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Mongolia: Vegetable Production and Irrigated Agriculture Project

Project Name
Vegetable Production and Irrigated Agriculture Project
Project Number
51423-002
Country / Economy

- Mongolia

Project Status
Active
Project Type / Modality of Assistance

- Grant
- Loan

Source of Funding / Amount

Grant 9205-MON: Supporting Irrigation Scheme in Central Mongolia

Source	Amount
Japan Fund for Prosperous and Resilient Asia and the Pacific	US$ 2.00 million

Loan 3895-MON: Vegetable Production and Irrigated Agriculture

Source	Amount
Concessional ordinary capital resources lending	US$ 25.30 million

Loan 3896-MON: Vegetable Production and Irrigated Agriculture

Source	Amount
Ordinary capital resources	US$ 14.70 million

Operational Priorities

- OP1: Addressing remaining poverty and reducing inequalities
- OP2: Accelerating progress in gender equality
- OP3: Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability
- OP5: Promoting rural development and food security

Sector / Subsector

- **Agriculture, natural resources and rural development** / Agricultural production - Irrigation

Gender
Effective gender mainstreaming
Description

The project is aligned with the following impact: income generation and enterprise support for smallholder vegetable farmers increased. The project will have the following outcome: efficiency of climate-resilient agricultural production and marketing increased.

Output 1: Efficient and climate-resilient irrigation infrastructure and management systems installed. The project team will focus on (i) upgrading, modernizing, and climate-proofing irrigation and drainage infrastructure; (ii) strengthening coordination and management of irrigation services, irrigated land, and irrigation infrastructure, including storage ponds to build resilience against prolonged droughts, to ensure efficient, reliable, and equitable irrigation supplies for agricultural land; and (iii) planting trees for shelter belts around the modernized irrigated areas. The team will upgrade, modernize, and climate-proof 12 selected schemes along with directly associated infrastructure to provide irrigation services for 7,000 ha. The project will finance the remodeling and improvement of main, secondary, and tertiary canals or pipes, drainage facilities, field application systems, such as high-efficiency center pivot sprinkler systems and drip irrigation for 240 ha, and associated structures; and, where needed, construction of new access roads and windbreaks. Soum (district) governments will be strengthened to conduct O&M of irrigation systems and will pilot a modern asset management system. The project will create 240 jobs during construction, of which 40% are earmarked for women and 10% for households headed by women; and ensure that all contracts for the 3,094 households to be involved in the farming of new vegetable plots will be co-signed by women.

Output 2: Environmentally sustainable agricultural production systems improved. The project aims to improve food safety, environmental sustainability, and climate resilience of agricultural production systems, focusing specifically on agrochemical residue testing and supporting the implementation of a new law on plant seeds by promoting the introduction of new high-yielding and climate-resilient vegetable seed varieties. The project will support the national Institute for Plant Protection (IPP) with testing equipment and reagents to boost its testing capacity; IPP will be able to handle an additional 4,000 tests to ensure the safety of imported pesticides and to monitor the residues in food products. This is expected to reduce the use of harmful agrochemicals and to build consumer trust in domestically produced vegetables. The project team will coordinate with the national extension center to support four regional crop research institutes (CRIs) by (i) providing equipment and facilities such as climate-controlled growth chambers, storage cool rooms, sheds, fencing, mechanization packages, seed cleaning and packaging equipment, conservation farming equipment, and teaching facilities; (ii) conducting small-scale irrigation rehabilitation and modernization; and (iii) providing greenhouses and low-carbon solutions to extend the cropping seasons and achieve high-value vegetable and quality seedling production. This is expected to increase the production capacity for vegetable seeds by 0.65 tons and for seed potatoes by 10 tons. A total of 20 women researchers and 192 women from CGGs will be given technical support and training on best practices.

Output 3: Technical, institutional, and management capacity and coordination strengthened. The project team will set up 48 CGGs in the 12 irrigation schemes, which target women for 40% of the membership and 25% of leadership positions; and provide training on improved vegetable production for 480 CGG participating farmers, including 40% women, in collaboration with the CRIs. The two main providers of

extension services to vegetable farmers will be crop research centers such as the Institute of Plant and Agriculture Science, and a facilitation partner such as a local nongovernment organization. Project-supported CRIs will provide capacity building on good agricultural practice and integrated pest management for farmers' improved management of natural resources with less use of agrochemicals, more use of climate-smart agriculture practices, and better vegetable production, processing and marketing techniques. To further strengthen CGGs, the project will provide mechanization technology packages, all-weather greenhouses with solar-powered heating and long-life films, and small cool rooms for product storage. The equipment will be provided through a combination of ADB loan and JFPR grant to the soum governments, which can then make it available to the CGGs based on predetermined eligibility criteria.

Project Rationale and Linkage to Country/Regional Strategy

Mongolia's economy has been characterized by rapid growth and transformation since transitioning from central planning in the early 1990s. Mineral exports were the main driver for achieving middle-income status in 2011. However, Mongolia's vulnerability to external shocks underscored the need for a more diversified and labor-intensive economic structure for the rural population. In 2018, agriculture's share in employment was 26.7% while it contributed only 10.8% of Mongolia's gross domestic product. In line with the government's focus to accelerate economic diversification and job creation, agriculture has become a priority for growth. It is the main source of livelihood in rural areas, where more than one-third of the total population lives. Poverty in rural areas (30.8% in 2018) remains higher than in urban areas (27.2% in 2018). Limited income-generation opportunities and lack of resilience to natural disasters increase the risk of rural-urban migration. Agriculture is not sufficiently diversified and relies heavily on imports for vegetables and fodder, which in turn threatens national food security and the disaster risk resilience of the livestock industry. Only about half of the country's vegetable demand was met by domestic production in 2008-2016. Vegetables are in high demand by more health-conscious citizens, and a more balanced diet can be expected to have considerable public health benefits.

Inefficient and climate-vulnerable irrigation services. More frequent droughts induced by climate change are a threat to food security, and particularly to vegetable production, which requires reliable access to irrigation services. In 2017, only 1% of Mongolia's land area (777,000 ha) was cultivated, of which only 1.1% (8,900 ha) was used for vegetables (mainly beets, cabbages, carrots, cucumbers, garlic, onions, tomatoes, and turnips). The country's irrigation systems are recognized as having low water productivity and lacking resilience to severe droughts and floods, although sufficient water resources are available--only 1.6% of the internal renewable water resources were withdrawn in 2014. The climate is trending toward a higher annual average temperature and less annual average rainfall, leading to a decline in river runoff. Existing irrigation infrastructure, and fodder and vegetable yields are threatened by water shortages in early spring, snowmelt river floods throughout spring, and flash floods from storms.

Environmentally unsustainable production systems. After the collapse of the former Soviet Union, the cropped area declined from its peak of 837,868 ha in 1989 to 162,040 ha in 2006, as government support through national and regional crop research and extension centers declined. The cultivation techniques are unsustainable

in terms of water productivity and the use of agrochemical inputs with unknown levels of residue in marketed crops. The productivity of vegetable-growing systems is further limited by a lack of access to seeds of high-yielding, climate-resilient varieties. The absence of reliable quality assurance testing of inputs such as pesticides increases production costs and poses the potential risk of environmental pollution. The lack of agrochemical residue-testing capacity at government agencies threatens food safety and access to premium-price marketing opportunities.

Inadequate technical and institutional management capacity. Small farm sizes with inadequate access to efficient and climate-resilient irrigation limit the scope for productivity and quality-enhancing mechanization. Individual small-scale farmers lack access to improved production technologies, which require larger-scale operations to be profitable. About 300 cooperatives and 35,000 households in the country grow vegetables on plots of up to 100 ha, but the total sown area was only 8,904 ha in 2018.3 Cooperative and farmer incomes are low and opportunities curtailed. In the absence of post-harvest and storage facilities, and with low awareness of value-added opportunities and marketing, farmers sell their vegetables mainly to middlemen.

Government policy. Backed by its Sustainable Development Vision 2030, Government Action Plan, 2016-2020, and State Policy on Food and Agriculture and Crop Production Law, Mongolia is committed to improve vegetable production. The state policy stresses the need to strengthen agricultural productivity and production management through a value chain approach, adaptation to climate change, and capacity building for farmers. The government targets for local vegetable production to meet 70% of domestic demand by 2020, and 100% by 2025, through support for initiatives such as on-farm mechanization, climate-resilient greenhouses, and water-saving irrigation technology. Policies prioritizing smallholder farming offer an enabling environment for meeting these targets. Following on from Mongolia's National Programme for Food Security (2009-2016), the government intends to enhance water productivity and expand the country's irrigated land from 54,000 ha in 2019 to 120,000 ha by 2030.

Strategic fit. The project is in line with Strategy 2030 of the Asian Development Bank (ADB) by creating knowledge and promoting rural development and food security. Supporting a diversified agriculture sector with inclusive economic growth is a key strategic priority for ADB in its country partnership strategy for Mongolia, 2017-2020. The project will help improve the water productivity and climate resilience of irrigation systems, expand vegetable production and value chain links, and institutionalize residue testing for food safety, which is consistent with the four priority areas of ADB's Operational Plan for Agriculture and Natural Resources and ADB's Water Operational Plan 2011-2020.

Lessons. The project design incorporates lessons from previous and ongoing projects financed by ADB and others in Mongolia, as well as from project preparation. Accordingly, the project responds to the need to (i) support government executing and implementing agencies in developing their project implementation capacity; (ii) expand the capacity of design institutes to identify and apply modern water-efficient irrigation methods in subproject designs; (iii) enable the careful design of water-efficient irrigation systems that support climate-smart agricultural production; (iv) promote sound operation and maintenance (O&M) of upgraded systems, particularly through community grower groups (CGGs), to ensure their long-term sustainability; and (v) help set up CGGs and introduce them to climate-smart production technologies, particularly for vegetables.

Impact

Income generation and enterprise support for smallholder vegetable farmers increased

Project Outcome

Description of Outcome

Efficiency of climate resilient agricultural production and marketing increased

Progress Toward Outcome

Not yet due. The project implementation is slightly behind the schedule. As of 30 August 2023, civil works for rehabilitation of 10 irrigations systems covering 3,031 ha of farmland are ongoing at the project sites. In Q3 2023, the project will start the recruitment of consulting firms for detailed engineering design of new irrigations systems, for construction supervision and for capacity building in operation and maintenance of the systems.

Implementation Progress

Description of Project Outputs

Efficient and climate-resilient irrigation infrastructure and management systems installed

Environmentally sustainable agriculture production systems improved

Technical, institutional, and management capacity and coordination strengthened

Status of Implementation Progress (Outputs, Activities, and Issues)

Output 1. As of 30 August 2023, the civil works for rehabilitation of 10 irrigations systems covering 3,031 ha of farmland were ongoing at the project sites. These systems will be commissioned in Q2-3 2024. The arrangements for O&M and asset management of irrigation systems will be developed by capacity building consultants (to be recruited in Q4 2023), in consultation with soum working groups. As of 30 June, total of 177 local workers were employed in the construction of 10 irrigation schemes, of which 35 or 20% were women, including 11 (or 6%) female heads of households.

Output 2. The project will support the national Institute for Plant Protection (IPP) with testing equipment and reagents to boost its testing capacity. The project will also support four regional crop research institutes (CRIs) by (i) providing equipment and facilities such as climate-controlled growth chambers, storage cool rooms, sheds, fencing, mechanization packages, seed cleaning and packaging equipment, conservation farming equipment, and teaching facilities; (ii) conducting small-scale irrigation rehabilitation and modernization; and (iii) providing greenhouses and low-carbon solutions to extend the cropping seasons and achieve high-value vegetable and quality seedling production. The project has not started the procurement of any goods, works and consulting services for this output.

Output 3. Vegetable Production Facilitation consulting firm (Package C13) supports the EA/IAs in forming the CGGs, promoting greenhouse vegetable production, vegetable processing, and marketing, formulation of capacity development plans and their implementation, water management, and use of sprinkler irrigation equipment. The team conducted a preliminary assessment of the situation in the project soums and organized discussions with community members and vegetable growers on establishing vegetable grower cooperatives or CGGs, encouraging their participation and proactiveness in achieving the project goals by cooperation, better resource utilization, business planning, and other mutually beneficial activities and initiatives. Coordinators in 11 soums have been appointed. As of date, the consulting firm assisted in the establishment of 14 CGGs with 158 members in eight soums of five aimags. 45% or 72 members are women, 9% or 14 are female heads of households, 14% or 22 members belong to very poor families and 7% or 1 member is a female leader.

Geographical Location
Nation-wide

Safeguard Categories

Environment
B
Involuntary Resettlement
B
Indigenous Peoples
C

Summary of Environmental and Social Aspects

Environmental Aspects
Involuntary Resettlement
Indigenous Peoples

Stakeholder Communication, Participation, and Consultation

During Project Design
During Project Implementation

Contact

Responsible ADB Officer
Badarch, Tuul
Responsible ADB Department
Sectors Group
Responsible ADB Division
Agriculture, Food, Nature, and Rural Development Sector Office (SG-AFNR)
Executing Agencies
Ministry of Food, Agriculture, and Light Industry (MOFALI)

Timetable

Concept Clearance
10 Oct 2018
Fact Finding
08 Oct 2019 to 14 Oct 2019
MRM
06 Dec 2019
Approval
27 Feb 2020
Last Review Mission
-
Last PDS Update
27 Sep 2023

Funding

Grant 9205-MON

Milestones

Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
27 Feb 2020	05 May 2020	26 May 2020	31 Mar 2027	-	-

Financing Plan

	Total (Amount in US$ million)
Project Cost	2.00
ADB	0.00
Counterpart	0.00
Cofinancing	2.00

Grant Utilization

	Date	ADB	Others	Net Percentage
Cumulative Contract Awards	24 Jul 2024	0.00	0.56	28%
Cumulative Disbursements	24 Jul 2024	0.00	0.21	11%

Status of Covenants

Category	Sector	Safeguards	Social	Financial	Economic	Others
Rating	-	Satisfactory	-	Satisfactory	-	Satisfactory

Loan 3895-MON

Milestones

Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
27 Feb 2020	05 May 2020	26 May 2020	31 Mar 2027	-	-

Financing Plan

	Total (Amount in US$ million)
Project Cost	29.55
ADB	25.30
Counterpart	4.25
Cofinancing	0.00

Loan Utilization

	Date	ADB	Others	Net Percentage
Cumulative Contract Awards	24 Jul 2024	16.11	0.00	64%
Cumulative Disbursements	24 Jul 2024	12.58	0.00	50%

Loan 3896-MON

Milestones

Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
27 Feb 2020	05 May 2020	26 May 2020	31 Mar 2027	-	-

Financing Plan

	Total (Amount in US$ million)
Project Cost	14.70
ADB	14.70
Counterpart	0.00
Cofinancing	0.00

Loan Utilization

	Date	ADB	Others	Net Percentage
Cumulative Contract Awards	24 Jul 2024	0.00	0.00	0%
Cumulative Disbursements	24 Jul 2024	0.09	0.00	1%

Project Page	https://www.adb.org//projects/51423-002/main
Request for Information	http://www.adb.org/forms/request-information-form?subject=51423-002
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