые к проекту. Презентатор высказал свое видение и предоставил комментарии по аспектам процедур и правил оценки воздействия на окружающую среду и по критериям и правам лиц, подвергшихся воздействию проекта.

В ходе обсуждения данного документа участники также выразили свои взгляды и отметили, что люди могут испытать различные воздействия в ходе проведения строительных работ, такие как шум техники (в ходе транспортировки строительных материалов и работы строительного оборудования), пыль, строительные отходы (например, в ходе демонтажа старых окон, дверей и крыш зданий), которые могут неблагоприятно повлиять на здоровье работников, местных жителей, а также на их безопасность. Так же в ходе дискуссий было отмечено что использование отравляющих веществ для борьбы с саранчой может неблагоприятно повлиять на домашний скот. В дополнение существует множество других аспектов, которые, даже если они являются временными, могут оказать серьезные воздействия на экологию и здоровье людей. Будет необходимо принять необходимые меры по смягчению воздействий таковых неблагоприятных

воздействий. В ходе презентации также обсуждались другие вопросы, связанные с окружающей средой и социального воздействия проекта, а именно:

- Требования законодательства Республики Таджикистан по охране окружающей среды
- Меры по смягчению воздействий на окружающую среду, предлагаемые в документе
- Рамочная модель плана управления пестицидами
- Политики Всемирного Банка по принудительному переселению, в которых содержатся защитные меры по устранению и смягчению воздействий рисков, связанных с принудительным переселением в рамках проекта.

В ходе консультаций участников, лица, принявшие участие в семинаре, задали ряд вопросов, включая:

- Будет ли проведена государственная экологическая экспертиза данного проекта?
  Государственная эколгическая экспертиза всех строительных компонентов проекта будет проведена до начала строительных работ.
- Будут ли рассматриваться народные средства борьбы с саранчой?
  Проектом будет представлен самый современный опыт борьбы с саранчой, который включает себя биологической борьбы с вредителем.
  Однако опыт поколений показал, что саранча не особо восприимчива к народным средствам, поэтому их применение подходит только на стадии первых поползновений или в качестве профилактики.
- Представленные 10 социально экологических стандарта очень сложны. Могут ли эти стандарты упрощаться для локального уровня?
  Эти 10 экологических и социальных стандартов, предложенные Всемирным банком, являются критериями, используемыми во всех проектах по всему миру. Воажно обеспечить соблюдение этих требований, поскольку они защищают окураэающую среду, здоровье людей, местную культуру, уровень жизни и не допускают коррупции и многого другого.

Участниками было отмечено о прозрачности подготовленной технической документации, что говорит об эффективности подходок к реализации проекта.

Секретарь Н.Раджабова

Annex 8: Minutes of Meeting of Public Consultation in Bokhtar

ПРОТОКОЛ

Презентации «Рамочного документа по проекту «Усиление устойчивости сельского хозяйства Таджикистана» (P175952) для обсуждения и предложений».

22 апреля 2021 года г.Бохтар

Участвовали:

На презентации приняли участие представители областного и районного управления сельского хозяйства Хатлонской области (районов Дусти, Балхи, Вахш, А.Джами, г.Леваканд, г.Бохтар), председатели фермерских и питомнических хозяйств, консультанты по экологическим и социальным вопросам ГУ РПСХ и ВБ
Всего на презентации приняло участие 29 чел. (Список участников прилагается).

Первым выступила Рахматова Д.К. и представила краткую информацию о Проекте. Проект направлен на усиление антикризисной устойчивости сельскохозяйственного сектора, на повышение внутренней продовольственной безопасности, укрепление основы для повышения производственной и экспортной конкурентоспособности растущего сектора садоводства. Так же проект направлен на улучшение потенциала раннего предупреждения, готовности и реагирования к кризисам Министерства сельского хозяйства дргих соответствующих государственных и научных учреждений.

На данном выступлении представлены цели, задачи и компоненты Проекта и короткое сообщение о каждом из них. Географический охват будет в целом общенациональный, при этом особое внимание будет уделяться территориям в Хатлонской и Согдийской областях, РРП и г.Душанбе. Также Рахматова Д. напомнила, что на прошлой неделе участникам было представлено сообщение о трех разработанных документах по социальным аспектам, а именно:

- Процедуры регулирования трудовых отношений;
- Основы политики переселения;
- План взаимодействия с заинтересованными сторонами.

Сегодня же на общее рассмотрение участников представляется полный документ: Рамочный документ управления рисками и воздействиями, то есть, включены аспекты по охране окружающей среды. Данный документ относится к числу основных технических документах Проекта, где рассмотрены все нормативные экологические и социальные стандарты Всемирного Банка и их требования. Также рассмотрены национальные институциональные основы, касательно социально- экологических вопросов.

Далее выступил консультант по охране окружающей среде Всемирного Банка Дадобоевым Д.С., который представил на общее рассмотрение презентацию на тему: «Проект повышения устойчивости сельского хозяйства в Таджикистане (P175952)».

В своей презентации по оценке экологических рисков и мер по их предотвращению, Дадобоев Д. подробно рассказал воздействие программ на экологические аспекты Проекта в рамках каждого компонента. В рамках первого компонента были рассмотрены существующие

воздействия, риски и меры их предотвращения, связанные с семеноводством, производством саженцев и посадочного материала. Здесь указаны риски на окружающую среду, на строительство и/или реконструкцию существующих офисных зданий, лабораторий, теплиц и др.

В рамках компонента 2 приведены экологические риски в процессе поддержки инвестиций в агро-логистические центры для усовершенствования цепочек добавленной стоимости в плодоовощном секторе. В рамках 10 экологическо- социальных стандартов также подробно определены воздействия и меры по их смягчению/устранению в ходе реализации программ Проекта. Особое внимание было также уделено проведению мониторинга и оценки хода выполнения, экологических и социальных мер, указанных в данном документе.

В рамках компонента 3 рассмотрены вопросы, связанные повышению потенциала отобранных государственных институтов для предотвращения и управлению кризисными ситуациями. Особенно, вопросам управления плодородием почв, защите растений и борьбе с саранчой. Отмечено, что данный Рамочный документ будет содержать подробные процедуры управления органическими отходами, связанными с сельскохозяйственным производством, транспортировкой и хранением. Документ включает также меры и действия по оценке и управлению конкретными рисками и воздействиями на сообщество, возникающими в результате деятельности по Проекту, включая риски COVID-19 и меры предоростожности, управление движением и безопасность, загрязнение и обращение с отходами и борьба с вредителями, саранчой и др.

Далее, выступил, консультант по экологическим вопросам ГУ РПСХ Носиров Р.С. В своем выступлении отметил, что в рамках данного документа довольно подробно рассмотрены все экологические аспекты в соответствии с экологическими стандартами Всемирного Банка. Носиров Р.С. отметил, что одним из важных направлений и аспектов реализации нового Проекта является поддержка охраны окружающей среды. Всемирный Банк в рамках финансирования реализуемых программ в нашей республики считает необходимым обеспечение экологической и социальной безопасности с целью выявления, минимизации и смягчении потенциальных неблагоприятных экологических и социальных последствий.

Основной целью данного Рамочного документа состоит в том, чтобы предупредить негативные экологические последствия. И создать основы для сбережения продуктивных земельных ресурсов, а также для последующего постепенного роста экономической и экологической значимости (предупреждения эрозии почв, засоления, подтопления земель, загрязнения наземных и водных экосистем, применение в большом количестве минеральных удобрений и пестицидов, вредители и болезни, что наносит часто гораздо больший вред плодородию почв и приводит к потере экономической и экологической ценности земель. При выполнении строительных работ должны приниматься меры по охране природы, рациональному использованию природных ресурсов, рекультивации земель, обезвреживанию и утилизации вредных твердых отходов, выбросов и сбросов до уровня предельно допустимых нормативов охрана труда и других ресурсов обеспечивающие охрану окружающей природной среды и здоровье человека. Он также, касался вопроса охраны окружающей среды посредством использования агротехнической, механической, физической, биологической и народными средствами защиты растений от болезней и вредителей, способствования плодородию почв, мир растений, улучшению качества сельскохозяйственной продукции правилами и процедуры производства, хранения, транспортировки, использования минеральных удобрений и пестицидов.

Носиров Р. отметил, что учитывая распространения инфекционного заболевания COVID-19 для безопасности и предотвращения от заражения данной болезни во время общения, посещение многолюдные места, работы и т.д. обязательно использовать антисептики и медицинские маски.

Начальник аграрного отдела Хукумата района А.Джоми он отметил важность слушания проекта таких Рамочных документов, где учитываются наши мнения, а так же отметил, что сегодня в районе в результате реорганизации и реформирования сельскохозяйственных организаций (бывшие колхозы и совхозов) появились тысячи индивидуальных, семейных и коллективных хозяйств. И у нас остаётся первостепенная задача- обеспечение устойчивого развития сельскохозяйственного производства при условии бережного отношения к окружающей природы. Учитывая разнообразия профессий на уровне руководства хозяйств, довольно актуальным является проведение семинаров по вопросам комплексной борьбы с вредителями и болезнями, непосредственно на местах с фермерами с практическими занятиями, хотя бы зонально-в двух джамоатах каждого района.

Руководитель сельскохозяйственного управления района Леваканд отметил, что сегодня к недостаткам, характеризующих состояние сельского хозяйства относятся снижение плодородия почвы, разрушение ее структуры, загрязнение почв, водных источников и атмосферы из-за несовершенства существующих технологий, отсутствие доступных методов и средств по оценке экологической ситуации в сельском хозяйстве.

Проведение таких важных семинаров по вопросу применения различных методов борьбы с болезнями и вредителями в системе сельского хозяйства, минеральных удобрений практически на местах в дехканских хозяйствах с фермерами и дехканами позволяет решить ряд важных задач земледелия. Такие как, обеспечение воспроизводства плодородия почв, получение высококачественной растениеводческой продукции, сбалансированной по химическому составу и питательной ценности, а также повышение рентабельности растениеводства и обеспечение экологических прав и норм.

Председатель фермерского хозяйства района Балхи в своем выступлении по вопросу выращивания и распространения саженцев и других посадочных материалов, предложил проведение практических семинаров по новым методам черенкования, проведение прививки и необходимость финансовой поддержки питомнических хозяйств. Он затронул низкий уровень знания фермеров в сфере болезни растений и животноводство, неправильное и сверх нормы использования ядохимикатов в сфере производство и переработки сельхоз продуктов, низкий уровень производителей в выборе минеральных удобрений и семена, строительство лабораторий по анализу Минудобрений и пестицидов.

Председатель питомнического хозяйства района Дусти отметил, очень мало тренингов в сфере выращивания и по уходу интенсивных садов, о биологических и традиционных методах защиты овощей, фруктовых садов и виноградников, использовании новейших биопрепаратов и технологий в сельскохозяйственной отрасли, низкий уровень знания сельхозработников и в целом населения по защите окружающей среды.

Предложения.

1. Подробно прослушав презентацию и выступления участников вцелом все участники одобрили представленный Рамочный документ управления социально- экологическими рисками. Также одобрили прозрачность механизма реализации проекта при утверждении технической документации; Выразили свою благодарность руководству Всемирного Банка за столь нужный и очень востребованный фермерами Проект, а также готовность к тесному сотрудничеству в ходе реализации программ Проекта;

2. Предложено включить в программы проекта проведение обучающих семинаров по вопросам выращивания, по уходу интенсивных садов, о биологических и традиционных

методах защиты овощей, фруктовых садов и виноградников, использовании новейших биопрепаратов и технологий в сельскохозяйственной отрасли;

3. Повысить уровень знания фермеров в сфере болезни растений и животноводство, неправильное и сверх нормы использования ядохимикатов в сфере производство и переработки сельхоз продуктов через информационные материалы, консультации и др.;

4. Включить в программы Проекта проведение практических семинаров по новым методам черенкования, проведение прививки и необходимость финансовой поддержки питомнических хозяйств; Создать биолаборатории для анализа состава минеральных удобрений;

Секретарь Рахимов Л.

Annex 9: List of participants of Public Consultation in Dushanbe

СПИСОК УЧАСТНИКОВ ВСТРЕЧИ ПО ОБСУЖДЕНИЮ ПРОЕКТА ДОКУМЕНТА ВСЕМИРНОГО БАНКА в г.Душанбе

21.04.2021

Ф.И.О.	Организация	должность	телефон	Эл.почта
Ходжаев У. А	Х.Д. „Аббос"	агроном	919192379	
Меликова М.О.	Х.Д. „Арзон-2014"	экономист	907145698	
Собиров У. Р.	х.д. „Фаридун"	агроном	917236514	
Каюмов Н	х.д. „Каюмов Н"	Раис.	918926917	
Исоев Исмоил	ПВД „[illegible]"	и.в. Роҳбари КВД	985.65.25.25	
[illegible] Бобосафар	С.Р. кишоварзи н. Хисор	Сардор [illegible]	[illegible]	
Довлатова Фаришта	Раёсати кишоварзи	мутахассис	908-84-8429	
Турсунов И. С	КДФ [illegible] Турсунзода	Директор	933083009	
Зумоев Ш.	Х.Д. Баракат	агроном	904121480	
Азизов Ф	х.д. „Даврон"	Раис	907496410	
Абдурахмонова С	х.д. „Одил"	агроном	935.50.65.50	
Авазов А.	х.д. Авазов	Раис	917589855	
Урозова П.	Ваз. кишоварзи	Сармутахассис	907801231	
Насырджанов С	ОО Кухистон	зам. директора	907516885	
Юсунджанов Ф	ОО Экологический фонд Таджикистана		918677048	

Раджабова Н.Р.	Секретариат по аграрной реф.	Национальный консультант	935700177	niginstat@list.ru
Нуралиев Ф. Х.	Х/д „Фируз"	мутахасис		
Рахимов М. А	Х/д „Гулсино"	нозир-референт		
Мусулмонова С.	мутах. шуъб. Вазорат [illegible]	мутахассиси шуъб.	935496116	musulmonova858@mail
Иброгимова У.	муп. пешбари Раёсати [illegible]	мутахассиси пешбар	98-720-4746	
Иброгимов Х. И	сармутахассис Р.[illegible]		918704534	
Каромозода Х.	Х/д „Фотима-Зуҳро"	мутахассис	985.87.2003	
Чемонов А	Вазорати кишоварзӣ	муп. пешбари	985255128	
Додобоев Д.	Бонки Ҷаҳонӣ	Мутахассиси оид ба ҳифзи муҳити зист	939000572	

Annex 10: List of participants of Public Consultation in Bokhtar

Список Участников по обсуждению Проекта документа
Всемирного Банка в г.Бохтар
22.04.2021

Ф.И.О.	Организация	Должность	Телефон	Примечание
Асомиддинзода Ш.	Раёсати кишов. Бохтар	сардор	935136986	
Исмаилзода Б.	Раёсати кишов.	мутахассис	939376666	
Мирзоев Ч.	Шуъбаи кишов.	н. А. Чоми	938802896	
Исматов Рахматулло	х/д „Рахмат"	агроном	937543987	
Оринов Салим	х/д „Михол"	н. А. Чоми	934262621	
Баротов Алон	х/д „Алонзон"	фермер	933442125	
Турдиев С. Х.	х/д „Солехон"	фермер	935145519	
Лочинов Рустам	ХБУ. нихолпарвари	агроном -	935194048	
Иззатмамадов Г.	мутб. Экол. Левакант	мутахассис н. Дусти	918910484	
Расулов Ч.	х. Д. „Эхсон"	н. Вахш, фермер	907728682	
Сатторов Ш.	х. д. „Шароф"	н. Балхи, фермер	905300856	
Пиров Д.	х. д. „Далер"	н. А. Чоми, агрон.	935975528	
Гулов Сафар	шуъбаи Заминсозӣ	н. Вахш	934230440	
Гурдиев Аслан	шуъбаи кишов.-и	н. Левакант	935482569	
Сохибов М.	х. д. „Ахсон"	н. Балхи	918521945	
Туракулов О.	х. д. „Ориф"	н. Дусти	900910972	
Шарипов Б.	ОО „Мевахои Тоҷ"	н. Вахш	935662922	
Худаев М.	ОО „Маърифат"	Технолог	934202018	
Дустматов Б.	х. д. „Бахтиер"	фермер	938327480	
Каримов Х.	х. д. „Баракат"	н. Вахш	902330174	
Галиев Максуд	х. д. „Максуд"	н. А. Чоми	935187891	
Холов Р.	х. д. „Расул"	н. Балхи	904232348	
Юсуфзонов С.	ОО „Давлат"	агроном	901182222	
Давлатов Ф.	КВХ „Нихолпарвар"	н. Вахш	938192771	
Каримов Н.	ОО „Дусти"	н. А. Чоми	934230770	
Дустов М.	х. д. „Мевахои Тоҷик"	н. Дусти	918222230	
Рахимов Фируз	х. д. „Махина"	ш. Бохтар	901192770	
Саидуллоев Х.	ОО „Хосилот"	ш. Бохтар	905508197	
Шарифи Расул	Маркази соҳибкорӣ	ш. Бохтар	935719422	
Рахматова Я.	МД РССК	мушовир	888884419	
Носиров Р.	МД РССК	мушовир	888884462	