China, People's Republic of: Heilongjiang Jiamusi Irrigation and Drainage System Modernization

Project Name	Heilongjiang Jiamusi Irrigation and Drainage System Modernization
Project Number	48054-002
Country	China, People's Republic of
Project Status	Proposed
Project Type / Modality of Assistance	Loan
Source of Funding / Amount	**Loan: Heilongjiang Jiamusi Irrigation and Drainage System Modernization** Ordinary capital resources — US$ 150.00 million
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth
Drivers of Change	Governance and capacity development
Sector / Subsector	**Agriculture, natural resources and rural development** - Agricultural drainage - Agricultural production - Irrigation - Rural water policy, institutional and capacity development - Water-based natural resources management **Water and other urban infrastructure and services** - Urban flood protection
Gender Equity and Mainstreaming	Effective gender mainstreaming
Description	The expected impact of the project will be increased net income of the farmers in Jiamusi Municipality and enhanced national food security. The expected outcome of the project will be efficient and environment-friendly agricultural production in Jiamusi Municipality. The project will improve and increase irrigated area of about 22,080 ha in Jiamusi Municipality. The project will include the following four outputs: (i) modernized irrigation and drainage system, (ii) increased flood-carrying capacity and reduced nonpoint source pollution, (iii) strengthened institutional capacity, and (iv) improved project implementation capacity. Output 1 will support (i) construction and upgrade of about 300 kilometers of main and branch irrigation and drainage canals; (ii) construction and upgrade of over 100 canal structures; (iii) construction and upgrade of on-farm irrigation and drainage canals; (iv) establishment of sprinkler irrigation systems (pipes and equipment) for economic crops and vegetables; (v) renovation of five pumps and/or pump stations, including intake facilities; (vi) construction of supplementary water supply canals to an existing reservoir for increased capacity; and (vii) rehabilitation or construction of about 130 kilometers of farm access roads. Output 2 will include (i) dredging and pollution cleaning of six rivers, (ii) re-vegetation of riverbanks and establishment of constructed wetlands, (iii) construction of cascade weirs for maintaining water levels in the six rivers, (iv) construction of four ecological floating islands for agricultural pollution control, and (v) balanced fertilizer and site specific nutrient management. Output 3 will support (i) establishment of water users associations (WUAs); (ii) provision of real-time water delivery monitoring and control; (iii) introduction of water tariff reform; (iv) introduction of water-saving irrigation technology, such as alternate wetting and drying irrigation method for paddy field, for water saving and methane emission reduction; (v) improvement of agricultural extension services, such as introduction to climate-smart farming practices to reduce methane emissions and increase yields; (vi) enhancement of flood and pollution management capacity; and (vii) training of farmers and support to farmer field schools on irrigation management, climate-smart production techniques, O&M, and marketing skills. Output 4 will provide (i) consulting services for project implementation management, (ii) training and study visits for project implementation staff of the executing and implementing agencies, and (iii) project monitoring and evaluation. The Jiamusi Municipal Government (JMG) will be the executing agency. A project leading group and a project management office have been set up in JMG. The project management office will be responsible for daily coordination of the project preparation and implementation. The implementing agency will be the Jiamusi Xinshidai Urban Infrastructure Investment Company, Ltd.

Project Rationale and Linkage to Country/Regional Strategy	During the country programming mission held in Manila in October 2013, the government of the People''s Republic of China (PRC) requested the Asian Development Bank (ADB) to assist the governments of Heilongjiang Province and Jiamusi Municipality in preparing the Heilongjiang Jiamusi Irrigation and Drainage System Modernization Project. The project is included in ADB''s lending program for 2016 standby under the country operations business plan, 2014 -2016 for the PRC. The proposed project will help modernize the irrigation and drainage system for sustainable agricultureal production and improve the ecological environment of the Jiamusi municipality. The ADB mission discussed the opportunity and necessity for incorporating innovations or best-practices in this project, including (i) organizational arrangements for sustainable water resource and infrastructure use management and maintenance; (ii) climate-smart agriculture practices that make the systems adaptive and resilient to climate changes, and that mitigate greenhouse gas emissions from production systems; (iii) participation and inclusion of farmers in decision making and planning, and use of existing platforms such as cooperatives and associations for promoting, organizing, and delivering technology to farmers; (iv) use of ecological measures for embankment; and (v) introduction to the latest techniques for constructed wetlands. The national government has been shifting the emphasis from a growth-oriented focus toward a broader and more inclusive rural and sustainable development. The project is in line with the Third Plenum Decision of the Eighteenth Chinese Communist Party Congress which aims to promote integrated urban and rural development and to accelerate agriculture modernization and building of new forms of agricultural operations systems that jointly develops household, collective, cooperative, and enterprise operations. The project aligned with ADB''s Strategy 2020 to continue to invest in rural infrastructure, covering irrigation and water management. Agriculture continues to play a critical role in the People's Republic of China (PRC) for ensuring food security, increasing rural livelihoods, and meeting the growing demands for vegetables, livestock products, and staple grains. The proposed project will help modernize the irrigation and drainage system for sustainable and efficient agriculture production in the Jiamusi Municipality, Heilongjiang Province of the PRC. Jiamusi Municipality is located in northeastern Heilongjiang Province, along the lower reaches of the Songhua River. It lies in the center of the Sanjiang Plain, an alluvial flood plain of 108,900 square kilometers where the Heilong, Songhua, and Wusuli rivers meet. The Sanjiang Plain is a key grain production area in the PRC and plays a vital role to ensure national food security. It has been designated by the government as a comprehensive reform pilot area for modern agricultural development. Development of modern irrigation and drainage system in Jiamusi is of a national and provincial priority for efficient and environment-friendly agricultural production and modernization. Jiamusi has cultivated land of about 1.13 million hectare (ha), of which 1.09 million ha is used for grain crops (rice and corn). The average per capita land is about 1 ha in Jiamusi, much higher than that of national average of above 0.1 ha. The farms are manageable in size for households and it will have a good demonstration effect for household farming in the PRC, particularly for major grain production areas. Irrigation is essential to increasing and sustaining agricultural production in most regions of the PRC, including Jiamusi. The proposed project area is currently served by several surface irrigation schemes which were built in the 1960s and 1970s. Irrigation and drainage systems have fallen into disrepair because of a lack of funding, poor management, and a lack of farmers' active involvement, resulting in shrinkage of the irrigation coverages and unstable grain production. On-farm irrigation and drainage canals are inadequate in these irrigation districts, and the existing systems do not work efficiently because of poor operation and maintenance (O&M). Farmers are still widely using flood irrigation rather than water-saving and climate-smart rice production methods. The existing irrigation facilities cannot support a reliable supply of water for high-value crops such as vegetables to supply local markets. There are six rivers running through the irrigation schemes and Jiamusi urban area before flowing into Songhua River. These rivers serve as drainage channels of irrigation returning water. Flood and pollution of the rivers are concerns to Jiamusi. Some river sections do not have adequate flood-carrying capacity causing damages to people's property. Some sections have been used as garbage-dumping sites due to lack of proper management. The rivers are also polluted by chemicals and fertilizers from irrigated agriculture production and untreated domestic wastewater prior to the operation of the wastewater treatment facilities in Jiamusi. The pollutants flow into Songhua River and further deteriorate its water quality, where ADB has supported the government in developing a long-term strategy on pollution and flood control, and followed by supporting implementation of the strategy through several public and private sector lending projects. Nonpoint source pollution from agriculture emerges as main source of pollution in the PRC, but its prevention has not been adequately addressed. Institutional arrangement for irrigation management is a concern in Jiamusi; in particular, there is inadequate participation of farmers in Jiamusi. Only a few water users associations (WUAs) exist in the project area and do not work effectively in managing the irrigation systems. Experience worldwide has shown that participation of farmers or farmer groups in irrigation management is a key for the sustainability of irrigation systems. Public agricultural extension agencies in the local governments play a key role in helping farmers access new agricultural technologies and market information, but they have inadequate outreach and do not deliver advice that is responsive to farmers' needs. Some farmer cooperatives in the project area have played a positive role in agricultural production, but their capacities need to be strengthened for adapting to climate change and applying climate-smart farming practices. There is also a need to improve the local government's capacity in managing flood and pollution, and in planning and implementing the project activities. The government prioritizes agricultural modernization as a key to ensuring national food security and stabilizing economic growth. The project is in line with the government's recent call to accelerate agricultural modernization featuring high efficiency, resource saving, and environmental friendliness. The project conforms to the midterm review of ADB's Strategy 2020 on the renewed emphasis on agriculture and rural development as an integral part of the inclusive growth strategy. The project also conforms to ADB's Water Operational Plan, 2011- 2020 to increase irrigation efficiency and to promote integrated water resources management. Lessons learned from ADB, the World Bank, and other development partners' programs relating to irrigation and drainage, water resources management, and environmental improvement include (i) sustainable O&M with user financing should be pursued, (ii) development and participation of farmer organizations and farmers are vital elements of irrigation management reform, (iii) efficient on-farm irrigation systems and agronomic measures should be pursued as an integral part of project interventions, and (iv) capacity development and training for relevant institutions and farmers is essential. The project is expected to demonstrate the following
Impact	Increased net income of the farmers in Jiamusi Municipality and enhanced national food security

Outcome	Efficient and environment-friendly agricultural production in Jiamusi Municipality
Outputs	1. Modernized irrigation and drainage system 2. Increased flood-carrying capacity and reduced nonpoint source pollution 3. Strengthened institutional capacity 4. Improved project implementation capacity
Geographical Location	Jiamusi

Safeguard Categories	
Environment	B
Involuntary Resettlement	B
Indigenous Peoples	C

Summary of Environmental and Social Aspects	
Environmental Aspects	Based on the preliminary assessments, the project is classified as category B for environment. Safeguards documents, including an initial environmental examination, will be prepared following ADB's Safeguard Policy Statement (2009).
Involuntary Resettlement	Based on the preliminary assessments, the project is classified as category B for involuntary resettlement. Safeguards documents, including a resettlement plan, will be prepared following ADB's Safeguard Policy Statement (2009).
Indigenous Peoples	Based on the preliminary assessments, the project is classified as category C for indigenous peoples. Safeguards documents will be prepared following ADB's Safeguard Policy Statement (2009).
Stakeholder Communication, Participation, and Consultation	
During Project Design	The main project stakeholders are the Jiamusi Municipal Government as borrower; the agencies involved in project execution and implementation, such as the executing and implementing agencies; the beneficiaries of the irrigation systems to be modernized; the private sector and cooperatives; agricultural enterprises; and the people affected by land acquisition. The executing and implementing agencies, as well as local governments and beneficiaries, will be consulted during PPTA. The affected households will be consulted during the preparation of a resettlement plan by the executing agency. An ADB mission visited the People's Republic of China (PRC) from 26 August to 2 September 2014 to undertake reconnaissance mission for the project. The mission held discussions with officials from the Ministry of Finance, the National Development and Reform Commission, the Heilongjiang Provincial Development and Reform Commission, the Heilongjiang Provincial Finance Department, the Jiamusi Municipal Government, and other relevant agencies. The mission conducted field visits to selected project sites in Jiamusi.
During Project Implementation	

Business Opportunities	
Consulting Services	All ADB-financed consultants will be hired through a firm following ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).
Procurement	All ADB-financed procurement will be conducted following ADB's Procurement Guidelines (2015, as amended from time to time).

Responsible ADB Officer	Radstake, Frank
Responsible ADB Department	East Asia Department
Responsible ADB Division	Environment, Natural Resources & Agriculture Division, EARD
Executing Agencies	*Jiamusi Municipal Government* *No. 2666, Changan Road, Jiamusi Municipality, Heilongjiang Province, People's Republic of China*

Timetable	
Concept Clearance	19 Feb 2015
Fact Finding	25 Sep 2017 to 29 Sep 2017
MRM	29 Nov 2017
Approval	-
Last Review Mission	-

Last PDS Update	26 Sep 2017

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