Republic of Kazakhstan

Landscape Restoration Project

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

October 20, 2020

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List of Abbreviations and Acronyms

CERC	Committee on Environmental Regulation and Control, MEGNR
CMR	Complaints Monitoring and Reporting
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
CSO	Civil Society Organization
DAS	Dry Aral Seabed
EA	Environmental Assessment
EBRD	European Bank for Reconstruction and Development
EE	Environmental Expertise
EHS	Environment, Health and Safety
EIA	Environmental Impacts Assessment
ESF	World Bank Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	World Bank Environmental and Social Standards
FAO	Food and Agriculture Organization of the United Nations
FMG	Fertilizer Management Guidelines
FWC	Forestry and Wildlife Committee, MEGNR
GDP	Gross Domestic Product
GEF	Global Environment Facility
GFP	Grievance Focal Point
GIIP	Good International Industry Practice
GRM	Grievance Redress Mechanism
GRP	Gross Regional Product
GRS	World Bank Grievance Redress Service
HF	Household Farm
IBRD	International Bank for Reconstruction and Development / World Bank
IDA	International Development Association / World Bank
IE	Individual Entrepreneur
IF	Individual Farm
IFC	International Finance Corporation
INDC	A term of the United Nations Framework Convention on Climate Change that commits state parties to reduce greenhouse gas emissions.
IPM	Integrated Pest Management
IPV	Index of Physical Volume of Production
LDN	Land Degradation Neutrality

LGMC	Local Grievance Management Committee
LLP	Limited Liability Partnership
LMP	Labor Management Procedure
LRP	Kazakhstan Landscape Restoration Project
M&E	Monitoring and Evaluation
MEGNR	RK Ministry of Ecology, Geology, and Natural Resources
MIS	Management Information System
MSMB	Micro, small and medium-sized business
NGMC	National Grievance Management Committee
NGO	Non-Governmental Organization
O&M	Operation and maintenance
ODE	Oblast Environmental Department, CERC
ODNR	Oblast Directorate of Natural Resources and Environmental Control
OP	Operation Policy (World Bank)
OTIFW	Oblast Territorial Inspectorate of Forestry and Wildlife
PAP	Project Affected Person
PCB	Polychlorinated biphenyls
PDO	Project Development Objective
PF	Peasant Farm
PFA	Kazakhstan Country Partnership Framework
PIU	Project Implementation Unit
PMP	Pesticides Management Plan
RGMC	Regional Grievance Management Committee
RK	Republic of Kazakhstan
RK MOA	RK Ministry of Agriculture
RMR	Risk Reduction Regime
RPF	Resettlement Policy Framework
RSP	Resilience Support Program
SEE	State Environmental Expertise
SEP	Stakeholder Engagement Plan
SFF	State Forest Fund
SNFR	State Natural Forest Reserve
SNNP	State National Natural Park
SNR	State Natural Reserve
TA	Technical assistance
WB	World Bank
WWF	World Wildlife Fund

1. Introduction

The Kazakhstan Landscape Restoration Project (LRP) is a part of the Resilient Agroforestry and Rangeland Project under the Sustainable Forest Management Impact Program on Dryland Sustainable Landscapes financed by the seventh replenishment of the Global Environment Facility Trust Fund (GEF-7). LRP will be part of the program, which supports Central Asia countries to implement the Astana Resolution via the Resilient Landscapes Program (RESILAND). The objective of this program is to avoid, reduce, and reverse further degradation, desertification and deforestation of land and ecosystems in dryland areas, through the sustainable management and restoration of degraded landscapes, including forest and pastureland.

The project is relevant to Kazakhstan's Country Partnership Strategy (CPS), Area of Engagement 3: Ensuring environmentally sustainable development and achievement of high priorities of the environmental protection and low carbon strategy. In line with the CPS, the LRP will support efforts to pilot good agroforestry practices and provide recommendations for reforming environmental permit systems, monitoring and enforcement systems. The World Bank's Country Partnership Framework (CPF) for 2020-2025 is aimed at supporting efforts of the Government of the Republic of Kazakhstan (RK) to essentially increase the competitiveness of the economy by means of interventions which will create preconditions for establishment of a modern, effective, climate-smart and entrepreneurial society. The project is of particular relevance to CPF Objective 2 of promoting market-led agricultural transformation and Objective 6 of enhancing natural resources management. LRP meets the CPF's selectivity criteria of: (i) contributing to the inclusion and shared prosperity agenda; (ii) improving conditions to attract private investments or mobilize additional resources (Maximizing Finance for Development); and (iii) contributing to regional or global public goods. This project will also contribute to implementation of the World Bank (WB) Group's Climate Action Plan, particularly Objective 2 (Drive a mainstreamed, whole-of-government programmatic approach) of catalyzing impacts on a large scale and the particular reference to the prioritized solution in the high-potential area of integrated landscape management.

Under the Bonn Challenge, the RK committed to restoring 1.5 million ha of forests by 2030 and thereby increasing the forest cover in the Republic from 4.7 to 5% and reducing land degradation. Kazakhstan is in the process of setting Land Degradation Neutrality (LDN) targets. Under the Paris Agreement, the RK pledged to pursue greenhouse gas emissions mitigation policies which cover several sectors (energy, agriculture, waste, transport, buildings), including land use and forestry. In its INDC, the country committed to reducing emissions by 15% from the 1990 level. Kazakhstan's Climate Action Plan's goals are to integrate desertification combating measures into economic and social development, combat and prevent lands from desertification and maintain their enabling and sustainable condition.

The project will operate in a macroeconomic situation that has worsened past few months due to fall in external demand for crude oil and manufactured goods as well as the COVID-19 quarantine. In Kazakhstan, like in other parts of the world, the COVID-19 crisis is disrupting livelihoods and communities. The pandemic may pose a serious threat to food security and nutrition of vulnerable segments of population. The GDP growth is projected to slow down to at least 1.0 percent or lower in 2020[1]. Prior to COVID-19 outbreak the draft budget for 2020 assumed a slight increase in the deficit, but now considering significantly lower oil prices and standstill in economic activity the deficit is likely to be much higher. Inflation is likely to move up above the Central Bank target on the back of Tenge depreciation, which lost almost 15 percent of its value against U.S. dollar as of March 2020. The deeper shortfall in tax revenues from economic fallout might require additional resources to be deployed. Hence, the government is expected to rely more on financing from international financial organizations and donors particularly in areas of global public goods like environment. Rural poverty and unemployment is expected to increase

[1] Downside scenario projects contraction by 0.8 percent.

due to the economic impact of COVID 19. The landscape restoration project design was adapted to the emerging risks and threats due to COVID-19 outbreak.

The RK took all measures in response to COVID crisis to mitigate its consequence. An emergency situation and lockdown were declared during March-April, 2020. Social support was provided to the most affected part of the population, including poorest part and those who lost their income during pandemic. Apart from emergency measures in healthcare, monthly payments in amount of the minimal salary (42,000 Tenge or about US$100) have been done. In addition to monetary payments Government arranged delivery of food carts and critical medicine to all in need, including families with many children and disabled. Social assistance was also automatically extended in case terms of such an assistance expired during quarantine period, credit payments to banks were also extended.

Purpose of the Environmental and Social Management Framework (ESMF)

The main goal of the ESMF is to avoid, minimize or mitigate, potential negative environmental and related social impacts caused by implementation of the project. The Framework approach is chosen as the project is financing a broad range of small and medium scale activities, most of which will not be identified until implementation begins. The Framework ensures that the identified sub-projects are correctly assessed from environmental and social point of view to meet the WB's Environmental and Social Framework (ESF) and its applicable Standards, as well as Kazakhstan's Environmental and Social Laws and Regulations for adequate mitigation of any residual and/or unavoidable impacts. The ESMF serves as a guiding tool for Project Implementation Unit (PIU) in identifying and assessing the potential environmental and social impacts of sub-projects, in preparing environmental and social management plans (ESMPs) that will summarize necessary mitigation measures to minimize or prevent identified risks, and to provide guidance on environmental and social monitoring and reporting.

Sectoral Context

The Kazakhstan drylands and degraded landscapes have a negative impact on the economy and living standards of the population of the country, particularly affecting the rural poor that directly depend on what the land can provide for their nutrition and livelihood. Economic losses from land degradation are estimated to be between 3 and 11% of GDP; at that, the losses caused by inaction exceed the costs of actions by 5 times. The landscapes of Central Asia are plagued by erosion, deforestation, overgrazing and other impacts which lead to the loss of productivity and reduction in efficiency of lands, as well as exacerbating natural disasters such as sand shifts, dust and sandstorms. Kazakhstan is one of Central Asia regions most affected by climate change (droughts, flooding, landslides, etc.), which acts as a multiplier of land degradation, decrease in agricultural productivity, water pollution and sedimentation, increased frequency of disasters, destruction of infrastructure and loss of lives. About 80% of Kazakhstan's land is considered degraded, including the dry Aral Seabed. Most of these lands are arid zones with saxaul forests, steppes and pastureland where further degradation is expected as the climate changes.

Kazakhstan has only 4.7 percent of its land area covered by forests. Half of that area (49%) is covered by saxaul woods, which have a high environmental value for protection of soils against erosion. The arid and continental climate of Kazakhstan, with extreme winter and summer temperatures, makes forest and rangeland ecosystems particularly vulnerable to various threats like desertification; fires (natural and man-made, including agricultural burning); pest and disease harborage areas which, as a rule, emerge after fires; overexploitation due to illegal logging; and overgrazing of pastures as a result of uncontrollable excessive grazing pressures, lack of rangeland rotation, or any pasture management system. Almost all forests in RK are owned by the state and managed by local governments (oblast akimats) – 79%; the Forestry and Wildlife Committee (FWC) of RK MEGNR – 20%; the area of private forest lands is insignificant and makes up less than 700 ha. In 2012, the RK Government adopted a legal act on support (of natural and non-state legal entities) of establishment of private forest plantations in the country for production of wood, firewood and fruit by means of reimbursement (of up to 50%) expenses for planting and growing. However, implementation of the subsidy program hasn't started yet due to the following reasons: lack of knowledge about methods of cultivation of fast-growing plantations and agroforestry practices; lack of

clarity on the mechanism for subsidizing private forest plantations; lack of public awareness of land degradation and landscape restoration; lack of incentives for farmers to apply methods of sustainable land use and forest growing. Under LRP, these barriers will be removed by means of reaching wide agreement and improving stakeholders' understanding of the model for agrosilvopastoral farms, raising public awareness of the issue of land degradation, financing of agroforestry demonstration sites (models) and improving livelihoods of local communities. Engagement of the private sector (farmers and local communities) in cultivation of fast-growing plantations, fruit, berry and nut-bearing trees and agroforestry methods will contribute to the development of the private forest fund in the country.

Agriculture in Kazakhstan is a small sector of the economy; it contributes less than 10% to GDP and employs about 2.5 million. About 45% of the country's population live in rural territories and the income of nearly 30% of labor force is generated by employment in the agricultural sector. The average monthly wage in agriculture is low and makes up about 80 000 tenge a month (about US$200) which is significantly lower than other sectors, including transport, construction, education, health care and social services.

In RK, more than 15 000 organizations involved in agribusiness in the agricultural sector are registered (exclusive of forestry and fishery); they account for 3.5% of all organizations registered in Kazakhstan, including in the project areas: 560 individual farms and other organizations in Kyzylorda oblast and 660 in Zhambyl oblast. The share of women-headed households in Kazakhstan is 70 percent.

Project Overview

The Project Development Objective (PDO) is to pilot and build capacity for community centered landscape restoration in targeted areas.

Project Description. The project activities were identified based on analysis of barriers to conduct landscape restoration, which include weak institutional and technical capacity to utilize advanced technologies for implementation of sustainable landscapes practices and maintain restoration in view of rapid climate change, insufficient knowledge about advanced practices implemented in neighbor countries in the region. The project will also address lack of clarity on incentives and technical knowledge available for farmer and community-centered landscape management models, and Insufficient budgetary support to test innovative methods in sustainable landscapes management.

Environment and Social Risk

The environmental and social risks are both rated moderate. The project will be implemented in several pilot areas in Kyzylorda Region within the Aral Sea Basin and in Zhambyl Region in the south of the country where both agriculture land and State forests exist, allowing the piloting of PPP in "model farms". The project is expected to result in improvements to the natural environment through the planned pilot activities as well as follow-on activities. While there is the possibility of pilot activities involving vulnerable groups or being conducted near protected areas or critical habitats, no negative long-term environmental impacts are expected from this US$4.0 million grant.

Project-financed activities will be grouped into the following three components:

Component 1: Piloting community – centered approach on dryland agroforestry and landscape restoration (US$2.42 million)

Component 1 will finance grants (cash-for-work), technical assistance, goods and services, works, training and operational costs to conduct several key activities related to actual landscape restoration: (a) piloting of community-centered afforestation around Kyzylorda city using successful planting technologies of Saxaul and other drought-resistant trees; and (b) piloting of the farmer-centered approach in establishment of 3 agroforestry demonstration plots in Kyzylorda oblast (5 ha each) of fast-growing fruit tree plantations for combining forestry with fruit production and/or horticulture; and 6 plots in degraded pasturelands in Zhambyl oblast (20 ha each but affecting 1,300 ha of surrounding pastures) for combining

forestry with livestock production. Sample agro-forestry practices based on existing recommendations will include plantation of fodder trees and pasture improvement. Further explanation and selection criteria of participants are given in para 63. Various agro-forestry practices will be evaluated separately based on cost-benefit calculations and beneficiaries' feedback and will be suggested for scale-up in other donor financed projects and/or government subsidized programs as well as farms' self-financed investments. The project will also cover establishment of nursery and technical equipment necessary to conduct those operations. Actions under (a) will be implemented by local forestry enterprises while hiring local community members to carry out the planting, plantations on pastureland will be carried out by the farmers supported by forestry organizations reporting to the local government, involving: (i) knowledge dissemination to farmers, farmers' associations, and the national and local administration about the model and its benefits; (ii) developing markets and rewarding farmers for start-up time; (iii) conducting suitability assessments to identify the areas suitable for agroforestry, for FMNR, and the tree species to be used, and the conditions under which agroforestry or FMNR should be implemented; and (iv) providing local incentives to participating farmers, for example subsidized inputs.

Component 2: Capacity building of the Forestry and Wildlife Committee (FWC) for integrated landscape management (US$1.34 million)

This component will address FWC key bottlenecks to raise their afforestation capacity and support the evolving institutional needs of the forestry sector to become a sustainable and productive sector by financing critical capacity building activities including *inter alia* technical studies, consultations and surveys. Preparatory works including mapping, survey, and design will be made on Dry Aral Seabed, which should allow continued long-term afforestation of degraded area. The project will also support establishment of a depository of forest species' seeds (gene bank), which is needed for scientific and research purposes, and facilitate inventory of unaccounted forest, which should clarify magnitude of land degradation problem in Kazakhstan. To further strengthen forest management capacity the project will support preparation of the forest management plans on selected areas of newly accounted forest in southern and south-western part of Kazakhstan in close proximity to the project area. Just in time technical assistance will be provided to the Ministry of Ecology, Geology and Natural Resources to advance related policies and legislation depending on policy priorities at the project implementation period. The project will also work with the existing LDN workstreams and help establish additional ones as needed to support the development of an LDN strategy and targets for Kazakhstan. This component will also ensure regional cooperation, exchange of experience and dissemination of best practices within the GEF Drylands Impact Program and with neighboring countries.

Component 3: Project coordination and monitoring (US$0.58 million)

Component 3 will finance technical assistance, goods, training and the operating costs of a Project Implementation Unit (PIU) within the FWC, which will coordinate the implementation of the project by managing and monitoring and evaluating the implementation of project work plans; ensure collaboration among stakeholders at national and local levels; report on progress and financial management performance to the World Bank; ensure timely external auditing of project accounts and the appropriateness of procurement and financial management tasks; and ensure adherence to and implementation of environmental and social measures as appropriate. The PIU will also be responsible to produce communication materials for any program-level meetings and knowledge exchange visits and mobilize the participation of Kazakh representatives in such events. Component 3 will also cover the operating costs of a Project Advisory Committee

In view COVID-19, LRP activities were adjusted to respond to emerging risks and threats and include:

- Purchase of adequate personal protective equipment (PPE) and multi-purpose equipment for the forest enterprises staff and local communities including masks, gloves, disinfectant sprinklers are included to the list of equipment to be provided by the project;

- Labor intensive plantation activities will generate employment opportunities and help to mitigate negative social and economic impact of quarantine lockdown;
- Support private farmers in the short-term via grants/cash to grow the required berry bushes, orchard species;
- Purchase of seedlings for berry bushes, orchard species, and other seeds to assist local communities in food security;
- Additional and new jobs could also be created with the commence of the new gene bank and expanding afforestation programs following mapping/inventory of unregistered forests.

In terms of managing the immediate health risks, forestry is considered one of the least risky activities, with both work and supervision amenable to social distancing.

2. Background Data

Location and Size of Project Areas

Kazakhstan is landlocked (with the exception of the Caspian Sea) country in the center of Eurasia, the bigger part of which belongs to Asia and the smaller to Europe; it is located between 45- and 87-degrees east longitude, 40- and 55-degrees north latitude; the official name is the Republic of Kazakhstan. The total area of the country is 2 725 thousand km². In terms of land area, it ranks ninth in the world and second (after Russia) among the countries of the former Soviet Union (USSR). It shares borders with Russia in the North and the West (the border length is 7 548.1 km), with China in the East (1 782.8 km), with the Kyrgyz Republic in the south (1 241.6 km), Uzbekistan (2 351.4 km) and Turkmenistan (426 km). The total length of land borders is 13 392.6 km, the water border on the Caspian Sea is 600 km long. The country extends over 2 963 km from the East to the West and over 1 652 km from the North to the South.

Figure 1 . Map of Kazakhstan

The Project is focused on Kyzylorda and Zhambyl oblasts in the South of the country which have high rates of absolute and relative poverty and where there are drylands and degraded landscapes on lands of the State Forest Fund and agricultural lands.

Kyzylorda oblast is located in the South of Kazakhstan. The area of the oblast is 22 602 thousand ha and by this parameter it ranks fourth in the Republic. In terms of administrative geography, the oblast consists of its center - the city of Kyzylorda and 7 districts. As of February 1, 2020, the population was 804.4 thousand people.

Kyzylorda oblast borders on Uzbekistan in the South and the Southwest, on Turkestan oblast in the East, on Karaganda oblast in the Northeast, on Aktyubinsk oblast in the North and the Northwest. Kyzylorda oblast covers the northeastern half of the Aral Sea with the water-surface area of about 700 thousand ha and the area of the dry seabed of about 2 200 thousand ha.

The Syr Darya travels 1000 km in the oblast, with strongly twisting riverbed and delta wetlands, flows across the central part of the oblast from the Southeast to the Northwest. There are many salt lakes.

The oblast is located to the East of the Aral Sea in the lower reaches of the Syr Darya River, mainly within the Turan lowland (heights of 50 to 200 m), characterized by degraded landscapes of drylands and almost completely covered with sands.

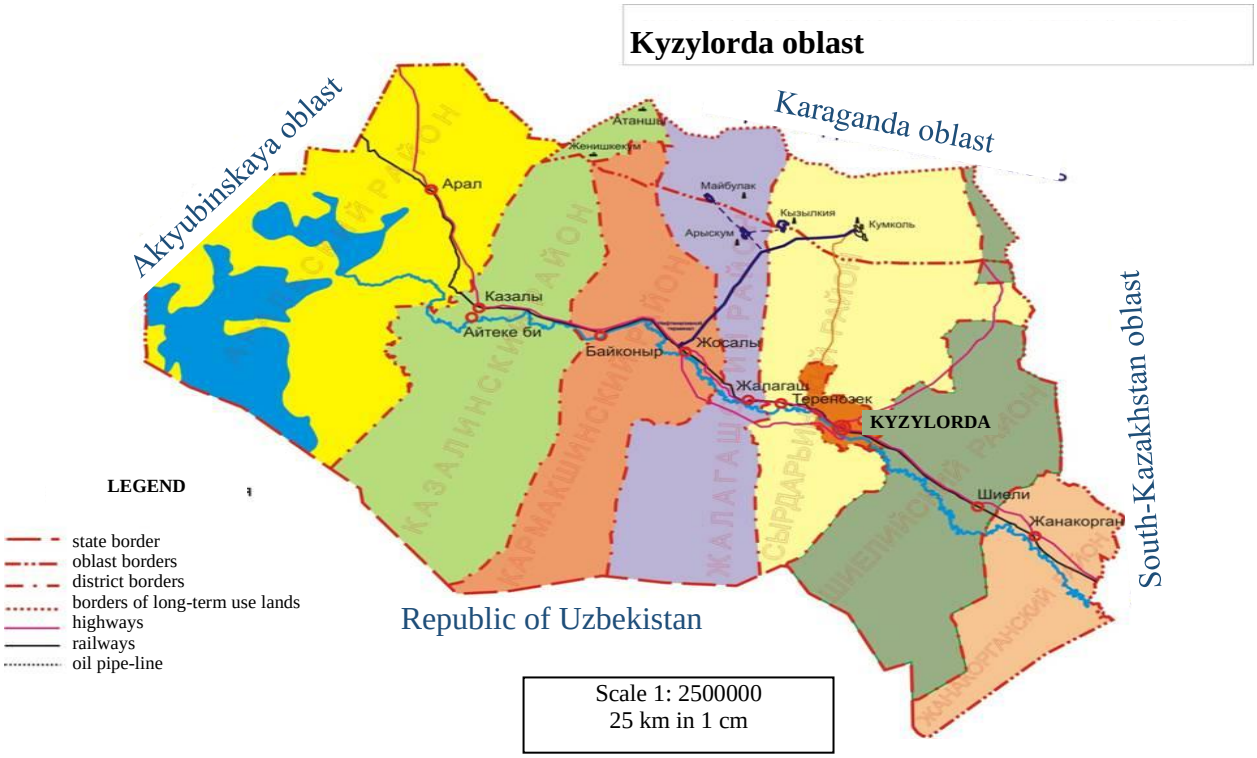

Figure 2. Map of Kyzylorda oblast

Zhambyl oblast is located in the South of Kazakhstan. The area of the oblast is 14 426.3 thousand ha which accounts for 5.3% of the RK's territory. In terms of administrative geography, the oblast consists of its center - the city of Taraz and 10 districts. As of February 1, 2020, the population was 1 130.9 thousand people. Zhambyl oblast borders on the Kyrgyz Republic in the South (6 districts), on Almaty oblasts in the Southeast, on Turkestan oblast in the Southeast and the East and on Karaganda oblast in the North. The oblast extends over 500 km from the West to the East and over 400 km from the South to the North.

The territory of the oblast is mostly flat and includes the basins of the of Shu and Talas rivers; it is limited by the Karatau Ridge in the West, by mountains of the Kyrgyz Alatau, Shu-Ili mountains in the East, borders on the clay and stony desert Betpak-Dala (Severnaya Golodnaya Steppe) in the North and on the West shore of Lake Balkhash in the Northeast – the second (after the Caspian Sea[2]) largest perennial salt lake in the world. Between the Shu and Talas rivers is the Moyynkum desert (Moyynkum Sands) which is characterized by hilly steeply-sloping sands – winnowed deposits of the ancient sea and river sediments.

[2] Before its demise, the Aral Sea was the world's second largest perennial salt lake.

Figure 3. Map of Zhambyl oblast

Physical Environment

Climate

As a whole, the climate of Kazakhstan is continental, with warm to hot summers and very cold winters. The climate specifics that characterize it as continental are a large difference between winter and summer temperatures, aridity or insignificant amount of atmospheric precipitation on most part of the RK, long severe winters and short summers in the North and short winters and long hot summers in the South. However, climatic conditions vary depending on elevation and other geographical factors; the climate of mountain areas is softer and semiarid. Mountain areas in the East of the country - Altay and Tarbagatay, Northern fringes of Tien Shan – ridges of Dzungarian and Zailiyskiy Alatau in the Southeast, the Karatau Ridge, Kyrgyz and Shu-Iliyskiy Alatau in the South and the Southwest belong to the belt with arid climate, moderately warm summers and moderately severe winters. Medium-altitude mountains in the South of the Republic stand apart; as a result of ridge-and-valley temperature inversions there are wide areas with rather soft winters and large amount of precipitation. In the summer, dry tropical air of Central Asia induces hot dry weather in the country; from time to time temperatures go up to +35 or even +40 °C; in the winter, intrusions of Arctic air bring severe frosts, sometimes to as low as −50 °C.

Precipitation is insignificant and most of it falls in the spring and at the beginning of summer; conditions vary from arid to semiarid. Most rainless months are July and August. Only in mountain areas, precipitation falls all the year round. In the winter, snow falls on all the territory of the country, except for Southwestern and Southern periphery. The deepest snow cover is reported in the North and the Northeast of the country. The average annual precipitation on most territory is small – 100 to 500 mm.

The climate of Kyzylorda oblast is continental and very arid with long hot and dry summers and rather warm, short and dry winters. The average temperature in July is 27.2 °C, in January it is -5.5 °C, the highest temperature is +45 °C and the lowest is -42 °C.

The openness to the North allows cold air masses to get freely in the territory of the oblast which results in sharp cold snaps. In the winter, the Northern and Northeast parts of the Aral Sea freeze up.

Aridity is one of distinctive features of the oblast climate. Precipitation is very scarce. Its average annual amount does not exceed 100 – 190 mm (lowest in Kazakhstan) and its distribution by seasons of the year is extremely uneven: the winter and spring period account for 60 % of all precipitation.

Frequent and strong predominantly northeast and east winds are common for all the territory of the oblast. Their average annual speed is in the range from 3.1 to 6.0 m per second. In the winter, strong winds at low temperatures blow off the thin snow cover from elevated terrain features which results in deep frost penetration and cracking of topsoil layers. In the summer, dust storms are reported.

Table 1. Key climatic parameters of Kyzylorda oblast

Ambient temperature (in the open air)	Minimum:	- 42° C and lower
	Maximum:	+45° C and higher
	Average monthly value:	+27.2° C and higher in July - 5.5° C and lower in January
	Average annual value:	+ 9.2° C
Relative humidity	Average annual – 58%, in the summer – about 37%; January - 78%, July - 34%, very dry	
Average precipitation:	Average annual – 129 mm, including in the winter – 73 mm	
Number of days with rainy fog:	About 70 days	
Maximum solar radiation:	From 2 500 to 3 000 hours and more	
Maximum soil temperature	More than 36 °C	
Surface:	From 32 °C to 36 °C and higher (July)	
Elevation (m above sea level):	From 50 - 200 to 1400 m	
Wind speed:	Up to 32 m per second	

The climate of Zhambyl oblast is also continental and arid with long hot and dry summers and rather warm, short and dry winters. The diverse terrain (mountains in the south and deserts in the north) adds variety to the climate.

The average temperature in January is -15 °C on the steppe and from - 6 to - 8 °C in the foothills; in July the temperature is +16 °C and +24 to +25 °C respectively. The highest temperature is +45 °C and the lowest is -42 °C.

Aridity is one of distinctive features of the oblast climate. Precipitation is scarce. The average annual precipitation is from 120 to 300 mm in the flat part and from 500-700 to 1000 mm in the foothills and mountains. The seasonal distribution of precipitation is uneven: the winter and spring period account for 60 % of all precipitation. The average annual relative humidity is 45-50%. The growing season in the foothills and on the plain is 205 to 225 days.

Ground waters occur in layers virtually in the whole territory of the oblast at depths from 2 to 30 meters.

Winds in the territory of Zhambyl oblast blow from three basic directions: northern – Kordayskiy, up to 40 m per second and up to 55 days a year; northeastern – Arystandy-Karabasskiy, up to 35 m per second; southeastern – Mugalzharskiy, up to 50 m per second.

Arystandy-Karabasskiy is a mountain-and-valley wind; it blows continuously along the valley of the Arystanda river located on the southwest slope of the Karatau Ridge. While passing the Moyynkum desert, it originates sandstorm ‘Karabas’, which means ‘the black head’.

Table 2. Key climatic parameters of Zhambyl oblast

Ambient temperature	Minimum:	- 42 °C and lower
	Maximum:	+45° C and higher
	Average monthly value:	+35 ° C and higher in July
	Average annual value:	+ 16 - 17°C
Relative humidity	January - 80%, July - 40%, very dry	
Average precipitation: - in the flat part - in the foothills and mountains	Average annual – 236 mm from 120 to 300 mm from 400 to 1000 mm	
Number of days with rainy fog:	About 80 days	
Maximum solar radiation:	From 2 300 to 3 000 hours and more	
Maximum soil temperature	More than 36 °C	
Surface:	From 32 °C to 36 °C and higher (July)	
Elevation (m above sea level):	Up to 1000 m	
Wind speed:	Up to 50 m per second	

Forest Growth Conditions

Kyzylorda oblast is located in the desert zone with subzones of step (in patches) with extremely severe forest growth conditions. According to forest site regionalization, the oblast belongs to the province of the desert zone and the Syr Darya tugay woods. By geobotanical regionalization, this territory completely is located in the Asian desert geobotanical zone of Turan's provinces.

The soil and vegetation cover in the oblast is classified mainly as a typical desert on gray brown, light brown soils and a step/desert on brown soils (Northern part of the Aral Sea region). The soils are characterized by high carbonate content, alkaline reaction, presence of water-soluble salts, schistose texture and small humus content. In lower reaches of the Syr Darya river, more than 100 thousand ha of alluvial soils became saline soils and more than 500 thousand ha of boggy and meadow-boggy soils dried.

A considerable part of the territory is occupied by sands which are almost deprived of vegetation; wormwood-fescue and saltwort vegetation grows on stabilized sands; in the spring, ephemeral plants appear on brown and sierozem sandy and solonetz soils; astragali, calligonum and species of wheat grass grow in depressions among sands. Hilly sands are stabilized by white saxaul, tamarisk, eurotia, biyurgun and wormwoods.

The vegetation in Kyzylorda oblast is rather diverse. The flora is represented by 819 species included in 391 genera and 81 families. Life forms of wild flora include: 7 species of trees; 82 of shrubs; 44 of semishrubs; 256 of perennial plants; 267 of annual plants; 11 of annual and biennial plants; 23 of biennial plants.

Tugay and saxaul woods are widespread in the territory of the oblast. Depending on the prevailing arboreal plants, tugay woods are of oleaster, willow, turanga, oleaster-willow and other types. One of turanga species – blue poplar (Populus pruinosa) is listed in the Red Book. Generally, they grow in a narrow belt on the Syr Darya floodplain.

By now, tugay woods have considerably shrunk due to drying of the Aral Sea and the resulting subsidence of groundwater level, control of the river flow by the system of hydraulic structures, diversion of large amounts of river water for irrigation of fields, wildfires and a number of other current environmental problems. Oleaster becomes more active.

The category of tree and shrubbery thickets includes the thickets of salt cedar or tamarisk (Támarix) and common salt tree (Halimodendron) which occur virtually across the entire floodplain and delta. In the process of desertification, tugay bushes are replaced by thickets of black saxaul (Haloxylon aphyllum) which grows on salty soils. White saxaul (Haloxylon persicum) grows on sandy soils in less favorable conditions.

Saxaul woods grow both in continuous woodlots and in separate patches on salty alluvial plains that were formed near the ancient delta of the Syr Darya River which is due to the drying of old riverbeds, salinization of idle and fallow lands in irrigated agriculture.

The main dominants of desert vegetation communities in the oblast are: wormwoods: sagebrush (white) (Artemisia lerchiana), black (A. pauciflora), sand wormwood (A. arenaria); perennial saltworts: biyurgun (Anabasis salsa), keireuk (Salsola orientalis), black salsola (S. arbusculaeformis); psammophilous (sand) Calligonum shrubs, white salsola and species of silver koyansuyek (sand acacia); desert cereals: stipa grasses, eremopýrum, bottle sedge or beaked sedge, etc.

Considerable diversity of natural zones is characteristic of the entire territory of Zhambyl oblast; landscapes of overgrown and semi-overgrown deeply dissected sands usually prevail.

By natural conditions, the territory is divided into three zones: desert, desert-steppe and mountain-steppe.

The area of the desert zone is 11 million ha which accounts for 70.5% of the territory of the oblast and includes the former Aral Seabed. Brown gray soils and light, meadow, takyr-like sierozems are widespread in this zone.

The area of the desert-steppe zone is 2.6 million ha or 17.4% of the territory of the oblast. It represents a narrow belt of Karatau foothills, the Kyrgyz Ridge and Shu-Ili mountains.

The area of the mountain-steppe zone is 1.2 million ha or 7.9% of the entire territory of the oblast.

Diverse climatic conditions, vast territory, availability of water and labor resources could facilitate the development of various sectors of agriculture: crop and livestock production.

In terms of forest site regionalization, the oblast belongs to the province of the desert zone and mountain-steppe forests. By geobotanical regionalization, this territory is located in the Asian desert geobotanical zone of Turan's provinces.

The forests in Zhambyl oblast are located in two forest site types: saxaul and tugay desert woods in Moyynkum sands and mountain forests in the Karatau zone of mountain fruit, deciduous woods and shrubs and the Zailiysky western zone of mountain fruit and other deciduous light forests.

The soil and vegetation cover in the oblast is classified mainly as a typical desert on gray brown, light brown soils and a step/desert on light-chestnut soils and serozems. The soils are characterized by high carbonate content, alkaline reaction, presence of water-soluble salts, schistose texture and small humus content.

A part of the territory is occupied by argillaceous-stony and sandy deposits of the ancient sea which are almost deprived of vegetation. Wormwood-fescue and saltwort vegetation grows on stabilized hilly and steeply-sloping sands; in the spring, ephemeral plants appear on brown, light-chestnut, sierozem, sandy loam and solonetz soils. Astragali, calligonum and species of wheat grass grow in depressions among sands. Hilly sands are stabilized by black and white saxaul, tamarisk, eurotia, biyurgun and wormwood-fescue vegetation.

The vegetation cover in the oblast is very diverse and includes more than 3 thousand species of trees, shrubs and grasses, out of which 50 species are listed in the Red Book.

Saxaul and tugay woods are widespread in the desert territory of the oblast. Depending on the prevailing arboreal plants, tugay woods are of oleaster, willow, turanga, oleaster-willow and other types. One of turanga species – blue poplar (Populus pruinosa) is listed in the Red Book. Generally, they grow in a narrow belt on river floodplains.

The category of tree and shrubbery thickets includes the thickets of salt cedar or tamarisk (Támarix) and common salt tree (Halimodendron) which occur virtually across the entire floodplains and deltas of small rivers. In the process of desertification, tugay bushes are replaced by thickets of black saxaul (Haloxylon aphyllum) which grows on salty soils. White saxaul (Haloxylon persicum) grows on sandy soils in less favorable conditions.

State Forest Fund

The area of the RK State Forest Fund (SFF) is 27 783.0 thousand ha or 10.2 % of the territory of the Republic. The timbered lands occupy 12 289.7 thousand ha or 44.2% of the SFF total area; the percent of forest area is 4.7%.

Forest vegetation communities are represented by wide tree species composition (more than 20 species) and shrubs (more than 40 species).

Kazakhstan forests are classified as birch outliers of northern areas, pine outliers in the northwest, pine forests of the Kazakh Upland, ribbon forests of the Irtysh right bank, mountain forests of Altay and Saur, Dzungarian Alatau and Tien Shan as well as saxaul, tugay, floodplain and intrazonal woods.

As of 01.01.2020, the total area of the State Forest Fund (SFF) in Kyzylorda oblast was 6 509 819 ha and occupied 28.8% of the oblast area. The timbered area is 3 105 202 ha, the percent of forest area in the oblast is 13.7%.

About 75% of the area (17.1 million ha) are degraded landscapes of drylands; these are deserts, semi-deserts and partially steppes. The area of water bodies in Kyzylorda oblast is about 1.0 million ha (5%).

In Kyzylorda oblast, there are more than 2.2 million ha of the dry Aral Seabed (DAS), including 574 thousand ha that are part of SFF lands.

One of priority goals of oblast state forestry institutions is the establishment of forest improvement plantations on the dry Aral Seabed for the purpose of containing toxic salt carryover by dust storms as much as possible.

During the 18-year period, from 2002 to 2019, 152 134 ha of forest improvement plantations were established on DAS, including 71.8 thousand ha by the method of sowing saxaul seeds. The average survival index was 12%.

Currently, on the dry Aral Seabed there are about 2.0 million ha of land deprived of vegetation where forest improvement works may be carried out provided that a part of these lands will be transferred to the State Forest Fund.

The potential DAS area suitable for sowing and planting of trees is 420 thousand ha – these are SFF lands where after soil surveys or design and survey works the feasibility of establishment of forest improvement plantations will be studied.

The woods are dominated by saxaul plantations which occupy 90.4% of timbered land with an area of 2 806 087 ha, including: white saxaul – 1 528 124 ha; black saxaul – 1 277 963 ha.

The forest fund is under the jurisdiction of 8 state municipal institutions on forestry and wildlife protection of the Directorate of natural resources and environmental control of Kyzylorda oblast (ODNR).

RSE 'Kyzylorda Oblast Territorial Inspectorate of Forestry and Wildlife of the Forestry and Wildlife Committee of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan' (OTI) is the authorized agency on fulfillment of implementation and control functions in the area of forestry, wildlife protection, reproduction and use, especially protected natural territories.

As of 01.01.2020, the total area of the State Forest Fund (SFF) in Zhambyl oblast was 4 427 034 ha and occupied 30.7% of the oblast area. The timbered area is 2 293 785 ha, the percent of forest area in the oblast is 15.5%.

About 50% of the area (7.2 million ha) are degraded landscapes of drylands; these are deserts, semi-deserts and partially steppes.

Forest management works were carried out in Zhambyl oblast in 2017. According to the forest management plan, for the forthcoming revision period from 2018 to 2032 it is planned to regenerate forests on an area of 487 874 ha, out of which 74 695 ha are allocated for forest plantation development by artificial methods and 413 179 ha for natural regrowth.

Soil surveys are planned on 625 655 ha. An area of 649 791 ha will be left without any economic impact.

In the territory of state forestry institutions there are 14 temporary forest nurseries that meet only 50-60% of the total annual demand for planting material in the oblast. In this connection, it is planned to establish a permanent forest nursery on an area of 88 ha.

The forest fund is under the jurisdiction of 15 state municipal institutions on forestry and wildlife protection of the Directorate of natural resources and environmental control of Kyzylorda oblast (ODNR).

RSE 'Zhambyl Oblast Territorial Inspectorate of Forestry and Wildlife of the Forestry and Wildlife Committee of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan' (OTI) is the authorized agency on fulfillment of implementation and control functions in the area of forestry, wildlife protection, reproduction and use, especially protected natural territories.

Biological Environment – ecosystems

Kazakhstan is distinguished by its rich biodiversity. Its biological wealth is equivalent to that of neighboring countries which are 20 times larger, with surprising diversity of fauna and flora, including globally significant population of threatened or endangered species like argali (mountain sheep), saiga antelope, snow leopard, Kulan (wild ass). The territory of Kazakhstan has a unique set of landscape complexes: from deserts to highlands and landlocked sea ecosystems. Arid and sub-humid lands account for more than 75% of the Kazakhstan territory. More than 40% of species composition of the entire biodiversity is concentrated there.

The country ratified the UN Convention on Biological Diversity and formulated the National strategy and the Action plan for conservation of priority species and habitats.

In the context of growing rates of economic development of the country and intensification of natural resources use, the issue of further improvement of the territorial conservation system becomes ever more relevant. This context emphasizes the need for further development of especially protected natural territories of the Republic of Kazakhstan (hereinafter referred to as EPNT) as an effective system of biodiversity conservation in the country.

Flora

The vegetation in Kazakhstan is very diverse. First of all, it is worth mentioning the types of vegetation widespread in Eurasia. Steppe and desert types of vegetation account for the major share of the territory. Besides, tundra, meadow, forest, shrubby and marsh types are common to the country. It is worth mentioning juniper light forests, umbelliferae, savannoides, phryganoides (thorn and mountain-

wormwood types) among rare original types associated with arid regions of Central Asia and cryophyte-cushion types associated with mountains of the continental Asia.

According to a number of estimates, the flora of Kazakhstan includes more than 13 thousand species, including more than 5754 species of higher vascular plants, about 5000 fungi, 485 lichens, more than 2000 seaweeds and about 500 bryophyte species. Fungi and higher plants underwent the most complete inventory. Endemics account for 14% of plants. Among them there are a lot of relicts.

In Kazakhstan there are centers of flora endemism (Karatau Ridge, Western Tien Shan), unique natural complexes – pine forests on sands (Ara – and Aman – Karagay, Naurzum); forest and steppe complexes of low-hill terrain in Central Kazakhstan; desert communities of Betpak-Dala, Southern Balkhash region and Ili depression that are peculiar by their flora composition; a set of forest, shrub and steppe communities in Southern Altay, Kalbinskiye mountains and Tarbagatay, middle mountains of Dzungarian Alatau and Tien Shan with coniferous fir forests and fragmented apple-tree woods; wetland ecosystems of lower reaches of the Ural, Torgay hollow, lakes Tengiz and Alakol; flood-plain forests (tugay) of the rivers of Syr Darya, Ili and Charyn.

Unique globally significant genetic resources of agrobiodiversity (ABD) are concentrated in Kazakhstan. They include 194 plant species that determining the genetic potential of 24 agricultural crops. A number of them is of considerable value both for development of agriculture and for development of the export potential.

Fruit ABD, first of all, crab (Sievers apple-tree – Malus sieversii (Ledeb.) M.Roem., Nedzvetsky apple-tree – Malus niedzwetzkyana Dieck.) and common apricot (Armeniaca vulgaris Lam.) won recognition worldwide. They grow in mountain woods of Western Tien Shan, Karatau, Kyrgyz Alatau, Zailiysky Alatau, Ketmen, Dzungarian Alatau and Tarbagatay. Recent research suggests that crab genes are present virtually in all modern effective commercial varieties of this plant.

Also, Kazakhstan genetic resources of pistachio (Pistacia vera L.), almond (Amygdalus communis L.) and wine grapes (Vitis vinifera L.) have good, first of all, economic prospects. The northernmost parts of habitats of these species are located in Kazakhstan. Due to this, their natural populations have genetic foundations for winter hardiness and cold resistance.

In Kazakhstan, there are 10 species of currant (Ribes spp.) and gooseberry (Glossularia spp.), which can and should contribute to effective wide use of these plants in fruit farming which doesn’t meet demand for berry products.

The Kazakhstan vegetable ABD includes carrot (Daucus carota L.), purslane (Portulaca oleracea L), asparagus (Asparagus), onion and garlic (Alliums pp.). Special attention should be paid to onion and garlic. In the Republic grow 120 species of wild relatives of these plants, including their progenitors. This rich genetic material is of high value both at the national and at the global level.

The development of the natural agrobiodiversity of ornamental plants has good prospects. The Netherlands is commonly referred to as the country of tulips. However, the species and genetic diversity of these plants is concentrated in Kazakhstan. Here grow 31 species of tulips (Tulipa spp.).

The development of the natural ABD of technical plants (flax – Linum spp., safflower – Carthamnus spp., arucola – Eruca spp., brassicaceae, mustard – Brassica spp.) and fodder crops (first of all lucerne – Medicago spp.) has good prospects.

More than 70 varieties of cereals, 68 varieties of fruit and berry, more than 60 varieties of vegetables and melons, 23 varieties of potatoes were bred and zoned in the Republic.

The flora of Kyzylorda oblast is very diverse and includes 819 species which belong to 391 genera and 81 families. Life forms of wild flora include: 7 species of trees; 82 of shrubs; 44 of semishrubs; 256 of perennial plants; 267 of annual plants; 11 of annual and biennial plants; 23 of biennial plants.

Tugay and saxaul woods are widespread in the territory of the oblast. Tugay woods grow on natural levees of the Syr Darya River forming a narrow-dashed line 20 m wide. Depending on the prevailing arboreal plants, tugay woods are of oleaster, willow, turanga, oleaster-willow and other types.

By now, tugay woods have considerably shrunk due to drying of the Aral Sea and the resulting subsidence of groundwater level, control of the river flow by the system of hydraulic structures, diversion of large amounts of river water for irrigation of fields, wildfires and a number of other current environmental problems. Oleaster becomes more active.

Blue poplar (Populus pruinosa), one of turanga species, which is included in the Red Book, can be sighted on terraces of the rivers.

The category of tree and shrubbery thickets includes the thickets of tamarisk and common salt tree which occur virtually across the entire floodplain and delta. In the process of desertification, tugay bushes are replaced by thickets of black saxaul.

Saxaul woods grow on salty soils. They grow both in continuous woodlots and in separate patches on salty alluvial plains that were formed near the ancient delta of the Syr Darya River which is due to the drying of old riverbeds, resalinization of idle and fallow lands in irrigated agriculture.

The main dominants of desert vegetation communities in the oblast are: wormwoods: sagebrush (white) (Artemisia lerchiana), black (A. pauciflora), sand wormwood (A. arenaria); perennial saltworts: biyurgun (Anabasis salsa), keireuk (Salsola orientalis), black salsola (S. arbusculaeformis); psammophilous (sand) Calligonum shrubs, white salsola and species of silver koyansuyek (sand acacia); desert cereals: stipa grasses, eremopýrum, bottle sedge or beaked sedge, etc.

The flora of plains and mountains of Zhambyl oblast is highly distinctive, original and remarkable in its own way. The vegetation cover in the oblast is very diverse and includes more than 3 thousand species of trees, shrubs and grasses, out of which 50 species are listed in the Red Book.

In the Moyynkum sand desert grow black saxaul, common salt tree, Calligonum, sand acacia ‘sand tree’ (silver wattle) and early-flowering annual plants, horsetail ephedra, sand rye, herd grass, common hemp, plume grass (a cereal from India), sophora, alkali swainsonpea and other plants. Tugay vegetation grows along the Shu valley.

On vast clay terrain of Betpakdala grow mainly numerous wormwood species (more than 30 species!), including endemic floral wormwood (betegue viviparous) as well as: bulbous meadow-grass, which everywhere creates a green background, desert sedge, sophora, acacia and many saltworts: salsola, biyurgun, sarzasan, keireuk. A rare ancient shrub of the rose family – Spiraeanthus schrenkianus – occurs.

In foothills and mountains of Zhambyl oblast, the vegetation follows the pattern of vertical zonation and consists of more than 1 200 species of higher plants, including 16 species of trees, 62 species of shrubs, 80 species of mosses and 60 species of lichens. More than 50 species of most valuable trees, shrubs and endemic grasses are listed in the Red Book. Many plants are well known:

- Fruit plants – Sievers apple-tree, mahaleb cherry, Berberis obovatifolia, Meyer's Currant, sea buckthorn and purging buckthorn;
- Low-growing shrubs –Tien-Shan cherry, Petunnikov almond, Caracas (ironwood), cotoneaster, Turkestan juniper (archa);
- Medicinal plants – Altay hawthorn, Begger and Fedchenko dog roses, inula macrophylla, entangled larkspur, common St. John's wort, horsetail ephedra, Aconitum talassicum, Origanum tyttanthum Gontsch, Asian mint, dwarf everlast (immortelle), etc.;

- Fodder plants - Medicago tianschanica, oxytrope, trigonella, foxtails, sheep fescue, cocksfoot and others;
- Technical plants – Rheum maximowiczii and two species of the buckwheat family - Aconogonon bucharicum and Aconogonon coriarium, Allochrusa gypsophiloides, common hemp, licorice;
- Essential-oil-bearing plants – fraxinella, scaligeria, hay plant, Ferula tenuisecta, caraway, various dragonheads, Ziziphora bungeana and clinopodioides;
- Ornamental plants – bright-red Tulipa greigii and cream-yellow Tulipa kaufmanniana, Crocus alatavicus (saffron), elegant violet-blue ixiolirion, bright orange Trollius Altaycus, large white anemone, white-rose Morina kokanica, larkspur, primrose, forget-me-not.

In the low desert belt of the foothills of Karatau and Shu-Ili mountains prevail shrubs – spirea, Tien Shan cherry, pea shrub; trees occur only in gorges, near water. In the forest-meadow belt of Kyrgyz Alatau mountains prevail tree-like archa (juniper); the grass vegetation consists of numerous species of the grass family. Also, endemic Tulipa zenaidae and Paeonia intermedia occur. In subalpine and alpine belts prevail cereals and sedges variegated by buttercups, cinquefoils and louseworts.

Fauna

The fauna of Kazakhstan is represented by a variety of species which are both strictly protected and widely used for hunting and farming. The country is inhabited by 835 species of vertebrate animals, including mammals – 178, birds – 489 (including 396 nesting birds), reptiles – 49, amphibia – 12, fish - 104 and cyclostomes – 3 species.

Huntable species include 34 mammals and 59 birds.

The inventory of invertebrate fauna has not been completed yet and probably only half of existing species was identified. However, it was found out that at least 80 000 invertebrate animals, including not less than 60 000 insect species, inhabit Kazakhstan.

As of now, out of 550 insect families represented in the fauna of Kazakhstan only about 100 were rather completely studied and no more than 40% of species composition was identified, not to mention very insufficient knowledge about biological, environmental specifics of species and their distribution.

The Appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) include 110 species of the Kazakhstan fauna, including 20 species in Appendix I and 90 species in Appendix II. The list of rare and endangered species includes 40 mammals, 50 aquatic animals and 57 birds.

The agrobiodiversity of the Kazakhstan fauna (wild relatives of domestic animal) is studied insufficiently and at present virtually not used in breeding.

The territory of the Republic is inhabited by species of vertebrates that are progenitors of domestic animals. Among mammals these are mouflon (Ovis orientalis), wild sheep (O. аттоп), boar (Sus scrofa), kulan (Equus hemionus), jackal (Canis aureus), wolf (C.lupus), spotted wildcat (Felis lybica) and some others. Among birds these are, first of all, ducks (Anatidae – ducks, geese) and gallinaceous birds (Gallidae).

One of examples of successful utilization of genetic material of wild animals for improvement of productivity of domestic animals is the creation in Kazakhstan of a breed of sheep ‘Arkhar-Merino’ in breeding of which wild sheep (Ovis ammori) were used. The resulting hybrids had valuable qualities of the Merino breed and climate and disease resilience common to wild sheep.

In the territory of the Republic, local breeds of domestic animals, including those selected in Kazakhstan, are raised: Cattle – 4 (Alatauskaya, Auliyeatinskaya, Kalmyk, Kazakh white-headed), sheep – 9 (Edilbekskaya, Kazakh fat-tailed coarse-wool and medium-wool, Tsygayskaya, Kazakh fine-fleece, South Kazakh and North Kazakh Merino, Kazakh Arkhar-Merino, karakul sheep), goats – 3 (local coarse-wool, cashmere and mohair breeds), horses – 2 (Adayevskaya, Kazakh horse of Dzebe line).

The practice of reintroduction of hoofed animals is rather successfully used in Kazakhstan for restoration of extinct or endangered species or individual populations as well as for augmentation of their number. During the period from 1953 to 1961, 14 kulans were delivered to Barsakelmes island from the Badkhyzskiy protected area (Turkmenistan); in the course of reproduction they were transported to SNNP Altyn-Emel (Almaty oblast), Andasayskiy (Zhambyl oblast) and Aktau-Buzachinskiy (Mangystau oblast) state wildlife areas, SNFR Altyn Dala (Kostanay oblast). Now, the kulan population is more than 3 000 species.

In 1981, of the Bukhara deer was reintroduced; 21 heads were transported from Tajikistan to the Ili river floodplain (Almaty oblast). Later, the number of the Bukhara deer grew to about 700 heads. Currently, jointly with the World Wildlife Fund (WWF), works on reintroduction are carried out in the Syr Darya floodplain, Turkestan district, South Kazakhstan oblast; now more than 100 animals are kept in two groups - one in pens and the other in the wild. Also, since 2003, works on introduction of Przhevalsky horse have been carried out (in SNNP Altyn-Emel), also preparatory works on introduction of tiger that inhabits tugay woods along the Shu river (Turkestan tiger) started; the last animal was killed in 1945 in Syr Darya tugay woods.

It should be noted that many wild animals in the Republic are used without breeding of agricultural varieties as they possess necessary useful qualities, do not require zoning or adaptation to the conditions in Kazakhstan and are able to mate in captivity. One of the most successful examples of such efforts is artificial reproduction of marals (Cervus elaphus) in the conditions of East and Central Kazakhstan.

Diverse wild fur animals are widely used; part of them have been successfully raised in captivity since long ago: minks (Mustela vison, M.lutreola), sable (Marieszibelina) and fox (Vulpes vulpes). A promising area is the use of selection and genetic potential of other high-value wild fur animals inhabiting the territory of Kazakhstan: ermine (Mustela erminea), bobak marmot (Marmota bobac), muskrat (Ondatra zibethina), otter (Lutra lutra) which are domesticated quite successfully.

Corresponding biotechnical actions can be designed for raising saiga (Saiga tatrica) in semi-free conditions or in pens; experiments with domestication of this animal have been carried out in Kalmykia for many years.

Such types of wild avifauna as mallard (Anasplatyrhynchos), gadwall (A.strepera), quail (Coturnix coturnix), pheasant (Phasanius colchicus), gray goose (Anser anser) can become objects of very intensive research into genetic selection.

Farming of popular hunting species, first of all bustards of the families Otis, Tetrax and Chamydotis, pheasants (Phasasnius colchicus) and gallinaceous birds, is very promising.

Such popular species as collared dove (Streptopelia decaocto), turtle dove (S.turtur), oriental turtle dove (S.orientalis) and laughing dove (S.senegalensis), black lark (Melanocorhypha jetoniensis), blackbird (Turdus merula), fieldfare (T.pilaris), rock thrush (Monticola saxatilis), common myna (Acridotheres tristh) and other species of the family Passeridae can be farmed and exported as ‘exotic’.

At present, out of the total fish and Cyclostomata species diversity (about 140 species), about 5 to 8 animals, including hybrids, are farmed. These are sturgeons (Acipenseridae) in the Caspian Sea, coregonoids (Coregonidae) in North and East Kazakhstan, Far East herbivorous (grass carp – Ctenopharyngodon idella and silver and bighead carps – Hypophthalmichthys molitrix, Aristichthys nobilis) mainly in the southern regions, virtually everywhere – carp (Surshsh carpio) (actually a mixture of wild and domestic forms of carp), as well as some hybrids.

Herrings (Clupeidae), nelma (Stenodus l.nelma), white fish (S.l.leucivhthys), grayling (Thymalus arcticus), taimen (Huso taimen), pike (Esox lucius), Caspian roach (Rutilus rutilus caspius), kutum (R.frisii), tench (Tinea tinea), barbels (Barbus brachycephalus and B.capita) marinka (Schizothorax spp.), Balkhash perch

(Perca schrenkx) are promising as genetic fishery resources. These species can be used both for purely selection and genetic purposes to increase the productivity of wild populations; however, it is necessary to take into account the threat of possible change in the genetic structure of the latter.

Small species of cyprinids (Cyprinidae) and loaches (Cobitidae), which have endemic and sub-endemic forms, represent interest as objects of aquarium breeding of species of Kazakhstan ichthyofauna. Loaches (Noemacheilus conipterus, N.strauchi, N.kuschakewichi etc.), equivalent to the South-East Asian representatives of the genus Acanthophthalmus, and limnophilic endemic minnow species (Phoxinus brachyurus, Ph.poljakowi, Ph.percnunis ignatowi) are the most interesting in this regard. Potentially, this group can include tench (Tinea tinea) and stickleback of the family Pmgitius.

As a genetic resource, among amphibians and reptiles especially important are species of poisonous snakes: steppe and common vipers, blunt-nosed viper, vipers (Vipera ursinu, V.berus, V.libethina and Arkistrodon halys) as well as species used in the traditional oriental medicine: Siberian salamander (Ranodon sibiricus), Tatary sand boa (Eryx tataricus), etc. The distinctness of gerpetofauna species allows for their farming and exporting as exotic. Most notable among them are various species of lizards (Sauria) of the genera Teratoscincus, Crossobamon, Alsophylax, Tenuidactylus, Trapelus, Phrynocephalus, Ablepharus and Eremias, snakes (Serpentes) of the genera Coluber, Spalerosophis and Elaphe. Central Asian tortoise (Agrionemys horsfieldi), which is an important article of export, is an example of commercial demand for reptiles.

The fauna of Kyzylorda oblast has a considerable diversity of mammals, fish, birds and other living organisms. The fauna is represented mainly by: hoofed animals (saigas, deer, kulans); predators (foxes, corsacs, wolves, jackals, etc.); various rodents (gophers, jerboas, mice, etc.); birds (pheasants, partridges, ducks, etc.); reptiles, etc. Muskrat was successfully acclimatized in the delta of the Syr Darya River. One of the most interesting reptiles in the sandy desert is monitor lizard; it is called ‘steppe crocodile’ and listed in the Red Book of Kazakhstan. In the eighteenth century, the territory of the oblast was inhabited by tigers and Bukhara deer.

The prevailing harvested fish species are silver carp, grass carp, catfish, carp, sazan, crucian, pike perch, bream and roach.

The fauna of Zhambyl oblast is represented by a considerable diversity of mammals, birds, reptiles, fresh-water and many other vertebrata and invertebrate animals. The fauna is represented by more than 40 species, including arkhars, saigas, dzheyrans, roes, boars, hares, pheasants, partridges and many others. Till 1945, tugay woods along the Shu river were home to Turkestan tiger.

The prevailing harvested fish species are silver carp, grass carp, carp, sazan, pike perch, bream, krill and roach.

Terrain, Geology and Soils -

The terrain, geology and soils of Kazakhstan are significantly diverse and have a complex structure due to the vast territory.

The main features of the Kazakhstan terrain can be described as follows:

1. Plains and low-mountain areas prevail. They are located in the West, North and Central parts of Kazakhstan;
2. High-mountain areas occupy a small territory and are located in the East and South-East of the Republic;
3. Entire surface of the RK has a general slope from South to North and from East to West; and
4. High and low mountains alternate with intermountain valleys and plains.

These terrain features significantly affect the formation of climate and natural landscapes in certain territories. One third of the Republic's territory is occupied by plains: West Siberian, Caspian, Turan (up to 200 m above the sea level). A little more than half of the Kazakhstan territory is occupied by hills, plateaus and small hills (Turgay plateau, Ustyurt, Saryarka, etc. – 400-500 m). Mountains with a height of 4,000-5,000 m or more, with peaks covered with eternal snow and glaciers, occupy only 10% of the Republic's territory. They are located in the East and South-East of the RK: Altai, Saur, Zhungar Alatau and Northern ridges of the Tien Shan mountain system. In the West of the Republic, on the Mangystau Peninsula, there is the lowest point – the Karagiye depression (132 m below the sea level), and the highest point is located in the South-East – Khan Tengri peak (6,995 m). The height difference between the highest and lowest points is 7,127 m. On the plains and in the low mountains of Kazakhstan, natural zones are located in the latitudinal direction, and the high-mountains are featured by altitudinal belts. The surface relief is of great importance in human life. Plains and intermountain valleys are convenient for economic activities, for crop production and animal husbandry. Mountain slopes covered with meadows can be used mainly for pasture.

The geological structure of Kazakhstan is as follows. Pre-Paleozoic rocks are the most ancient. They come to the surface only in such mountainous areas where the base is exposed from severe destruction. Crystalline schist and gneiss are observed in the ridges of the Northern Tien Shan, Mugalzhary, in the Ulytau and Kokshetau mountains in Saryarka. Paleozoic sedimentary and igneous rocks are observed in many mountainous areas. These are limestone, sandstone, clay schist, and red-colored sandstones. They form Mugalzhary, Saryarka, Northern Tien Shan, Zhungar Alatau, Tarbagatai and Altai. The deposits of copper, lead, iron, manganese, tin, tungsten, gold, etc. are linked by numerous intrusions. Mesozoic rocks are less common. They are distributed in the Karatau ridge of the Mangystau region, on the pre-Ural plateau, in the Ili and Turgay depressions. Sedimentary deposits of the Cenozoic era, in contrast to the Mesozoic, are found throughout the territory of Kazakhstan. They are divided into Paleogene, Neogene and Anthropogene. Paleogene deposits are distributed in the marginal parts of intermountain basins: Chui, Ili, Zaisan and on the plains of Ustyurt, the Aral Sea and the Turgay plateau. Neogene deposits are observed in the foothills of high mountain areas and consist of dense sandy clays, pale yellow loams with sand and pebble layers. Anthropogenic (Quaternary) deposits are found throughout the territory of Kazakhstan. They are different in origin. Marine deposits are common in the Caspian Plain, in the Karakum mountains and on the Turgay plateau. Lake and river deposits are composed of lake and river terraces and strips of coastal plains. Glacial deposits are observed in the areas of modern glaciation and in the high-mountain valleys of the Altai, Zhungar Alatau and Tien Shan.

Kazakhstan is famous for the richness of its mineral resources. This is due to the geological structure of the Earth's crust and features of development. Mountain forming, introduction of igneous rocks and metamorphism, i.e. a variety of endogenous processes that are associated with certain changes in the structure, mineral and chemical composition of rocks, lead to the formation of various minerals. Most often, ore minerals are found in mountainous areas (in folded and folded-block areas) and on platforms devoid of sedimentary cover, i.e. on shields. On the contrary, minerals of sedimentary origin (oil, gas, coal, etc.) can be found on platforms with a sedimentary cover (i.e. on plains). In 1919-1923, the industrial capacity of the Karaganda coal basin was determined. Since then, Kazakh geologists have discovered many other deposits and are working hard to develop them. Kazakhstan has almost all types of mineral raw materials. 99 elements from the periodic Mendeleev's table were found, reserves of 70 elements were explored, and more than 60 elements are used in production. About 6,000 mineral deposits are known in Kazakhstan. The Republic ranks first in the world reserves of tungsten, second - in chromite and phosphorus ores, third – in manganese ore (after USA and Ukraine), fourth - in reserves of lead and molybdenum, eighth – in reserves of iron ore (after Brazil, Australia, Canada, USA, India, Russia and Ukraine). Kazakhstan ranks sixth in the world in terms of gold reserves, and third in the CIS after Russia and Uzbekistan. More than half of the reserves of copper and lead, 70% of zinc located in the CIS, are concentrated in Kazakhstan.

The soil cover of Kazakhstan has horizontal and vertical zones associated with the change of bioclimatic and lithological-geomorphological conditions, due to the significant length of the territory from North to South.

There are three main soil zones in the plain part of the Republic:

1. black earth soils developing to the North of 52° n. l.;
2. dark chestnut soils located between 48 and 52° n. l.;
3. brown and gray-brown desert soils (South of 48° n. l.), alternating with arrays of desert sand and takyr-like soils.

Area of black earth soils is divided: into the subzones of leached black earth soils, which occupy a small part of the forest-steppe zone, into the subzone of ordinary black earth soils of the moderately dry steppe and into the subzone of southern black earth soils of the arid steppe. In the subzone of leached black earth soils, there are meadow-chernozem soils, alkali soils, solod soils, and gray forest soils, which gives a common ground for the forest-steppe of Kazakhstan and the forest-steppe of Western Siberia.

The zone of chestnut soils is divided into the subzone of dark chestnut soils of the moderately dry steppe, the subzone of typical chestnut soils of the dry steppe, and the subzone of light-chestnut soils of semi-desert.

In the zone of brown and gray-brown soils, there is a subzone of brown soils of the Northern desert, a subzone of gray-brown soils confined to the middle and southern subzones of the desert. The boundaries between soil subzones clearly coincide with climatic boundaries.

Along with changes in the soil cover from North to South, there are significant changes within each soil zone from West to East. This is due to the increasing continentality of climate, the difference in the precipitation regime, as well as lithological and geomorphological features. In the mountainous regions of the South and South-East of Kazakhstan, there are four soil provinces that differ in the structure and ratio of soil belts.

West Tien-Shan province (within the Chimkent region), which includes:

1. Belt of light, typical and dark grey desert soils of semi-desert piedmont plains and foothills.
2. Belt of mountain brown soils of the middle mountains.
3. Belt of mountain-meadow subalpine and alpine soils of the high-mountain.

Northern Tien-Shan province (Kyrgyz, Zailiyskiy, Zhungar Alatau and Ketmen ridges). It features:

1. Belt of low-carbon (Northern) gray-earth and light-chestnut soils of piedmont plains and foothills.
2. Belt of mountain dark chestnut soils and mountain black earth soils of steppe low mountains.
3. Belt of mountain leached black earth soils, mountain gray forest and mountain dark-colored forest soils of the meadow-forest middle mountains;
4. Belt of mountain-meadow subalpine and alpine soils of the high-mountain.

In the foothills and low mountains of the Saur-Tarbagatay and West Altai soil provinces, there is only one belt of mountain chestnut and mountain black earth soils. The belt of mountain-meadow and gray forest soils of the middle categories and the belt of mountain-meadow subalpine and alpine soils are above.

In the project areas in the Kyzylorda region, most of the land cover is classified as a typical desert on gray-brown, light-brown soils and a settled desert on brown soils (Northern Aral Sea region). Soils have high carbonation, alkaline reaction, presence of water-soluble salts, layered composition, low humus content. In the lower reaches of the Syr-Darya, more than 100 thousand hectares of alluvial soils have become salt marshes, and more than 500 thousand hectares of marsh and meadow-marsh soils have dried up. A significant part of the territory is occupied by sand, almost devoid of vegetation.

Most of the land cover of the Zhambyl region is classified as a typical desert on gray-brown, light-brown soils and a settled desert on light chestnut soils and gray soils. Soils have high carbonation, alkaline reaction, presence of water-soluble salts, layered composition, low humus content.

Part of the territory is occupied by clay-stony and sandy deposits of the ancient sea, almost devoid of vegetation. On fixed tuberous sands, wormwood-fescue, saltwort vegetation grows, and ephemeral one in the spring, on brown, light chestnut, gray earth, sandy loam and solonetzic soils.

Land Use

The administrative territory of the Kyzylorda region is 24,041.4 thousand hectares, which is 8.3% of the entire territory of the Republic. The distribution of the land fund of the region by category is as follows:

- Agricultural lands – 2,439.7 thousand ha;
- Settlement lands – 684.0 thousand ha;
- Lands of industry, transport, communications, for the needs of space activities,
- Defense, national security, and other non-agricultural purpose – 154.4 thousand ha;
- Lands of specially protected natural areas, lands of health-improvement,
- Recreational and historical and cultural purposes – 161.0 thousand ha;
- Forest lands – 6,502. 5 thousand ha;
- Water resource lands – 2,239.8 thousand ha;
- Reserve lands – 11,860.0 thousand ha.

The total land fund: 154.9 thousand ha are arable land, 2.5 thousand ha are perennial plantations, 58.8 thousand ha are fallow lands, 106.8 thousand ha are hayfields, 11 824 thousand ha are pasture lands, 14.8 thousand ha are melons and other lands - 11,879 thousand ha.

The soil and vegetation cover belongs to the desert zone. 25% of the total land area is in the flood plain of the Syr-Darya river, including the irrigation system, 20% - in the semi-desert zone, 55% - in the desert zone.

2,439 thousand ha of lands is provided for land use and ownership of individuals for farming, which is 10.2 % of the total land fund of the region. To date, there are 3,640 land users in the region, of which 3,390 are peasant farms and 250 are state and non-state legal entities.

The main type of agricultural land is pastureland (1,714 thousand ha, 70.2%). The greatest demand for pasture lands is observed in the North of the region (Aral – 459.8 thousand ha, 75%), Kazalinskiy – 195.2 thousand ha, 73%). The pasture lands of the region are fully used as natural pasture lands without the use of pasture rotation.

The vegetative conditions of the Kyzylorda region are favorable for the cultivation of many crops, but due to the small amount of precipitation, agriculture is based only on irrigation, on lands provided with engineering drainage systems. Engineering and drainage systems in the region are provided with 179.2 thousand ha of lands (0.8% of the total land in the region), of which 166.4 thousand ha are provided to agricultural formations (93%). That is, if the share of irrigated arable land in the region does not reach 1% of the total land fund of the region, then the use of engineering-prepared land reaches 93%, which is an indicator of interest in the use of irrigated lands.

The structure of agriculture in the region is dominated by crop production - 57%, livestock - 43%. Grain, fodder, potatoes, vegetables, melons, and oilseeds are cultivated on the territory of the region. The main crop of the region is rice, which is produced 90% in the Republic. All districts of the region are involved in rice farming, except for the Aral region. The main rice-growing areas are Zhalagash, Syr-Darya and Karmakshi districts, where 66.9% of the total rice crop in the region is concentrated. These areas have the extensive irrigated fields where water comes from the Syr-Darya river through a network of channels and ditches. Surface irrigation is mainly used for rice and cotton, which require a large amount of water. The

problem with irrigation in this region is that collector water usually flows back into the main river and eventually ends up in the Aral Sea. This water flows through the fields and contains agrochemicals, salts, and deposits washed from the fields. The deterioration of the water management structure has led to uncontrolled over-watering, rising ground water levels, waterlogging and salinization of the soil.

In recent years, there has been a trend of a gradual increase in arable land. So, in recent years, the area of arable land as part of agricultural land has increased by 14.4 thousand ha (11%), from 136.1 thousand ha to 150.5 thousand ha. Most of the increase in arable land is accounted for by Zhanakorgan (46%) and Kazalinskiy (41%) districts of the region. At the same time, there is also a decrease in arable land – in Kyzylorda city (-12%) and Shieli district (-11.2%). The increase in the area of arable land is mainly facilitated by state support measures (subsidies).

Due to the difficult natural and climatic conditions of the region, high temperatures in the summer and a small amount of humus in the soil, melons and rice are the most effective in agricultural production.

There are facts of inefficient use of land, non-compliance with the crop cultivation technology. Of the identified 311.2 thousand ha of unused land, 257.0 thousand ha (83%) were returned to state ownership.

The area of Zhambyl region is 14,426.4 thousand ha, which is 5% of the entire territory of the Republic. The structure of the land fund of the region by category is as follows:

- Agricultural land – 4,589.3 thousand ha (31.8%);
- Settlement lands – 467.1 thousand ha (3.2%);
- Land of industry, transport, communications, defense, and other non-agricultural purpose – 173.1 thousand ha (1.1%);
- Lands of specially protected natural areas, lands of health-improvement,
- Recreational and historical and cultural purposes – 11.6 thousand ha (0.08%);
- Forest lands – 4,430.6 thousand ha (30.7%);
- Water resource lands – 338.7 thousand ha (2.3%);
- Reserve lands – 1,926.2 thousand ha (13.3%).

Agricultural lands in recent years have increased by 26.1 thousand ha due to the provision of land plots from reserve lands. Of the total area of these lands, 1.7 thousand ha (0.03%) are occupied by citizens for gardening and dacha construction; non-state legal entities use 964.5 thousand ha (19.6%); peasant farms are 3,336.6 thousand ha (72.7%); state agricultural legal entities are 351.5 thousand ha (7.6%). There are 28,257 agricultural land plots (4,589.3 thousand ha) in permanent land use.

Lands of specially protected natural areas decreased by 0.3 thousand ha and amounted to 11.6 thousand ha, reserve lands - by 188.1 thousand ha due to their redistribution between categories.

The category of forest lands increased by 6.3 thousand ha due to the provision of land plots to farms and partnerships for agricultural production.

Social and Economic Background

Given the worsening external economic situation, industries will develop primarily in the Kyzylorda region, which will provide economic and social benefits in the shortest possible time and ensure high employment of the population.

The negative side in the development of the regional economy is its dependence on the oil and gas sector, which is 37.1% of the gross regional product of GRP. The decline in oil production in recent years by more than 50% (mainly due to the oil field inundation and the end of the life of the fields) led to a significant decline in industrial production, investment in fixed assets of the region, as well as lower volumes of export focused on supply of commodities (oil).

Most of the land cover of the Kyzylorda region is classified as a typical desert on gray-brown, light-brown soils and a settled desert on brown soils (Northern Aral Sea region). Soils have high carbonation, alkaline reaction, presence of water-soluble salts, layered composition, low humus content.

In recent years, the region has seen a decline in crop production (vegetables, melons, potatoes and oilseeds), which affects the volume of gross agricultural output (volume index decreased to 91.2%).

Inflation annually increases the consumer price index by an average of 5-7% for energy, food and non-food products, paid services, and much more. The increase in prices for consumer goods and services over the six-year period was 18.0%.

The share of tax receipts and payments from 6 major oil companies in the region in the total volume of local budget revenues decreases from year to year. The main decrease is observed in the payment for environmental emission, which is caused by the ongoing Gas Utilization Program in the region. In addition, the deterioration of the financial condition of large oil companies due to the decline in oil prices has a significant impact on the solvency of oilfield service companies. Thus, only 100 large taxpayers of the region that serve the oil sector enterprises have a decrease in the salary fund by 11.4%, and consequently, income and social taxes are reduced.

The rate of active population in the region is on average 68%. According to statistics, 5.0% of the economically active population is unemployed, and the unemployment rate in the village is higher than the unemployment rate in the city: for the village - 5.2%, for the city - 4.7%. Among the unemployed by occupational qualifications, the largest share is people with secondary education; long-term unemployed; unskilled workers; those with less than a year of experience; and young people without work experience. By gender, there are many women who are unemployed.

The average monthly nominal wage per employee, including compensation for work in an environmental disaster zone, is approximately 280 US dollars. The minimum wage in agriculture is 150 US dollars. The Gini index is equal to 0.223 (the average for Kazakhstan is 0.278). A relatively low index in the region shows a lower differentiation of income of the population.

The gross regional product of Zhambyl region in Kazakhstan's GDP is only 2.5%. The regional budget is subsidized. More than 80% of the revenue part of the budget is transfers from the republican budget. The share of GRP per capita is the lowest in the Republic of Kazakhstan, occupies the 16th place and is 8.5 thousand US dollars. This is due to the natural production capacity of the region, a high share of employment in agriculture where productivity growth is difficult, as well as the lack of large oil and gas fields in comparison with other regions.

The region is industrial and agricultural, so in the structure of GRP, the contribution of industry is about 18%, and agriculture is about 10%.

Most of the land cover of Zhambyl region is classified as a typical desert and settled desert. Soils have high carbonation, alkaline reaction, presence of water-soluble salts, layered composition, low humus content.

Inflation annually increases the consumer price index by an average of 5-7% for energy, food and non-food products, paid services, and much more. The inflation rate in March 2019 to December 2018 was 1.4%, prices for food products increased by 4.0%, for non-food products by 0.8%, and paid services decreased by 1.1%.

Low labor productivity in agriculture and its instability is directly related to the structure of employment in the region, in particular – the predominance of a number of self-employed. Zhambyl region belongs to regions with a low level of wages, which is primarily due to the fact that the largest share in a number of employed – 67.4% - is made up of employees of organizations on education, health and social security, whose wages are fixed. The lowest amount of labor remuneration in the region was noted in agriculture,

forestry and fisheries – 180 US dollars. The structure of household expenditures shows that food expenditures account for the predominant share.

Social and economic problems of Zhambyl region are as follows:

- High percentage of self-employed and employed people in temporary jobs, especially in rural areas;
- Low level of youth employment;
- Low qualifications of able-bodied persons with disabilities;
- Level of income of the population remains one of the lowest in Kazakhstan;
- High share of self-employed citizens in the total number of recipients of targeted social assistance; and
- Low effectiveness of active measures to end poverty, where employment remains a problem.

Population

Population of the Kyzylorda region as of February 1, 2020 is 804.4 thousand people (4.3% of the total population of the Republic of Kazakhstan), of which 399.3 thousand people (49.8%) are women. There is an increase in the population, so for 11 years from the last census in 2009, the population growth was 125.6 thousand inhabitants, or 15.6%. Despite the fact that migration is featured by a negative balance, the population growth trend is caused by a high birth rate. In terms of population, Kyzylorda region occupies the 11th place in the Republic. The total life expectancy in the region has increased from 67.4 years in 2009 to 71.06 years, which corresponds to the average for the Republic of Kazakhstan (71.62 years). However, the average life expectancy of women exceeds the average life expectancy of men (75.17 years compared to 67.07 years).

There were no significant changes in the age structure between 2009 and 2020. The age cohort of the population aged 65 years and over is 4.7% of the population; those aged 20-64 years are 55.5%. In recent years, a high birth rate has been registered – the age category from 0 to 4 years is 13.1% and from 5 to 19 years - 26.8%. Due to the high share of children and young people, there is a certain demographic burden. The percentage of women is 50.1%, and men - 49.9%.

The population of the region is featured by strong ethnic homogeneity, the share of Kazakhs is 95.9%, the share of the rest of the population (4.1%) is accounted for by Russians, Tatars, Uzbeks, Turks, Koreans and other nationalities.

The level of urbanization in the region is lower than the republican average – 43.2% of the population lives in cities (the average for the Republic is 56.7%). The population of the cities of the region - Kyzylorda, Aralsk and Kazaly (small cities) - amounted to 268.9, 31.9 and 7.0 thousand inhabitants, respectively. Over the past decade, the population of the regional center, Kyzylorda, has increased by almost 10%. The main reason for the significant growth of the population of Kyzylorda is internal migration from the districts to the regional center.

The Syr-Darya river is the main waterway, the natural dominant and dispersal axis, on which most of the settlements of the Kyzylorda region are located. Almost 85% of the settlements, which are home to about 90% of the region's population, are located along the Syr-Darya river and currently form the transit basis of regional significance. The population density in the districts is lower than the regional average (3.3 people per 1 sq. km), with the exception of Kyzylorda (112 people per 1 sq.km), which indicates an uneven distribution of the population in the region. Formally, the population density is half the average for the Republic of Kazakhstan, but in fact, given that the vast majority of the region's population is settled in the floodplain of the Syr-Darya river, the population density is several times higher and is at least 15 people per 1 sq. km.

More than 450 thousand people live in rural areas, or 56.8% of the total population of the Kyzylorda region. The average annual number of people employed in agriculture, without taking into account citizens engaged in private farming, is 5.0 thousand people, or 2.3% of the total number of employees in the region and 1.2% of the rural population.

The population of Zhambyl region as of February 1, 2020 is 1,130.9 thousand people (6.1% of the total population of the Republic of Kazakhstan), of which 571.3 thousand people (50.8%) are women.

In the region, there is an annual trend of stable population growth (annually by 0.7% compared to the corresponding period), despite a negative migration balance of more than 10 thousand people annually. Thus, over the past 3 years the population has increased by 10.1 thousand people, taking the 6th place among the regions. This increase is mainly due to the high birth rate, which by the end of 2019 is registered at 11% higher than the republican average, and the death rate is lower by 11.4%. There is a decrease in the number of urban population by 0.4% and an increase in the population in villages by 1.8% . The level of urbanization in 2019 was 39.7%, and the population of villages exceeds the number of residents of cities and is 60.3%. In terms of population, Zhambyl region occupies the 5th place in the Republic. Life expectancy in the region increased from 71.9 in 2016 (with the republican average of 72.3 years) to 72.8 years in 2018 (73.15 in the Republic of Kazakhstan).

The population of the region is featured by strong ethnic homogeneity, the share of Kazakhs is 72.7%, Russians - 9.8%, Dungans - 5.2%, Turks - 3.1%, Uzbeks - 2.5%, and 6.7% of other nationalities.

The population density of Zhambyl region is relatively high, it occupies the 3rd place in the Republic and is 7.79 people per sq. kilometer.

More than 680 thousand people live in rural areas, or more than 60% of the total population of the region.

Economic Growth and Environment

The economy of the Republic of Kazakhstan as a whole is developing steadily, with GDP growth of 4.5% in 2019. In early 2019, the RK predicted GDP growth of 3.8%, while the World Bank expected growth of only 3.5%.

The main drivers of the economy that have contributed to the country's GDP are the construction, transport, trade and communications sectors. In 2019, the growth rate of the construction industry was 12.9%, trade - 7.6%, communications - 5.2%, transport - 5.1%, manufacturing - 4.4%, mining - 3.7%.

Real incomes of the population increased by 5.5%, investments in fixed assets increased by 8.5%, and trade turnover amounted to 97 billion US dollars.

The economy of the Kyzylorda region is industrial and agricultural, its share in the Republic's GRP is 3.4%. According to this indicator, the region is on the 13th place in the RK.

The oil and gas sector of the region is a determining branch of the regional economy and is 37.1% of the GRP. More than 80% of industrial production is accounted for by the mining industry, which is dominated by the production of crude oil and natural gas. The share of manufacturing in the structure of industrial production is insignificant, only 8.8%. Industrial production is almost completely concentrated in Kyzylorda (90.7%).

The share of the agricultural sector in the GRP structure is insignificant - 2.6%. The structure of agriculture in the region is dominated by crop production - 57%, livestock - 43%.

The growth of GRP in the region was influenced by high growth rates in the manufacturing industry - 60%, in housing construction - 20.8%, in trade - 40.3%. However, the negative side in development of the region's economy is a dependence on the oil and gas sector. Thus, the largest share in the GRP structure is occupied by industry, which accounts for about 90% of the mining (oil and gas) industry. The decline in oil production in the region has reached 30%, and the expected further decline (up to 50%) will lead to a significant reduction in industrial production in general. The reason for decline in oil production is field inundation up to 95% (reduction of reservoir pressure) and the transfer to the final stage of development of such large fields in the region as "Kumkol", "Southern Kumkol", "Aschisai" and others with a service life

of 20-25 years. These factors affected the reduction of investment in fixed assets in the region by up to 30%.

The volume of foreign trade turnover of the Kyzylorda region is more than 3,000 million US dollars, including: the volume of exports is more than 2,900 million US dollars (94%), imports – more than 180 million US dollars (5.8%). The foreign trade balance is more than 2,700.0 million US dollars. Export of Kyzylorda region is mainly focused on the supply of raw materials (97.6%), and only 2.4% of processed goods. Exports of crude oil and processed goods (propane and butane) declined by almost 20%.

Local budget revenues are generated mainly from tax revenues from major oil companies, they account for 80% of the total tax revenue.

Zhambyl region is industrial and agricultural, so in the structure of GRP, the contribution of industry is about 18%, and agriculture is about 10%. The share of the region's GRP in Kazakhstan's GDP is only 2.5%.

The gross regional product of Zhambyl region in 2018 amounted to 1,532.1 billion KZT and compared to 2016, it nominally increased by 29.5%, actually - by 7.5% by increasing production in the main sectors of the economy.

The structure of the gross regional product of Zhambyl region and the share in economic activities for 2019 is as follows: agriculture - 10.1%; industry - 18.3%; construction – 7.6%; trade – 11.4%; communications – 0.7%; other - 32.2%.

In the structure of industrial production of the region, the largest share is taken by the manufacturing industry of about 70.0%, mining - 11.0%, electricity - 18.0%, water - 1.0%.

The share of industrial production of the region in the national volume is one of the smallest among the regions and its dynamics has decreased over the past 4 years, so in 2016 it amounted to 1.8%, in 2017 – 1.6%, in 2018 – 1.5%, in 2019 – 1.4%.

By the end of 2019 the region in terms of volume index (VI) of the industry occupies 16 and 12 places among the regions of Kazakhstan, respectively, ahead of the 5 regions of the Republic of Kazakhstan in terms of VI.

The region occupies a significant position in the Republic in terms of production of yellow phosphorus (99.0%), phosphorus fertilizers (87.6%), gypsum (86.7%), sugar (66.1%), portland cement (16.3%), sheep wool (14.7%).

The metallurgical industry is one of the components of the manufacturing industry. The metallurgy sector accounts for 17.9% of the manufacturing industry and 12.9% of the industrial sector.

Deposits of gold, silver, lead, zinc, copper, and quartzite have been explored in the region. Currently, gold and silver ore are extracted and enriched, metals are smelted, and metal products are produced in the Akbakai basin of Moyynkum district. Copper ore is mined at the Shatyrkul polymetal deposit in the Shu district. However, the most important sectors of metallurgy are the production of ferroalloys, gold and silver. By the end of 2018-2019, there is an increase in production volumes in the industry by 1.2 times, due to an increase in output of ferrous metallurgy by 24.7%, precious and non-ferrous metals - by 14.6% and metal casting - by 7.5%

In general, the analysis of the dynamics of production in the metallurgical industry shows a very narrow list of products with high added value, with a significant share of ore production, which is mainly focused on exports.

In the territorial context, the industrially developed areas of the region are Moyynkum district and due to the activity of 1-2 large enterprises - Merken, Sarysu, Talas, Korday and Shu districts. The production focus of the Baizak, Zhambyl, Zhualyn and T. Ryskulov districts is mainly provided by processing of agricultural

products. The main large industrial enterprises are concentrated in Taraz, the share of industry in the total production of the region is almost 57.0%

In terms of GRP per capita, which is an indicator of the economic development of regions, the region has the lowest level in terms of "Ratio of GRP per capita of regions to the average republican level" and ranks 16th among the regions of the Republic. The low share of GRP, as well as the low level of GRP per capita in Zhambyl region, is caused by the natural production capacity of the region, as well as a high share of employment in agriculture (where labor productivity growth is difficult), as well as the lack of large oil and gas fields (compared to the Mangistau and Atyrau regions of the Republic of Kazakhstan).

The regional budget is subsidized. More than 80% of the revenue part of the budget is transfers from the republican budget. The share of own income in the regional budget revenue tends to increase annually and over the past 4 years is: in 2016 - 18.6%, in 2017-23.3%, in 2018 – 23.2%, in 2019 – 26.6%. Tax revenues make up more than 90.0% of the total revenue to the local budget.

The average per capita nominal monetary income of the population over the past 4 years has increased in local currency (KZT), but decreased in dollar equivalent and amounted to: in 2015 - 236.6 $ (43,143 KZT); in 2017 - 170.3 $ (55,548 KZT); in 2018 - 195.8 $ (65,056 KZT); in 2019 – 193.8 $ (72,862 KZT). The growth rate of nominal income in KZT for this period increased by 168%, and in US dollars, on the contrary, decreased by 29%.

Since March of 2019, the COVID-19 pandemic has resulted in a global economic slow-down and a precipitous drop in oil prices, both of which are having significant effects on Kazakhstan’s economy. As of July 26, 2020, Kazakhstan is reporting 81,720 of and 585 deaths from COVID-19.

3. Description of Administrative, Political and Regulatory Frameworks

The concept of legal policy of the Republic of Kazakhstan defines the main directions of development of the country's legal system, its administrative, political and regulatory frameworks, which contribute to the progressive development of state and public institutions that ensure sustainable socio-economic development of Kazakhstan.

Legal, Regulatory and Policy Frameworks

The foundation of the national legal system is constitutional law, its progressive development is based on the principles and norms of the basic law of the country – the Constitution of Kazakhstan. Compliance with and implementation of the fundamental principles of the Constitution (such as social harmony and political stability, economic development for the benefit of all the people, Kazakhstan's patriotism, solving the most important issues of public life by democratic methods) will ensure sustainable socio-economic and political and legal development of the country.

Prospects for development of constitutional law are related to the improvement of existing constitutional laws that determine the structure of the state, the mechanisms of functioning of the state power and its branches, their interaction with each other under the leadership of the President of the Republic of Kazakhstan.

The legal system of the country, regulatory sources is a single system of legal acts and has the following legal regulation:

1. Constitution of the Republic of Kazakhstan.
2. Codes and laws:
   a) Constitutional laws
   b) Laws of the Republic of Kazakhstan
3. Orders and Decrees of the President of the Republic of Kazakhstan:
   a) Decrees that have the force of Law
   b) Decrees of the President
4. Government Resolutions and Orders of the Prime Minister.
5. Orders of Ministries, agencies and departments.
6. Decisions and orders of the Akim and resolutions of the Maslikhat.

A separate type of sources of administrative law are legal contracts:

1. International agreements ratified by the Parliament of Kazakhstan.
2. Intergovernmental contracts.
3. Interdepartmental contracts.

Relevant National Laws and International Treaties

An overview of laws and regulations related to environmental and social laws that regulate the legal relations between the parties involved in the implementation of the LRP is as follows (see Table 3).

Table 3. List of national laws and regulations

Framework laws on the environment
• Environmental Code • Law on permissions and notifications
Mineral resources
• Water Code

Land management

- Land Code
- Law on assessment activity

Forests

- Forest Code

Animals and factories

- Law on Protection, Reproduction and Use of Animal World
- Law on Plant Protection
- Law on Plant Quarantine
- Law on Pastures

Health and safety

- Code on Public Health and Health Care System
- Veterinary Law
- Law on Prevention of Iodine Deficiency Disorders
- Food Safety Law
- Law on Civil Protection
- Law on Radiation Security of Population
- Law on Social Protection of Citizens Affected by the Environmental Disaster in the Aral Sea Region
- Order of the Minister of Health of the Republic of Kazakhstan on approval of Sanitary Rules "Sanitary and Epidemiological Requirements for Laboratories Using Potentially Hazardous Chemical and Biological Substances"

Waste and chemical management

- Code on Public Health and Health Care System
- Order of the Minister of health of the Republic of Kazakhstan "On Approval of Sanitary Rules "Sanitary and Epidemiologic requirements to Collection, Use, Application, Neutralization, Transportation, Storage and Waste Disposal of Production and Consumption"
- Law on Plant Protection

Biodiversity

- Law on Protection, Reproduction and Use of Animal World
- Law on Specially Protected Natural Areas
- Law on Organic Production
- Law on Ratification of the Cartagena Protocol on Biosafety to the Convention on Biological Diversity
- Government Resolution on the approval by the Republic of Kazakhstan of the Convention on Biological Diversity and the Organization of Implementation of its Obligations

Access to information and public meetings

- Law on Access to Information
- Law on State Registration of Legal Entities and Registration of Branches and Representative Offices
- Law on Procedure for Consideration of Appeals from Individuals and Legal Entities
- Law on Mass Media
- Law on Public Associations
- Law on Procedure for Organization and Conduct of Peaceful Assemblies, Rallies, Marches, Pickets and Demonstrations

Labor issues

- Labor Code
- Law on the Rights of the Child

Agribusiness

- Business Code
- Law on Private Enterprise
- Tax Code
- Law on Limited and Additional Liability Partnerships

- Law on Regulation of Trading Activities
- Presidential decree on introducing a moratorium on inspections and preventive control and supervision with visits

Use of agrochemicals

- Law on Plant Protection
- Government Resolution on approval of the Technical Regulations "Requirements for the Safety of Pesticides (Pesticides)"
- Law on Technical Regulation
- Reference list of pesticides (pesticides) allowed for use in the Republic of Kazakhstan
- Order of the Minister of Ecology, Geology and Natural Resources of the Republic of Kazakhstan on approval of the list of especially dangerous pests and forest diseases, except quarantine species and Rules against them
- Order of the Minister of Agriculture of the Republic of Kazakhstan on approval of the Rules for registration, production tests and state registration of pesticides

The Republic of Kazakhstan is a member of various international organizations and an active participant of meetings, conferences and sessions devoted to environmental protection, ecology, climate change, combating desertification and landscape degradation, preserving biological diversity and solving social, cultural and economic problems. Kazakhstan has signed and ratified a number of relevant international treaties, conventions and other framework documents, a list of which is attached in Table 4.

Table 4. List of international treaties and conventions ratified by Kazakhstan

* The Rotterdam Convention on the Prior Informed Consent Procedure (PIC) (1998);
* The Stockholm Convention on Persistent Organic Pollutants (2002);
• The Convention on Biological Diversity (1997) and its Cartagena Protocol on Biosafety (2004);
* Convention Concerning the Protection of the World Cultural and Natural Heritage (1992);
• The United Nations Convention to Combat Desertification (1997);
• The United Nations Framework Convention on Climate Change (1995);
* The Ramsar Convention (2007);
* The Convention on the Conservation of Migratory Species of Wild Animals (2005).
* The Convention on International Trade in Endangered Species of Wild Fauna and Flora (1999);
* The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (2003)
* The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters
* The Convention for the Safeguarding of the Intangible Cultural Heritage (2006);
• The International Covenant on Economic, Social and Cultural Rights (2006);
* The Convention on the Elimination of all Forms of Discrimination Against Women (1998);
• The Convention concerning Minimum Age for Admission to Employment (2000);
• The Worst Forms of Child Labour Labor Convention (2002);
• The Abolition of Forced Labour Labor Convention (2000);
• The Employment Policy Convention (1998);
• The Labour Labor Inspection Convention (2001);
• The UN Convention on the Rights of the Child CRC (1994)

Overview of Key National Environmental Legal Regulations

Environmental Code (2007 as amended and supplemented in 2020) governs the relations on protection, restoration and conservation of the environment, use and reproduction of natural resources when conducting the economic and other activities related to the use of natural resources and environmental impact within the Republic of Kazakhstan. Participants in the relationship are individuals and legal entities and state bodies of the country.

The environmental foundations of sustainable development are: ensuring a favorable environment for human life and health; protecting the environment and preserving biodiversity; defending national

interests in the use of natural resources and the impact on the environment; meeting the needs of generations, and much more. The Code provides for respect for the right of citizens to access environmental information, full public participation, and transparency of issues and measures taken to address environmental issues. The Code focuses on the Republic's global partnership to preserve, protect and restore the health and integrity of the Earth's ecosystem, as well as to promote the development of international law relating to liability for environmental damage.

The main principles of the environmental legislation of the Republic of Kazakhstan are: ensuring environmental safety; ecosystem approach; state regulation, interaction, coordination, transparency, availability of environmental information; mandatory preventive measures to prevent environmental pollution; liability and compensation for damage for violation of environmental legislation; payment and permitting procedure for environmental impact; application of the best environmentally friendly and resource-saving technologies when using the natural resources and environmental impact; mandatory assessment of the impact on the environment and public health when making decisions on its implementation, etc.

Land, subsoil, surface and underground waters; atmospheric air; forests and other vegetation; fauna, gene pool of living organisms; natural ecological systems, climate and the ozone layer of the Earth shall be protected from destruction, degradation, damage, pollution and other harmful effects. Specially protected natural areas and objects of the state nature reserve fund are subject to special protection.

Article 13 of the *Environmental Code* proclaims the right of citizens to live in a favorable environment and protection from negative environmental impacts. Citizens also have the right to receive environmental information, as well as to participate in the development, adoption and implementation of decisions concerning the impact on the environment. The latter is provided by public discussion of draft environmentally important decisions and public environmental reviews. Public representative bodies must take into account citizens' comments and suggestions.

Public participation. Article 14 of the Code provides for the right of public associations on environmental protection: to develop and promote environmental programs; to apply to the court to protect the rights, freedoms and legitimate interests of individuals and legal entities; to initiate and organize public environmental expertise and public hearings; to exercise public environmental control; to receive timely, complete and reliable environmental information from state bodies and organizations.

Public associations are also given the right to perform activities on environmental protection and its improvement; on the rational use and reproduction of natural resources; to participate in the protection of environmental objects of special ecological, scientific, historical, cultural and recreational value; to participate in the activities of specially protected natural areas; to perform activities on environmental education, to conduct scientific researches on environmental protection, and much more.

In accordance with the *Law of the Republic of Kazakhstan "On Public Associations"*, the public associations can cooperate and interact with state bodies and international organizations, conclude agreements with them, to perform the certain works under the contracts as provided for by Kazakhstan legislation; to participate in discussion of draft normative legal acts on environmental protection at the stage of their preparing; to raise questions about accountability, to demand the cancellation of decisions on location, construction, environmentally hazardous facilities, as well as the decision on termination of economic and other activities of individuals and legal entities, having a negative impact on the environment and human health.

In 2000, Kazakhstan acceded to the 1998 Aarhus Convention, which takes precedence over domestic legislation and also provides for public rights in environmental matters. energy efficiency. Public

participation procedures are provided for all categories of projects, although in practice they are mostly applied to high-risk projects.

Environmental Impact Assessment. Chapter 6 of the Environmental Code of the Republic of Kazakhstan is devoted to the environmental impact assessment procedures, which assess the possible consequences of planned economic and other activities for the environment and human health, develop measures to prevent adverse consequences (destruction, degradation, damage and depletion of natural ecological systems and natural resources) and improve the environment. Environmental impact assessment is mandatory for all types of economic and other activities that may have a direct or indirect impact on the environment and public health. It is prohibited to develop and implement projects of economic and other activities that affect the environment without assessing the impact on it. The results of the impact assessment are an integral part of pre-planned, planned, pre-project and project documentation. The prospective activity of the designed facilities is subject to environmental impact assessment in accordance with the requirements of this Code.

An environmental assessment (EA) must be conducted before making a decision on the choice of sites for construction or reconstruction of facilities, regardless of their form of ownership, that have short- and long-term environmental, genetic, economic and demographic consequences. If these requirements are violated, construction will be stopped until the requirements of the authorized environmental control authorities (such as sanitary, geological, and public safety authorities) necessary to improve and prevent negative environmental consequences are properly met.

During the environmental impact assessment, the following should be taken into account: (i) direct impacts - impacts directly caused by the main and related types of planned activities in the area of the facility location; (ii) indirect impacts - environmental impacts that are caused by indirect (secondary) factors arising from the implementation of the project; (iii) cumulative impacts - impacts that arise as a result of constantly increasing changes caused by past, present or reasonably predictable actions accompanying the implementation of the project.

During the environmental impact assessment, the following impacts are assessed: (i) atmospheric air, excluding the effects of greenhouse gas emissions; (ii) surface and underground water; (iii) the surface of the bottom of reservoirs; (iv) landscapes; (v) land resources and soil cover; (vi) vegetation; (vii) animal life; (viii) the state of ecological systems; (ix) health status of the population; (x) social sphere (employment, education, transport infrastructure).

During the environmental impact assessment, negative and positive effects on the environment and human health should be taken into account.

The environmental impact assessment procedure (adopted by Order of the Minister of Environment Protection of the Republic of Kazakhstan in 2007 "On Approval of the Instruction on Environmental Impact Assessment", supplemented by the Decree of the Minister of Energy in 2016) provides guidance on composition, order of development, coordination and approval of design estimate documentation for construction of facilities, buildings and structures, as well as chapters "Environmental Impact Assessment (EIA)", Social and Environmental Assessment (SEA)" and "Feasibility Studies".

List of facilities and types of activities for which the preparation of documentation on environmental impact assessment is mandatory (annexes to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan in 2007 "On Approval of Instructions for Environmental Impact Assessment"). This extensive list contains 120 activities grouped into four environmental impact categories (from high (I) to low (IV) health hazard classes). If a facility or type of activity is not included in the list, then it is not required to pass an EIA or SEA.

Environmental Assessment. Chapter 7 of the Environmental Code of the RoK is devoted to the issues of mandatory environmental assessment to determine and limit the negative impact of managerial, economic, normative and other activities on the environment and human health, and maintaining balance between economic development and environmental protection and the prevention of damage to third parties during the environmental management. The following types of environmental assessment are carried out in the Republic of Kazakhstan: state environmental assessment; public environmental assessment; and environmental assessment of projects. Mandatory state environmental assessment shall be applied to: pre-project and project documentation of planned activities that have an impact on the environment, with accompanying materials of EIA; draft regulatory legal acts and documents, which implementation may lead to negative impacts on the environment; biological justification for the extraction and use of plant and animal resources, and many others.

The Environmental Code states that all types of economic and other activities must be carried out in accordance with the existing environmental standards and norms for environmental protection, with the mandatory application of measures to prevent and mitigate negative consequences on the environment in order to avoid its pollution and negative impact on human health.

The *Law On Permissions and Notifications* (2014, as amended by 2020) establishes a uniform procedure for obtaining permissions/licenses for all types of activities that require authorization. Licenses are legal instruments for governing the certain potentially hazardous activities where minimum qualifications and strict compliance with regulations are required to ensure that they are performed effectively, safely and do not lead to potentially very significant and irreparable damage to the environment and human health. In particular, licenses are required for hazardous waste management; for industrial safety activities, sources of ionizing radiation, production and handling of pesticides and other agrochemicals. Permissions are issued by the relevant industry regulator (Ministry or Committee) or by an organization to which such authority is delegated. Licensing is also used to ensure the most efficient and sustainable use of natural resources. For example, licenses are required to search for, collect, or extract minerals, or to construct underground structures that are not associated with mining.

The *Water Code* (2003, as amended in 2019) provides for state management and regulation of the water fund of the Republic of Kazakhstan. The goals of water legislation are to achieve and maintain an environmentally safe and economically optimal level of water use and protection of water resources, water supply and sanitation to preserve and improve the living conditions of the population and the environment. The main tasks are: implementation of state policy and regulation of water relations; providing a legal basis for support and development; defining the basic principles and directions for the use and protection of water resources, water supply and sanitation; protection of the population and economic facilities from emergencies at water facilities and the consequences caused by them.

The water fund of the Republic of Kazakhstan includes the totality of all water bodies within the Republic of Kazakhstan, included or subject to inclusion in the state water cadaster. Water bodies of the Republic of Kazakhstan include concentrations of water in land surface topography and the earth's interior, which have borders, volume and water regime. They are seas, rivers, channels equated to them, lakes, glaciers, and other surface and underground water bodies. Water resources of the Republic of Kazakhstan are reserves of surface and underground water, concentrated in water bodies that are used or can be used.

The *Land Code* (2003, as amended in 2020). In accordance with this Code, land in the Republic of Kazakhstan is in state ownership. Land plots may also be privately owned on the grounds, conditions and within the limits established by this Code.

The land legislation of the Republic of Kazakhstan is based on the following principles: integrity, inviolability, protection, environmental safety and rational use; targeted use of land, payment and priority

of agricultural land; state support for the use and protection of land; conservation of land as a natural resource, the basis of life and activity of the people of the Republic of Kazakhstan, etc.

The tasks of land legislation are: establishing the grounds for the emergence and termination of land use rights and ownership of land; regulating land relations, ensuring rational use and protection of land, reproduction of soil fertility; creating conditions for the equal development of all forms of management; protection of land rights of individuals and legal entities and the state, etc.

The land fund of the Republic of Kazakhstan, in accordance with its intended purpose, is divided into the following categories: (i) agricultural lands; (ii) settlement lands (cities, towns and rural localities); (iii) industrial, transport, communications, space, defense, national security, and other non-agricultural lands; (iv) protected areas, recreational, and historical-cultural lands; (v) forest lands; (vi) water lands; and (vii) reserve lands.

The legal regime of lands is determined based on its belonging to a particular category and permitted use in accordance with the zoning of lands (territory). According to natural conditions, the following zones are distinguished: (i) forest-steppe; (ii) steppe; (iii) dry-steppe; (iv) semi-desert; (v) desert; (vi) foothill-desert-steppe; (vii) subtropical desert; (viii) subtropical-foothill-desert; (ix) Central Asian mountain; (x) South Siberian mountain.

Assignment of land to categories, as well as transfer of lands from one category to another, in connection with changes in their intended purpose, are made by the RK, local executive bodies within their competence. Provision and withdrawal of land plots, including for state needs, are also made by state bodies.

The *Forest Code* (2003, as amended in 2020). This Code regulates the public relations on possession, use, and disposal of forest fund, and also establishes legal bases of protection, reproduction, enhancing environmental and resource capacity of the forest fund, its rational use.

Basic principles of forest legislation of the RoK is: recognition of national significance of forests, their climate-performing, environmental, field, and soil and water protection and sanitary-hygienic functions; sustainable development of forests and increasing forest cover; conservation of biological diversity, the reserve fund, cultural and natural heritage of forests; rational, continuous, sustainable, multipurpose use of forest resources etc.

This Code defines state regulation, control and supervision in the field of conservation, protection, use of the forest fund, reproduction of forests and forestation; compensation for damage caused by a violation of the forest legislation of the Republic of Kazakhstan; availability of information on the state of the forest fund; participation of the population and public associations in protection of the forest fund.

All forests located within the country, as well as lands of the forest fund that are not covered with forest vegetation, but are intended for the needs of forestry, form the forest fund of the Republic of Kazakhstan. The forest fund consists of public and private forest funds.

The state forest fund includes: forests of natural and artificial origin (including forest and non-forest lands) provided for the needs of forestry and on the lands of specially protected natural areas; protective plantings on the right-of-way of railways and highways, canals, main pipelines and other linear structures with a width of ten meters or more, an area of more than 0.05 hectares.

The private forest fund includes those created at the expense of individuals and non-state legal entities on lands granted to them in private ownership or long-term land use, in accordance with the Land Code of the Republic of Kazakhstan with the intended purpose for forestation: (i) artificial plantations; (ii)

plantations of natural origin that arose by seed and (or) vegetative means; (iii) private forest nurseries; (iv) special-purpose plantation stands; (v5) agroforestry stands; (vi) protective stands on allotment lanes of privately owned commercial highways.

The forest fund does not include: individual trees and groups of trees with an area of less than 0.05 hectares, located outside the state forest fund, shrubby vegetation on agricultural land; landscaping within the borders of localities, except for urban forests; trees and shrubs on household, dacha and garden plots.

Article 106 of the forest legislation provides for incentives to increase the forest cover of the territory of the Republic, and article 112-3 – state support for private forestation by reimbursing up to 50% of the cost of creating plantations of fast-growing trees and shrubs and private forest nurseries.

Public participation. Article 68 of the Forest Code provides for the right of citizens and public associations to use the forest fund, participate in protection, reproduction of forests and forestation.

The population participates in the protection, use of the forest fund, forest reproduction and forestation through the local government bodies. State bodies and organizations provide assistance to local self-government bodies in solving issues of local significance, related to the protection, use of the forest fund, forest reproduction and forestation.

Public associations established for protection and use of the forest fund, forest reproduction and forestation, perform their activities for the conservation and rational use of the biological diversity of forests, the reserve fund facilities, the development of school forestry, the creation of voluntary fire-fighting units, etc. in cooperation with a Forest Agency.

Key national social and legal provisions and citizen engagement

The Law "On Access to Information" (2015, amended and revised on 2020) is underpinned by Article 18 of the Constitution, which states that government agencies, public associations, officials and the media are required to provide every citizen with the opportunity to obtain and familiarize himself/herself with documents and sources of information that affect her or his rights and interests, except where otherwise provided by law.

Under paragraph 1 of Article 11 of this Law, information on request is provided free of charge, but if the response to a written request provides for copying or printing, then, in accordance with paragraph 13 of this Article, the user of the information must reimburse the owner of the information the actual cost of copying or printing. The amount the actual cost of copying or printing and the payment procedure is determined by the RK. Tariffs for copying or printing and the payment procedure are subject to mandatory publication in periodicals distributed on the entire territory of the Republic of Kazakhstan, and placement on the Internet resources of the owners of information. Vulnerable social groups are exempt from payment of actual cost of copying or printing according to the procedure determined by the RK.

The Law "On the Public Associations" (1996, amended and revised on 2020). The public associations in the Republic of Kazakhstan, political parties, trade unions and other associations of citizens, created on a voluntary basis to achieve common goals that are not contrary to the law, are recognized as public associations. Public associations are non-profit organizations.

Public associations are established and operate in order to implement and protect political, economic, social and cultural rights and freedoms, to promote the activity and amateur activities of citizens; satisfying professional and amateur interests; development of scientific, technical and artistic activities, protection of life and health of people, protection of the natural environment; participation in charity

activities; cultural and educational, sports and recreational work; protection of historical and cultural monuments; patriotic and legal education; expanding and strengthening international cooperation; other activities not prohibited by the law of the Republic of Kazakhstan. Public associations are created and operate on the basis of volunteerism, equality of their members (participants), self-government, legality, accountability and transparency of activities.

Participation or non-participation of a citizen in the activities of a public association cannot be grounds for restricting his/her rights and freedoms. Requirement to specify in official documents on membership (participation) in a public association is not allowed.

Public associations acquire the rights and assume responsibilities through their governing bodies operating within the powers granted by the statute and legislation of the Republic of Kazakhstan.

In order to implement statutory purposes, public associations in accordance with the law of the Republic of Kazakhstan have the right to:
- disseminate information about their activities;
- represent and protect the rights and legitimate interests of its members in courts and other public bodies, other public associations;
- to establish mass media;
- to organize and hold peaceful meetings;
- to carry out publishing activities;
- to join international non-for-profit non-governmental groups;
- to exercise other powers that do not contradict the law of the Republic of Kazakhstan.

A public association must:
- comply with the legislation of the Republic of Kazakhstan and the norms provided by the statute;
- ensure that its members are able to familiarize with documents and decisions affecting their rights and interests;
- inform their members about the receipt and expenditure of funds;
- inform the registration authority of changes in the location of the permanent governing body and in the information on managers in the scope of information included in the the National Register of Business Identification Numbers.

The Law "On the procedure for organizing and holding peaceful meetings, rallies, marches, picketing and demonstrations" (2020) states that the right to freedom of peaceful assembly cannot be restricted, except as established by this Law in the interests of public safety, public order, protection of health, protection of the rights and freedoms of other persons.

The organizer of peaceful assemblies during peaceful assemblies must not:
- call for violation of the Constitution and laws of the Republic of Kazakhstan, mass riots, incitement of social, racial, national and ancestral hatred, call for the seizure of power, forced dismantlement of the constitutional order;
- impede the functioning of transport, infrastructure, damage plantations, small-scale architectural structures and other property, prevent movement of citizens not participating in peaceful assemblies;
- prevent the activities of state bodies, organizations, officials in the implementation of a set of measures to protect the life, health, rights and freedoms of citizens, the interests of society and the state, the protection of public order during peaceful assemblies;
- engage private security organizations for ensuring public order and security of peaceful meetings;
- install yurts, tents, other facilities without coordination with the local executive body;
- carry any weapons, as well as items (substances, things) that can be used against the life and health of people and cause material damage to citizens and property of legal entities;

- distribute and/or consume alcohol, drugs and their equivalents, as and be in a state of alcoholic and drug intoxication;
- use tools that prevent facial recognition, except for personal protective equipment for health protection purposes;
- use symbols that are prohibited in the country during campaigning and peaceful assemblies.

This law prohibits holding peaceful meetings without organizers. In accordance with Article 4 of the Law, the organizer must file a notice of holding a peaceful meeting or an application for approval from the local executive body. Paragraph 6 of Article 5 of the Law states that the organizer of peaceful assemblies may not be a citizen of Kazakhstan, who has been acknowledged by a court to be legally incapable and who has a criminal record; in the case when the organizer is a legal entity, it must be duly registered and its activities must not be suspended or prohibited by the laws of the Republic of Kazakhstan.

The Law "On the Procedure for Consideration of Appeals of Individuals and Legal Persons" (2007, with changes and amendments of 2020). This Law regulates public relations related to the filing and consideration of appeals by individuals and legal entities in order to exercise and protect their rights, freedoms and legitimate interests. The Law contains legal provisions on the information channels established for citizens to file their appeals, requests and complaints. Complaints are considered within up to 30 days from the date of receipt of the appeal. Depending on the subject's scope (e.g., public services, procurement, access to information, labor violations, occupational health, environmental protection, etc.), time limits for consideration of complaints is regulated by the relevant laws.

The basic principles of regulating legal relations related to the consideration of appeals of individuals and entities are: lawfulness; uniform requirements to appeals; guarantee of the rights, freedoms and legitimate interests of individuals and legal entities; the inadmissibility of bureaucracy and red tape when considering appeals; equality of individuals and entities; transparency in the activities of actors and officials in the consideration of appeals.

The following shall not be considered:
- anonymous appeals, except in cases where such an appeal contains information about criminal offences or a threat to the national or public security and which is subject to immediate redirection to the public authorities in accordance with their competence;
- the appeal that does not state the substance of the issue.

The subject or official is obliged to consider the appeal if the conditions that led to the abandonment of the appeal have subsequently been removed.

The Law "On Children's Rights" (2002, with changes and amendments as of 2019) states that every child has the right to freedom of work, free choice of occupation and profession. Children from the age of fourteen have the right at the parent's approval to participate in socially useful work that they can perform for health and development reasons and that does not harm physical, moral and mental health of the child, and they have the right to receive a profession. This right is enforced by the employment services and local government authorities.

The procedure for concluding and terminating an employment contract and other features of the regulation of workers under the age of eighteen are set by labor laws of the Republic of Kazakhstan.

It is forbidden to accept or involve a child for any work that may pose a risk to its health or hinder its education or harm its health and physical, mental, spiritual, moral and social development.

The Labor Code (2015, with changes and amendments as of 2020) prohibits forced labor (Article 7). The Labor Code also establishes the minimum age at which a child can work, as well as the conditions under

which children can work (articles 31; 69; 75-77; and 182). The minimum age for employment is 15 years, but in some cases vocational training, light work is allowed for a 14-year-old (Article 182 of the Labor Code). In addition, there are some labor restrictions as to what type of work can be performed and what hours are allowed to workers under the age of 18[3]. Examples of labor restrictions include: persons between the ages of 14 and 16 cannot work more than 24 hours a week, while persons under the age of 18 cannot work more than 36 hours per week; during the school year, the maximum number of hours is half or 12 and 17.5 hours, respectively. These restrictions are consistent with the ILO Minimum Age Convention. The Law on Parental Responsibility for the Child's Upbringing and Education rests the responsibility on parents to ensure that children do not engage in hard and dangerous work and do attend school.

Appropriate institutions

RK Government agencies that will be involved in LRP are shown in Table 5.

Table 5. Government agencies that will be involved in the LRP

Institution	Level of engagement	Role in the project implementation
Ministry of National Economy (MNE)	national	• Participates in the project's Steering Committee
Ministry of Ecology, Geology and Natural Resources (MEGMR)	national	• Overseeing the project's coordination department • Chairman of the Steering Committee
Ministry of Agriculture (MA)	national	• Participates in the project's Steering Committee
The Forestry and Wildlife Committee (FWC)	national	• Responsible for the overall implementation and coordination of all project activities • Responsible for the financial management of the project, including procurement functions • Performs all fiduciary functions; • Responsible for the development of social and environmental tools, implementation, monitoring and reporting • Oversees work of PIU • Oversees the activities of the two regional territorial inspections of the FWC
Project Implementation Unit (PIU) under the Forestry and Wildlife Committee (FWC)	national	• Responsible for the overall implementation and coordination of all project activities • Responsible for preparation of work plans, procurement documents, technical assignments, contracts and their implementation • Performs management, monitoring, evaluation and reporting • Ensures cooperation with stakeholders at the central and local levels • Oversees field work, operations of contractors/subcontractors
Local executive body is local administration of Kyzylorda region	regional	• Participates and assists in the work of the project's Steering Committee at the regional level
Local executive body is local administration of Zhambyl region	regional	• Participates and assists in the work of the project's Steering Committee at the regional level

[3] For LRP, the minimum age of employment is 16 years of age according to the LMP.

Institution	Level of engagement	Role in the project implementation
Local administrations of districts and auyl districts of Kyzylorda region	local	• Participates and supports the project at the district level
Local administrations of districts and auyl districts of Zhambyl region	local	• Participates and supports project implementation at the district level
Kyzylorda Regional Territorial Inspectorate of Forestry and Wildlife Committee (FWC)	regional	• Liaise with PIU for the implementation of the project in the region
Zhambyl Regional Territorial Inspectorate of Forestry and Wildlife Committee (FWC)	regional	• Liaise with PIU for the implementation of the project in the region
Office of Natural Resources and Environmental Management of Kyzylorda Region	regional	• Responsible for approving regional environmental expertise
Office of Natural Resources and Environmental Management of Zhambyl Region	regional	• Responsible for approving regional environmental expertise
Regional Office of the Environmental Protection Committee of Kyzylorda Region	regional	• Overseeing the project's environmental activities at the local level
Regional Office of the Environmental Protection Committee of Zhambyl Region	regional	• Overseeing the project's environmental activities at the local level

World Bank Environmental and Social Framework (ESF)

The World Bank's Environmental and Social Framework (ESF) defines its commitment to sustainable **development** of investment projects through the application of environmental and social standards (ESS) designed to identify and manage environmental risks. The ESF will assist recipients in their goals of reducing poverty and sustainable improvement of citizens' well-being and health as well as preserving the environment. The Bank's social and environmental policy establishes mandatory requirements for identifying and assessing environmental and social risks and impacts on investment projects it supports through financing.

The Bank is committed to assisting recipients in the development and implementation of sustainable projects, as well as in strengthening the recipient's Social and Environmental Principles in assessing and managing the environmental and social risks and impacts. The ESS are aimed at preventing, minimizing, reducing or mitigating negative social and environmental risks and the impacts on projects. The ESS will assist and support Recipients: (a) to achieve good international environmental and social sustainability practices; (b) in fulfilling their national and international environmental and social obligations; (c) to strengthen stakeholder participation in governance and transparency in reporting; (d) in improving sustainable development and project outcomes through ongoing engagement with stakeholders.

The ten ESS are: ESS 1 – Assessment and Management of Environmental and Social Risks 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.

For the LRP, the environment and social risks are both rated moderate; therefore, the overall ESF risk level is moderate. While there are no anticipated negative long-term environmental or social effects, the risk will be confirmed during appraisal once landscape restoration, reforestation, and pasture management, activities are better defined and understood by the client. ESS 1, 2, 3, 4, 6, 8, and 10 are considered relevant and described in detail below. Chapter 5, below, details how these ESS will be applied to the LRP.

The World Bank Group Environmental Health and Safety (EHS) Guidelines.

The EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP) and are referred to in the ESF. The EHS Guidelines contain the performance levels and measures that are normally acceptable to the World Bank Group, and that are generally considered to be achievable in new facilities at reasonable costs by existing technology. The World Bank Group requires borrowers to apply the relevant levels or measures of the EHS Guidelines. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects will be required to achieve whichever is more stringent.

World Bank Interim Guidance on COVID-19.

In response to the COVID-19 pandemic, World Bank has issued an interim guidance note for World Bank projects that is in keeping with the World Health Organization (WHO) Guidelines. The note, which contains links to the latest guidance for responding to COVID-19, is found as Annex 11 to this ESMF.

4. Potential environmental and social risks and impacts

Positive impact

The LRP is part of the Risk Mitigation Regime (RMR) included in the World Bank's CPF with the Republic of Kazakhstan for 2020-2025, aimed at supporting the Government's efforts to significantly improve the competitiveness of the economy through interventions that will help create the prerequisites for a modern, effective, climate-friendly entrepreneurial society. LRP is related to Goal 2 of the CPF, which is to promote market transformation in agriculture and to Goal 6, which provides for improved management of natural resources. The implementation of LRP will contribute to inclusiveness and shared prosperity; will improve the conditions for attracting private investment or mobilizing additional resources (as part of raising funding for development); and will contribute to regional or global public good.

Geographically, the project areas of LRP are located in the drought-ridden, economically depressed areas of Kyzylorda and Zhambyl regions, which have some of the highest levels of absolute and relative poverty in the country. The project is expected to have a positive impact on employment and livelihoods, farming, and added value chain activities. There is hope that the project will open new prospects for local communities in the development of agribusiness and private forest breeding, namely agroforestry.

The domestic and export market for project areas of LRP has untapped potential to generate revenue from the sale of fresh and/or processed food and other products derived from the establishment of agroforestry demonstration sites.
Industry interventions are designed to directly and indirectly reach the most vulnerable groups, such as women and young people, who are the beneficiaries of the expected improvements in overall economic conditions. In addition, the design of the project's activities will directly target vulnerable groups in a number of ways:

It is planned to use local labor and migrant workers to create protective plantations around settlements and agroforestry demonstration sites, construction of wells, and a forest nursery. The main contractors will be local communities as well as farmers and farms that can hire the necessary labor. Forest lab or plantations is carried out both manually and by mechanical means. The work on the creation of a forest nursery requires some qualifications and experience of work in this area. The main contractor is expected to be a local construction organization selected on a competitive basis. Construction method for building water sources for irrigation (including for animals) will be determined depending on the location of the agroforestry demonstration sites based on the Working design. It will presumably be excavated wells or water wells. The construction of water wells can be carried out by a local construction organization, selected on a competitive basis, with an appropriate license, qualifications and construction experience.

Women and youth will take part in planting and agrotechnical tending. It is expected that local women and youth will participate in the work of LRP. It is expected to help generate income and improve economic well-being and also employ youth, thereby dissuading them undesirable and illegal actions.

The capacity-building development of degraded landscapes will help further the development of agribusiness and private forestry and will support the beneficiaries. Given low potential and willingness of farmers and local communities to participate in the development of private forestry, financial and technical assistance will be provided under LRP and training workshops on the introduction of innovative agroforestry technologies, including environmental education will be conducted.

Adverse risks and consequences

The proposed project activities under Component 1 could have environmental impacts associated with noise, dust, pollution of air, soil and water, solid waste management, biodiversity degradation, health and safety hazards, community health and safety risks, etc. It is expected that environmental risks will be typical for small construction works and the work on the creation of protective plantations and agroforestry demonstration sites. Environmental risks will be temporary in nature and specific areas and can be easily mitigated by applying best building and/or environmentally friendly methods and appropriate mitigation measures. Examples of adverse environmental and social risks and impacts and mitigation measures are presented in Annex 1 (Examples of adverse social and environmental risks and impacts and proposed mitigating measures).

Adverse environmental impacts and risks

The following major negative impacts on the environment may occur:

Soil and water pollution. As a result of leakage of fuel and lubricants from tree-planting machines and construction equipment and stored waste, petroleum products and chemicals can contaminate the soil, penetrate groundwater or drain into surface water reservoirs. Maintenance and care of equipment and machinery near natural streams can lead to water pollution. If temporary settlements of developers are established on the construction site, pollution can be caused by sanitary conditions in settlements. The project will invest in improving the quality of sanitary conditions in the areas where workers take food and rest. Inadequate management and operation of sanitation facilities can lead to increased stream and groundwater pollution.

Impact on biodiversity. During the forest planting and construction work, soil processing (deep ploughing, cultivation, harrowing) and earthworks will be carried out, which can damage the vegetation cover and lead to the vegetation clearance. Moving and storage of construction materials, removing surplus, waste and building rubbish can disrupt wildlife, including affecting natural habitats. However, since all works will be carried out mainly in developed areas, a significant negative impact on biodiversity or natural habitat is unlikely.

Noise, vibration and temporary air pollution. The dust will form as a result of logging and construction work, mechanical agrotechnical tending, transportation of construction materials/waste and movement of tractors, tree-planting machinery and heavy vehicle. Strong increase in noise and vibration is expected when planting, construction, transporting materials, operation of construction equipment, in particular, in earthworks, pneumatic drilling and operation of construction cranes. Noise and vibration will cause concern among local residents if the work is carried out in close proximity to residential areas.

Construction refuse and waste. During the construction of wells and forest nursery it is assumed that the amount of waste and garbage will be a little, as excavated wells will be created manually from concrete and brick, and maintenance buildings of the forest nursery will be built using modular structures. The following possible types of wastes that may be generated during construction work have been formed: (i) construction rubbish and waste as a result of transportation, recycling, compressor operation, jackhammers and other construction equipment; (ii) soil and stones, cut trees, bushes, household waste, outdated equipment and materials; (iii) hazardous waste - construction rubbish containing asbestos plaster, asbestos slate, mineral wool plate and Ruberoid roofing felt, worn tires, filters and oils of construction equipment and transformer substations. Construction waste will be removed in a timely manner and properly transported to special sites in local landfills. Hazardous waste will be removed and disposed of carefully to avoid further impact on the health of workers and surrounding communities.

Adverse social consequences and risks

Exclusion of locations. Choosing one location for agroforestry demonstration sites over others to attract investment in agribusiness and infrastructure for farmers and local communities can lead to some risk of dissatisfaction of stakeholders. In this regard, extensive consultations with public and private stakeholders on the location for the construction of the forest nursery and agroforestry sites will be conducted following the Project's Stakeholder Engagement Plan (SEP). Representatives of FWC and local authorities should organize a campaign to inform the public about grants for agroforestry demonstration sites among the target groups. Developers will use existing information channels (local administrations of districts and rural districts, media, non-governmental organizations, mailing lists, social networks) to reach potential participants.

Exclusion of vulnerable groups. Some individuals or groups have limited access to a variety of opportunities and resources, such as women and young people having weak links with government because of their remoteness, lack of education or lack of interest in public life. Other participants may also suffer social isolation. The main contributors include income, employment status, social class, personal habits and appearance, religion and political affiliation. The risk will be prevented and/or reduced by conducting outreach and awareness-raising campaign in line with the project SEP. Training programs are expected to target younger groups of population who will be given priority access to these programs. Women, including those who head households, are expected to benefit from the support provided on account of investments in agribusiness as part of LRP. They will be provided with technical assistance in the establishment of agroforestry demonstration sites and subsequent support during the implementation.

The risk of child and forced labor. In rural areas, where child labor is widely seen as support for parents who find themselves in their spare time without disrupting school attendance, there is still a risk of it being used in violation of national law which sets the minimum age for employment at 15 years, although in some cases vocational training, light work is allowed for a 14-year-old. The LRP prepared the LMP which provides detailed description of relevant parts of national labor codes and measures to fill gaps with the Bank's ESS2. The LMP also prohibits anyone under the age of 16 to work or be contracted on LRP activities. Compliance by contractors/subcontractors and farmers with national legislation as well as ESS2 on the use of child forced labor will be closely monitored, and efforts will be made to raise awareness of contractors of relevant legislation and the penalties for non-compliance. Any facts of non-compliance will be monitored throughout the LRP implementation period.

Low ability to comply with and implement Environmental and Social Framework (ESF). Given that the project is prepared in accordance with the recently adopted ESF by the World Bank, the recipient's ability to implement the project based on full compliance with ESF is limited. Therefore, the WB team provided technical assistance to the Recipient (including PIU at FWC executive agency) to prepare a package of ESMF tools during preparation. Environmental and Social Impact Assessment and ESIA/ESMP Preparation Guidelines, etc. will be used during implementation of the capacity-building activities under Component 1. In addition, the selection, design, contracting, monitoring and evaluation of sub-projects will be in line with the recommendations set out in the annexes on the environment and social issues.

To address the identified impacts, the agency, contractors, subcontractors, and beneficiaries must undertake a number of mitigation measures that will be prepared during the project implementation.

Occupational and Community Health and Safety Risks

Dangerous production factors as a result of forest planting and construction work. The immediate impact on the safety and health of people in forest planting and construction work can be caused by a variety of factors, such as: the operation of tree-planting machinery with moving and rotating mechanisms, dust,

noise, vibration; work at highs and deep confined space work (wells); the work of cranes and bulldozers; welding and electric shock; health conditions, etc. Work-related injuries associated with forest planting and construction work (rotating and falling structures, etc.), as well as those associated with contaminated drinking water or food products have potential impact on workers' health safety.

Road traffic. Every effort will be made to minimize the time spent to transport workers to their place of work, moving tractors, tree-planting machinery, construction vehicles and other special transport to prevent any incidents or damage to property. Drivers will be warned to drive with extreme caution. Speed limits in work zones and traffic with heavy machinery will also be regulated. Proper traffic organization will also prevent negative impact to the highest extent possible.

Health. The COVID-19 pandemic also presents a risk to the LRP and the beneficiary communities due to increased interaction with stakeholders and interested parties from outside a particular location. The LRP will mitigate this risk by strictly following the World Bank Group Interim Note on COVID-19 and related WHO guidelines.

5. Management of Environmental and Social Risks

According to the environmental and social procedures, the WB categorizes all projects into one of four risk categories: *high, substantial, moderate or low*. When assigning an appropriate risk category, the Bank takes into account relevant issues such as type, location, sensitivity and scale of the project; the nature and extent of potential environmental and social risks and impacts; as well as the recipient's logistical base, its determination, ability and willingness to manage environmental and social risks and impacts in accordance with the social and environmental standards.

For projects involving several small sub-projects that are identified, developed and implemented during the project, the Bank considers compliance with national social and environmental requirements related to sub-projects and assesses the Client's potential to manage social and environmental risks and impacts of sub-projects. The Bank will require the Recipient to conduct a proper social and environmental assessment of sub-projects, their development and implementation as follows: (a) high-risk sub-projects in accordance with the ESS; (b) sub-projects with significant, moderate and low risk levels in accordance with national laws and ESS requirements that the Bank deems significant for such sub-projects.

Environmental risks are moderate. The physical work envisaged in the project is of average proportion and it is expected that the environmental impact associated with the proposed construction will be easily mitigated. These exposures may include increased pollution due to improper care, processing and storage of construction materials and waste, excessive noise and dust levels and possibly health effects associated with the use of pesticides or inadequate disposal of waste and asbestos-containing material. The environmental risk of the project is assessed as significant not because of the nature of the work proposed and the associated environmental risks, but because of the remote and potentially vulnerable areas where the LRP is planned; a large number of expected small works and limited capacity of implementing partners to understand and to apply the World Bank ESF and relevant ESS.

Social Risks are moderate. The project will be implemented in several pilot areas in Kyzylorda Region and in Zhambyl Region in the south of the country where both agriculture land and State forests exist, allowing the piloting of PPP in 'model farms'. The project's major social impacts/ risks emanate from three key interventions: 1) three agroforestry demonstration plots in Kyzylorda oblast (5 ha each) combining forestry with fruit production and horticulture; 2) six plots in Zhambyl oblast (20 ha each) on the territory of forest pastures for combining forestry with livestock production; and (3) community centered forestation around Kyzylorda city. Of these, the first two assume significance. The sites for the first two activities within these regions will be selected during implementation based on their degree of degradation, economic potential, capacity of local authorities/ communities to carry out activities and accept new tools, the biome's diversity and land use types. Demo Plots will be created on the existing lands/farms and no new lands will be acquired. Land plots so selected will be such that the farmers and/or local communities already have long-term forest and/or land usage agreements with local authorities and have proven record of operations in agriculture in the recent years. Any land that has been used by farmers and/or local communities for livelihoods purposes without long-term forest and/or land usage agreements with local authorities will be excluded from the project. No changes in the land usage are envisaged. Nor any access restrictions likely to happen. The only major social issue the project needs to address relate to effective outreach such as to ensure successful community mobilization. This would demand an inclusive information, education and communication (IEC) campaign and technology demonstrations and dissemination. Further, the project would rely rather exclusively on local labor force for all the land and tree activities such as preparation of lands – cleaning of weeds, leveling etc- planting of seedlings, irrigating, pruning, cutting, drafting etc.,). So, special attention will have to paid to ensure that working atmosphere will be community friendly and all labor management practices are in accordance with the provisions of ESS 2 – all workers will be hired fairly without discrimination and that no child/ forced labor risks arise as well as safe and healthy conditions with special regard to COVID-19

Situation. All these are ingrained into the project design and will be further elaborated during the implementation.

The following specific risk management measures and tools are planned throughout the project cycle to prevent, prevent, minimize, reduce or mitigate environmental and social risks and impacts:

ESS 1 - Assessment and Management of Environmental and Social Risks and Impacts

Environmental and social risks are assessed as moderate. The level of risk may be affected by unstable social and environmental conditions, the remoteness of planned actions and the inexperience of the LRP PIU at implementing projects subject to the World Bank's ESF. The following tools have been prepared to address the risks: (i) this Environmental and Social Management Framework (ESMF); (ii) a Stakeholder Engagement Plan (SEP); (iii) Labor Management Procedures (LMP). ESMF covers relevant ESS and the World Bank Group's EHS Guidelines.

Through this ESMF, a framework approach is being used since the project is financing small and medium scale pilot activities, most of which will not be identified until implementation begins. The ESMF covers applicable national environmental and social legislation and regulations as well as the relevant ESSs and the World Bank Group's Environmental Health and Safety Guidelines. Where the ESF differs from national legislation and regulations, the stricter standards will take precedence. The ESMF structure includes sections dealing with each of the relevant ESS; integrating the ESF principles into the proposed capacity building program; guidelines and criteria prohibiting proposed pilot activities in proximity to protected areas or critical natural habitats; selection criteria that preclude pilot activities that might require resettlement or disruption of livelihoods; checklists for determining where and when site specific Environment and Social Impact Assessments (ESIAs)/Management Plans (ESMPs) might be necessary; and generic ESMP checklists for the small-scale activities including both landscape restoration, reforestation, and pasture management as well as construction and rehabilitation at existing facilities.

Anticipated risks, which are addressed in the ESMF and are expected to be easily mitigable, include dust and minor soil loss during planting, use of pesticides for nurseries or during planting, possible encroachment on natural habitats, issues related to small-scale construction/ rehabilitation of existing facilities (dust and waste disposal etc.).

The social risks and impacts are related to potential access restriction to both agriculture and State forests as a result of piloting of "model farms" in Kyzylorda Region within the Aral Sea Basin and in Zhambyl Region in the south of the country. To mitigate this risk, the ESMF clearly precludes pilot activities that might require resettlement or cause the disruption of livelihoods. Pilot activities will take place on "model farms", which have been established by the Government of Kazakhstan to pilot innovation and provide a venue for training and extension on successful pilots.

The studies and capacity building financed under Component 1 will be prepared in line with the ESF to ensure recommendations for future activities are sustainable, and environmentally and socially sound.

ESS 2 – Labor and Working Conditions

ESS 2 recognizes the need to create jobs and generate income to successfully fight poverty and ensure inclusive economic growth. The recipients can promote a healthy relationship between employees and management and enhance the development benefits created by the project by ensuring fair treatment of the project's' employees, as well as safe and healthy working conditions. The scope of application of ESS2 depends on the type of employment relationship between the Recipient and the project workers. The term "project worker" refers to the following categories: direct workers, contracted workers, primary supply workers and community workers.

The Project is expected to encompass the following categories of workers: direct workers, contracted workers, and community workers. Direct workers could be either government civil servants or those deployed as 'technical consultants' by the project. The former will be governed by a set of civil services code, the latter by mutually agreed contracts. Local community members will be engaged in community works under the project on a voluntary basis as a result of an individual or collective agreement, and third parties (contractors/subcontractors) may hire local community members in non-complex seasonal, large-scale work that must be performed within a short period of time according to agro-technical terms (e.g. forest planting, planting, weeding, harvesting, etc.). And contract workers will be employed as deemed appropriate by contractors, sub-contractors, and other intermediaries, details of which will be known as and when activities' implementation begins. Risk of child/ forced labor is considered to be limited as the same is prohibited under the national legislation.

Direct workers are people employed or engaged directly by the Recipient (including the project proponent and the project implementing agencies) to work specifically in relation to the project (direct workers). These include civil servants and project consultants who will perform their functions in accordance with national legislation and on the basis of a mutually agreed agreement (contracts for the LRP will be agreed between FWC and WB). The implementing agency of the LRP – Forestry and Wildlife Committee of the Ministry of Ecology, Geology and Natural Resources of Kazakhstan – will be guided by national labor legislation and the existing practice for hiring staff for this project. The provisions of the Labor Code of Kazakhstan (2015 with changes and amendments as of 2020) apply to coordinators (managers) of the Project Implementation Unit (PIU). The remaining employees (consultants) are not civil servants and will be hired on a contractual basis. Two types of employment contract are applied to the PIU : one-year employment contracts and short-term contracts. The majority of employees are permanent employees with one-year employment contracts with fixed monthly salary rates. All contract documents are stored in folders and electronically in the FWC. Employment of project workers should not exceed 40 hours per week and is recorded in the timesheet. Information on salary (once or twice a month), paid sick leave and annual leave is kept in printed form and electronically. The labor inspection of the Ministry of Labor and Social Protection of Kazakhstan checks the organization's' maintenance of operational documentation twice a year, including that of FWC and LRP. The implementing agency undergoes an annual audit of the Accounts Chamber and therefore maintains the documentation carefully to avoid administrative penalties and fines.

Contracted workers are workers employed or engaged by a third party to perform work or provide services related to the core functions of the project regardless of the place of its implementation. For the LRP, these are contractors and subcontractors, information about them will be known during the implementation of the project. Contractors will be selected by tender; PIU will prepare procurement documentation. The commission created by the FWC's order will select winners of the tender (contractors). The results of the tender will be agreed with the WB when necessary. Contractors will be guided by the legislation and legislative and regulatory acts of the Republic of Kazakhstan. They will independently attract local labor and subcontractors, which must be approved by the Recipient represented by PIU. It is expected that the construction of excavated wells may be carried out under international contracts by foreign contractors and migrant workers.

Subcontractors may be involved by contractors to carry out work on the construction of a forest nursery or structures of the irrigation network. Subcontractors are expected to be selected from among local companies. The subcontractor will be guided by national legislation, regulations and the Labor Code of Kazakhstan. The estimated number of staff and workforce of subcontractors is 10 persons.

Community workers are workers employed or engaged to perform community service. The project provides for the use of community workers engaged in community work that can be performed by communities on a voluntary basis as a result of an individual or collective agreement. Third parties

(contractors/subcontractors) may engage workers in non-complex seasonal, large-scale work that must be performed within a short period of time according to agrotechnical terms (e.g. forest planting, planting, weeding, harvesting, etc.). These works can be classified as community works that do not require high qualifications, and seasonal (temporary) workers engaged can be classified as community workers.

When entering into agreements or individual employment contracts for public works, the requirements of Kazakhstan's labor legislation and ESS 2 concerning HSE should be of particular importance. Employment agreements will reflect and clearly define the working conditions of community workers, including the amount and method of payment (if applicable), working hours, access to the grievance mechanism.

Local population will be involved in community service, which may lead to risks of child or forced labor and other violations of labor laws. Therefore, PIU and third parties will regularly check the safety of working conditions, the age of employees, the conditions under which the workforce is being involved, assess the potential risks and health impacts of workers.

The Labor Management Procedures (LMP), prepared separately, sets out details for how labor is being managed under the project. This outlines the details of the preparation of labor management plans and employment principles. The LMP also defines main requirements for labor workers in accordance with the national Labor Code of the Republic of Kazakhstan. It emphasizes the risks associated with the project and identifies the resources needed to address the project's labor issues. Further, efforts will be made to train and hire as many as possible from local communities where the activities are taking place.

ESMF includes sections on EHS, including special tools that must be prepared by a client or a contractor prior to the start of work (EHS checklists, codes of conduct; safety training, etc.). Most of the workforce is expected to be locally employed. Civil works contracts will incorporate social and environmental mitigation measures based on the WBG EHS Guidelines and the ESMF. All civil works contracts will include industry standard Codes of Conduct that include measures to prevent Gender Based Violence/Sexual Exploitation and Abuse (GBV/SEA). GBV assessment too has been done. A locally based Grievance Redress Mechanism (GRM) specifically for direct and contracted workers will be provided. The note, which contains links to the latest guidance for responding to COVID-19, is found as Annex 11 to this ESMF

ESS 3 – Resource Efficiency and Pollution Prevention and Management

ESS 3 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 and achievable. This standard sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle consistent with Global International Industry Practice (GIIP).

The ESMF will include assessment of risks and impacts and proposed mitigation measures related to relevant requirements of ESS 3, including pesticide use and a pesticide management plans; water use; air pollution; hazardous materials management; and procedures for handling and disposing of hazardous and construction (including asbestos) waste. Site specific ESMPs will address these issues, as relevant.

ESS 4 – Community Health and Safety

ESS 4 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.

Though relevant, community health and safety may not be critical, as the local communities will be in the forefront of implementing the pilot activities. The ESMF will include assessment of work-related health risks; works and road safety; COVID-19, HIV/AIDS and sexually transmitted diseases; excessive noise and dust levels, site safety awareness and access restrictions; and labor influx.

The SEP will also ensure widespread engagement with communities in order to disseminate information related to community health and safety, particularly around social distancing required by COVID-19, high risk demographics, self-quarantine, and mandatory quarantine.

ESS 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS 6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. Biodiversity often underpins ecosystem services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services.

ESS 6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. Habitat is defined as a terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the nonliving environment. All habitats support complexities of living organisms and vary in terms of species diversity, abundance and importance.

The proposed pilot activities in landscape restoration, reforestation, and pasture management are likely to involve sustainable use of natural resources that may include innovative pasture management, forestry, and orchard development. It may also support investment in rehabilitation of existing degraded forests and woodlands to restore protective cover and to make these and other forests more productive. The project will not finance activities that involve any conversion or degradation of critical natural habitats. The project will also not finance industry-scale commercial harvesting operations. Any harvesting of trees by local communities or other local entities supported by the project would adhere to a time-bound action plan for achieving a standard of forest management developed with the meaningful participation of locally affected communities, consistent with the principles and criteria of responsible forest management.

As the specific locations of pilot activities are not yet known, the ESMF contains criteria prohibiting them in or near protected areas or critical natural habitats. The ESMF also contains check-lists and guidance to help the client deal with issues related to ESS 6 for the different types activities being piloted. Additionally, ESMF criteria will include requirements for detailed mapping and, where necessary, identification of species and habitats.

ESS 8 – Cultural Heritage

ESS 8 recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. People identify with cultural heritage as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. Cultural heritage, in its many manifestations, is important as a source of valuable scientific and historical information, as an economic

and social asset for development, and as an integral part of people's cultural identity and practice. ESS8 sets out measures designed to protect cultural heritage throughout the project life cycle.

The requirements of ESS8 apply to cultural heritage regardless of whether or not it has been legally protected or previously identified or disturbed. The requirements of ESS8 apply to intangible cultural heritage only if a physical component of a project will have a material impact on such cultural heritage or if a project intends to use such cultural heritage for commercial purposes.

A chance finds procedure is a project-specific procedure which will be followed if previously unknown cultural heritage is encountered during project activities. It will be included in all contracts relating to construction of the project, including excavations, demolition, movement of earth, flooding or other changes in the physical environment. The chance finds procedure will set out how chance finds associated with the project will be managed. It is highly unlikely that the project will result in any chance finds, Southern Kazakhstan is home to several bronze age sites; therefore, the ESMF includes a section on protection of Cultural Heritage including "chance find" procedures to be followed for proposed pilot activities.

ESS 10 – Stakeholder Engagement and Information Disclosure

Stakeholder Engagement includes the following: (i) stakeholder identification and analysis; (ii) planning for stakeholder engagement; (iii) grievance mechanism; (iv) consultations on ESMF, LMP; and (v) continuous interface with and reporting to the stakeholders. A Stakeholder Engagement Plan (SEP) has been prepared that enables the project to identify different stakeholders and provides an approach towards engaging with them throughout the project's life. The plan helps in identifying various stakeholders, provided coverage and approach to each group and subgroup, identified obstacles and outlined ways to address the issues of interaction between the parties. The SEP will have publicly available and will be updated periodically. Beneficiaries include farmers, livestock producers, foresters, scientists, and research institutions. Other interested parties include local communities, NGOs, and government agencies. The SEP also identifies impediments at reaching out to stakeholders as well as reflect/build capacity of the client in engaging with stakeholders. The SEP has been prepared by the client, reviewed by the Bank, and disclosed on both the Bank and Client websites. The project has developed and put in place a Grievance Redress Mechanism (GRM) to enable stakeholders to air their concerns/ comments/ suggestions, if any. The SEP details procedures used for consulting and disclosing all ESF instruments prepared for the project (ESMF, LMP, SEP, etc.). Public consultations, compliant with current COVID-19 restrictions, on ESMP, LMP, and SEP will be conducted during Project Appraisal.

Stakeholder engagement is an inclusive process conducted throughout the project life cycle. Where properly designed and implemented, it supports the development of strong, constructive, and responsive relationships that are important for successful management of a project's environmental and social risks. Stakeholder engagement is most effective when initiated at an early stage of the project development process and is an integral part of early project decisions and the assessment, management, and monitoring of the project's environmental and social risks and impacts.

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6. ESMF Implementation Arrangement

ESMF Process Flow at the Project Level

The implementation of LRP activities will be based on the principles of transparency, inclusiveness and citizen engagement into the process cycle. The state and society value the right of citizens to participate consciously in decisions that affect their lives. Two-way interaction and dialogue of the local population with the executive authorities, underlines the importance of information exchange and mutual respect between the authorities and citizens.

With regard to the implementation of ESMF, the Forestry and Wildlife Committee (FWC) will carry out the following: (i) support the PIU and service providers to accelerate information and capacity building (including environmental criteria used, EIA procedures, etc.); (ii) socioenvironmental screening and assessment of sub-projects (agroforestry demonstration plots) and construction sites; (iii) coordinate and connection with the competent environmental and social assessment authorities (Committee for the Protection of the Environment); (iv) ensure that the requirements of the Checklist and ESMP, as well as social audit tasks during the implementation of sub-projects; (v) consideration of complaints and feedback from project stakeholders and the public, including complaints related to environmental and social impacts; (vi) supervision (independently or jointly with the State Environmental Inspectorate) over the implementation of environmental protection and mitigation measures provided for in the ESMP; (vii) environmental impact monitoring as part of the overall monitoring of the LRP implementation; and (viii) reporting on environmental and social impacts. FWC, together with the PIU, is responsible for the implementation of the above activities.

For implementation of ESMF, the LRP team will follow the described activity process cycle (see Table 6).

Table 6. Technological cycle for agroforestry demonstration plots

PROCESS CYCLE FOR WOOD AND AGRICULTURE				
	Activities	**primary**	**secondary**	**Associates**
1.	Capacity building of FWC / PIU and implementing partners of SES	WB E & S specialists	FWC / PIU	Local consultants
2.	Inclusion of E&S requirements and guidelines for agroforestry sub-projects	FWC	PIU	
3.	Implementation of the interested party Communication Plan	PIU		Representatives of FWC - RTI, Local Authorities (Akimats) and RDNR
4.	Creation of grievance mechanism at the district, regional and national levels	Representatives of FWC - RTI, Local Authorities (Akimats) and RDNR	PIU	
5.	Awareness-raising work on the selection of sub-projects for agroforestry demonstration plots and procedures for applying for participation	Support through local government (akimats) and RDNR; FWC- RTI representatives; Association of Farmers; community organizations	PIU	FWC / PIU through web-site
6.	First selection of proposals received for the provision of sites for the establishment of agroforestry sub-projects to meet the criteria	Local Authorities (Akimats) and RDNR; FWC – RTI Representatives	PIU	
7.	Second selection of site proposals for compliance and requirements, including E & S requirements	PIU	FWC	
8.	Final selection of proposals for the provision of sites for the establishment of agroforestry sub-projects for compliance	After the WB approval.	FWC / PIU	

	with the requirements, including the requirements for EEE			
9.	Completion of SESP and social screening for selected agroforestry sites	PIU/FWC		
10.	SESP checklist and check of social list	PIU/FWC		
11.	Development of SES tools (SEIA/SESP for a particular site)	PIU/FWC		
12.	Quality Control and Tools Presentation SES in WB	PIU/ FWC		
13.	Consideration and approval of Sanitary and Epidemiological Facility tools	WB E & S Specialists	Project TTL	
14.	ESMP implementation	PIU	contractors	
15.	Monitoring and reporting on the implementation of SESP	PIU	FWC	
16.	Supervision of SESP implementation	WB E & S Specialists		

ESMF Process Flow at the Sub-project Level

Selection of Grant Sub-projects

Within the framework of the Landscape Restoration Project in Kazakhstan (LRP), component 1 provide for the establishment of 9 pilot agroforestry sub-projects to demonstrate innovative methods of growing forest and fruit plantations in combination with agricultural crops. It is planned to create 3 demonstration agroforestry plots in urban areas of Kyzylorda region (the area of each plot is 5 ha, total area - 15 ha) and 6 pilot agroforestry plots in Zhambyl region (the area of each plot is 20 ha, total area - 120 ha), among them.

Demonstration plots are planned to be created for farms with direct participation of farmers or other local communities with long-term forest or land use agreements.

The selection of sub-projects for the agroforestry demonstration plots will be carried out with the support and taking into account the proposals of local authorities, mass media, regional territorial inspections for the protection of forests and wildlife (RTI), regional departments of natural resources and regulation of natural resources use (RDNR), associations of farms and peasant farms and public organizations. The selection will be carried out in three stages, after awareness-raising work on the application procedures for participation.

The first selection of proposals received from farmers and peasants on the provision of land for the creation of agroforestry sub-projects for compliance with the criteria will be made at the local level with the participation of a commission established by local authorities (akimats), consisting of representatives of RDNR and RTI. Second selection of proposed land plots at the level of the coordination project department FWC and PIU. The third final selection will be made after approval by the World Bank.

The sub-projects of agroforestry demonstration plots will be almost identical by type and scale of potential environmental impacts. Therefore, the main criteria for land plot selection will be: (i) the existence of a long-term land use or forest management agreement; (ii) the location of the plot, i.e. the location of the plot near water sources, human settlements, roads accessibility, electricity, topography and soil; (iii) the presence of sensitive and valuable ecosystems and "critical" habitats for endangered rare and endemic species; and (iv) the compliance with the List of Unacceptable Types of Activities for agroforestry sub-projects LRP.

Upon completion of the plot selection procedures, design and survey works will be started and for each sub-project a Work Project on creation of a demonstration site for agroforestry will be drawn up, which

will determine the estimated cost, types of wood and shrub species, agricultural crops, type of water supply and power supply, as well as the possibility and degree of pesticide use. Also, when developing the Working Projects (design) of agroforestry demonstration plots, the project organization will be guided by the List of Unacceptable Types of Activities for agroforestry sub-projects LRP (see Table 7), which are not accepted for financing by the World Bank.

Screening of Sub-projects for Environmental and Social Risks and Impacts

List of Unacceptable Types of Activities for agroforestry sub-projects LRP

The initial selection of agroforestry sub-projects for LRP will be based on the list of excluded activities that will not be permitted by the WB, so proposals for the selection of land plots and the development of sub-project design should not include these activities. The List of Unacceptable Types of Activities for agroforestry sub-projects LRP is given in Table 7.

Table 7 List of Unacceptable Types of Activities for agroforestry sub-projects LRP

№ s/i	**Name of activities unacceptable for sub-projects** *LRP*
1.	Have negative environmental and social impacts, create cumulative impacts and/or cannot be adequately mitigated
2.	Manufacturing or trade in any product or activity found to be illegal under the laws or regulations of the Recipient's country or international conventions and agreements, or subject to international prohibitions, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCBs, wildlife or CITES regulated products
3.	Tobacco production and trade
4.	Production or trade in timber or other forest products other than sustainably managed forests
5.	Production, sale, storage or transportation of significant volumes of hazardous chemicals or industrial use of hazardous chemicals (gasoline, kerosene and other petroleum products)
6.	Production and processing of genetically modified organisms (GMO)
7.	Use of pesticides prohibited by international agreement, Kazakh Law, or ESS 3.
8.	Use of species listed in annex 1 to the Bonn Convention on International Trade in Endangered Species of Wild Fauna and Flora
9.	Will have a strong negative impact on income/livelihoods
10.	Will entail any kind of forced eviction of people.
11.	Does not meet the required technical and quality specifications
12.	Exclude poor/marginal population or other vulnerable groups
13.	Does not ensure equal pay for equal work for women and men
14.	Funded or planned to be funded by the Government or other development partners
15.	Includes compensation for loss of land or property from funds received from World Bank financing
16.	Finance the construction of any new dams or restoration of existing dams, including structural and/or operational changes
17.	Production or activities related to forced labor
18.	Engage in activities that cause or lead to child abuse, exploitation of child labor or trafficking; No child under the age of 16 years should be involved in construction, restoration or maintenance of a sub-project.
19.	Will involve the purchase or use of illegal/prohibited drugs, military equipment or other potentially hazardous materials and equipment, including chain saws, pesticides; insecticides; herbicides; asbestos (including asbestos-containing materials); or other investments that are detrimental to livelihoods, including cultural resources
20.	Involvement the development of new settlements or expansion of existing settlements in critical habitats, protected areas or planned for certain categories of state protection (e.g. national parks, nature reserves).

Sub-projects selection procedure

As soon as it is confirmed that the agroforestry sub-project LRP is not part of the list of prohibited activities, the PIU with support from local FWC representatives of RTI and RDNR working with applicants will conduct a rapid assessment of possible environmental and social impacts, which will be based on the requirements of national legislation and the World Bank ESF and ESS by completing the selection form provided in Annex 3 (Environmental Screening of the Checklist). Social screening of the checklist will be carried out for high risk projects mainly related to resettlement and will not be applied in the LRP.

This will make it possible to determine the type and scale of potential environmental and social impacts and to determine which risk category the sub-project should be assigned. In general, the significance of environmental and social impact assessment (ESIA) will depend on the *type and scale* of the sub-project, its location, the sensitivity of environmental issues, and from the *nature and scales* of potential risks and impacts.

Type and scale of projects. Sub-projects with high or substantial environmental or social risks and impacts will not be funded by the Project. The "high risk" rating will generally entail the following impacts: (a) significant impacts on populations, including settlements and local communities; (b) alteration of ecologically important areas, including wetlands, natural forests, grasslands and other "critical" natural habitats and ecosystem services; (c) direct emissions of pollutants that are high enough to cause air, water or soil degradation, threatened species and "critical" habitats; (d) large-scale physical disturbance of the site and/or environment; (e) extraction, consumption or conversion of significant amounts of forest and other important natural habitats, including terrestrial and subterranean and aquatic ecosystems (f) measurable modification of the hydrological cycle; (g) hazardous materials in quantities greater than random; and (h) significant people displacement and other significant social unrest.

Location. There are a number of locations that should be considered when deciding whether to classify a project as "**substantial or high risk**": (a) near the sensitive and valuable ecosystems and "critical" habitats - juniper forests, wetlands, wild lands, vulnerable soils and special habitats for endangered rare and endemic species; (b) in densely populated areas where resettlement or potential impacts of pollution and other disturbances may have a significant impact on communities; (c) in regions where there is an intense activity or conflict with respect to development and natural resource allocation; along watercourses, in areas where there is a conflict with respect to the distribution of natural resources; and (d) in areas where there is a risk that the project will not be able to carry out its activities. Sub-projects located in close proximity to such areas will be categorized as having a significant or high environmental risk and will not be considered by LRP to support.

Sensibility. Sensitive issues may include, but are not limited to: wetland conversion, potential adverse impacts on endangered species and their habitats as well as protected areas or sites, involuntary resettlement, toxic waste disposal, impacts on international waterways and other transboundary issues.

Magnitude. There are a number of ways to measure magnitude, such as the absolute number of affected resources or ecosystems; the affected number relative to an existing resource or ecosystem; the intensity of the impact, its timing and duration. In addition, it may be necessary to consider the probability that a particular impact will occur; the joint impact of the proposed action; and other planned or ongoing actions.

Taking into account the scale of the proposed agroforestry sub-projects LRP, it is expected that their environmental and social impact will be low or moderate. Therefore, only sub-projects rated as "**moderate risk**" or lower will be considered for supporting by LRP.

The results will be reflected in the form of verification presented in Annex 4 (Results of environmental and social screening). Although the risk ratings of the ESF are the determinative categories, but they usually correspond to the Kazakhstani categories:

(a) high-risk sub-projects (excluded from the project) correspond to national categories I and II;
(b) sub-projects of substantial risk correspond to national Category III and will require either a specific site ESIA and/or a simple ESMP;
(c) moderate risk sub-projects are national Categories III and IV and will require checklists for ESMP; and

(d) low risk sub-projects correspond to national category IV and do not require additional EA.

Development of protective tools

For LRP activities (forest-planting and construction works and sub-projects for agroforestry) of presumably high or substantial risk will require an Environmental and Social Impact Assessment (ESIA) to identify, assess and prevent potential social and environmental risks and impacts (see Annex 5 Brief description of the ESIA report). If a high or significant risk of a sub-project or activity is confirmed, it will be excluded from the LRP activities. For LRP activities that have significant and moderate risks, mitigation measures for adverse impacts and risks will be developed and included in the development of the Socio-Ecological Management Plan (ESMP) (see Annex 6 Content and Format of ESMP) or ESMP Checklist (see Annex 7 Environmental and Social Checklist for Small Construction and Restoration Activities).

The purpose of the ESMP is to forecast potential impacts and improve environmental and social aspects of sub-projects by minimizing, mitigating or offsetting negative impacts. Simple checklists of the Social and Environmental Management Plan will be used for sub-projects of significant risk, which may have minor environmental impact, and which are typical for small investments in planting and construction.

The ESMP checklist consists of three sections: (a) *Part 1* is a descriptive part ("object passport"), which describes the specificity of the project in terms of its physical location, project description and a list of authorization or notification procedures with reference to the relevant rules. If necessary, this information may be supplemented; (b) *Part 2* includes environmental and social screening in a simple yes/no format and identifies mitigation measures; and (c) *Part 3* is a monitoring plan for activities carried out during restoration activities.

For LRP activities (works and sub-projects of agroforestry) of significant risk, it is necessary to disclose the documents on Environmental Assessment (EA) and conduct public consultations with people affected by the project and stakeholders. Face-to-face consultations should be organized for all projects that will require ESIA and ESMP. For this purpose, the ESF documents should be posted in advance (about two weeks) on the website of the Ministry of Ecology, Geology and Natural Resources (MEGNR RK) or on the website of the FWC, and hard copies should be provided to local government authorities and key stakeholders (environmental authorities). During the consultations, sub-project applicants will register all comments and suggestions for improvement of EIA documents and prepare relevant reports for inclusion in the final version of ESF documents. On a special public hearing dedicated to the ESMP, the project beneficiary will provide information to all stakeholders about the forthcoming construction activities.
In addition, other specific information relating to project activities and EA should also be made available to the public online on the website of the MEGNR RK or the FWC. On this basis, public consultations can be conducted virtually taking into account the relevant questions/proposals online. Similarly, public consultations on the ESMP Checklist and other issues may be held.

In cases where an ESIA is required for LRP activities, in accordance with the national legislation, the project organization and the beneficiary (farmer or local community), supported by the PIU and local representatives should submit all EA documents to the Department of Management and Regulation of Natural Resources (NRM) of Kyzylorda or Zhambyl regions. Which are the authorized bodies to conduct EIA and Environmental Assessment, and which make a decision on approval or rejection of proposals for sub-projects of the LRP.

Once all EA documents have been prepared, accepted and received, if necessary, by the State Environmental Assessment, the PIU will send the prepared documents to FWC for signing an agreement with the beneficiaries, which will include declarations of compliance with all EA documents.

The processes of development of protective environmental and social tools for LRP activities (forest-planting and construction works and sub-projects of agroforestry demonstration sites) are reflected in the table 8:

Table 8: Development of environmental and social tools for LRP activities

Step 1.	a) An engineer or technical specialist shall screen works and sub-projects for prohibited/excluded types of activities; b) If the sub-project is screened for a list of prohibited/excluded activities, the PIU will assist the implementer in completing Part 1 of the table "Environmental Screening of the Checklist"; The Environmental Screening of the checklist will identify the environmental risk category and type of EE that will be used to conduct either a partial ESIA or ESMP; d) Screening results, including potential negative impacts and possible mitigation measures, will be reported in the *LRP* and FWC
Step 2.	a) If the sub-project requires a full ESIA and ESMP, it should be submitted to FWC for further action. b) For sub-projects of significant and moderate risk, the Environmental Screening Table of the Checklist notes potential risks to the environment and indicates how they will be prevented/mitigated.
Step 3.	If a sub-project is selected for funding, an ESIA and ESMP Checklist should be prepared by PIU specialist (or an external expert/firm hired) with the participation of the executor; Notes: In the case of small-scale construction and restoration works with significant risk, in accordance with the WB environmental management requirements, the Checklist should be applied to address potential environmental impacts.
Step 4.	The FWC shall submit an ESIA and draft ESMP checklist for WB approval
Step 5.	The FWC, with the assistance of the implementers, will organize the disclosure of the ESIA and ESMP project and consultations with the public, NGOs, community representatives, farmers and other stakeholders. Formal minutes will be prepared to record comments and suggestions from participants.
Step 6.	FWC discloses the ESIA and ESMP on its website.
Step 7.	Executor and beneficiary/farmer, contractor/subcontractor can start implementation as soon as the ESMP Checklist is completed and partially updated, based on consultations with the community and approved by the WB.
Step 8.	a) The Sub-project Applicant will submit a full set of environmental documents for review and further funding decision; б) Once the sub-project is approved, the FWC will complete the sub-project evaluation and begin signing the funding agreement with the relevant beneficiaries.
Step 9.	Periodical supervision, monitoring and reporting will be carried out by the PIU, FWC and RDNR representatives in accordance with the agreed monitoring plan.

ESIA/ESMP review process

As explained above, a site-specific assessment of the agroforestry works and sub-project will be conducted in accordance with the WB's ESF and in the result such assessment the EEMP will be made for specific site-. This will be the responsibility of FWC and PIU, which will be supported by executors and field representatives. As a rule, the ESMP Checklist should form an annex to the tender documents for any construction works. The procedures for regulating labor relations will also form part of the tender documents for construction work. The implementation of the ESMP will be part of the construction tasks, but in the event of any non-compliance, the FWC, as the main responsible party, through the PIU and field representatives, will take corrective action. The distribution of responsibilities of all parties involved into the project is shown in Table 9.

It is expected that preparation and implementation of the ESMP will cost only a small fraction of the design and construction expenses, as most mitigation measures will be very general, ready and feasible without special skills, experience or equipment. The coordination project department of FWC will submit to the World Bank for a site-specific preliminary review of the ESMP. When the WB is confident that the ESMP process is accurate, it can postpone the preliminary review to a subsequent review.

Table 9: Roles and Responsibilities in Review and Implementation of ESIAs and ESMPs

Responsible party	Duties
World Bank WB	• Review, approve and disclose ESMF, ESMP and IPCP on the WB official website. • Check the ESMP for a particular site and do not raise an objection to FWC. • Review the procedures for regulating labor relations

Responsible party	Duties
	• Conducting support and supervision missions on LRP implementing to ensure that the project meets the requirements of the WB Social and Environmental Framework.
the Forestry and Wildlife Committee, including Project Implementation Unit FWC and PIU	• Prepare and implement ESMF, IPCP, PRER and submit for approval to the Bank • Disclose SEMB and IPCP on the FWC website • Prepare the ESMP in accordance with the SEMB • Transmit the ESMP to the WB for preliminary review • Carry out quality control and review of ESMP • Disclose ESMP on the official FWC website and include in the tender documents • Appoint field specialists for environmental and social monitoring • Control the implementation of human resources management procedures • Check the implementation of the ESMP by the construction contractor, give recommendations and decide whether additional measures are needed or not. • In case of non-compliance, make sure that the contractor rectifies the non-compliance and inform the WB about the non-compliance. • Prepare, update and implement a Interested Parties Communication Plan (IPCP) that takes into account additional vulnerable groups with a gender perspective. • Hold consultation meetings and prepare and distribute leaflets or other information documents to inform communities, hire a public relations officer on the project, its impacts and construction schedule, and the rights of affected people. • Establish a multi-level grievance mechanism (MGM) and monitor and address complaints related to the project in a timely manner. • Summarize environmental and social issues related to project implementation at the WB in regular progress reports. • Be open to comments from affected groups and local environmental authorities on environmental aspects of project implementation. Meet with these groups during site visits if necessary. • Coordinate and communicate with WB supervision missions regarding environmental and social aspects of project implementation. • Carry out regular monitoring activities for the implementation of the ESMP for specific sites. • Compensate or correct any damage incurred during construction (e.g., infrastructure damage) as provided for by the ESMP from the state budget.
Representatives of FWC: RTI and RDNR	• Make sure that the contractor has implemented the ESMP correctly and on time. • Carry out environmental and social monitoring as defined in the SEMB, as well as specific ESMP for sub-projects. • Collect information on environmental and social issues for the progress reports submitted to FWC and make sure that they all meet the Bank's requirements.
Contractors/subcontractors, farmers, local communities	• Introduce ESMP on project sites. • Regularly report on the progress of implementation of the ESMP. • Note any unexpected environmental and social problems during the implementation.

Pest Management and Mineral Fertilizers Issue

Key comments. Potential applications issues within the framework of LRP sub-projects, pesticides (agrochemicals) for plant pest and disease control, and mineral fertilizers to stimulate growth and increase crop yields will be reflected in the Agroforestry Demonstration Plots Work Projects and in the sub-project design. Pesticide use will increase the cost of crops and also increase the risks of adverse environmental and human health impacts through careless and inappropriate use. The challenge for SEMB in this regard is to require the adoption of an integrated pest management approach, to raise awareness among beneficiaries about pesticide hazards and best practices in the safe use and management of pesticides. The list of pesticides and biological substances permitted for use in Kazakhstan is provided in the official document "List of Pesticides (Poisonous Chemicals) permitted for use in the territory of the Republic of Kazakhstan", which also contains regulations on their effective and safe use. All pesticides indicated in the list have state registration in accordance with the Law of the Republic of Kazakhstan "On Plant Protection". Pesticides not listed into the List are prohibited for import, sale, production, use and advertising on the territory of the Republic of Kazakhstan. Pesticides prohibited by WHO for use should not be used by designers (developer) and beneficiaries of sub-projects. The principles of integrated pest management and rules for the use, treatment and storage of pesticides are presented in *Annex 9. Annex 10* provides a recommended structure for a pest

management plan. Any pesticides or pesticide products or formulations under this project shall be used in compliance with the EHSGs[4].

The Pesticide Management Plan (PMP) will be reviewed and approved by the Environmental and Social Affairs Specialist of the PIU prior to approval of the sub-project, and field representatives will follow up on the implementation of the plan.

Safety issues when using and handling mineral fertilizers. The use of fertilizers provides important benefits for forest plantations and crops, but they also present certain risks associated with accidental impacts on the environment and on farmers during improper handling and use. In order to avoid adverse environmental impacts, the use of mineral fertilizers must strictly comply with a number of requirements set out in the current legal instruments as well as the Fertilizer Management Guidelines (FMP). The rules and procedures for the production, storage, transportation and use of mineral fertilizers are reflected in relatively few number of documents.

Consideration and approval of sub-projects related to the purchase and use of mineral fertilizers. The use of mineral fertilizers may harm the environment and the health of farmers, in such cases, potential designers (developers) and beneficiaries should attach a short note to the sub-project proposal including the following information: (a) types of fertilizer and its quantity; (b) storage conditions; (c) uses; (d) measures to be taken to control possible hazard scenarios; and (e) the responsible person. The sub-project proposal, together with this note, will be reviewed and approved by the environmental and social PIU specialist, who will give its approval. Such sub-projects will also be subject to preliminary review by the WB.

Training and Awareness for personnel handling and applying pesticides.

Monitoring and Reporting on the Project Environmental and Social Impact Assessment

Project Implementation Unit (PIU) will support monitoring and assessment (M&A) activities to track, document and communicate project outcomes. The FWC team will be responsible for the overall assessment of progress and outcomes. Semi-annual and quarterly reports, reviews of project monitoring regarding the middle and final lines to assess performance indicators of achieving LRP goals will be submitted to the WB as required. FWC will be in charge of producing the final report based on information system (IS) data and surveys.

Monitoring Plans

The Forestry and Wildlife Committee of the MEGNR of the RK, PIU and field representatives will supervise the implementation of measures to mitigate adverse social and environmental impacts included in the ESMP. Despite the expectations of the low environmental and social impacts under the LRP, prevention or mitigation of potential negative impacts are planned during the initial stages of works and construction.

The environmental and social monitoring system starts with the preparation stages before operation to prevent project negative impact and to monitor the effectiveness of mitigation measures. As part of project supervision, this system assists the WB and the Recipient to assess the success of mitigation measures and enable for appropriate actions to be taken. The monitoring system provides supervision, technical assistance, early identification of impacts that require mitigation measures, tracks mitigation results and provides information on project progress.

[4] https://www.ifc.org/wps/wcm/connect/90231ba8-5bb3-40f4-9255-eaf723d89c32/1-5%2BHazardous%2BMaterials%2BManagement.pdf?MOD=AJPERES&CVID=ls4XLqS

PIU will carry out the environmental and social monitoring, which provides the WB with information on key environmental and social impacts, possible consequences, and effectiveness of the measures taken. This information will enable to assess the success of mitigation measures being implemented and to take necessary corrective actions under the project's supervision.

In this regard, the Monitoring Plan defines objectives and type of monitoring, their relationship to impacts and mitigation measures. In particular, the ESMP monitoring section contains: (a) a specific description and technical details of the monitoring measures, including parameters to be measured, methods to be used, sampling locations, frequency of measurements; and (b) monitoring and reporting procedures for: (i) early identification of conditions that require specific mitigation measures, and (ii) information on mitigation progress and results. The monitoring plan format is given in Annex 7 of Part C of the ESMP checklist included in this document.

Monitoring and Reporting Obligations

FWC and PIU designated representatives and staff will monitor all works and sub-projects to ensure compliance with safety requirements during construction, operation and maintenance. They will ensure full compliance with the contract and ESMP terms. The final payment to the contractor should be subject to a final inspection with special attention to the requirement to restore the facility to its original condition after the completion of rehabilitation activities.

Environmental monitoring of rehabilitation sites will include regular observations of soil, water and vegetation in and around the rehabilitation sites; the involvement of environmental inspectors in monitoring and evaluation will assist in developing systematic environmental monitoring at the rehabilitated sites.

Environmental and Social Affairs Specialist visits work and sub-project sites at times, if contractors are found to be non-compliant with the ESF, ESMF, or site specific ESMP, further payments will be discontinued until compliance with SES is achieved.

In addition, the PIU will be responsible for environmental and social monitoring activities in the project areas as part of preventive and mitigation measures proposed to address potential adverse impacts. This monitoring will be included in the overall project monitoring plan required by the World Bank as part of project implementation. Within environmental and social monitoring activities, PIU Environmental and Social Affairs Specialist and field representatives conduct random site inspections to determine the effectiveness of measures taken and impact of project activities on the environment. PIU will also be responsible for processing, reviewing and monitoring of grievances and other feedback, including on environmental and social issues.

FWC acting through PIU will be responsible for ESMP reporting performing the following actions:

- To record and maintain the results of LRP supervision and monitoring throughout the project life. To submit consolidated progress reports on the implementation of the BSEM/ESMP, as well as environmental and social aspects of sub-projects and update information on any grievances/reactions that have been reviewed and are pending to the World Bank on a semi-annual basis.
- To prepare quarterly or biennial progress reports on the implementation of measures proposed by the ESMP for individual sub-projects;
- To prepare semi-annual reports on the environmental impact arising from the implementation of sub-projects and analyze the effectiveness of mitigation measures used to minimize negative impacts.

- To prepare schemes and requirements for contractor's reports on environmental protection and mitigation measures, as well as to review the contractor's monitoring plan and reports.
- To provide mitigation measures as well as environmental and social protection measures to the general public by special publications and/or annual public workshops.

Institutional Capacity for ESMF Implementation

The following organizations play an important role in the Landscape Restoration Project (LRP) implementation: (a) Forestry and Wildlife Committee of the MEGNR of the RK (FWC); (b) Project Implementation Unit (PIU); (c) FWC authorized field representatives: Regional Territorial Forestry and Wildlife Inspectorates (RTI), and (d) local authorities, rural areas and Regional Natural Resources and Environmental Governance Departments (RNRD). The other relevant stakeholders are Committee on Environmental Regulation and Control of the MEGNR (CERC), companies having contracts with FWC for goods, works and services supply.

The Forestry and Wildlife Committee of the Ministry of Ecology, Geology and Natural Resources of the RK (FWC) will be the Project Implementation Unit (PIU) for LRP as a whole. Fiduciary responsibilities, including procurement, financial management, monitoring and evaluation, as well as social and environmental risk and impact mitigation tasks, will be assigned to the PIU with the involvement of current staff in the FWC or the MEGNR of the RK. FWC will also establish a PIU consisting of approximately 5 professional consultants to coordinate LRP implementation and perform the following functions: managing finance, procurement, environmental and social risks; control over project work plans, their monitoring and assessment; ensuring cooperation between stakeholders at central and local levels; reporting on project progress and ensuring timely external financial management audits, project procurement procedures; ensuring monitoring, strict compliance and implementation of the environmental and social principles of the World Bank. The PIU will also be responsible for preparing information materials for all program meetings and knowledge exchange visits and for organizing the participation of Kazakhstani representatives in such events. The project may additionally recruit FWC staff on a short-term basis for successful LRP implementation/coordination. FWC will designate its subordinate organizations Kyzylorda and Zhambyl Regional Forestry and Wildlife Inspectorates (RTI) as field representatives in the project area to support and monitor LRP implementation, coordinate with contractors, local authorities, beneficiaries and communities.

FWC and PIU will directly plan, implement social and environmental screening and monitoring, and maintain documentation and reporting.

During project implementation, the FWC and PIU will be responsible for the following:

(a) investigation of environmental screening and assessment of the acceptability of agroforestry works and sub-projects from an environmental point of view;
(b) liaison and coordination with the competent authorities of the environmental assessment (EA) (Committee on Environmental Regulation and Control);
(c) ensuring the proper implementation of ESMP Checklist requirements and, in general, the implementation of ESMP during the sub-project implementation;
(d) handling grievances and feedback from project stakeholders and public, including grievances regarding the environmental / social impacts of sub-projects;
(e) supervision and control (independently or jointly with environmental inspectors of the State Environmental Control) of measures to protect the environment and mitigate their consequences provided for in the ESMP;
(f) environmental impact monitoring as part of the overall monitoring of the sub-project implementation;

(g) reporting on the environmental impact arising from the implementation of the sub-project and analysis of the effectiveness of mitigation measures used to minimize negative impacts.

Contractors/Subcontractors

The contracts with approximately 43 contractors (subcontractors), who will employ about 1206 people, are proposed to be concluded on a competitive basis according to the World Bank procurement terms. Table 10 presents categories and number of contractors, as well as the probable number of contract workers.

Table 10. Categories and number of contractors, probable number of contract workers.

Categories of contractors	Number of contractors/subcontractors	Categories and probable number of workers				
		Directly involved in the project	Contract workers, incl.		Involved in public works	Total
			total	labor migrants (internal/ foreign)		
Services:						
- PIU National consultants	5	5	-	-	-	5
- Project institutes and organizations	6	-	70	70/-	100	170
- International Consultants	2	2	-	-	-	2
- National consultants (technical supervision, training, assessment, monitoring, etc.)	6	6	-	-	-	6
Total:	**19**	**13**	**70**	**70/-**	**100**	**183**
Works:						
Forestry and agricultural:						
- Peasant and farming enterprises	12	-	135	-	675	810
Construction:						
- Enterprises, campaigns, industrial and civil engineering firms (LLP, IE, PA, JSC etc.)	6	-	165	-/50	35	200
Total:	**18**	-	**300**	**-/50**	**710**	**1010**
Goods:						
- Suppliers of goods (machinery, equipment, tools, furniture, stationery, etc.)	6	-	13	-	-	13
Total:	**6**	-	**13**	-	-	**13**
Total:	**43**	**13**	**383**	**70/50**	**810**	**1206**

The main types of work in the project are design and survey works, mapping, forest inventory, forest planting, sowing of fodder plants, plants maintenance, construction of a forest nursery, construction of wells, installation of an irrigation network, watering (irrigation) of plants and crops, harvest, technical supervision, monitoring, evaluation, etc.

These works are carried out on the basis of specially developed projects; therefore, the specialized design and survey organizations will be involved, they will also perform works on mapping of the forest fund territory and inventory of unaccounted forests.

International consultants can be engaged to introduce innovative agroforestry methods and technologies.

Professional technical supervision consultants will be hired to carry out technical supervision and control on whether the contractors (subcontractors and suppliers of goods and services) comply with the technological process, quality, completeness and relevance of performed works and services to the contract terms (Work Projects, Terms of Reference).

Short-term national consultants will be hired to strengthen institutional capacity of forestry to manage degraded landscapes, to conduct training workshops, to organize regional cooperation meetings, to monitor and evaluate project work plans and reports.

The workers for the main types of work shall have the following specific qualifications:

Design and survey works, forest mapping and inventory. These works and services will be performed by specialized design and survey and forest management organizations. When carrying out field survey and forest management work, these organizations may hire and engage local workforce to perform work that does not require special qualification and consider them as workers involved in public works.

Forest planting. The main contractors will be local communities - farmers and peasant enterprises which can hire the necessary workforce. Forest planting is performed mechanically and manually. Mechanized planting is the use of tractor equipped with tree-planting machines. The number of workers per unit is 7 people - tractor driver-1; planter-4; tree-setter-2. Women can participate in these works as planters and tree-setters. Manual planting is used to supplement plantations in case of low acclimation rate of seedlings, as well as when establishing demonstration agroforestry plots with large-size seedlings of fruit and berry and nut-fruited crops.

Sowing of fodder plants. Local communities will be the main contractors. Planting of fodder shrubs and sowing of herbs, as well as medicinal plants, will be mainly carried out mechanically - tractors with seeders and 2 workers - a tractor driver and a seed filler. It is also possible to carry out manual sowing on preliminary prepared soil with the use of female labor.

Forest planting maintenance., In accordance with forest requirements, starting from the first year of planting, after the planting works finished, it is necessary to conduct agrotechnical maintenance for the following 5 years. The main contractors will be local communities. Planting and sowing maintenance at the agroforestry demonstration plots will be performed by the beneficiaries themselves - local communities (farmers, land users) to whom these plots will be granted. Farmers will involve local people in the maintenance works. Agrotechnical maintenance is carried out mechanically and manually. Mechanized maintenance is carried out by tractors equipped with cultivators, ploughs, disc harrows etc. These operations are carried out by one tractor driver. Manual maintenance involves weeding with hand tools (pullers, hoes, rakes). Performing manual maintenance does not require qualifications. These types of activities are considered public works.

Construction of a forest nursery. Construction of a forest nursery requires certain qualifications and experience. The main contractor is expected to be a local construction organization selected on a competitive basis.

Construction of wells. The method of construction of water supply sources for plantation irrigation (for animals as well) will be determined based on the Working Projects and on location of agroforestry demonstration plots. Presumably, these will be shaft wells or water wells. Shaft wells are proposed to be constructed manually, using experience of Turkmenistan. It may be necessary to involve foreign labor migrants for this purpose, not only a consultant - the head of construction but also workers with previous experience in construction of such wells. The construction of water wells can be performed by a local

construction organization with the appropriate license, qualification and construction experience that has been selected on a competitive basis.

Installation of an irrigation network. This type of work can be performed by a local construction company with the relevant license, qualification and construction experience selected on a competitive basis. At the same time, the irrigation network can be installed by a beneficiary land user involving local labor under the guidance of an irrigation system engineer-consultant.

Watering (irrigation) of crops and plantings. Plantings and crops at the agroforestry demonstration plots will be irrigated by the beneficiaries themselves - local communities (farmers, land users) that will involve local people.

Harvesting. Harvesting on the agroforestry plots will be carried out by the beneficiaries themselves - farmers and local communities that will involve local people. These works do not require the qualification of workers; women and child labor can be used; the type of activity is considered public works. It is expected that during the project period, in the first year of planting, a good harvest of melon and other crops can be obtained, while 2-3 years after planting, some fast-growing fruit and berry trees and shrubs also start giving their first crops.

Technical supervision. Technical supervision specialists will be hired to carry out technical supervision of the construction of a forest nursery and wells, irrigation system, establishment of the green zone and agroforestry demonstration plots and other activities. It is planned to hire both local technical supervision specialists and specialists from other regions of the country (e.g. by the location of a specialized project organization).

Monitoring, assessment, training and other capacity building services in degraded landscape management. Short-term national consultants are planned to be engaged for monitoring and assessment of project work plans and reports, professional development of forestry staff, farmers and local authorities, training workshops, organization of regional cooperation meetings.

One of the main success factors of LRP implementation is quality and timely execution of works and services without violation of labor legislation of the Republic of Kazakhstan, without accidents and incidents, without violation of HSE rules or World Bank requirements. In this regard, the recipient, represented by FWC and PIU, shall make all reasonable efforts at the stage of preparing tender documents and tender evaluation to select reliable contractors who have implemented procedures for regulating labor relations, which allow them to work in accordance with the requirements of the Labor Code of the RK and the WB Social and Environmental Standards.

Farming Enterprises and Local Communities

Farming and peasant enterprises, agro-firms and various local communities are expected to be not only LRP beneficiaries but also the main contractors for forest planting and agroforestry demonstration plots. They will perform the following activities: forest planting; agrotechnical maintenance of forest plants (manual weeding); planting, sowing and growing crops, fruit and berry shrubs, fodder shrubs, herbs, medicinal plants and other plants; watering (irrigation) of plantings and seedings; harvesting fruit and berry, melon and other crops. Farming and other peasant enterprises will attract local population, women and youth to carry out LRP works, and at this they shall strictly observe labor legislation of the Republic of Kazakhstan, procedures of labor relations regulation (PLRR), environmental and social management framework (ESMF), World Bank environmental and social standards (ESS), and Social and Environmental Management Plan (ESMP).

Within LRP sub-projects farmers, acting as work performers and beneficiaries, shall pay special attention to potential use of pesticides (agrochemicals) for plant pest and disease control and mineral fertilizers to stimulate growth and increase crop yields. Careless and inappropriate use of pesticides will increase the risks of adverse environmental and human health impacts. Farmers and beneficiaries shall be aware of pesticide hazards and best practices on their safe use and management; they shall adhere to and strictly implement the Pesticide Management Plan (PMP) and the Fertilizer Application Guide (FAP) under the guidance of the PIU Environmental and Social Affairs Specialist.

There are plans to conduct training workshops for enhancing the capacity of farmers and local communities to stimulate private forest fund development, including agroforestry, and to apply WB environmental and social standards.

Local Public Authorities

Local public authorities at the regional level (Regional Akimat) will support LRP. Regional Akimat will be represented by the Natural Resources and Environmental Governance Department (RNRD), which will provide overall project support during preparation and implementation. RNRD will organize work with district and rural authorities (district akimats; akimats of rural areas) to involve farmers and local communities in LRP implementation; information disclosure and public consultations; collection of proposals on land plots for establishment of agroforestry sub-projects and their initial selection, etc. In the process of project implementation, RNRD will provide continuous support by participating in social and environmental assessment, screening, monitoring; control of contractors' performance and acceptance of these works; control of contractors' compliance with labor legislation of the RK, PLRR, WB ESMP and SES. RNRD will also organize the establishment of the Grievance Management Committee at the local and regional levels.

Main tasks and functions of the RNRD are as follows: environmental protection; protection and use of forest resources, forest reproduction and afforestation; protection, reproduction and use of wildlife; protection, reproduction and use of fish resources and other aquatic animals; use and protection of water resources; organization and conduct of state environmental expertise. Within the scope of its competence, the RNRD organizes the State Environmental Expertise for II, III and IV category facilities, issues permits for environmental emissions for II, III and IV category facilities, carries out environmental protection activities, and regulates environmental management.

District akimats and akimats of rural areas will also provide local comprehensive support to LRP, directly participating in information disclosure, public consultations, regulation of labor relations, social and environmental issues and complaints management.

The Environmental Department of Kyzylorda region (RED) of the Committee on Environmental Regulation and Control of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan will be in charge of conducting the State Environmental Expertise (SEE), supervise the preparation of the ESIA and as an authorized body participate in conducting inspections on compliance with environmental legislation of the Republic of Kazakhstan. RED has its divisions at city and district akimat levels.

Other Relevant Stakeholders

Various non-governmental organizations (NGOs); civil society organizations (CSOs); associations; local communities can act as stakeholders in the landscape rehabilitation project in Kazakhstan (LRP) in the territories of Kyzylorda and Zhambyl regions These stakeholders can participate and make proposals on conducting public consultations, disclosing information on any issues related to the LRP implementation, including issues regarding social and environmental principles and adverse effects on environment and

human health protection. At the same time, these organizations can participate in the tender processes for the project within their competences.

Training and Technical Assistance

The World Bank will provide technical assistance and support to enhance FWC's institutional capacity in implementing the WB social and environmental policy. As part of the Launch workshop, the WB Environmental and Social Affairs Specialist will provide FWC and PIU staff with a special training on the following topics: (i) Procedural aspects of Social and Environmental Assessment (SEA) (phases, main participants, main responsibilities, etc.); (ii) Environmental and Social Impact Assessment potentially related to LRP works and sub-projects; (iii) Consulting and approval of SEA and monitoring plans; (iv) Preparation of a Social and Environmental Management Plan (ESMP) checklist; (v) Field supervision and reporting. Technical assistance and capacity building support will also be provided for the PIU Environmental and Social Affairs Specialist who has the experience in environmental and social sphere. These specialists will build their capacity on environmental and social management and on possible mitigation measures.

In addition, a training program will be organized through FWC of MEGNR of the RK to develop and enhance professional skills and capacities in environmental and social management. This training will strengthen the capacity of PIU and specialists of the Environmental Department at regional and districts levels, providing specialized instructions on environmental assessment, management, monitoring and other relevant issues. The program will also support public awareness campaign and consultations with local authorities and beneficiaries to encourage continued maintenance of local and public property (forest ranges, construction sites and agroforestry sub-projects) established under the project.

ESMF Implementation Budget

The overall responsibility for financial management will be entrusted to FWC, supported by a PIU Financial Management Consultant who will be in charge of financial management, budget planning, transfer of funds, accounting and financial reporting for LRP resources. Funds will be transferred by the World Bank as transactions based on quarterly interim financial reports for monitoring purposes.

FWC will finance LRP activities at an interim stage after the PIU provides verified information on activities that have been undertaken to minimize any hazardous environmental impacts and that shall be included in the cost of works or sub-projects. PIU shall receive from the contractors certificates of work performed certified by field representatives including information on compliance with the requirements of ESMF, such as ESIA/ESMP, information and disclosure activities and/or other relevant activities depending on their nature, complexity, scope, etc.

The project shall provide sufficient funding for a number of capacity building activities that are required to ensure successful ESMF implementation. At this stage of preparation of the project for implementation of the WB social and environmental management framework, it is difficult to determine the budget for capacity building activities and trainings. The estimated budget for the proposed organizational and capacity building activities and trainings will be updated in the procurement plan after the start of the project.

7. Public Consultations and Information Disclosure

ESMF Disclosure

In accordance with the World Bank's SES 10 requirements, FWC will place ESMF for public use, including all information on potential environmental and social risks and consequences of LRP. Such information will be posted on the FWC website(https://www.gov.kz/memleket/entities/forest?lang=ru), social networks (Facebook, Twitter, Instagram), national and local media (newspapers, television) in an accessible form and language for the public and stakeholders so that they will have opportunity to fully contribute to the project development and mitigation measures. ESMF will be presented in a preliminary and final (updated) version. The documentation shall adequately analyze main risks and impacts of the project with sufficient details to inform on stakeholder engagement and the Bank decision-making processes.

For high and significant risk projects, the WB shall specify project-related documentation in the Project Evaluation Document that shall be prepared and published after approval of the project by the Bank's Board of Directors. The Bank shall provide the following information for each key document, if possible: objectives and proposed content of the document; rationale for the preparation period; estimated costs associated with the document preparation and its implementation; source of funding and methods of preparation.

Public Consultations

Fifteen to twenty days after posting information o Facebook, Twitter, Instagram, and the FWC website, the PIU and field representatives will conduct public consultations on results of environmental and social analysis and research in Kyzylorda and Zhambyl regions. If required, such consultations will be conducted in district akimats or akimats of rural areas where LRP activities will be implemented. It is anticipated that these consultations will take place close to or during the World Bank Appraisal Mission. As a result of public consultations, minutes and lists of participants will be drawn up and the draft ESMF document will be revised taking into account the participants' recommendations. The final version of the document will be posted on the website of FWC of MEGNR of the RK and on the World Bank website.

Consultations on environmental assessments of LRP activities and sub-projects. Disclosure of environmental documents for projects with significant risk is mandatory and shall be available to affected groups and local NGOs. At least one round of consultations shall be held after the ESMP preparation (public disclosure for the ESMP Checklists can be done by posting on the FWC website and submitting printed copies to local councils). This can be done in local authorities and/or the State Environmental Inspectorate of the Regional Environmental Departments and/or its district subdivisions.

Consultations on simple sub-projects. In case of small construction projects, which include LRP works and sub-projects and which will not have a significant impact on the environment, public consultations can be held virtually or at key locations in the local public administration offices. An information plate will be installed for construction and afforestation works at sites.

Grievance Redress Mechanism

FWC and PIU will respond in a timely manner to concerns and grievances regarding environmental and social issues from LRP affected parties. The grievance redress mechanism (GRM) will be introduced to receive, address concerns and resolve such grievances. The GRM shall be commensurate with the level of potential risks and impacts of the project; shall be accessible and inclusive; shall have formal and informal grievance mechanisms, complemented, if necessary, by solutions developed under the project. The grievance mechanism shall provide: (a) confidentiality, impartiality, objectivity, and timeliness of consideration of all grievances; (b) prompt and effective resolution of issues in a transparent and culturally

sensitive manner that is accessible to all affected parties free of charge and excludes penalty for its use; and (c) respect for local cultural practices, care, objectivity, sensitivity, and responsiveness to the needs and concerns of project affected parties. Such a mechanism, process or procedure shall not exclude the application of judicial or administrative remedies but shall also allow for anonymous complaints to be filed and addressed.

Having an effective GRM will also serve to reduce conflicts and risks such as outside interference, corruption, social exclusion or poor governance; improve the quality of project activities and results; and serve as an important feedback and learning mechanism for project management regarding the strengths and weaknesses of LRP procedures and processes.

Grievance Management Committee will be established in local authorities to address grievances. Measures taken in response to grievances or suggestions should be reasonable and balanced.

Overall process

An effective and acceptable Grievance Redress Mechanism (GRM) is an independent and objective process that involves informing the parties on the stages of considerations of the issues they have raised, feedback to assess the responses received within the time frame established by the mechanism, and procedure for appeal against outstanding complaints. The overall GRM process will be as follows: (a) at initial stages of the assessment process, aggrieved persons will be provided with the copies of grievance procedures as guidance on how to deal with complaints; (b) the grievance process starts with the registration of grievance or complaint which will be recorded in the Grievance Log; (c) the time to consider and respond to the grievance will depend on the issue that needs to be resolved; (d) if the grievance is not resolved or the decision is not satisfactory to the complainant, the complainant may file his or her complaint with the appropriate court.

Procedures

The FWC and akimats will offer its oblast and local channels. The PIU will enable (i) local level offices, (ii) community (village) level as GM focal points. By this arrangement, the project will be able to address effectively and efficiently all grievances raised at grassroot level – households, which will have countrywide scattered pattern including those in remote areas. To manage the project GM, it will include following successive tiers of extra-judicial grievance review and resolution:

- The first tier will be the village local self-governments at the grassroots, who are responsible for helping members of the community and other social work (conflict resolution, overall community upkeep, etc.). They have the primary responsibility for identifying the households and/or individuals requiring social assistance. Unresolved grievances will be elevated to GRC.
- PAPs will have an option of submitting grievance to PIU directly. This will be the second tier, which will form a Grievance Redress Commission (GRC) under leadership of PIU and includes one or more senior oblast and rayon level office managers and one village leaders. GRC will resolve issues that could not be resolved by local government or those that came directly. The GRC will deal with issues before referring to the legal recourse.

Appellate mechanism. If a grievance remains unresolved to the satisfaction of the complainant, he or she may file his or her grievance or complaint with the appropriate court.

Table 11. Grievance Redress and Feedback Mechanism

To whom is the complaint filed	Form of submission	Complaint management procedure	Time for consideration of complaints
THE FIRST LEVEL **Office of local authorities** Address: Tel.: Fax: E-mail address: Officer responsible for maintaining the GRM Log:	Verbal Written In electronic format	1. Local authorities register complaint/proposal in the Log for registration of complaints and proposals; 2. Maintain and monitor the process of reviewing and responding to complaints; 3. Monthly they are reporting in writing to the PIU, to the Social Development Specialist on the status of work with complaints.	3days
THE SECOND LEVEL **GRC at PIU level** PIU FWC: Address: Tel: Fax: E-mail address: Officer responsible for maintaining the GRM Log:	in written form in electronic form	1. PIU office registers a complaint in the Log for complaints and proposals; 2. Maintain and monitor the process of reviewing and meeting the complaints; 3. Consideration of the complaint may require additional verification of the issue, including collection of additional documents. 3. Report on a monthly basis in written to the FWC (depending on the nature of the issue) on the status of work with complaints.	5 days 15 days

Grievance Log

Grievance Focal Points will maintain local Grievance Logs to ensure that each grievance has an individual reference number and is appropriately tracked, and recorded actions are performed. When receiving feedback, including grievances, the following shall be determined:

- Type of appeal;
- Category of appeal;
- Persons in charge of examining and implementing the appeal;
- Deadline for the resolution of the appeal; and
- Agreed action plan.

Environmental and Social Development Specialist, CC and local representatives will ensure that each grievance has its own individual identification number and that recorded actions are implemented accordingly. The Grievance Log shall contain the following information:

- The complainant's name, his/her location and description of the grievance or complaint;
- Date of grievance lodging;
- Date the grievance was registered in the log;
- Description of the proposed action to address the grievance, name of the grievance redress body;
- Date on which information on the proposed actions to address the grievance or complaint was sent to the complainant (if necessary);
- Brief information on the meeting and the decision of the Grievance Management Committee (if necessary);
- Date on which the decision on grievance was made (when the grievance or complaint was closed); and
- Date on which the message (response) on the grievance or complaint was sent to the complainant.

A template for the Grievance Log is provided in Annex 8.

Grievance Monitoring and Reporting

Effective monitoring and reporting of complaints in LRP will contribute to improving the grievance redress mechanism (GRM) and strengthening stakeholder feedback. This will reduce conflicts and risks such as outside interference, corruption, social exclusion or poor governance, as well as improve the quality of LRP activities and outcomes in general.

FWC field representatives will be responsible for:

- Collecting data from city and/or district level Grievance Focal Points (GFP) on the number, content and status of grievances or complaints and uploading them to a single regional database;
- Maintaining registers of grievances at the regional level;
- Monitor outstanding issues and propose actions to address them; and
- Providing quarterly GRM reports to the PIU Environmental and Social Affairs Officer.

PIU Environmental and Social Officer will be responsible for the following:

- Synthesizing and analyzing qualitative data received from local GFP on the number, content and status of grievances and uploading them to a single database;
- Monitor outstanding issues and propose actions to address them; and
- Providing quarterly GRM reports to FWC.

FWC submits quarterly GRM reports to the World Bank and updates on the following:

- Status of GRM implementation (procedures, training, public awareness campaigns, budgeting);
- Qualitative data on number of received appeals (grievances, applications, suggestions, requests, positive feedback) with indication of grievances related to World Bank's SES 2 and SES 5 and number of resolved grievances;
- Quantitative data on the type of appeals and responses provided, problems and grievances that remain unresolved;
- Level of satisfaction with the measures taken (response given);
- Corrective measures, their adoption and implementation.

World Bank Grievance Redress System

Communities and individuals who feel they are negatively affected by a World Bank project may submit complaints to the existing LRP level grievance redress mechanisms or to the World Bank Grievance Redress Service (WB GRS). This service ensures timely consideration of grievances or complaints received to address issues related to the project. Project affected communities and individuals may submit their grievances to an independent Inspection Panel of the World Bank which determines whether damage has been (or may be) caused by non-compliance with World Bank policies and procedures. Complaints may be filed at any time after the issues have been brought directly to the attention of the World Bank and the Bank management has been given an opportunity to respond. For information on how to file a complaint with the World Bank Corporate Grievance Redress Service (GRS), see http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. Information on how to file grievances or complaints with the World Bank Inspection Panel can be found at www.inspectionpanel.org.

Annex 1 - Environmental and Social Risks and Impacts and Mitigation Measures

Environmental Impacts and Risks	Mitigation measures
Soil erosion: Does the project include crop production? If so, which cultures? Is the agricultural field on the hillslopes and / or flat land? Does the project include plowing and growing plants on the hillslopes?	1) Plowing across the hillslope 2) Horizontal tillage 3) Avoid the creation of new terraces, as this is due to the loss of the topsoil, etc. 4) Approximate crop rotation: long-fallow land-wheat-corn-sunflower-medick (alfalfa) - medick (2 years) -beans (peas, kidney bean, etc.) / wheat-corn-sunflower, etc. 5) On lands subject to erosion, it is preferable to grow plants that require close plant seeds (for example, wheat, rye, etc.). Avoid cultivating row crops (corn, sunflower). 6) Gardens: creating grass strips between rows, deep cultivation (tillage) between rows. 7) Where possible, use the field culture industry with cattle breeding and horticulture industries, etc.
Natural habitat and loss of biodiversity: will the project include the use or change of the natural habitat (grazing on pastures and plowing of steppe territories, cutting down or removing trees or other natural vegetation, etc.)	1) Avoid the use for crop production of natural or semi-natural steppe areas intended for grazing. 2) Avoid cutting down trees and other natural vegetation, etc. if possible. 3) Minimize the loss of natural vegetation / vegetation protection during construction work.
Soil pollution: Will pesticides be used in the project? If yes, then what types and their quantity?	1) Use of less harmful pesticides. 2) Do not use more pesticides than necessary. 3) Development of pesticide management plans and integrated pest and disease control in order to ensure appropriate treatment and avoid contaminated over-the-surface flow, etc.
Land, habitat and ecosystem degradation: Is the area to be used a natural (not rearranged) habitat (forests, wetlands, natural meadows, etc.)? Does the project include cattle breeding? If so, what type and how much? Will animals feed in the stable, graze or walk freely?	1) Do not exceed the carrying capacity of pastures (on degraded lands it is 0.3-0.5 c / ha; on good lands - 1.5 c / ha); avoid overgrazing. 2) If possible, use livestock facilities. 3) If possible, create artificial pastures or improve the sowing of fodder plants. 4) If possible, protect pasturelands for their restoration, subsequent use, etc. 5) Do not graze livestock in natural areas in early spring and late autumn, etc. 6) Use natural grassland and grasslands more for mowing than for grazing, etc.
Land degradation: will the project include earthworks?	1) To remove and maintain the upper rich soil layer on adjacent agricultural lands.
Solid waste generation - what type of waste will be generated (construction waste, agricultural waste, livestock manure) and their approximate amount	1) Separation, use and processing of waste. 2) Disposal at permitted site. 3) Use of manure as fertilizer
Toxic waste generation - what types of toxic waste will be generated (obsolete and unusable pesticides and mineral fertilizers; chemicals used in agro-processing activities; asbestos) and their approximate amount.	1) Clearly mark toxic wastes at the site as hazardous material and securely enclose them in closed protection sheathe, as well as label them with detailed information on composition, properties and handling; 2) Disposal of toxic waste at sites. 3) The use of special vehicles for the transport and disposal of toxic waste. 4) Make sure that containers with hazardous substances are placed in an airtight container to prevent leakage and leaching;

	5) Make sure that asbestos is not reused.
Biodiversity and habitat loss. Will the project be located near protected territory or other vulnerable areas that support important habitats of natural fauna and flora? Are you planning to expand the cultivated area for the transformation of the natural habitat?	1) Consider alternative places where possible 2) Plan seasonal work, depending on the circumstances: for example, do not work during the breeding season of wild animals and birds. 3) If possible, enclose the work site in order to reduce even occasional disturbances in habitat and biodiversity. 4) Inform staff of the surrounding environmentally important area, if any. 5) If possible, plant (or maintain) green corridors for the movement of terrestrial fauna.
Groundwater pollution - does the project involve the use of combustive and lubricating materials? if the project envisages livestock number production, is there a manure platform?	1) fuel and lubricating materials: use special concrete sites for the operation and storage of fuel and lubricants to avoid leakage into the soil and runoff to water bodies. 2) Pesticides: see above. 3) The use of special platforms and reservoir with a waterproof bottom for the accumulation of manure and the preparation of organic fertilizers, etc.
Construction	1) Careful selection of the construction site. 2) When designing, it is necessary to optimize the size of the construction site in order to reduce damage to the ground. 3) Whenever possible, construction and installation works should be carried out during the dry season to avoid excessive pollution of over-the-surface flow. Allocate and dispose waste properly. 4) Cleaning of the construction site, replacement of damaged trees, border structures, restoration of vegetation of the working area. 5) Remove and store garbage in a controlled area, spray with water fog to reduce dust from garbage. 6) Suppress dust during pneumatic drilling / destruction of walls by constantly spraying water and / or installing dust screens. 7) Prevent garbage from entering the environment (sidewalks, roads); 8) Do not burn construction waste and other waste on site. 9) Avoid excessive idling on construction sites. 10) Building noise should be limited by the time specified in the permit. 11) During operation, the engines of generators, air compressors and other mechanical equipment with a mechanical drive should be covered with shell, and the equipment should be located as far as possible from residential areas. 12) Take appropriate measures at the site of control and protection against erosion and sediments, for example, such as hay bales and / or silt fences, to prevent sediment from moving away from the site and create excessive turbidity in nearby streams and rivers. 13) Identify disposal methods and waste collection areas for all major types of waste expected from demolition and construction work. 14) Separate mineral, organic, liquid and chemical construction waste from general waste by sorting on site and storing in appropriate containers.

	15) Construction waste will be collected and disposed of by licensed collectors. 16) Record and store waste disposal data as evidence for proper management. 17) If possible, reuse in the work the corresponding used materials (except asbestos).
Air quality. Will the project make pollution emissions? What types of pollution emissions (SOx, NOx, particulate matter, dioxides, furans, etc.)	1) Use approved methods and techniques to prevent and control emissions (e.g. absorption and filtering method) 2) If possible, use local exhaust ventilation and dust collection equipment. 3) Establish barriers to protect against wind (if the raw materials are stored in open piles). 4) Whenever possible, use fuels and low sulfur raw material such as natural gas or liquefied petroleum gas. 5) If possible, install specialized filtration systems, etc. 6) Choose processes and materials with a low content of volatile organic compounds (VOCs) or without the content of these chemically harmful products. 7) If possible, install and modify equipment to reduce the use of solvents in the manufacturing process. 8) Carry out strict primary and secondary control of atmospheric emissions, etc.
Water quantity: will the project include water use? What volumes and from which water source (centralized water supply system and / or from the reservoir)?	1) Provide a natural flow of water or minimal disturbance of natural discharge. 2) Install water meters to monitor and minimize water use. 3) Avoid or minimize surface water withdrawal in case of downstream of water-logged area, etc.
Water Quality / Pollution: Will the project contribute to surface water pollution - what will be the approximate volumes of wastewater discharge? Does the project include wastewater discharges into reservoirs and / or into a centralized sewerage network / septic tank	1) For small rural enterprises: establish local waste treatment facilities (e.g. septic tanks). For large enterprises: do not exceed the established limits for pollutants in water discharge. 2) Reduce the collection of water and mud. 3) Restore the existing sewer system / connect to the municipal sewer system. 4) Properly organize waste disposal sites. 5) If possible, plant at least shrubbery down the slope to reduce the flow of pollutants into surface water bodies.
Biodiversity loss: will the project include the introduction of Non-indigenous species (in the case of aquaculture projects)?	1) If possible, avoid the introduction of Non-indigenous species. 2) In the case of the use of already introduced Non-indigenous species, to ensure their non-admission to natural ecosystems, for example, when dumping water from ponds, etc.
Loss of biodiversity. Will the project be located near a protected area or wetland?	1) Do not exceed the established limits of pollutants in water discharge and emissions. 2) Avoid or minimize construction and operational activities during the breeding season, migration, etc.
Degradation of aquatic ecosystems	1) Avoid introducing pesticides into a strip 300 m wide along the natural surface of water bodies. 2) Avoid cutting down trees and other natural vegetation along water bodies. 3) Avoid the entry of alien species into natural water bodies. 4) Properly arrange waste disposal sites, etc.

Field weed, pests, diseases: will the project contribute to the spread of field weeds, pests and diseases of animals and plants?	1) Avoid growing monoculture plants on agricultural land. 2) Conduct proper pest control 3) Give priority to agrotechnical and biological measures to control field weeds, pests and diseases. 4) In livestock farms, observe carefully established rules to prevent or minimize animal diseases, etc.
Subsidence of water bodies: will the project contribute to the subsidence of water bodies due to soil erosion?	1) Avoid excessive soil erosion: see above. 2) Minimize tillage 3) Provide holding / nettling pond, if necessary. 4) Provide control over reed harvesting (to avoid over-harvesting).
Socio-economic environment	
Social consequences: does the project include the following: (a) labor protection issues; (b) health hazards; (c) the involuntary purchase of land or the movement of third parties using land; (d) loss of access to sources of income; (e) loss of physical and / or economic assets.	Appropriate design of the project: location, construction methods, the use of safe technologies during the operation period, deadlines, thorough decommissioning, etc. Projects that lead to loss of lands or non-land private assets, including those that may exist on public/ state lands, or physical relocation of households, will not be financed by the project. Loss in livelihoods of local population will be avoided or fully mitigated if avoidance is not possible.
Will the project have an impact on the deterioration of human health, safety of labor protection and create problems and concerns for residents living near the project area? If not, is this possible by applying the proposed mitigation measures to reduce the environmental and social impacts of the project to an acceptable level?	1) Provide collective and individual protective measures (work clothes, masks, shoes), if necessary. 2) Follow established labor protection requirements, as well as simple rules, for example: (a) water is sprayed twice a day during construction to avoid dust;(b) indoor ventilation works during and after construction; (c) terms of work. 3) Conduct regular briefings of employees on labor protection and safety requirements including the safe handling and use of pesticides. 4) Limit the speed of vehicles and the speed of movement in residential areas, especially trucks, using appropriate signs and regulations. 5) Limit traffic in residential areas. 6) Limit the time of construction work to certain hours in order to minimize public discomfort. 7) Restrict the movement of hazardous materials in residential areas / regulation of transportation of materials; apply any load restrictions required during and after construction. 8) Include safety and environmental requirements in the design documentation, as well as training of community members on the safe handling and use of any pesticides.
Expected public interests, indignation and / or discomfort of residents living near the project area, for example, the location of the facility, the place of disposal of waste, harmful emissions into the environment, as well as the aesthetic location of the constructed facilities?	1) Public consultations and meetings should be held on a regular basis to discuss the problems of society and take appropriate measures. 2) Make the consideration of complaints mechanism (CCM) available to community members to submit their letter of claims and complaints.

Annex 2 - Risk Categories and Related Environmental and Social Instruments

I	**Moderate risk sub-projects** **(sub-projects that are unlikely to have direct and adverse consequences - ESIA / ESMP not required)**
Small-scale agricultural sub-projects, if they were not created as a result of the transformation of the natural habitat, do not use pesticides and do not have any other adverse environmental impacts. - Agriculture, fruit and berry gardening (small up to 5 ha), crop production - Livestock (small - less than 10 heads of cattle, small cattle or 500 birds) - Construction of sites for silos, drying, cleaning, storage of grain - Construction of greenhouses (without boiler rooms) - Flax production - Agritourism - Purchase of seeds - Beekeeping - Agricultural machinery (tractors, mowing machines, seeders, etc.) Deal Wholesale and retail trade in agricultural products	
II	**Sub-projects with significant risk** **(sub-projects that may have some environmental and social consequences of development - ESMP is compulsory)**
Small-scale agricultural sub-projects (listed above as the "Moderate Risk Category"), if created as a result of a conversion of the natural habitat, consider using pesticides or significant amounts of chemical fertilizers and may have other adverse environmental impacts. For repeat sub-projects with significant risk, a detailed ESMP will work, as for sub-projects with moderate risk. Medium Agricultural Sub-projects - Agriculture, gardening (average 5-300 ha) - Animal breeding (average - from 10 to 500 heads of cattle and up to 1000 small animals) - Aviculture from 500-3000 birds (special measures are needed to reduce an impact) - Construction and operation of surface irrigation and drinking water supply - Recultivation of fallow lands (up to 100 ha); - The use of virgin soils and the whole space for intensive farming - Construction of buildings for the storage of agricultural goods and products - Construction of warehouses for chemical pesticides and mineral fertilizers.	

Annex 3 - Environmental and Social Screening Checklist

Part 1 (to be completed by representatives at the site)

1. **Name and code of the sub-project:**
2. **A brief description of the sub-project**, which should include: the nature of the project, project cost, physical size, site plot, location, ownership of real estate, the existence of current operations, expansion plans or new construction (the description can be copied from the sub-project's proposal and is attached).
3. **Will the project affect the environmental or social parameters** listed below during the construction or operational phase? Indicate when checking at what stage the impact will occur and whether mitigation measures are required.

Explain what demand for land will be needed and indicate to whom this land belongs, who uses this land and / or how the land will be provided.

Part 2 (To be completed based on the results of the environmental screening and analysis process)

Project environmental risk category (significant or moderate) _____

ESIA and / or PSES or PSES checklist required (yes or no) _____

What specific issues should be addressed in the ESIA / ESMP?

Environmental and Social Screening: **Date:**

Annex 4 - Environmental and Social Screening Results

The risk category is **"High"**. Significant impact, exclude from financing The risk category is **"Significant".** Limited or temporary impact requiring significant mitigation, excluded from financing The risk category is **"Moderate".** Limited or temporary impact The risk category is **"Low".** No impact	Prep. By: Name and Signature: Designation: Date: Approved by: Name and Signature: Designation: Date:

Any sub-project annexes that include actions that are coincident with actions that are included in sub-project lists of excluded sub-projects for financing and that may have significant environmental or social risks will be disqualified. If the answer to one of the following questions is YES, then the application should be excluded.

Annex 5 - Summary of Environmental and Social Impact Assessment Report

Environmental and social impact assessments for projects involving significant risk are focused on specific environmental issues raised by the sub-project. Its main purpose is to identify environmental impact and those measures that, if they are included in the project and in the implementation of the project, can ensure the minimization of negative environmental impacts. The volume and level of detail required in the analysis depends on the magnitude and severity of the potential impacts.

The environmental and social impact assessment report should include the following elements:

a. *Summary.* This summarizes important findings and recommended actions.
b. *Political, legal and administrative framework*. This section summarizes the legal and regulatory framework applicable to environmental management in the jurisdiction in which the study is conducted.
c. *Description of the project.* It describes the nature and scale of the project, as well as the geographical, environmental, temporary and socio-economic context in which the project will be implemented. The description should identify the social groups that will be affected, include a map of the project site, identify impacts on land or assets, and identify any third-party or auxiliary facilities that will be needed for the project.
d. *Initial data.* The relevant physical, biological and social conditions are described, including any significant changes expected before the start of the project. The data should be compliant to the design, location, operation or mitigation measures.
e. *Environmental and social impacts.* The possible or expected positive and negative impacts are described in numerical terms, as far as possible. Mitigation measures are identified and to evaluate the residual impacts after alleviating. The deadline constraints of available data and the uncertainties associated with the assessment of impacts and the results of the proposed mitigation are described.
f. *Analysis of alternatives.* Comparison of possible alternatives with the proposed location, design and operation of the project, including the “no project” alternative in terms of their relative impact, costs and local conditions. For each of the alternatives, evaluate and compare the environmental impact and costs relative to the proposed plan.
g. *Social and Environmental Management Plan (ESMP).* If significant impacts requiring mitigation are identified, the ESMP will identify mitigation measures to be taken, identify key monitoring indicators and any institutional strengthening needs for the effective implementation of mitigation and monitoring.
h. *Annexes.* This section should include:
    i. a list of compilers of a environmental and social assessment (SEA);
    ii. references used in preparing the study;
    iii. a chronological report of interdepartmental meetings and consultations with NGOs and stakeholders;
    iv. tables with relevant data discussed in the main text; and
    v. a list of related reports, such as a list of voluntary land donations or social assessments, that have been prepared for the project.

Annex 6 - Contents and Format of ESMP

General remarks. The Social and environmental management plan should have mitigation, monitoring and administration actions that have to be taken during the project implementation in order to avoid or eliminate negative impact on environment. ESMP can also be effective and necessary to achieve mitigation of negative environmental impacts (**description of ESMP** is given in **Annex 1 below**).

The format of the Management plan is given in **Annex 2 below.** It is a ESMP development model. The model divides the project cycle into three phases: construction, operation and decommissioning. Preparatory group identifies any expected impact on environment based on the analysis conducted in the context of preparation of the environmental assessment at each stage. Mitigation measures should be identified and listed for each impact. Assessment is done based on the cost of mitigation actions separated by assessments for installation (investment cost) and operation (current cost). ESMP format also provides the definition of institutional responsibility for "installation" and operation of mitigation devices and methods.

Monitoring plan may be useful to monitor the requirements, responsibilities and costs of monitoring the implementation of mitigation of impact on environment measures identified in the analysis included in environmental assessment for projects with high and significant risks. **The format of the Monitoring plan** is given in **Annex 3 below**. The project cycle is divided into three phases like ESMP (construction, operation and decommissioning). The format also includes a string for basic information which is critical to ensure credible and reliable monitoring. Key elements of matrix are:

What is being controlled?

- Where monitoring takes place?
- How to control a parameter to ensure important comparison?
- When and how often is monitoring necessary or most effective?
- Why is parameter monitored (what does it give about impact on environment)?

In addition to these questions, it is useful to identify costs related to monitoring (both investment and recurring) and institutional obligations.

When monitoring plan is developed and implemented in the context of the project, the PIU will request reports at appropriate periods and include these findings in its interim reports to the World Bank, as well as provide these data to Bank staff during surveillance missions.

Description of Social and environmental management plan

Social and environmental management plan (ESMP) identifies possible and cost-effective measures that can reduce potentially significant adverse impacts on environment to acceptable levels. The plan includes countervailing measures if mitigation measures are not feasible, are cost-effective or insufficient. In particular, ESMP: (a) identifies and summarizes all expected significant adverse environmental impacts (including those related to indigenous peoples or involuntary resettlement); (b) describes with technical details each mitigation measure, including the type of impact to which it relates and conditions under which it is required (e.g., continuously or in case of unforeseen circumstances), together with projects, equipment descriptions and operating procedures, as appropriate ; (c) assesses any potential environmental impact of these measures; and (d) ensures a link to any other mitigation plans (e.g. for involuntary resettlement, indigenous peoples or cultural property) needed for the project.

Monitoring

Environmental monitoring during the implementation of the project provides information on key environmental aspects of the project, particularly, on environmental impact of the project and effectiveness of mitigation measures. This information allows the recipient and the Bank to evaluate the success of mitigation measures as part of project supervision and allows taking corrective actions as necessary. Therefore, the ESMP determines the monitoring objectives and type of monitoring with reference to the impacts assessed in SEA report and mitigation measures described in ESMP. In particular, ESMP monitoring section provides: (a) a specific description and technical details of monitoring measures, including measured parameters, methods used, sampling locations, measurement

frequency, detection limits (where applicable) and defining the threshold values that will signal on necessity of corrective actions; and (b) monitoring and reporting procedures to (i) ensure early identification of conditions that require specific mitigation measures, and (ii) provide information on progress and results of mitigation.

Capacity building and training

ESMP uses EA for existence role and capabilities of environmental units on sites or at agency or ministry level in order to support timely and effective introduction of the components of environmental project and mitigation measures. As necessary, ESMP recommends to establish or expand the units and conduct training for the staff in order to ensure implementation of EA recommendations. In particular, ESMP provides detailed description of institutional mechanisms on implementation of mitigation measures and monitoring (e.g., work, supervision, enforcement, implementation monitoring, corrective actions, financing, reporting and staff training). EMPs cover one or more of the following additional topics in order to strengthen environmental management in the institutions that are responsible for implementation: (1) technical assistance programs, (b) procurement of equipment and materials, and (c) organizational changes.

Schedule and cost estimates

In all three aspects (mitigation, monitoring and capacity building), the EMP provides (a) schedule for the implementation of measures to be carried out within the framework of the project, showing phasing and coordination with the overall project implementation plans; and (b) estimates of capital and operating costs and sources of funds for implementing ESMP. These figures are also included in the tables of the total project cost.

Integration of ESMP with the project

Recipient's decision to continue the project and Bank's decision to support it are partially based on expectation that ESMP will be effectively implemented. Therefore, the Bank expects that the plan will be specific in the description of individual measures to mitigate and monitor and allocate institutional responsibilities, and it should be integrated into the overall planning, design, budget and implementation of the project. Such integration is achieved through creation of a ESMP within the framework of the project, so that the plan receives funding and supervision along with other components.

Format of Environmental management plan

Phase	**Environmental impact**	**Mitigation measure(s)**	**Cost**		**Institutional responsibility**		**Comments**
			Install	Work	Install	Work	
Construction	•	•					
Operation	•	•					
Decommissioning	• •	• •					

Format of Environmental monitoring plan

Phase	**Which** parameter should be controlled?	**Where** will parameter be tracked?	**How** will parameter be controlled?	**When** will parameter be controlled?	**Why** is this parameter controlled?	**Cost**		**Institutional responsibility**	
						Install	**Work**	**Install**	**Work**
Basic									
Construction									
Operation									
Decommissioning									

Annex 7 - Environmental and Social Checklist

General Guidelines for Using the ESMP Checklist

These general guidelines are presented in abbreviated form and prepared for projects with low, moderate and significant risks of environmental and social impact. It is expected that the best practices provided in the manual will be applicable to the use of a checklist for ESMP for small construction.

The checklist type format was developed to provide "best practice examples" and is intended for the convenience of users and is compatible with the requirements of WB social and environmental framework.

The Environmental and Social Management Plan (ESMP) checklist type format attempts to cover typical core approaches to mitigate construction contracts with little local impact. It is generally accepted that this format provides key elements of a Social and Environmental Management Plan (ESMP) or the Fundamentals of Environmental and Social Management (FESM) to meet the requirements of the World Bank's environmental and social assessment according to SES1. The purpose of this checklist is that it will be applicable as a guide for small-scale contractors and will become an integral part of tender documentation for contractors performing minor construction work under projects funded by the Bank.

The checklist consists of four sections:

Part 1 includes a narrative part that describes the project and defines technical content of the project in terms of institutional and legislative aspects, potential need for capacity building program and description of public consultation process. This section can contain up to two pages. Applications for additional information can be supplemented if necessary.

Part 2 includes a checklist of environmental and social audits where activities and potential environmental issues can be checked in a simple Yes / No format. If any specific activity / problem is caused by a "yes" check, a link is made to appropriate section in the following table, which contains clearly defined measures for management and mitigation.

Part 3 presents a plan for monitoring activities during construction and project implementation. It retains the same format as that required by the ESMP proposed in accordance with the Bank's usual requirements for projects with significant risk. The purpose of this checklist is to ensure that part 2 and part 3 are included in the tender documentation for contractors whose value is determined during the bidding process, and careful implementation is monitored during the implementation of work.

Content of ESMP checklist:

A. General information on project and sub-projects/works
B. Environmental and social impact analysis
C. Mitigation measures
D. Monitoring plan

PART A: GENERAL INFORMATION ON PROJECT AND SUB-PROJECTS/WORKS

SITE DESCRPTION		
Name of the site		
Describe the location of the sub-project or type of work		Annex 1: Map of the sub-project [] Yes [] No
Who owes the land?		
Description of geographical, physical, biological, geological, hydrographic and socio-economic context		
Places and distances for finding materials, especially aggregates, water, stones?		
LEGAL FRAMEWORK		
Define national and local laws and permits applicable to project activities		
PUBLIC CONSULTATION		
Determine when and where the public consultation process took place		
INSTITUTIONAL CAPACITY		
Will any capacity building take place?	[] No or [] Yes, if yes, Annex 2 includes a capacity building program	

PART B: ENVIRONMENTAL AND SOCIAL SCREENING

ENVIRONMENTAL / SOCIAL SCREENING				
	Activities / Release		**Status**	**Initiated actions**
Will the activity of the sub-project include/involve any of the following?	A.	Buildings restoration	[] Yes [] No	See section **A** below.
	B.	New construction	[] Yes [] No	See section **A** below.
	C.	Individual wastewater treatment system	[] Yes [] No	See section **B** below.
	D.	Historic building (s) and areas	[] Yes [] No	See section **C** below.
	E.	Land acquisition	[] Yes [] No	See section **D** below
	F.	Hazardous and toxic materials	[] Yes [] No	See section **E** below
	G.	Impact on forests and / or protected areas	[] Yes [] No	See section **F** below
	H.	Medical waste treatment / management	[] Yes [] No	See section **G** below
	I.	Traffic and pedestrian safety	[] Yes [] No	See section **H** below
	J.	Local community/ labor management	[] Yes [] No	See section I below

PART C: MITIGATION MEASURES

ACTIVITY	PARAMETER	ACCOUNT MEASURES
0. General terms	Notification and safety of workers	• Local construction and environmental inspectorates and communities have been notified of upcoming events. • Public was notified of the works through appropriate notice in media and/or on public sites (including sub-projects/works). • All permits required by law were obtained for construction and/or restoration. • Contractor formally agrees that all work will be carried out in a safe and disciplined manner in order to minimize impact on neighboring residents and the environment. • Personal protective equipment for workers will comply with international best practice (always helmets, if necessary, masks and safety glasses, harnesses and safety boots). • Proper site designation will inform employees of key rules and regulations to be followed.
A. General work, restoration and/or construction work	Air quality	• During the demolition of the premises, garbage chutes should be used above the first floor. • Construction waste should be stored in a controlled area and sprayed with water mist to reduce dust from waste. • Dust must be suppressed by continuous water spraying and/or installation of protective covers during the pneumatic coring/wall demolition. • The environment (sidewalks, roads) should be cleaned of debris to minimize dust. • Incineration of construction waste is not allowed on site. • There will not be any excessive idling of construction vehicles at the sites.
	Noise	• Construction of noise will be reduced by limited timing specified in the permit. • During operation of the engines of generators, air compressors and other mechanical equipment with a drive, they must be covered with protective

		covers, and equipment should be located as far as possible from residential areas.
	Water quality	• Appropriate measures to control erosion and sediment (for example, hay bales and / or silt fences) will be installed at the site to prevent sediment from moving away from the site and excessive turbidity in nearby streams and rivers.
	Waste management	• Ways and places for waste collection and disposal will be determined for all types of waste expected from demolition and construction. • Mineral construction and demolition waste will be separated from general waste, organic, liquid and chemical waste by on-site sorting and storage in appropriate containers. • Construction waste will be properly collected and disposed by licensed collectors. • Waste disposal records will be kept as evidence of good management according to the plan. • Whenever possible, the contractor will reuse and recycle appropriate and sustainable materials (except asbestos).
B. Individual wastewater treatment system	Water quality	• Approach to treatment of sanitary waste and wastewater from construction sites (installation or reconstruction) must be approved by local authorities • Before being discharged into receiving water, wastewater from individual systems must be treated in order to meet the minimum quality criteria established by national standards for wastewater quality and treatment. • Wastewater systems monitoring (before/after) will be conducted. • Construction and other equipment will only be washed in designated areas where the runoff will not pollute natural surface water bodies.
C. Historic building (s) and cultural heritage	Cultural heritage	• If the building is a historic facility located very close to such a facility or located in a historical area, notice must be given and permits must be obtained from local authorities, and all construction work must be planned and carried out in accordance with local law. • Provisions should be introduced to ensure that artifacts or other possible "accidental findings" found during excavation or construction are registered, liaison with responsible officials, work is suspended, postponed or changed to account for such finds.
ACTIVITY	**PARAMETER**	**ACCOUNT MEASURES**
D. Land acquisition	Land use criteria	• No one would lose use or access to lands that they currently use for residential or economic/ livelihoods purposes as a result of the project. • Any land donation must meet criteria for a voluntary land donation. • Land may be acquired or leased based on a willing-buyer willing-seller basis. • Free public land will be used during the work, they will be operated within the existing service area or follow the right of way or easements.
E. Toxic materials	Asbestos management	• If asbestos is located on the project site, it should be clearly identified as hazardous material. • As far as possible, asbestos will be appropriately retained and sealed to minimize exposure. • Asbestos will be treated with wetting solution to minimize asbestos dust before disposal (if necessary). • Asbestos will be processed and disposed by experienced professionals. • If asbestos materials are temporarily stored, the waste must be securely enclosed in closed containment shells and labeled appropriately. Security measures will be taken against unauthorized removal from the site. • Remote asbestos will not be reused.
	Toxic/hazardous waste management	• Temporary storage on site of all hazardous or toxic substances will be in safe containers marked with composition, properties and handling information. • Containers with hazardous substances should be placed in an airtight container to prevent leakage and leaching. • Waste must be transported by specially licensed carriers and located at a licensed facility.

		• Paints with toxic ingredients or solvents or lead based paints will not be used.
F. Affected forests, wetlands and/or protected areas	protection	• All recognized natural habitats, wetlands and protected areas in the immediate vicinity of the property will not be damaged or used, and all employees will be strictly prohibited hunting, searching for food, cutting or other harmful activities. • Surveys and stocktaking of large trees near construction activities should be made, large trees should be marked and fenced, their root system should be protected, and any damage to trees should be prevented. • Adjacent wetlands and watercourses should be protected against runoff from construction sites using the appropriate erosion and sediment control function, including but not limited to hay bales and silt fences. • There will be no unlicensed quarries or landfills in adjacent areas, particularly in protected areas.
G. Traffic and pedestrian safety	Direct or indirect hazards to public transport and pedestrians resulting from construction works	• In accordance with national regulations, the contractor will ensure that the construction site is adequately guarded, and traffic is regulated. This includes, but is not limited to: • Signs, warning signs, barriers and traffic deviations: the work site will be clearly visible, and the public will be warned of all potential dangers. • Traffic management system and staff training, particularly for access to the site and heavy traffic near the site. Ensuring safe walkways and crossings for pedestrians where traffic interferes. • Adjustment of working hours in accordance with local traffic flows, for example, avoidance of the main transport activities during peak hours or during livestock movement. • Active traffic management by trained and visible personnel on the site, if necessary, for a safe and convenient passage for the public. • Ensuring safe and permanent access to office premises, shops and residential premises during repair work, if the buildings are open to public.
I. Social Risk Management	Public relationship management	• Assign local liaison person to be in charge of communication with and receiving requests/ complaints from local population • Consult local communities to identify and proactively manage potential conflicts between an external workforce and local people (as relevant) • Raise local community awareness about benefits and risks of the project • Inform the population about construction and work schedules, interruption of services, traffic detour routes and provisional bus routes, blasting and demolition, as appropriate. • Address concerns raised through Grievance Redress Mechanism within the designated timeline within the scope of Contractor's liability
	Labor management	• The Contractor will recruit unskilled or semi-skilled workers from local communities to the extent possible. Where and when feasible, worker skills training, should be provided to enhance participation of local people. • The Contractor will provide adequate lavatory facilities (toilets and washing areas) in the work site with adequate supplies of hot and cold running water, soap, and hand drying devices. A temporary septic tank system should be established for any residential labor camp and without causing pollution of nearby watercourses • Where external workers are employed, the Contractor will raise their awareness on overall relationship management with local population, establish the code of conduct in line with international practice and strictly enforce them, including the dismissal of workers and financial penalties of adequate scale

PART D: MONITORING PLAN

Activity	**which** (Is the parameter to be monitored?)	**where** (Is the parameter to be monitored?)	**how** (Is the parameter to be monitored?)	**when** (Define frequency/or continuous?)	**why** (Is the parameter being monitored?)	**Who** (Is responsible for monitoring?)
1. Types of activities						

2. Types of activities						
3. Types of activities						

ENVIRONMENTAL MONITORING PLAN FOR SMALL-SCALE WORKS, RECOVERY/CONSTRUCTION AND SELECTED SUB-PROJECTS

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	DUTY
Design	ESMP guideline implementation (recommendations)	Design project for construction, reconstruction and adaptation.	Overview of developed and adaptational projects.	Preliminary approval of construction as part of the project monitoring program.	Recommended in accordance with national legislation requiring a building permit.	Should be part of the project	Designer, Contractor
construction	Parameters specified in the building permit are all special construction conditions issued by various authorities	The main design document	Part of the regular check by the Committee for Environmental Protection and building inspection	During the construction process and before issuing an operation permit	A regular check is provided by Law, and if any public complaint is sent to the ERSC or building inspection	Included in the construction phase, Contractor costs	PIU E&S specialists of ERSC and building inspections
	Construction waste management (including hazardous)	Supporting documents for waste submitted to the competent utility company	Part of the regular check by ERSC and building inspections	After reporting on waste management	Required in accordance with waste regulations	ERSC and building inspection costs and low costs for the Contractor	PIU E&S specialists of ERSC and building inspections
	Cultural heritage are "chance finds" encountered during excavations or construction.	Notification must be made and approved/consents will be obtained from local authorities and all construction works scheduled and carried out in accordance with local and national legislation.	Part of the regular check by ERSC and building inspection	During the construction process as part of the project monitoring program.	Provisions should be adopted in a way that artifacts or other possible "chance finds" encountered during excavations or construction are noted and registered, executive officials contacted, and works activities ceased or modified to account.	Transport costs for the contractor	Branches of Kazakhstan Investment Fund (KIF) and PIU
operation	Waste management	Based on documents for waste submitted to ERSC	Reports to ERSC	After reporting on waste management to ERSC	Should be monitored in accordance with waste management rules.	Project beneficiary and ERSC costs	Project beneficiary, competent utility company and ERSC

PART 2: SOCIAL AND ENVIRONMENTAL SCREENING

ACTIVITY	ENVIRONMENTAL PROBLEM/PARAMETER	MITIGATION MEASURES CHECKLIST
A. Contractor mobilization (general conditions)	Notification and worker safety	• The local construction and environment inspections 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. • 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 Personal Protective Equipment (PPE) 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. Rehabilitation, construction and/or other activities (construction works)	Air quality	• Keep construction 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. • 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 with protective shrouds, and equipment placed as far away from residential areas as possible.
	Waste management	• Waste collection and disposal pathways and sites will be identified for all waste types expected from construction activities. • Mineral construction 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 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. Wastewater	Water quality	• Appropriate erosion and sediment control measures will be installed at the site, such as, for example, hay bales and/or silt fences to prevent sediments from moving off the site and excessive turbidity in nearby streams and rivers. • 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 quality criteria set out by national guidelines on effluent quality and wastewater treatment. • Monitoring of new wastewater systems (before/after) will be carried out; • Contractors should act in such a way as to prevent accidental ingress of wastewater into tanks or groundwater during the concrete processing and mixing. They should not enter watercourses/channels without special settling in dams (pools) and without passing through special gravel filters and other treatments.
D. Cultural heritage finds	Cultural heritage	• Artifacts or other possible "chance finds" encountered during the excavation or construction are discovered, works activities ceased, objects marked and registered, and will be reported to local authorities and cultural workers. The works may re-commence only with the approval of the executive authorities.
E . Toxic Materials/Substances	Asbestos management	• If asbestos is located on the Project site, mark clearly as hazardous material. • The asbestos will be appropriately contained and sealed to minimize exposure. • The asbestos prior to removal will be treated with a wetting agent to minimize asbestos dust.

		• Asbestos will be handled and disposed by licensed and skilled professionals. • If asbestos material be stored temporarily, the wastes must 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 a leak-proof container to prevent spillage and leaking. • 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.
	Oil Substances/Wastes	• Car washes and places where machines and mechanisms are serviced should be equipped with settlement tanks and oil and gasoline collectors; • Waste oil and technical liquids should be poured into containers and then sent for disposal; • Eliminate the leakage of petroleum products during transportation; • All oil waste from operational maintenance materials should be collected and stored in designated areas and then cleaned in accordance with the established procedure.
	Polychlorinated Biphenyls (PCBs)	• Strictly comply with regulatory documents in terms of access and operation when taking oil samples and, in particular, the "Safety rules for servicing electrical equipment", II edition, issued in 1989, Moscow; • Use glass bottles for oil sampling; • Use one-sided protective gloves to prevent skin contact with printed circuit boards. • Protect eyes from possible splashes of oil by wearing glasses; The sample should be taken using a drain tap located at the bottom of the transformer; • Since there is a risk of unintentional formation and release of highly toxic dioxins during chlorine identification using the Beilstein method, tests should only be performed in the laboratory by experienced chemists. • If chlorine testing indicates that transformers contain PCBs, the rules prescribed in the Guidelines for the environmentally sound management of PCBs in electrical equipment should be observed, mark contaminated equipment, store used oil and contaminated transformers in tanks in a protected area, until appropriate disposal measures are taken.
F. Old/new equipment installation/dismantling and earthworks	Crane/excavator/bulldozer operations	• Strictly observe the existing national rules for these measures; • When approaching overhead power lines under voltage work • should be carried out under the supervision of electricians; • Cranes should be installed and secured in a stable position to prevent them from tipping over or spontaneous displacement under the influence of their own weight, as well as the engine. • It is necessary to check the serviceability of the mechanisms, their presence of fences and safety devices for mechanized management of earthworks. Work on faulty machines is not allowed; • Members of mechanized crews operating cranes and bulldozers should know and strictly follow all safety rules to avoid injury; • Workers servicing machines should be provided with instructions that include the following: (a) Instructions for monitoring the machine and maintaining the workplace; (b) safety requirements; c) signal guidance system; (d) maximum loads and speeds of machines; (e) the employee should take action in emergency cases or malfunctioning. • People who have passed special training and have a certificate of competency in machine control are allowed to drive machines. • The basic requirements for cranes and bulldozers are as follows: (a) all rotating parts of the machines — gears, chains and temporary gears, fans, flywheels, etc. should be protected by protective shroud. It is prohibited to operate mechanisms without barriers; (b) inspection, adjustment, tightening of bolts, lubrication and preventive maintenance of equipment during their operation are prohibited; and c) in areas where these machines operate, any

		other work or presence of people is prohibited. If large stones, stumps or other objects are found in the exploited soil, the machine should be stopped and objects that may cause an accident should be removed.
	Welding works	• The existing national rules for these measures should be strictly observed; • Personal items should have protective equipment, rubber gloves, special boots, and special helmets; • All employees should take training courses in labor protection before starting welding work; • Use protective equipment that includes at least: (a) a welder mask respirator; (b) protective clothing: all skin areas should be protected from molten metal and sparks. This includes long sleeve shirts; trousers that cover the toe of the shoe; gloves; shoes or boots; c) eye protection devices from debris and ultraviolet; (d) helmets; and • Fire protection: prepare and use fire extinguishers, as well as sand and water.
	Electrical equipment installation/dismantling	• Strictly observe the current national rules for these measures; • Perform routine inspections of machinery and equipment in order to eliminate malfunctions and meet repair deadlines; • Organizes training and instruction of employees engaged in the maintenance of machines, tools and equipment, safe working methods and techniques; and • It is forbidden to distribute defective or unverified tools for work, as well as to leave mechanical tools unattended, connected to the electric mains or compressed air pipelines; tight and bend the cables and hoses of the air hose; lay cables and hoses with their intersection with ropes, electric cables, handle rotating elements of a manual tool with a mechanical drive.
I. Social Risk Management	Public relationship management	• Assign local liaison person to be in charge of communication with and receiving requests/ complaints from local population; • Consult local communities to identify and proactively manage potential conflicts between an external workforce and local people (as relevant); • Raise local community awareness about benefits and risks of the project; • Inform the population about construction and work schedules, interruption of services, traffic detour routes and provisional bus routes, blasting and demolition, as appropriate; and • Address concerns raised through Grievance Redress Mechanism within the designated timeline within the scope of Contractor's liability.
	Labor management	• The Contractor will recruit unskilled or semi-skilled workers from local communities to the extent possible. Where and when feasible, worker skills training, should be provided to enhance participation of local people. • The Contractor will provide adequate lavatory facilities (toilets and washing areas) in the work site with adequate supplies of hot and cold running water, soap, and hand drying devices. A temporary septic tank system should be established for any residential labor camp and without causing pollution of nearby watercourses. • Where external workers are employed, the Contractor will raise their awareness on overall relationship management with local population, establish the code of conduct in line with international practice and strictly enforce them, including the dismissal of workers and financial penalties of adequate scale.

PART 3: MONITORING PLAN Phase/project activities	Which (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (If not included in project budget)	Who (Is responsible for monitoring?)
During the project implementation							
Construction and other works	Parameters specified in the building permit - all special construction conditions issued by various authorities	Design document Building permits	Part of the regular check by PIU	During the construction process and before issuing an operation permit	Regular review of building permits required to ensure compliance with national legislation and environmental requirements of EMP.	Included in contractor costs	Technical supervision, specialist in environmental and social issues of PIU
	Air quality and noise	At the construction site	visually	During the construction phase	To prevent environmental pollution and health impacts on employees	Costs as part of project implementation costs	PIU environmental and social issues specialist
	Wastewater	At the construction site	visually	During the construction phase	To prevent environmental pollution and health impacts on employees	Costs as part of project implementation costs	Ecology Department and PIU environmental and social issues specialist
	Construction waste, hazardous materials and asbestos management	At the construction site	Visual observations and analysis of supporting documents for waste collection and transportation, which are transmitted to competent utility company; Reporting documents from landfills	During the construction phase and after reporting on waste management	To prevent environmental pollution and health impacts required by national waste regulations	PIU costs and Contractor operating costs	PIU environmental and social issues specialist
New electrical equipment installation/ dismantling/welding works	Labor protection	At the construction site (for disassembling or installing equipment)	Visual observation and analysis of submitted report on performed operations, accidents, training reports	Before and during construction and in accordance with national requirements regarding labor safety	To prevent accidents and health impacts	Supervision costs of PIU ecologist and contractor costs	technical supervision, PIU environmental and social issues specialist

Annex 8 - Complaint Log Template

#	priority	Date Feedback Received	Feedback channel	Review category	Brief description	Anonym (yes/no)	Person assigned to feedback address	Status (resolved, pending, upgraded)	Feedback permission date	Permission message
1										
2										
3										
4										
5										
6										

Annex 9 - Integrated Pest Management

Principles of Integrated Pest Management. The main goal of pest management is to control pests and diseases that can damage crop production, so that they remain at a level below the threshold for economic injury. Pesticides must be managed to reduce human exposure and health hazards, to avoid their migration to land or water outside the site, and to avoid environmental consequences such as the destruction of useful species and the development of pesticide resistance. An important strategy is to promote and facilitate Integrated Pest Management (IPM) by preparing and implementing the Integrated Pest Management Plan (IPMP). IPM consists of judicious use of both chemical and non-chemical control methods. They are used to achieve effective and cost-effective pest control with minimal environmental pollution. Therefore, IPM may include the use of: a) mechanical and physical control; b) cultural control; C) biological control; and d) efficient chemical control. Although IPM emphasizes the use of non-chemical strategies, chemical control may be used in combination with other methods. Integrated Pest Management strategies depend on surveillance to establish the need for control and monitor the effectiveness of management efforts.

Alternatives to Pesticide Use. If possible, the following alternatives to pesticides should be considered:

- rotate crops (crop rotation) to reduce pests and weeds in the soil ecosystem;
- use pest-resistant cultivars;
- use a power-driven method of weed control and/or thermal weeding;
- support and use beneficial organisms such as insects, birds, mites and microbial agents to implement biological pest control;
- protect natural enemies from pests by providing a favorable habitat, such as bushes for nesting and other original vegetation that may contain pest predators, and avoid using of broad-spectrum pesticides;
- use animals for grazing and vegetation cover management;
- use power-driven management tools such as manual removal, traps, barriers, lighting, and sound to kill, move, or repel pests.

Pesticide Use. If the pesticides use is reasonable, users are encouraged to take the following actions:

- Training staff to use pesticides and ensuring that staff receive appropriate certificates or equivalent training if those are not required;
- Review and follow manufacturer's instructions for maximum dosage or treatment, as well as published reports on reducing speed for pesticides use without losing the effect, and apply the minimum effective dosage;
- Avoid regular calendar-based application and use pesticides only when necessary and useful based on criteria such as field observations, weather data (e.g. appropriate temperature, light wind, etc.).
- Avoid the use of highly hazardous pesticides, especially by non-certified, untrained, or under-equipped users. This includes:
- Pesticides of hazard class 1a and 1b recommended by the World Health Organization should be avoided in almost all cases. They should only be used if there are no practical alternatives and when the processing and use of products will be carried out in accordance with national laws by certified personnel due to monitoring of health and environmental impacts;
- It is recommended to avoid using pesticides of hazard class II if there are no restrictions on distribution and use of these chemicals in the host country, or if they can be accessed by personnel without proper training, equipment and facilities for the proper handling, storage, use and disposal;
- Avoid using pesticides listed in Annexes A and B of the Stockholm Convention, except in cases specified in the Convention and those subject to international bans or phase-out;
- Use only those pesticides that are produced under license, registered and approved by the relevant authority and in accordance with the International Code of Conduct on the Distribution and Use of Pesticides of the Food and Agriculture Organization (FAO);
- Use only those pesticides that are labeled in accordance with international standards and regulations, such as the Revised FAO Guidelines on good practice for labeling pesticides;
- Select application technologies and practices designed to reduce unintentional drift or runoff only in accordance with the instructions in the IPM program, and under controlled conditions;
- Maintain and calibrate the pesticide application equipment in accordance with the manufacturer's recommendations. Use application equipment registered in the country of use;

- Create untreated buffer zones or strips along water sources, rivers, streams, ponds, lakes, and ditches to help protect water resources;
- Avoid using pesticides that are associated with local environmental problems and threats.
- The national pesticide registration list should also be used.

Treatment and storage of pesticides. Contamination of soil, underground or surface water resources due to accidental spills during the transfer, mixing and storage of pesticides should be prevented by following the recommendations for storage and handling of hazardous materials. These are the following:

- Store pesticides in their original packaging, in a designated, dry, cool, frost-free and well-ventilated place that can be locked and properly marked. Only authorized persons can access it. You can't store human or animal food in this place. The storage area must also be designed with consideration of spill containment measures and placed with possible contamination of soil and water resources;
- Mixing and transfer of pesticides should be carried out by trained personnel in well-ventilated and well-lit areas using containers designed and intended for this purpose.
- Containers should not be used for any other purpose (e.g. for drinking water). Contaminated containers should be treated as hazardous waste and placed in designated areas for hazardous waste. Ideally, containers contaminated with pesticides should be disposed of in accordance with FAO guidelines and manufacturer's instructions;
- Buy and store no more pesticides than the necessary amount, and change stocks on a first-in-first-out basis so that the pesticides are not outdated. In addition, the use of obsolete pesticides should be avoided at all times; The Management Plan, which includes measures for the containment, storage and final destruction of all obsolete stocks, should be prepared in accordance with FAO guidelines and with countries' obligations under the Stockholm, Rotterdam and Basel conventions;
- Collect wash water from the cleaning equipment for reuse (e.g. dilution of identical pesticides to concentrations used for application);
- Make sure that protective clothing worn during the application of pesticides is cleaned or disposed of in an environmentally friendly manner; and
- Keep records of the use and effectiveness of pesticides.

Pest Management Plan (PMP). Pest Management Plan should apply to all activities and persons working. It should also be emphasized that chemical control efforts will be used to the maximum extent possible before the use of pesticides. The Pest Management Plan should be the basis for defining and implementing pest control. The plan should define the elements of the program, including health and environmental safety, pest identification and control, as well as storage, transportation, use, and disposal of pesticides. The Management Plan should be used as a tool to reduce dependence on pesticides, enhance environmental protection, and maximize the use of integrated pest management methods.

The Pest Management Plan should contain pest control requirements, outline the resources needed for supervision and control, and describe administrative, safety, and environmental requirements. The plan should contain guidance on how to operate and maintain an effective pest control program/activity. Pests considered in the Plan may include weeds and other unnecessary vegetation, crawling insects, and other vertebrate pests. Without control, these pests provoke the death of plants. Compliance with the Plan will ensure effective, cost-effective and environmentally acceptable pest control and ensure compliance with relevant laws and regulations.

Review and approval of the Pest Management Plan. The PMP should be prepared in all cases of direct purchase and use of pesticides by all sub-project beneficiaries. The PMP project should be reviewed by a specialist in environmental and social issues of the PIU, who will ensure their approval. These documents are also subject to preliminary review by the WB for the first two of these sub-projects.

Suggested modules for pest control trainings. A Pest Management Plan may include training activities organized either on a large scale in the project areas, or in a specific area of greater significance. Suggested modules are followings:

- Basic concepts of an integrated method for plant and animal protection;
- Alternatives to pesticides, training workers to use them and applying the minimum effective dosage;

- Studying pests, entomophages, their biology, microbiological preparations and the role of biological factors in regulating the number of pests;
- Compliance with the environmental requirements of the pest control system, crop diseases and weeds. Description of conservation measures to conserve and improve crops;
- Requirements for environmental and industrial safety during storage, transportation and use of pesticides;
- Selecting technologies and applications to reduce unintended releases or leaks of chemicals in accordance with the provisions of the Integrated Pest Management Program under controlled conditions, in compliance with international and local standards and environmental safety standards; and
- Environmental and Social Management Plan templates (using the experience of other WB projects), as well as pest management plans.

Annex 10 - Suggested Structure for Pest Management Plan

After reviewing the environmental checklist, the environmental and social affairs specialist of the PIU will determine whether the candidate should prepare a Pesticide Management Plan (PMP). This determination will be based on the used pesticides toxicity and the environmental risks associated with these activities. When it is decided that the PMP should be prepared for a sub-project, a two-step process will be applied to prepare PMP.

Phase A: Request additional information

The applicant must provide the following information:

1. Types and usage of pesticides
(i) Which pesticides should be purchased, including product name, type of preparation, active ingredient concentrations?
(ii) Where to buy pesticides, including store name and location?
(iii) How many pesticides do I need to buy, as well as the size and number of packages in each package?
(iv) What type of equipment should be used for the application of pesticides
(v) Are applicators trained to correct and safe use of pesticides?
2. The purpose and appropriateness of pesticides
(i) What crops do you plan to use as a pesticide?
(ii) Which pests and/or diseases should be controlled by the pesticide?
(iii) What non-chemical pest control measures have been used in the past to control pests and/or diseases mentioned in (ii) above?
(iv) How often and in what quantities in each specific application should pesticides be used?
(v) How will the decision be made on the timing of the use of the pesticide?
(vi) Have you been trained or received recommendations on non-chemical pest control or integrated pest management (IPM)?
(vii) If you are not trained, how do you plan to get help, advice or training on the quantities and methods of applying pesticides; calibration of spray equipment; use of protective equipment; storage and disposal methods, etc.

3. Treatment, storage and disposal of pesticides

(i) How will pesticides be transported to the project site?
(ii) Where will pesticides be stored on the farm?
(iii) Will the pesticide storage site be protected/closed and who will have access to these storage facilities?
(iv) Both animals, children and strangers will be excluded from access to storage facilities?
(v) Where will the pesticides be mixed and what precautions will be taken to ensure that the pesticide storage and mixing areas are removed from grain storage and production areas?
(vi) How will excess unused and mixed pesticide products be disposed of?
(vii) How will empty containers with pesticides be disposed of?
(viii) How will pesticide records be maintained in terms of purchase, use, and disposal?

4. Environmental aspects

(i) Are the areas where pesticides are used close to reservoirs, wetlands, or areas of known natural habitats?
(ii) Are there natural pollinators near the application areas? If so, what precautions will be used to ensure that non-target useful species are not affected?

Phase B: Preparation of the Pest Management Plan

Based on the information provided on the sub-project, the environmental and social affairs specialist of the PIU will determine the risks due to pesticide use; the most important and most practical mitigation measures to be taken, including any additional measures using non-chemical control measures. As a rule, the PMP plan will be as follows:

(a) The purpose of the activity provides information about the extent and severity of pests and diseases in the crops to be grown.

(b) General information about the Area, which should contain data on land use and soil, water resources, site layout, and etc.

(c) An overview of existing pest control practices and capacities which should provide data on current practices (chemical and non-chemical) in the control of specific pests and diseases, restrictions, the history and extent of pest and disease control of fruit and agricultural crops have been managed and controlled; as well the reasons for expanding the use of pesticides under the proposed sub-project loan.

(d) Types, quantity, and usage of pesticides provides information about the types, quantities, and nature of pesticides to be purchased and used, as well as current and suggested methods for treating, applying, storing, and disposing of pesticides.

(e) Capacity, training and knowledge on the safe application and use of pesticides provides information on the existing knowledge and potential of staff and staff in the safe application and use of pesticides, as well as identifying gaps in training and knowledge to improve potential.

(f) Potential risks and hazards due to the application and use of pesticides in the sub-project. Provide information on the environmental and human health impacts associated with the treatment, use, storage and disposal of pesticides under the sub-project, including potential impacts on non-target useful species, soil, water and natural habitats.

(g) Mitigation measures, to avoid and manage potential pesticide impacts that would provide information about the following:

- Mechanical and physical control, cultural and biological control measures, which can be used in combination with or without the use of pesticides to suppress or reduce the target pest or disease severity that needs to be controlled;
- Chemicals substances and chemical procedures which to be used to control pests and diseases, the conditions in which chemicals will be used, including climatic conditions, vegetation conditions, periods of use, to increase the effectiveness of the pesticide and reduce its environmental impact, as well as specific measures to protect sensitive ecosystems, aquatic systems and groundwaters;
- Managing health and safety aspects that determine measures to ensure the safe treatment, transportation, use, storage and disposal of pesticides in order to reduce environmental and health risks;
- measures to be taken to ensure public safety and protection when using pesticides;
- measures to track and monitor the pesticide use and the effectiveness of pest control;
- measures to be taken to raise awareness, improve

information flow and capacity building for agricultural workers in relation to
hazards due to unsafe use, treatment and storage of pesticides,
and measures to reduce such risks, as well as options for integrated pest management;

- measures to be taken in order to obtain technical support to control

pests and their safe use;

- use of pesticides when necessary; and
- Budget estimates for implementing the PMP.

Annex 11 - COVID-19 World Bank ESF/SAFEGUARDS Interim Note

This note was issued on April 7, 2020 and includes links to the latest guidance as of this date (e.g. from WHO). Given the COVID-19 situation is rapidly evolving, when using this note it is important to check whether any updates to these external resources have been issued.

1. INTRODUCTION

The COVID-19 pandemic presents Governments with unprecedented challenges. Addressing COVID-19 related issues in both existing and new operations starts with recognizing that this is not business as usual and that circumstances require a highly adaptive responsive management design to avoid, minimize and manage what may be a rapidly evolving situation. In many cases, we will ask Borrowers to use reasonable efforts in the circumstances, recognizing that what may be possible today may be different next week (both positively, because more supplies and guidance may be available, and negatively, because the spread of the virus may have accelerated).

This interim note is intended to provide guidance to teams on how to support Borrowers in addressing key issues associated with COVID-19 and consolidates the advice that has already been provided over the past month. As such, it should be used in place of other guidance that has been provided to date. This note will be developed as the global situation and the Bank's learning (and that of others) develops. This is not a time when 'one size fits all'. More than ever, teams will need to work with Borrowers and projects to understand the activities being carried out and the risks that these activities may entail. Support will be needed in designing mitigation measures that are implementable in the context of the project. These measures will need to take into account capacity of the Government agencies, availability of supplies and the practical challenges of operations on-the-ground, including stakeholder engagement, supervision and monitoring. In many circumstances, communication itself may be challenging, where face-to-face meetings are restricted or prohibited, and where IT solutions are limited or unreliable.

This note emphasizes the importance of careful scenario planning, clear procedures and protocols, management systems, effective communication and coordination, and the need for high levels of responsiveness in a changing environment. It recommends assessing the current situation of the project, putting in place mitigation measures to avoid or minimize the chance of infection, and planning what to do if either project workers become infected or the work force includes workers from proximate communities affected by COVID-19. In many projects, measures to avoid or minimize will need to be implemented at the same time as dealing with sick workers and relations with the community, some of whom may also be ill or concerned about infection. Borrowers should understand the obligations that contractors have under their existing contracts (see Section 3), require contractors to put in place appropriate organizational structures (see Section 4) and develop procedures to address different aspects of COVID-19 (see Section 5).

2. CHALLENGES WITH CONSTRUCTION/CIVIL WORKS

Projects involving construction/civil works frequently involve a large work force, together with suppliers and supporting functions and services. The work force may comprise workers from international, national, regional, and local labor markets. They may need to live in on-site accommodation, lodge within communities close to work sites or return to their homes after work. There may be different contractors permanently present on site, carrying out different activities, each with their own dedicated workers. Supply chains may involve international, regional and national suppliers facilitating the regular flow of goods and services to the project (including supplies essential to the project such as fuel, food, and water). As such there will also be regular flow of parties entering and exiting the site; support services, such as catering, cleaning services, equipment, material and supply deliveries, and specialist sub-contractors, brought in to deliver specific elements of the works.

Given the complexity and the concentrated number of workers, the potential for the spread of infectious disease in projects involving construction is extremely serious, as are the implications of such a spread. Projects may experience large numbers of the work force becoming ill, which will strain the project's health facilities, have implications for local emergency and health services and may jeopardize the progress of the construction work and the schedule of the project. Such impacts will be exacerbated where a work force is large and/or the project is in remote or under-serviced areas. In such circumstances, relationships with the community can be strained or difficult and conflict can arise, particularly if people feel they are being exposed to disease by the project or are having to compete for scarce resources. The project must also exercise appropriate precautions against introducing the infection to local communities.

3. DOES THE CONSTRUCTION CONTRACT COVER THIS SITUATION?

Given the unprecedented nature of the COVID-19 pandemic, it is unlikely that the existing construction/civil works contracts will cover all the things that a prudent contractor will need to do. Nevertheless, the first place for a Borrower to start is with the contract, determining what a contractor's existing obligations are, and how these relate to the current situation.

The obligations on health and safety will depend on what kind of contract exists (between the Borrower and the main contractor; between the main contractors and the sub-contractors). It will differ if the Borrower used the World Bank's standard procurement documents (SPDs) or used national bidding documents. If a FIDIC document has been used, there will be general provisions relating to health and safety. For example, the standard FIDIC, Conditions of Contract for Construction (Second Edition 2017), which contains no 'ESF enhancements', states (in the General Conditions, clause 6.7) that the Contractor will be required:

- to take all necessary precautions to maintain the health and safety of the Contractor's Personnel
- to appoint a health and safety officer at site, who will have the authority to issue directives for the purpose of maintaining the health and safety of all personnel authorized to enter and or work on the site and to take protective measures to prevent accidents
- to ensure, in collaboration with local health authorities, that medical staff, first aid facilities, sick bay, ambulance services and any other medical services specified are available at all times at the site and at any accommodation
- to ensure suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics

These requirements have been enhanced through the introduction of the ESF into the SPDs (edition dated July 2019). The general FIDIC clause referred to above has been strengthened to reflect the requirements of the ESF. Beyond FIDIC's general requirements discussed above, the Bank's Particular Conditions include a number of relevant requirements on the Contractor, including:

- to provide health and safety training for Contractor's Personnel (which include project workers and all personnel that the Contractor uses on site, including staff and other employees of the Contractor and Subcontractors and any other personnel assisting the Contractor in carrying out project activities)
- to put in place workplace processes for Contractor's Personnel to report work situations that are not safe or healthy
- gives Contractor's Personnel the right to report work situations which they believe are not safe or healthy, and to remove themselves from a work situation which they have a reasonable justification to believe presents an imminent and serious danger to their life or health (with no reprisal for reporting or removing themselves)

- requires measures to be in place to avoid or minimize the spread of diseases including measures to avoid or minimize the transmission of communicable diseases that may be associated with the influx of temporary or permanent contract-related labor
- to provide an easily accessible grievance mechanism to raise workplace concerns

Where the contract form used is FIDIC, the Borrower (as the Employer) will be represented by the Engineer (also referred to in this note as the Supervising Engineer). The Engineer will be authorized to exercise authority specified in or necessarily implied from the construction contract. In such cases, the Engineer (through its staff on site) will be the interface between the PMU and the Contractor. It is important therefore to understand the scope of the Engineer's responsibilities. It is also important to recognize that in the case of infectious diseases such as COVID-19, project management – through the Contractor/subcontractor hierarchy – is only as effective as the weakest link. A thorough review of management procedures/plans as they will be implemented through the entire contractor hierarchy is important. Existing contracts provide the outline of this structure; they form the basis for the Borrower to understand how proposed mitigation measures will be designed and how adaptive management will be implemented, and to start a conversation with the Contractor on measures to address COVID-19 in the project.

4. WHAT PLANNING SHOULD THE BORROWER BE DOING?

Task teams should work with Borrowers (PMUs) to confirm that projects (i) are taking adequate precautions to prevent or minimize an outbreak of COVID-19, and (ii) have identified what to do in the event of an outbreak. Suggestions on how to do this are set out below:

- The PMU, either directly or through the Supervising Engineer, should request details in writing from the main Contractor of the measures being taken to address the risks. As stated in Section 3, the construction contract should include health and safety requirements, and these can be used as the basis for identification of, and requirements to implement, COVID-19 specific measures. The measures may be presented as a contingency plan, as an extension of the existing project emergency and preparedness plan or as standalone procedures. The measures may be reflected in revisions to the project's health and safety manual. This request should be made in writing (following any relevant procedure set out in the contract between the Borrower and the contractor).

- In making the request, it may be helpful for the PMU to specify the areas that should be covered. This should include the items set out in Section 5 below and take into account current and relevant guidance provided by national authorities, WHO and other organizations. See the list of references in the Annex to this note.

- The PMU should require the Contractor to convene regular meetings with the project health and safety specialists and medical staff (and where appropriate the local health authorities), and to take their advice in designing and implementing the agreed measures.

- Where possible, a senior person should be identified as a focal point to deal with COVID-19 issues. This can be a work supervisor or a health and safety specialist. This person can be responsible for coordinating preparation of the site and making sure that the measures taken are communicated to the workers, those entering the site and the local community. It is also advisable to designate at least one back-up person; in case the focal point becomes ill; that person should be aware of the arrangements that are in place.

- On sites where there are a number of contractors and therefore (in effect) different work forces, the request should emphasize the importance of coordination and communication between the different parties. Where necessary, the PMU should request the main contractor to put in place a protocol for regular meetings of the different contractors, requiring each to appoint a designated staff member (with back up) to attend such meetings. If meetings cannot be held in person, they should be conducted using whatever

IT is available. The effectiveness of mitigation measures will depend on the weakest implementation, and therefore it is important that all contractors and sub-contractors understand the risks and the procedure to be followed.

- The PMU, either directly or through the Supervising Engineer, may provide support to projects in identifying appropriate mitigation measures, particularly where these will involve interface with local services, in particular health and emergency services. In many cases, the PMU can play a valuable role in connecting project representatives with local Government agencies, and helping coordinate a strategic response, which takes into account the availability of resources. To be most effective, projects should consult and coordinate with relevant Government agencies and other projects in the vicinity.

- Workers should be encouraged to use the existing project grievance mechanism to report concerns relating to COVID-19, preparations being made by the project to address COVID-19 related issues, how procedures are being implemented, and concerns about the health of their co-workers and other staff.

5. WHAT SHOULD THE CONTRACTOR COVER?

The Contractor should identify measures to address the COVID-19 situation. What will be possible will depend on the context of the project: the location, existing project resources, availability of supplies, capacity of local emergency/health services, the extent to which the virus already exist in the area. A systematic approach to planning, recognizing the challenges associated with rapidly changing circumstances, will help the project put in place the best measures possible to address the situation. As discussed above, measures to address COVID-19 may be presented in different ways (as a contingency plan, as an extension of the existing project emergency and preparedness plan or as standalone procedures). PMUs and contractors should refer to guidance issued by relevant authorities, both national and international (e.g. WHO), which is regularly updated (see sample References and links provided in the Annex 10).

Addressing COVID-19 at a project site goes beyond occupational health and safety, and is a broader project issue which will require the involvement of different members of a project management team. In many cases, the most effective approach will be to establish procedures to address the issues, and then to ensure that these procedures are implemented systematically. Where appropriate given the project context, a designated team should be established to address COVID-19 issues, including PMU representatives, the Supervising Engineer, management (e.g. the project manager) of the contractor and sub-contractors, security, and medical and OHS professionals. Procedures should be clear and straightforward, improved as necessary, and supervised and monitored by the COVID-19 focal point(s). Procedures should be documented, distributed to all contractors, and discussed at regular meetings to facilitate adaptive management. The issues set out below include a number that represent expected good workplace management but are especially pertinent in preparing the project response to COVID-19.

(a) ASSESSING WORKFORCE CHARACTERISTICS

Many construction sites will have a mix of workers e.g. workers from the local communities; workers from a different part of the country; workers from another country. Workers will be employed under different terms and conditions and be accommodated in different ways. Assessing these different aspects of the workforce will help in identifying appropriate mitigation measures:

- The Contractor should prepare a detailed profile of the project work force, key work activities, schedule for carrying out such activities, different durations of contract and rotations (e.g. 4 weeks on, 4 weeks off).
- This should include a breakdown of workers who reside at home (i.e. workers from the community), workers who lodge within the local community and workers in on-site accommodation. Where possible, it should also identify workers that may be more at risk from COVID-19, those with underlying health issues or who may be otherwise at risk.

- Consideration should be given to ways in which to minimize movement in and out of site. This could include lengthening the term of existing contracts, to avoid workers returning home to affected areas, or returning to site from affected areas.
- Workers accommodated on site should be required to minimize contact with people near the site, and in certain cases be prohibited from leaving the site for the duration of their contract, so that contact with local communities is avoided.
- Consideration should be given to requiring workers lodging in the local community to move to site accommodation (subject to availability) where they would be subject to the same restrictions.
- Workers from local communities, who return home daily, weekly or monthly, will be more difficult to manage. They should be subject to health checks at entry to the site (as set out above) and at some point, circumstances may make it necessary to require them to either use accommodation on site or not to come to work.

(b) ENTRY/EXIT TO THE WORK SITE AND CHECKS ON COMMENCEMENT OF WORK

Entry/exit to the work site should be controlled and documented for both workers and other parties, including support staff and suppliers. Possible measures may include:

Establishing a system for controlling entry/exit to the site, securing the boundaries of the site, and establishing designating entry/exit points (if they do not already exist). Entry/exit to the site should be documented.

- Training security staff on the (enhanced) system that has been put in place for securing the site and controlling entry and exit, the behaviors required of them in enforcing such system and any COVID 19 specific considerations.
- Training staff who will be monitoring entry to the site, providing them with the resources they need to document entry of workers, conducting temperature checks and recording details of any worker that is denied entry.
- Confirming that workers are fit for work before they enter the site or start work. While procedures should already be in place for this, special attention should be paid to workers with underlying health issues or who may be otherwise at risk. Consideration should be given to demobilization of staff with underlying health issues.
- Checking and recording temperatures of workers and other people entering the site or requiring self-reporting prior to or on entering the site.
- Providing daily briefings to workers prior to commencing work, focusing on COVID-19 specific considerations including cough etiquette, hand hygiene and distancing measures, using demonstrations and participatory methods.
- During the daily briefings, reminding workers to self-monitor for possible symptoms (fever, cough) and to report to their supervisor or the COVID-19 focal point if they have symptoms or are feeling unwell.
- Preventing a worker from an affected area or who has been in contact with an infected person from returning to the site for 14 days or (if that is not possible) isolating such worker for 14 days.
- Preventing a sick worker from entering the site, referring them to local health facilities if necessary or requiring them to isolate at home for 14 days.

(c) GENERAL HYGIENE

Requirements on general hygiene should be communicated and monitored, to include:

- Training workers and staff on site on the signs and symptoms of COVID-19, how it is spread, how to protect themselves (including regular handwashing and social distancing) and what to do if they or other people have symptoms (for further information see WHO COVID-19 advice for the public).
- Placing posters and signs around the site, with images and text in local languages.
- Ensuring handwashing facilities supplied with soap, disposable paper towels and closed waste bins exist at key places throughout site, including at entrances/exits to work areas; where there is a toilet, canteen or food

distribution, or provision of drinking water; in worker accommodation; at waste stations; at stores; and in common spaces. Where handwashing facilities do not exist or are not adequate, arrangements should be made to set them up. Alcohol based sanitizer (if available, 60-95% alcohol) can also be used.

- Review worker accommodations, and assess them in light of the requirements set out in IFC/EBRD guidance on Workers' Accommodation: processes and standards, which provides valuable guidance as to good practice for accommodation.
- Setting aside part of worker accommodation for precautionary self-quarantine as well as more formal isolation of staff who may be infected (see paragraph (f)).

(d) CLEANING AND WASTE DISPOSAL

Conduct regular and thorough cleaning of all site facilities, including offices, accommodation, canteens, common spaces. Review cleaning protocols for key construction equipment (particularly if it is being operated by different workers). This should include:

- Providing cleaning staff with adequate cleaning equipment, materials and disinfectant.
- Review general cleaning systems, training cleaning staff on appropriate cleaning procedures and appropriate frequency in high use or high-risk areas.
- Where it is anticipated that cleaners will be required to clean areas that have been or are suspected to have been contaminated with COVID-19, providing them with appropriate PPE: gowns or aprons, gloves, eye protection (masks, goggles or face screens) and boots or closed work shoes. If appropriate PPE is not available, cleaners should be provided with best available alternatives.
- Training cleaners in proper hygiene (including handwashing) prior to, during and after conducting cleaning activities; how to safely use PPE (where required); in waste control (including for used PPE and cleaning materials).
- Any medical waste produced during the care of ill workers should be collected safely in designated containers or bags and treated and disposed of following relevant requirements (e.g., national, WHO). If open burning and incineration of medical wastes is necessary, this should be for as limited a duration as possible. Waste should be reduced and segregated, so that only the smallest amount of waste is incinerated (for further information see WHO interim guidance on water, sanitation and waste management for COVID-19).

(e) ADJUSTING WORK PRACTICES

Consider changes to work processes and timings to reduce or minimize contact between workers, recognizing that this is likely to impact the project schedule. Such measures could include:

- Decreasing the size of work teams.
- Limiting the number of workers on site at any one time.
- Changing to a 24-hour work rotation.
- Adapting or redesigning work processes for specific work activities and tasks to enable social distancing, and training workers on these processes.
- Continuing with the usual safety trainings, adding COVID-19 specific considerations. Training should include proper use of normal PPE. While as of the date of this note, general advice is that construction workers do not require COVID-19 specific PPE, this should be kept under review (for further information see WHO interim guidance on rational use of personal protective equipment (PPE) for COVID-19).
- Reviewing work methods to reduce use of construction PPE, in case supplies become scarce or the PPE is needed for medical workers or cleaners. This could include, e.g. trying to reduce the need for dust masks by checking that water sprinkling systems are in good working order and are maintained or reducing the speed limit for haul trucks.
- Arranging (where possible) for work breaks to be taken in outdoor areas within the site.

- Consider changing canteen layouts and phasing mealtimes to allow for social distancing and phasing access to and/or temporarily restricting access to leisure facilities that may exist on site, including gyms.

  At some point, it may be necessary to review the overall project schedule, to assess the extent to which it needs to be adjusted (or work stopped completely) to reflect prudent work practices, potential exposure of both workers and the community and availability of supplies, taking into account Government advice and instructions.

(f) PROJECT MEDICAL SERVICES

Consider whether existing project medical services are adequate, taking into account existing infrastructure (size of clinic/medical post, number of beds, isolation facilities), medical staff, equipment and supplies, procedures and training. Where these are not adequate, consider upgrading services where possible, including:

- Expanding medical infrastructure and preparing areas where patients can be isolated. Guidance on setting up isolation facilities is set out in WHO interim guidance on considerations for quarantine of individuals in the context of containment for COVID-19). Isolation facilities should be located away from worker accommodation and ongoing work activities. Where possible, workers should be provided with a single well-ventilated room (open windows and door). Where this is not possible, isolation facilities should allow at least 1 meter between workers in the same room, separating workers with curtains, if possible. Sick workers should limit their movements, avoiding common areas and facilities and not be allowed visitors until they have been clear of symptoms for 14 days. If they need to use common areas and facilities (e.g. kitchens or canteens), they should only do so when unaffected workers are not present and the area/facilities should be cleaned prior to and after such use.
- Training medical staff, which should include current WHO advice on COVID-19 and recommendations on the specifics of COVID-19. Where COVID-19 infection is suspected, medical providers on site should follow WHO interim guidance on infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected.
- Training medical staff in testing, if testing is available.
- Assessing the current stock of equipment, supplies and medicines on site, and obtaining additional stock, where required and possible. This could include medical PPE, such as gowns, aprons, medical masks, gloves, and eye protection. Refer to WHO guidance as to what is advised (for further information see WHO interim guidance on rational use of personal protective equipment (PPE) for COVID-19).
- If PPE items are unavailable due to world-wide shortages, medical staff on the project should agree on alternatives and try to procure them. Alternatives that may commonly be found on constructions sites include dust masks, construction gloves and eye goggles. While these items are not recommended, they should be used as a last resort if no medical PPE is available.
- Ventilators will not normally be available on work sites, and in any event, intubation should only be conducted by experienced medical staff. If a worker is extremely ill and unable to breathe properly on his or her own, they should be referred immediately to the local hospital (see (g) below).
- Review existing methods for dealing with medical waste, including systems for storage and disposal (for further information see WHO interim guidance on water, sanitation and waste management for COVID-19, and WHO guidance on safe management of wastes from health-care activities).

(g) LOCAL MEDICAL AND OTHER SERVICES

Given the limited scope of project medical services, the project may need to refer sick workers to local medical services. Preparation for this includes:

- Obtaining information as to the resources and capacity of local medical services (e.g. number of beds, availability of trained staff and essential supplies).

- Conducting preliminary discussions with specific medical facilities, to agree what should be done in the event of ill workers needing to be referred.
- Considering ways in which the project may be able to support local medical services in preparing for members of the community becoming ill, recognizing that the elderly or those with pre-existing medical conditions require additional support to access appropriate treatment if they become ill.
- Clarifying the way in which an ill worker will be transported to the medical facility, and checking availability of such transportation.
- Establishing an agreed protocol for communications with local emergency/medical services.
- Agreeing with the local medical services/specific medical facilities the scope of services to be provided, the procedure for in-take of patients and (where relevant) any costs or payments that may be involved.
- A procedure should also be prepared so that project management knows what to do in the unfortunate event that a worker ill with COVID-19 dies. While normal project procedures will continue to apply, COVID-19 may raise other issues because of the infectious nature of the disease. The project should liaise with the relevant local authorities to coordinate what should be done, including any reporting or other requirements under national law.

(h) INSTANCES OR SPREAD OF THE VIRUS

WHO provides detailed advice on what should be done to treat a person who becomes sick or displays symptoms that could be associated with the COVID-19 virus (for further information see WHO interim guidance on infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected). The project should set out risk-based procedures to be followed, with differentiated approaches based on case severity (mild, moderate, severe, critical) and risk factors (such as age, hypertension, diabetes) (for further information see WHO interim guidance on operational considerations for case management of COVID-19 in health facility and community). These may include the following:

- If a worker has symptoms of COVID-19 (e.g. fever, dry cough, fatigue) the worker should be removed immediately from work activities and isolated on site.
- If testing is available on site, the worker should be tested on site. If a test is not available at site, the worker should be transported to the local health facilities to be tested (if testing is available).
- If the test is positive for COVID-19 or no testing is available, the worker should continue to be isolated. This will either be at the work site or at home. If at home, the worker should be transported to their home in transportation provided by the project.
- Extensive cleaning procedures with high-alcohol content disinfectant should be undertaken in the area where the worker was present, prior to any further work being undertaken in that area. Tools used by the worker should be cleaned using disinfectant and PPE disposed of.
- Co-workers (i.e. workers with whom the sick worker was in close contact) should be required to stop work, and be required to quarantine themselves for 14 days, even if they have no symptoms.

  Family and other close contacts of the worker should be required to quarantine themselves for 14 days, even if they have no symptoms.

- If a case of COVID-19 is confirmed in a worker on the site, visitors should be restricted from entering the site and worker groups should be isolated from each other as much as possible.
- If workers live at home and has a family member who has a confirmed or suspected case of COVID19, the worker should quarantine themselves and not be allowed on the project site for 14 days, even if they have no symptoms.
- Workers should continue to be paid throughout periods of illness, isolation or quarantine, or if they are required to stop work, in accordance with national law.

- Medical care (whether on site or in a local hospital or clinic) required by a worker should be paid for by the employer.

(i) CONTINUITY OF SUPPLIES AND PROJECT ACTIVITIES

Where COVID-19 occurs, either in the project site or the community, access to the project site may be restricted, and movement of supplies may be affected.

- Identify back-up individuals, in case key people within the project management team (PMU, Supervising Engineer, Contractor, sub-contractors) become ill, and communicate who these are so that people are aware of the arrangements that have been put in place.
- Document procedures, so that people know what they are, and are not reliant on one person's knowledge.
- Understand the supply chain for necessary supplies of energy, water, food, medical supplies and cleaning equipment, consider how it could be impacted, and what alternatives are available. Early pro-active review of international, regional and national supply chains, especially for those supplies that are critical for the project, is important (e.g. fuel, food, medical, cleaning and other essential supplies). Planning for a 1-2 month interruption of critical goods may be appropriate for projects in more remote areas.
- Place orders for/procure critical supplies. If not available, consider alternatives (where feasible).
- Consider existing security arrangements, and whether these will be adequate in the event of interruption to normal project operations.
- Consider at what point it may become necessary for the project to significantly reduce activities or to stop work completely, and what should be done to prepare for this, and to re-start work when it becomes possible or feasible.

(j) TRAINING AND COMMUNICATION WITH WORKERS

Workers need to be provided with regular opportunities to understand their situation, and how they can best protect themselves, their families and the community. They should be made aware of the procedures that have been put in place by the project, and their own responsibilities in implementing them.

- It is important to be aware that in communities close to the site and amongst workers without access to project management, social media is likely to be a major source of information. This raises the importance of regular information and engagement with workers (e.g. through training, town halls, toolboxes) that emphasizes what management is doing to deal with the risks of COVID-19. Allaying fear is an important aspect of work force peace of mind and business continuity. Workers should be given an opportunity to ask questions, express their concerns, and make suggestions.
- Training of workers should be conducted regularly, as discussed in the sections above, providing workers with a clear understanding of how they are expected to behave and carry out their work duties.
- Training should address issues of discrimination or prejudice if a worker becomes ill and provide an understanding of the trajectory of the virus, where workers return to work.
- Training should cover all issues that would normally be required on the work site, including use of safety procedures, use of construction PPE, occupational health and safety issues, and code of conduct, taking into account that work practices may have been adjusted.
- Communications should be clear, based on fact and designed to be easily understood by workers, for example by displaying posters on handwashing and social distancing, and what to do if a worker displays symptoms.

(k) COMMUNICATION AND CONTACT WITH THE COMMUNITY

Relations with the community should be carefully managed, with a focus on measures that are being implemented to safeguard both workers and the community. The community may be concerned about the presence of non-local workers, or the risks posed to the community by local workers presence on the project site. The project should set out risk-based procedures to be followed , which may reflect WHO guidance (for further information see WHO Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response). The following good practice should be considered:

- Communications should be clear, regular, based on fact and designed to be easily understood by community members.
- Communications should utilize available means. In most cases, face-to-face meetings with the community or community representatives will not be possible. Other forms of communication should be used; posters, pamphlets, radio, text message, electronic meetings. The means used should take into account the ability of different members of the community to access them, to make sure that communication reaches these groups.
- The community should be made aware of procedures put in place at site to address issues related to COVID-19. This should include all measures being implemented to limit or prohibit contact between workers and the community. These need to be communicated clearly, as some measures will have financial implications for the community (e.g. if workers are paying for lodging or using local facilities). The community should be made aware of the procedure for entry/exit to the site, the training being given to workers and the procedure that will be followed by the project if a worker becomes sick.
- If project representatives, contractors or workers are interacting with the community, they should practice social distancing and follow other COVID-19 guidance issued by relevant authorities, both national and international (e.g. WHO).

6. EMERGENCY POWERS AND LEGISLATION

Many Borrowers are enacting emergency legislation. The scope of such legislation, and the way it interacts with other legal requirements, will vary from country to country. Such legislation can cover a range of issues, for example:

- Declaring a public health emergency
  Authorizing the use of police or military in certain activities (e.g. enforcing curfews or restrictions on movement)
- Ordering certain categories of employees to work longer hours, not to take holiday or not to leave their job (e.g. health workers)
- Ordering non-essential workers to stay at home, for reduced pay or compulsory holiday

Except in exceptional circumstances (after referral to the World Bank's Operations Environmental and Social Review Committee (OESRC)), projects will need to follow emergency legislation to the extent that these are mandatory or advisable. It is important that the Borrower understands how mandatory requirements of the legislation will impact the project. Teams should require Borrowers (and in turn, Borrowers should request Contractors) to consider how the emergency legislation will impact the obligations of the Borrower set out in the legal agreement and the obligations set out in the construction contracts. Where the legislation requires a material departure from existing contractual obligations, this should be documented, setting out the relevant provisions.

Resource List: COVID-19 Guidance

Given the COVID-19 situation is rapidly evolving, a version of this resource list will be regularly updated and made available on the World Bank COVID-19 operations intranet page (http://covidoperations/).

WHO Guidance

Advice for the public

- WHO advice for the public, including on social distancing, respiratory hygiene, self-quarantine, and seeking medical advice, can be consulted on this WHO website: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public

Technical guidance

- Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected, issued on March 19, 2020
- Recommendations to Member States to Improve Hygiene Practices, issued on April 1, 2020
- Severe Acute Respiratory Infections Treatment Center, issued on March 28, 2020
- Infection prevention and control at health care facilities (with a focus on settings with limited resources), issued in 2018
- Laboratory biosafety guidance related to coronavirus disease 2019 (COVID-19), issued on March 18, 2020
- Laboratory Biosafety Manual, 3rd edition, issued in 2014
- Laboratory testing for COVID-19, including specimen collection and shipment, issued on March 19, 2020
- Prioritized Laboratory Testing Strategy According to 4Cs Transmission Scenarios, issued on March 21, 2020
- Infection Prevention and Control for the safe management of a dead body in the context of COVID-19, issued on March 24, 2020
- Key considerations for repatriation and quarantine of travelers in relation to the outbreak COVID-19, issued on February 11, 2020
- Preparedness, prevention and control of COVID-19 for refugees and migrants in non-camp settings, issued on April 17, 2020
- Coronavirus disease (COVID-19) outbreak: rights, roles and responsibilities of health workers, including key considerations for occupational safety and health, issued on March 18, 2020
- Oxygen sources and distribution for COVID-19 treatment centers, issued on April 4, 2020
- Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response, issued on March 16, 2020
- Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19), issued on March 19, 2020
- Operational considerations for case management of COVID-19 in health facility and community, issued on March 19, 2020
- Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19), issued on February 27, 2020
- Getting your workplace ready for COVID-19, issued on March 19, 2020
- Water, sanitation, hygiene and waste management for COVID-19, issued on March 19, 2020
- Safe management of wastes from health-care activities, issued in 2014
- Advice on the use of masks in the community, during home care and in healthcare settings in the context of the novel coronavirus (COVID-19) outbreak, issued on March 19, 2020
- Disability Considerations during the COVID-19 outbreak, issued on March 26, 2020

WORLD BANK GROUP GUIDANCE

- Technical Note: Public Consultations and Stakeholder Engagement in WB-supported operations when there are constraints on conducting public meetings, issued on March 20, 2020
- Technical Note: Use of Military Forces to Assist in COVID-19 Operations, issued on March 25, 2020
- ESF/Safeguards Interim Note: COVID-19 Considerations in Construction/Civil Works Projects, issued on April 7, 2020
- Technical Note on SEA/H for HNP COVID Response Operations, issued in March 2020
- Interim Advice for IFC Clients on Preventing and Managing Health Risks of COVID-19 in the Workplace, issued on April 6, 2020
- Interim Advice for IFC Clients on Supporting Workers in the Context of COVID-19, issued on April 6, 2020
- IFC Tip Sheet for Company Leadership on Crisis Response: Facing the COVID-19 Pandemic, issued on April 6, 2020

- WBG EHS Guidelines for Healthcare Facilities, issued on April 30, 2007

ILO GUIDANCE

- ILO Standards and COVID-19 FAQ, issued on March 23, 2020 (provides a compilation of answers to most frequently asked questions related to international labor standards and COVID-19)

MFI GUIDANCE

- ADB Managing Infectious Medical Waste during the COVID-19 Pandemic
- IDB Invest Guidance for Infrastructure Projects on COVID-19: A Rapid Risk Profile and Decision Framework
- KfW DEG COVID-19 Guidance for employers, issued on March 31, 2020
- CDC Group COVID-19 Guidance for Employers, issued on March 23, 2020