

PROPOSED ADDITIONAL GRANT
IN THE AMOUNT OF US\$10 MILLION EQUIVALENT
TO
TAJIKISTAN
FOR A
LAND REGISTRATION & CADASTRE SYSTEM
FOR SUSTAINABLE AGRICULTURE PROJECT

Environmental Assessment

December 2011

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I. BACKGROUND & PROJECT DESCRIPTION

Project Objectives

With the Additional Financing, the revised Project Development Objective develops the original PDO of the LRCSP and is to expand farmland restructuring to enable more rural people to become independent farmers and take management decisions in response to market forces and to initiate the strengthening of tenure rights and services for other land users. This rewording reflects the new pilot activities to build capacity for registration of additional types of land and real estate (e.g., household plots, buildings), and also simplifies the wording by deleting reference to the Farm Privatization Support Project, which preceded the original project.

Project Description

In Tajikistan, farmland restructuring, together with complementary support activities, forms an essential element in the incentive framework for agricultural growth. Tajikistan also needs to increase collaboration of experienced independent agencies and to build the understanding of and experience for improvements in immovable property registration. The proposed financing would continue the activities of the original project and also include new small scale activities for other types of property (household plots, buildings) in both rural and urban areas. The activities would include the following (with italics used to note the new types of activities).

Part A: Farmland Restructuring and Registration of Land Use Rights

- (i) to enhance and expand farmland restructuring activities and regularize land use rights certificates in a systematic, fair, and transparent way;
- (ii) to build capacity for farmland restructuring and the registration of land use *and real estate rights* by establishing and supporting seven RLCCs *and one Municipal Cadastre Center*; and
- (iii) to develop the national cadastre and support issuance and registration of land use certificates by establishing survey and mapping capacity and spatial databases, and
- (iv) to undertake policy analysis supporting farmland restructuring *and immovable property registration*.

Part B: Information for Land Users and Irrigation Support, comprising

- (i) information for farmers *and other users of immovable property* to educate the population of participating regions on the farmland restructuring process, independent farm management practices, *and immovable property use rights and registration*;
- (ii) on-farm Irrigation and Water Management Grants to Water User Associations for on-farm irrigation and water management systems rehabilitation; and
- (iii) environmental land management to support (a) the improvement of cotton seed demonstrations and the associated dissemination of associated information, and (b) capacity-building among local agricultural and environmental specialists to advise and train farmers in assessment and monitoring of environmental conditions and in implementation of improved agro-ecological practices, including integrated pest management, for the enhancement of sustainable productivity.

Part C: Project Management and Coordination Support

- (i) to strengthen the Recipient's capacity for Project management, monitoring and evaluation, including audit, procurement and financial management activities.

The above activities would involve provision of consultants' services, services (other than consultants' services), training, goods, works, operating costs, and in the case of the irrigation support, grants.

The bulk of the Additional Financing would continue to focus on farmland restructuring and support an expansion of the same types of activities that have been undertaken under the original Project. It would also support small scale activities to provide additional types of immovable property records (e.g., household plots, buildings) for the registry database and thereby build understanding and provide experience for registration system improvements over the longer term. The new activities comprise: (a) the issuance of certificates for household plots that do not yet have certificates on a demand-driven basis, with the Regional Land Cadastral Centers (RLCCs) support, and (b) pilots to provide relevant experience for a future improved registration system, primarily by upgrading the quality of additional types of immovable property records (e.g., household plots, buildings) in the existing registry databases. In the pilots, the RLCCs and a new Municipal Cadastral Center (MCC), in cooperation with the raion land offices, would systematically verify, digitize, and complete the issuance of use rights for all household plots in pilot areas of at least three raions and one municipality. In those same areas they would also improve, verify and digitize records for buildings and improve the conditions and quality of customer service. It would include training of Project staff, SCLG staff, BTI staff and notaries as well as provision of technical assistance, computers and other technology, support for conversion of hard copy archival and other real estate data to digital format, associated facility upgrading and incremental operating costs. In combination, these Additional Financing activities would help build the basis for incorporating the new and upgraded property records into an improved registry system. .

Project Location and Basic Physical Characteristics Relevant to the Additional Financing.

Tajikistan is a mountainous, landlocked country of 143,000 square Kilometers and a population of more than 7 million. It is one of the poorest areas in Central Asia. Farmland restructuring is a central issue in the development Tajikistan's agriculture. Some two thirds of the population is directly dependent for their living on Tajikistan's 4.6 million ha of agricultural land, of which the greater part is 3.6 million ha rain-fed pasture land. Only about 850,000 ha are arable and irrigated, some 800,000 ha of which in lowlands are under rotation between cotton and cereal crops, with about 320,000 ha under cotton at any one time. Rocks and debris occupy 17.5% of the total area, glaciers and watercourses - 9%, forested areas - 3%, urbanized areas (settlements, transport, industrial lands) - about 2%. Forests and pasturelands are state property.

Land degradation in these areas contributes to further impoverishment by causing mudslides (ruining villages, roads and farmland, and irrigation and water systems), soil erosion (undermining agricultural productivity) and silting of waterways used for irrigation. The mountain areas of Tajikistan are globally important ecosystems with diverse flora and fauna (including many of economic importance). They are sensitive to climate change and face persistent threats from unsustainable land use and natural resource management. However, these areas have good productive potential that is currently underutilized. Exploiting this potential in

an environmentally sustainable manner could not only improve life for people in the highlands, but also relieve pressure on the lowlands, while at the same time providing opportunities for protecting global biodiversity.

Tajikistan is rich in *water resources*. The mountains of Central Asia, which occupy 20% of the total area of the Aral Sea basin (350 thousand sq. km), provide 90% of surface runoff. Tajikistan's water resources mainly come from glacier melt and precipitation and provide a major source of water in the Aral Sea basin. Almost all annual flow goes to the Amu Darya, which flows from Tajikistan vary from 90 BCM in moist years to 39 BCM in dry years. Total annual use is about 11 BCM, of which about 4% for domestic and drinking purposes, about 6% for production, 84% for irrigation, and about 5% for agriculture. The maximum water discharge is observed in June-August when snow and glacier melting is most intensive.

Agricultural production in Tajikistan is largely based on *irrigated farming*—about 90% of all agriculture is produced on irrigated land. However, most of the principal irrigation and drainage infrastructure, now 30 years old, is at risk, and ad hoc practices including temporary repairs exacerbate the situation. The system now manifests rapid deterioration in the efficiency of pumping stations, increased losses in the main canals, and low water use efficiency at the field level. Fertile agricultural lands are being abandoned at an alarming rate.

Despite an abundance of water resources and the presence of humid regions, *deserts* occupy part of Tajikistan's territory. They comprise 40% of the Eastern Pamirs, small areas in southern and northern Tajikistan, and the Syr Darya rivers. Natural desertification and land degradation, largely caused by climate change, deforestation, improper irrigation, soil depletion, overuse of chemicals, and other harmful farming practices can be seen in many zones of Tajikistan. .

The LRCSP has expanded farmland restructuring and improved access to agricultural land by the rural poor in most raions. As of September 2011, the original project covered about 10% of the arable and perennial land eligible for farmland restructuring in the 40 raions (of the country's 58 raions) where it operates. (The earlier Farm Privatization and Support Project worked in only 6 raions). About half of the LRCSP raions are in cotton-growing areas. Many of the farms subject to restructuring under LRCSP have already been partially restructured, although most are not yet divided into family parcels and do not yet support a market-oriented incentive framework. The LRCSP activities also include regularizing farms (mostly in rainfed uplands) that are already operating at the field level but that do not yet have documents.

The focus of the restructuring is on arable rather than pasture land. However, the Project has included some uplands that have been legally classified in the past as pasture land and that have undergone small community-based land resource management investments (e.g., orchards, improved pasture) under the World Bank-financed Community Agriculture and Watershed Management Project, which utilized a well-defined participatory process that addresses the interests of vulnerable people. In the future, the LRCSP may also involve further consideration of issues involving land use rights on high pastures. If such policy analysis and dialogue takes place, consistent with the Bank's policies, any resulting reforms would include development of a community decision making process and identification of appropriate measures to mitigate adverse impacts, if any, on the vulnerable members of the community.

The new project activities will build capacity for registration of additional types of land and real estate (e.g., household plots, buildings) in at least three raions and one municipality. These pilot

areas, selected to maximize prospects for learning and inter-agency collaboration, were agreed upon by the Government and the Bank. The Additional Financing will also support sporadic work on household plot records in other areas in accordance with institutional capacity and the demands of local residents.

Scope of the Additional Financing

The Additional Financing of US\$10.02 million for the period April 2012-March 2015 will be provided through a US\$10 million IDA Grant, and a beneficiary contribution of US\$0.02 million.

Project activities comprise the following activities.

- **Component A:** Farmland Restructuring and Registration of Immovable Property Rights to (i) enhance and expand farmland restructuring activities and regularize land use rights certificates in a systematic, fair and transparent way; (ii) build capacity for farmland restructuring and registration of land use and real estate rights; (iii) develop the national cadastre and establish survey and mapping capacity and spatial databases; and (iv) provide policy analysis to support farmland restructuring and immovable property registration.
- **Component B:** Information for Land Users and Irrigation Support to (i) provide information for farmer and other holders of land and real estate use rights; (ii) provide grants to water user associations for on-farm irrigation rehabilitation and water management; and (iii) enhance capacity-building in environmental land management and
- **Component C:** Project Management.

II. ENVIRONMENTAL ASSESSMENT, MONITORING AND MANAGEMENT

Potential Environmental Impacts

World Bank Environmental Safeguard Policies applicable to the LRCSP are Operational Policy OP 4.01 on **Environmental Assessment**, and Operational Policy OP 4.09 on **Pest Management**. The LRCSP has been assigned an overall category of B, since the project involves potential adverse environmental impacts on human populations or environmentally important areas (including wetlands, forests, grasslands, and other natural habitats) that are less adverse than those of Category A projects. The farmland restructuring and other activities that will take place under the framework of the LRCSP concern agriculture, domicile, and other privately held lands only. Under the project, there will be no privatization of national park areas natural/official forested areas, or areas classified as vulnerable habitat zones. The same is true for the proposed AF.

Findings from the earlier Farm Privatization Support Project, the past implementation of the original Land Registration and Cadastral System Project, and land registration projects in other countries indicate that improving farmers' tenure security and ability to make farm management decisions has a positive impact on land and soil management and therefore on the environment in general.

The Project does not directly support purchase or use of pesticides or other pest management activities, except for very small pesticide applications associated with the improved cotton seed demonstrations (which showed, *inter alia*, a way to decrease the use of pesticides) that were implemented prior to the 2009 Project Restructuring. OP 4.09 is triggered by the Project only because of the farmland restructuring, registration and irrigation rehabilitation that could potentially lead to increased pest problems and an increase in pesticide use among beneficiaries. Therefore, in the Project as restructured in 2009, the PMP focuses specifically on awareness raising and capacity building on IPM and pesticide safety for participating farmers, farmers' associations, and line representatives of the relevant ministries.

The Project will not involve resettlement. Land use certificates will be issued only for arable lands; however, there is a remote possibility that in some locations, project activities may involve other agricultural lands such as pasture where natural resource management approaches may involve some restrictions on access. To the extent that such activities occur, the Project would use, or if necessary develop, a community decision making process and appropriate measures to mitigate adverse impacts, if any, on the vulnerable members of the community, including groups involved in transhumance movement of livestock.

The environmental effects of the project, if any, will be minor or indirect. The civil works would be limited to office building rehabilitation and rehabilitation of on-farm irrigation systems. The project will not involve any major construction requiring resettlement or land acquisition. Temporary minor impacts (dust, minor soil loss) can be expected from planting activities, and building and irrigation rehabilitation. The project will not convert or degrade critical natural habitats. The LRCSP does not involve issuance of land use rights in protected or forested areas. It will not involve international waterways or disputed areas.

On the other hand, based on experience to date, new farmers and land users are generally not aware of sustainable agricultural approaches and methodologies or environmental safety. Therefore farmers might not anticipate the possible negative effects (e.g., on soils) associated with their agricultural practices (e.g., overexploitation of soils without crop rotation, weak usage of organic fertilizers, salination of irrigated lands in flat areas, soil compaction and loss of soil structure, etc.). This poses some environmental risk and could cause unfavorable changes in land quality, including soil erosion, reduction of organic matter in soil, and land degradation. However, the project will address natural habitat, sustainable land management, and other environmental considerations so farmland restructuring is associated with development of more environmentally acceptable pest management strategies and skills. The project's Mid-Term Review in 2008 stressed that the EMF should include steps to discourage agro technologies with possible negative impacts and should promote environmentally effective ones with clear and simple indicators that farmers can monitor for possible changes (e.g., changes in soil structure, soil organic content and others) in restored and rehabilitated lands. The project design has therefore been revised to include cost-effective support for building the capacity of farmers to assess and monitor environmental conditions and implement improved agro-ecological practices.

Tajik national environmental policy is aligned with the Bank's Environmental Assessment Requirements in the context of the AF. It is based on the Constitution of Tajikistan which guarantees "favourable ecological conditions" to every citizen, on the Law on Nature Protection, other related laws (listed earlier in the original EA LRCSP), and on the current regulations produced by the State Committee for Environmental Protection (SCEP). According to the Tajikistan Law on Ecological Expertise, all civil works, including rehabilitation works, should be

assessed for their environmental impacts and proposed mitigation measures and be reviewed and monitored by the SCEP. SCEP and its regional officers is also responsible for environmental impact assessment ("*Otsenka Vozhdeistviya na Okrujajushuiu Sredu*" (OVOS)) and state ecological expertise ("*Gosudarstvennaya Ecologicheskaya Ekspertiza*") for all investment projects.

Major categories of potential environmental impacts and related mitigation measures were described in detail in the EA for the LRCSP and in the environmental management provisions of the Level One restructuring that took place in July 2009. These categories concern: *direct impacts* from civil works such as on-farm irrigation and rehabilitation works, and limited infrastructure and office building rehabilitation; and *indirect impacts* resulting from tenure reform and changes in land use as well as agricultural intensification, and reform in water management.

Monitoring, Management and Supervision

As part of the 2009 restructuring, the Environmental Management Framework and Pest Management Plan were revised to integrate the Pest Management Plan into the Environmental Management Framework. As revised during the 2009 restructuring, the environmental management framework and practices were satisfactory and will continued to be used for the Additional Financing.

The current EMF proposes several levels of monitoring, management and supervision:

- (a) ***Contract and Grant Agreement Clauses.*** For small civil works related to office rehabilitation and for on-farm irrigation rehabilitation grants the standard environmental guidelines and clauses (and additional if needed) on the contractors' and grant recipient water user associations' responsibilities and activities¹ will be inserted within each contract and grant agreement within the context of the LRCSP project and during the design of works. Standard contract bidding documents and irrigation rehabilitation grant proposals also would have environmental precautionary clauses.²
- (b) ***Existing Officials in the Government's Environment Agency.*** Raion/district environmental inspectors will monitor possible environmental risks caused by small civil works.
- (c) ***PMU environmental specialist and International environmental advisor/consultant.*** In addition to the existing officials in the government's environmental agency, a full-time environmental specialist will be recruited into the PMU to oversee the environmental aspects of project development and implementation, review the environmental status of the project area, assist with the establishment of a baseline for the major environmental parameters, and set up a monitoring program for periodic review of the project's impact on the environment. He/she will also provide overall supervision and review bidding documents for inclusion of necessary environmental clauses. The basic duties of the environmental specialist are listed in Annex 3. And international environmental consultant (see Annex 4) will be hired to provide periodic support to the PMU and contractors (until the end of 2014) for implementation of Component B3: "Capacity-building in environmental land management."

¹ See Annex 1

² See Annex 2

(d) ***Subject Specific Measures***

- *Small on-farm irrigation investments.* (i) Water user associations or other farmer organizations would implement the on-farm irrigation and water management rehabilitation investments in collaboration with the raion level staff of the Ministry of Irrigation and Water Resources (MIWR) and PMU specialists, after receiving support in their establishment and capacity development from local consultants. (ii) Modest water usage fees acceptable to farmers will help to promote greater accountability, less water wastage, and better overall water management and distribution in a country where wasteful water practices have been used for the past 80 years.
- *Minor office reconstructions.* All civil works will be designed and implemented in accordance with environmentally sound engineering practices, and governed by existing environmental screening procedures and contractual standards. The environmental monitoring of the construction sites, including regular sampling of soil and water within and around the construction sites and involvement of the State Committee for Environmental Protection in monitoring and evaluation, will help to develop systematic environmental monitoring on rehabilitated sites. The environmental guidelines for contractors have led to reduced damage to landscapes undergoing civil works.

A streamlined approach to preparing environmental management plans (EMPs) for small on-farm irrigation investments, minor rehabilitation or small-scale building construction is based on a similar approach used by the Second Land and Real Estate Registration Project (Kyrgyz Republic), which was designed to be user friendly and compatible with safeguard requirements. A detailed description is attached in Annex 5. It is anticipated that this approach will provide the key elements of an EMP to meet World Bank Environmental Assessment requirements under OP 4.01.

- *Changes in land use and agricultural intensification.* The restructured project design also includes a program for training trainers in environmental land management (including integrated pest management (IPM)) to improve the quality of advice to newly independent family farmers. The LRCSP AF will build IPM capacity and carry out its Pest Management Plan as an integral part of sub-Component B3: “Capacity-building in environmental land management,” which will be implemented in collaboration with raion-level agricultural and environmental officials.

(e) ***Trainings.*** The training programs will be organized under the project in two ways.

- *To develop and expand professional skills and capacity in environmental management issues for staff involved in project implementation,* including PMU specialists, representatives of line ministries involved, raion and oblast officials, and WUAs. The program for training will be developed by the PMU environmental specialist under supervision of the international environmental advisor/consultant.
- *To build capacity in environmental land management.* A special sub-Component B3 was developed as an addendum to the EMF as part of the 2009 project restructuring to increase attention to environmental risks that may arise for newly independent farmers. Under the restructured design, this subcomponent has been using interactive training methods to build knowledge in agro-ecological management, enabling newly independent farmers to enhance

sustainable productivity. These farmers are now better able to accurately identify possible land degradation problems and risks, understand ecosystem interactions, adopt environmentally sound crop management practices, promote integrated pest management, and increase their use of organic inputs. These activities will continue under the AF in raions that were not covered previously. Under the Additional Financing, the subcomponent will include four basic stages: (i) identification and assessment of the best practice farm sites to determine the best (least hazardous) soil improvement and pest management techniques under different agro-climatic conditions, (ii) mobilization of farmers through awards for best practices (iii) training of trainers program (and use of best practice sites as training plots)³ for local environmental, agricultural and land officers, NGO technical specialists, water user associations, and others, and (iv) preparation and publication of an illustrated album on dehkan farms environmental land management methods for further dissemination and trainings .

Trainings will focus on learning through agro-ecosystem analysis and discussions, field visits to existing examples of good and bad practices, and mass media campaigns. The aim of training is to strengthen the ability of local agricultural, environmental, land and water officers and specialists to identify environmental risks and determine the sustainability of farmland under different agro-climatic and soil conditions and under different methods of land use and crops. The training will enable officials to identify pests, determine damage thresholds, make prudent control decisions, and safely and cost-effectively control land degradation and pests.

Through this subcomponent, the AF will improve institutional and human capacity, promote sustainable agricultural technology transfer and adoption, enable the integration of scientific and traditional knowledge, and promote informed decision-making to solve local problems. Based on best practice, the subcomponent will improve communication between research institutions, farmers, and extension agents and promote the adoption of promising methods generated by farmers with scientific support.

³ To further advise and train farmers in assessing and monitoring environmental conditions and in implementing improved agro-ecological practices, including IPM.

Annex 1. Standard Environmental Clauses for Works Contracts and Grants

The contractor, or in the case of the irrigation grants, the recipient water user association, is responsible for the following measures for Protection of the Environment.

The natural landscape should be preserved to the extent possible by conducting operations in a manner that will prevent unnecessary destruction or the scarring of natural surroundings. Except when required for permanent works, quarries, burrow pits, staging and processing areas, dumps, and camps, all trees, saplings, and shrubbery should be protected from unnecessary damage by project-related activities. After unavoidable damage has occurred, the Contractor/Grant Recipient is required to restore sites to quasi-original conditions where appropriate.

The Contractor's/Grant Recipient's operation should be performed so as to prevent accidental spillage of contaminants, debris, or other pollutants, especially into streams or underground water resources. Such pollutants include untreated sewage and sanitary waste, tailings, petroleum products, chemical, biocides, mineral salts, and thermal pollution. Wastewater, including those from aggregate processing and concrete batching, must not enter streams without settling ponds, grave 1 filters, or other processes, so as to not impair water quality or harm aquatic life.

The Contractor/Grant Recipient should ensure proper disposal of waste material and rubbish. If disposal is performed by burial or fire, it should not cause negative impact to either the air, soil or ground water supplies.

The Contractor/Grant Recipient should minimize air and water pollution emissions. Dust from the handling or transporting of aggregates, cement, etc., should be minimized by sprinkling or other methods. Materials, brush or trees should only be burned when the owners permits, under favorable weather conditions;

The Contractor's/Grant Recipient's facilities such as warehouses, labor camps and storage areas should be planned in advance to decide what the area will look like upon completion of construction. These facilities should be located so as to preserve the natural environment (such as trees and other vegetation) to the maximum extent possible. After project construction, camps and buildings should either serve as permanent residences and form future communities, if such use can be foreseen and approved, or be torn down and the area restore to its quasi-original condition in order to avoid deterioration into shanty towns.

Burrow pits should be landscaped and planted according to an ecological design to provide some substitute area for lost natural landscapes and habitats.

Annex 2. Standard Environmental Precautionary Clauses for Bidding and Grant Proposal Documents

(a) Preservation of natural landscape, to the extent possible, by conducting operations in a manner that will prevent unnecessary destruction or scarring of natural surroundings. Except where required for permanent works, quarries, burrow pits, staging and processing areas, dumps, and camps, all trees, saplings, and shrubbery should be protected from unnecessary damage by project-related activities.

(b) Prevention of accidental spillage of contaminants, debris, or other pollutants, especially into streams or underground water resources. Such pollutants include untreated sewage and sanitary waste, tailings, petroleum products, chemical, biocides, mineral salts, and thermal pollution.

(c) Proper disposal of waste materials and rubbish. If disposal by burial or fire, it should not negatively affect air, soil or ground water supplies.

(d) Minimal air and water pollution emissions. Dust from the handling or transporting of aggregates, cement, etc., should be minimized by sprinkling or other methods.

(e) Contractor/Grant Recipient facilities, such as warehouses, labor camps, and storage areas, should be located so as to preserve the natural environment (such as trees and other vegetation) to the maximum extent possible. After project construction, camps and buildings should either serve as permanent residences and form future communities, if such use can be foreseen and approved, or be torn down and the area restored to its quasi-original condition in order to avoid deterioration into shanty towns.

(f) Landscaping of burrow pits according to the ecological design to provide some substitute area for lost natural landscapes and habitats.

Annex 3. Basic Terms of Reference for the PMU Chief Environmental Specialist

- Assist with reviewing the environmental status of the project area and with setting up a long-term monitoring program and baseline for the major environmental parameters as part of overall project monitoring and evaluation.
- Oversee implementation of the environmental assessment framework for the projects.
- Monitor and assist government officials if government's ecological expertise or environmental impact assessment are necessary for the projects.
- Control EMF implementation.
- Be charged with and control current implementation, and analyze results and outcomes of the previous stages of sub-Component B3, in particular, practical application of knowledge obtained by local specialists for trainings to local farmers with land use rights certificates obtained under the project.
- Provide an opportunity for comprehensive study of environmental issues under the training program for water users associations (WUAs), which will be implemented with support from the on-farm irrigation subcomponent.
- Guide project/agency staff on project requirements and provide them with the necessary information (i.e., local, national, or international environmental standards and requirements for a obtaining permit/license, contracts, LOIs, etc.); organize environmental training programs for PMU staff; inform PMU about new findings and approaches in environmental land management from projects in other countries or financed by international organizations.
- Submit monthly progress reports to the PMU on the status and adequacy of action taken to meet environmental parameters identified for each of the project elements, noting weaknesses and suggesting measures for improvement.
- Provide guidance for project staff and assist with reviewing the procurement bidding documents for inclusion in relevant environmental mitigation measures, identifying weaknesses in design and specifications for resolving environmental problems.
- Monitor on a selective basis the environmental dynamics of land use by farmers with newly obtained land use certificates, particularly, for water users associations (WUAs), learn the lessons, and develop recommendations for other farmers.
- Serve as a liaison between the environmental staff in line ministries and the PMU.
- Assure that all relevant documentation and reports related to the environmental aspects of projects are properly maintained by the PMU.

- Liaise with Farm Advisory Service and Farmer Training Center to ensure that environmental considerations are included in their technical disseminations.
- Liaise with Irrigation Division of MoA to ensure that environmental concerns are incorporated in capacity building activities for irrigation/water user groups.

Annex 4. Basic Terms of Reference for International Environmental Advisor/Consultant

Taking into consideration advanced international practices, the Consultant will be responsible for providing periodic support to the PMU and contractors/grant recipients for implementation of sub-Component B3: “Capacity-building in environmental land management.” In particular, the Consultant will:

- Improve a set of environmental indicators as part of the overall project monitoring. Train PMU staff on environmental assessment and monitoring of the project sites.
- Improve the methodology for identifying and studying examples of both proper and improper land management techniques, on-farm irrigation practices, and pest management on existing farms. Define major risks to successful implementation of the subcomponent and mitigation measures.
- Improve indices and indicators for different types of land degradation for farmers’ use in monitoring.
- Improve evaluation criteria for assessment of farmers’ best practices in integrated environmental land management and on-farm irrigation.
- Develop recommendations on preventing land degradation on farms.
- Improve pest monitoring schemes for early warning on alien invasive species and migratory pests.
- Improve training programs on environmental land management for raion specialists and local farmers so that raion-level environmental, agricultural and land officers, NGO technical specialists, water user associations and others can better advise and train newly independent farms in improved agro-ecological practices).
- Conduct final review of lessons learned and recommendations for policy reform initiatives.
- Compare actual environmental practices on larger undivided farms with those on extended family farms.
- Develop basic design and coordinate preparation and publication of illustrated album on dehkan farm environmental land management practices.
- Provide clear documented report on current status of land degradation and desertification risks, irrigation facilities, soil quality and fertility, and pest management on the new farmers’ lands, and compare with initial stage and/or with remaining large undivided farms.

Annex 5. EMP for Construction and Rehabilitation Activities

The checklist-style format covers typical mitigation approaches to common civil works contracts and grants with localized impacts, and can be updated to incorporate the current experience with subproject implementation. This checklist could be directly applicable to bidding documents and form an integral part of contract and grant documents for civil works, including on-farm irrigation investments.

The checklist has three sections:

- **Part 1** is a descriptive part (“site passport”) that describes project details including physical location, institutional and legislative aspects, the public consultation process, and a project description, including the need for a capacity building program. Attachments with additional information can be added if necessary.
- **Part 2** includes the environmental and social screening in a simple Yes/No format, followed by mitigation measures for any given activity.
- **Part 3** is a monitoring plan for activities during project construction and implementation. It uses the same format as the one required for standard World Bank EMPs. It is the intention of this checklist that Part 2 and Part 3 be included as bidding documents for contractors and grant recipients instead of or in addition to standard environmental bidding clauses. Part 3 should be developed site-specifically and in necessary detail, defining clear criteria and parameters that can be included in the works contracts and grant agreements, that reflect the status of environmental practices on the construction site, and that can be observed/measured/quantified/verified by the inspector during the construction works.

Application of the EMP-Checklist

The design process for the envisaged civil works will be conducted in three phases:

General identification and scoping phase, in which the objects for rehabilitation, demolition, extension and/or complete reconstruction are selected, and an approximate program for the potential work typologies elaborated. Part 2 of the tabular EMP can be used to select typical activities from a “menu” and relate them to the typical environmental issues and mitigation measures.

Detailed design and tendering phase, including specifications and bills of quantities for individual objects, integrating environmental provisions in the form of a tabular EMP. This phase also includes the tender and award of works contracts and grants. In this phase, the contractor’s/grant recipient’s obligations regarding environmental measures during the works are contractually fixed.

During the implementation phase, environmental compliance is checked on site (along with other quality criteria) by the contractor/grant recipient under supervision of the PMU’s environmental specialist. The monitoring plan in Part 3 of the EMP table is the basis for verifying the contractor’s/grant recipient’s compliance with the required environmental provisions.

The practical application of the EMP checklist would include filling in Part 1 to obtain and document all relevant site characteristics, and to determine what sections of Part 2 and 3 are relevant to the proposed activities and therefore need to be addressed. In Part 2 the type of foreseen works, as obtained from the design documents, would be checked and the resulting provisions listed below highlighted (e.g., by hatching the field or copying and pasting the relevant text passages into the special provisions of the tender documents.

The completed tabular EMP is then attached as an integral part of the works/grant and, analogous to all technical and commercial terms, has to be signed by the parties to the contract or grant agreement.

Part 3 would be filled in during the design process to fix key monitoring criteria that can be checked during and after works for compliance assurance and ultimately the contractor's remuneration and grant payment.

EMP Checklist

PART 1: INSTITUTIONAL & ADMINISTRATIVE				
Oblast/raion				
Project title				
Scope of project and activity				
Implementation arrangements (Name and contacts)	Safeguard Supervision	Local Counterpart Supervision	Local Inspectorate Supervision	Contractor / Grant Recipient
SITE DESCRIPTION				
Name of site				
Describe site location	Attachment 1: Site Map <input type="checkbox"/> Y <input type="checkbox"/> N			
Who owns the land?				
Description of geographic, physical, biological, geological, hydrographic and socio-economic context				
Locations and distance for material sourcing, especially aggregates, water, stones				
LEGISLATION				
Identify national & local legislation & permits that apply to project activity				
PUBLIC CONSULTATION				
Identify when and where the public consultation process took place				
INSTITUTIONAL CAPACITY BUILDING				
Will there be any capacity building?	<input type="checkbox"/> N or <input type="checkbox"/> Y if Yes, Attachment 2 includes the capacity building program			

PART 2: ENVIRONMENTAL /SOCIAL SCREENING			
Will the site activity include/involve any of the following:	Activity	Status	Additional references
	Building rehabilitation	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section B below
	New construction	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section B below
	Individual wastewater treatment system	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section C below
	Historic building(s) or district(s)	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section D below
	Acquisition of land ⁴	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section E below
	Hazardous or toxic materials ⁵	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section F below
	Impacts on forests and/or protected areas	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section G below
	Handling or management of medical waste	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section H below
	Traffic or pedestrian safety	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section I below
ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST	
A. General Conditions	Notification and Worker Safety	<ul style="list-style-type: none"> Local construction and environment inspectorates and communities have been notified of upcoming activities. The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works). All legally required permits have been acquired for construction and/or rehabilitation. The contractor/grant recipient formally agrees that all work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environments. Workers' PPE will comply with international good practice (hardhats always, masks and safety glasses as needed, harnesses and safety boots). Appropriate signposting of the sites will inform workers of key rules and regulations. 	
	Air Quality	<ul style="list-style-type: none"> During interior demolition, debris-chutes shall be used above the first floor. Keep demolition debris in controlled area and sprayed with water mist to reduce debris dust. Dust from pneumatic drilling/wall destruction shall be suppressed by ongoing water spraying and/or installing dust screen enclosures on site. The surrounding environment (sidewalks, roads) shall be kept 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	<ul style="list-style-type: none"> 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 shall be closed, and equipment placed as far away from residential areas as possible.
	Soils and Water Quality	<ul style="list-style-type: none"> The site will establish appropriate erosion and sediment control measures such as e.g., hay bales and/or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers. 	

⁴ Land acquisitions includes displacement of people, change of livelihood encroachment on private property this is to land that is purchased/transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.

⁵ Toxic / hazardous material includes and is not limited to asbestos, toxic paints, removal of lead paint, etc.

	Waste management	<ul style="list-style-type: none"> Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting, and will be stored in appropriate containers. Construction waste will be collected and disposed of properly by licensed collectors. Records of waste disposal will be maintained as proof of compliance with proper waste management as agreed. Whenever feasible the contractor/grant recipient will reuse and recycle appropriate and viable materials (except asbestos).
ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
C. Individual wastewater treatment system	Water Quality	<ul style="list-style-type: none"> The approach to handling sanitary wastes and wastewater from building sites (installation or reconstruction) must be approved by the local authorities. Before being discharged into receiving waters, effluents from individual wastewater systems must be treated in order to meet the minimal quality criteria set out by national guidelines on effluent quality and wastewater treatment. Monitoring of new wastewater systems (before/after) will be carried out. Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.
D. Historic building(s)	Cultural Heritage	<ul style="list-style-type: none"> If the building is a designated historic structure, very close to such a structure, or located in a designated historic district, notification shall be made and approval/permits shall be obtained from local authorities, in line with local and national legislation, addressing all construction activities. Provisions shall be put in place so that artifacts or other possible “chance finds” encountered in excavation or construction are noted and registered, responsible officials contacted, and works activities delayed or modified to account for such finds.
E. Acquisition of land	Land Acquisition Plan/Framework	<ul style="list-style-type: none"> If expropriation of land was not expected but is required, or if unexpected loss of income from legal or illegal users of land occurs, the Bank’s Task Team Leader shall be immediately consulted. The approved Land Acquisition Plan/Framework (if required by the project) will be implemented.
F. Toxic Materials	Asbestos management	<ul style="list-style-type: none"> If asbestos is located on the project site, it shall be marked clearly as hazardous material. When possible, the asbestos will be appropriately contained and sealed to minimize exposure. Prior to removal (if necessary), asbestos will be treated with a wetting agent to minimize asbestos dust. Asbestos will be handled and disposed by skilled & experienced professionals. If asbestos material is to be stored temporarily, the wastes should be securely enclosed inside closed containers and marked appropriately. Security measures will be taken against unauthorized removal from the site. The removed asbestos will not be reused.
	Toxic / hazardous waste management	<ul style="list-style-type: none"> Temporary storage on site of all hazardous or toxic substances will be in safe containers labeled with details of the composition and properties of the contents as well as handling instructions. Containers holding hazardous substances shall themselves be placed inside leak-proof containers to prevent spillage and leaching. Wastes shall be transported by specially licensed carriers and disposed of in a licensed facility. Paints with toxic ingredients or solvents or lead-based paints will not be used.
G. Affects forests, wetlands and/or protected areas	Protection	<ul style="list-style-type: none"> All recognized natural habitats and protected areas in the immediate vicinity of the activity will not be damaged or exploited, and all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities. A survey and inventory shall be made of large trees in the vicinity of the activity; large trees shall be marked and cordoned off with a fencing, their root systems protected, and any damage to large trees avoided.

		<ul style="list-style-type: none"> ▪ Adjacent wetlands and streams shall be protected from construction site run-off, with appropriate erosion and sediment controls including but not limited to hay bales and silt fences. ▪ There will be no unlicensed burrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas.
H. Disposal of medical waste	Infrastructure for medical waste management	<ul style="list-style-type: none"> ▪ In compliance with national regulations the Contractor/Grant Recipient will insure that newly constructed and/or rehabilitated health care facilities include sufficient infrastructure for medical waste handling and disposal; this includes but is not limited to: <ul style="list-style-type: none"> ▪ special facilities for segregated healthcare waste (including soiled instruments, “sharps,” and human tissue or fluids) from other waste disposal; ▪ appropriate storage facilities for medical waste are in place; and ▪ appropriate disposal options, in place and operational, if the activity includes facility-based treatment.

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
I Traffic and Pedestrian Safety	Direct or indirect hazards to public traffic and pedestrians by construction activities	<ul style="list-style-type: none"> ▪ In compliance with national regulations the Contractor/Grant Recipient will insure that the construction site is properly secured and that construction-related traffic is regulated. This includes but is not limited to: <ul style="list-style-type: none"> • signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards; • traffic management system and staff training, especially for site access and near-site heavy traffic; Provision of safe passages and crossings for pedestrians where construction traffic interferes; • adjustment of working hours to local traffic patterns, e.g., avoiding major transport activities during rush hours or times of livestock movement; • active traffic management by trained and visible staff at the site, if required for safe and convenient passage by the public; and • ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public.

Part 3. Environmental monitoring plan for activities during project construction and implementation

Phase	What (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 activity preparation							
During activity implementation							
During activity supervision							

Such parameters and criteria include the use of PPE by workers on the site, dust generation and prevention, amount of water used and discharged by site, presence of proper sanitary facilities for workers, collection of different types of waste (mineral waste, wood, metals, plastic, and hazardous waste, such as asbestos, paint residues, and spent engine oil), waste quantities, proper organization of disposal pathways and facilities, and reuse and recycling wherever possible.

