

**PROJECT INFORMATION DOCUMENT (PID)
CONCEPT STAGE**

Report No.: 61066

Project Name	Sichuan Wudu Irrigated Agriculture Development Project
Region	EAST ASIA AND PACIFIC
Sector	Irrigation and drainage (60%); Water supply (20%); Agricultural extension and research (20%)
Project ID	P121414
Borrower(s)	THE PEOPLE'S REPUBLIC OF CHINA
Implementing Agency	Project Management Office Mianyang Prefecture Sichuan Province P.R. China
Environment Category	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD (to be determined)
Date PID Prepared	June 15, 2010
Estimated Date of Appraisal Authorization	February 22, 2011
Estimated Date of Board Approval	July 5, 2011

1. Key development issues and rationale for Bank involvement

The project areas are located in the south-east part of Mianyang Prefecture in the semi-tropic wet monsoon climate region in the Sichuan Basin. The Prefecture is relatively abundant in water resources as a whole given that the annual average precipitation is about 825-1,415 mm and the per-capita water resources is 1,903 m³ in the prefecture area compared to 293 m³ for the Hai River Basin in the North China Plain. However, about 80% of the rainfall comes during May to October and is less from north-west (1,400 mm) to south-east (800 mm) in the prefecture area. This uneven temporal and spatial distribution of rainfall makes many local areas of the prefecture, particularly the south-east part of the prefecture where there are dense population and irrigated agriculture, still face water shortages given the inadequate water storage capacity and not enough coverage of irrigation infrastructure systems within the Prefecture. The situation is worsened during drought period which affected frequently the project areas. In addition, the Prefecture is still in the early stage of recovering from the Beichuan earthquake disaster occurred in 2008 and many water infrastructures are being under reconstruction or rehabilitation.

The four key development issues were identified in water resources development and utilization in the project areas: (a) main irrigation infrastructure systems and on-farm works (lateral, sub-lateral and farm ditches) urgently need to be constructed or rehabilitated to help the recovering of agricultural production suffered from the big earthquake in the project areas; (b) water shortages and frequent droughts impede agricultural development in the project areas; (c) water use efficiency and productivity are very low in the project areas (water use in irrigated agriculture accounts for 66% of the total water use, and the actual consumptive use of water accounts for only 20% of the total available water resources in the Prefecture); and (d) sustainability of constructed water infrastructure has not been ensured. The Operation and Maintenance (O&M)

for both main/branch systems and on-farm works (lateral, sub-lateral and farm ditches) needs to be improved.

In order to reach the project objectives, the proposed project would address the above four key development issues and ensure the sustainability of development in terms of good operation and maintenance with the new approach applicable for economic scarcity areas, which is to increase agricultural production and farmer incomes with integration of engineering measures, agricultural measures and participatory irrigation management measures. To address the first issue and to mitigate water shortages in the project area, new irrigation infrastructures need to be developed to provide additional water for supplementary irrigation in the project areas. To address the second issue and to help farmers get sufficient access to water, on-farm irrigation systems need to be constructed and rehabilitated. To address the third issue and to increase irrigation efficiency and water productivity, an integrated package of measures including improved irrigation management and agricultural extension services needs to be provided to farmers. To address the fourth issue and to improve O&M of both main systems and on-farm works and to ensure sustainable development, farmers need to be fully mobilized and actively participate in the whole process of the design, construction and implementation of the on-farm works and to be responsible for O&M of their systems including paying for volumetric water charges after project completion.

The proposed project is consistent with the 2006-2010 Country Partnership Strategy (discussed by the Executive Directors on May 23, 2006). The proposed project would strongly support Pillar 2 of the Country Partnership Strategy to reduce poverty, inequality and social exclusion, through promoting balanced urbanization, sustaining rural livelihoods, and expanding access to basic social and infrastructure services, particularly in the rural areas. It would also support Pillar 3 to manage resource scarcity through conserving water resources.

2. Proposed objective(s)

The project development objectives are to increase farmers' income in irrigated agriculture and to introduce participatory approach for water management in the project areas to ensure its sustainable development.

3. Preliminary description

The proposed project would include the construction of irrigation works in three counties (Jiangyou, Zitong and Yianting counties) of Mianyang Prefecture, including construction of Jinnong sub-main canal and 11 branch canals with the total length of 373.9 km which would covers an irrigation area of 53,000 hectares. It will include also construction and rehabilitation of the on-farm system including laterals, sub-laterals and farm ditches covering the above area. Based on the draft feasibility study report, the total project cost was estimated as RMB Y1069 million, including RMB Y680 million (an equivalent of US\$100 million) from the World Bank and RMB Y389 million from the government as a counterpart funding. The proposed project would comprise the following three components:

Component 1: Construction and Rehabilitation of Irrigation Systems

- (a) Construction of the main irrigation systems including one sub-main canal and 11 branch canals to provide the reliable and supplementary access of irrigation water to farmers;
- (b) Construction/rehabilitation of the on-farm works including laterals, sub-laterals and farm ditches in the area of 800,700 mu (53,380 hectares) to ensure that farmers could achieve the full benefits of the project;

Component 2: Provision of a Complementary Package of Integrated Agricultural Inputs and Support Services to Farmers

- (a) Agricultural extension services including all agricultural measures or inputs to increase crop yield after supplementary water is available for irrigation;
- (b) Development of WUAs with CDD approach to mobilize farmers and allow them to participate in the whole process of project design, construction and implementation as well as to be in charge of O&M of their on-farm works; and

Component 3: Institutional Capacity Building and Project Management

- (a) Consulting services (through expert groups at the prefecture and county level) to facilitate PMOs for project management and implementation;
- (b) Oversea or domestic workshops, training and study tours to ensure that the project implementation follows the international practice;
- (c) Monitoring and evaluation (M&E) and procurement and financial management information system (MIS); and
- (d) Office equipment and working vehicles for project supervision and quality control.

The proposed project is a part of the Provincial Government's second-phase Wudu Irrigation Scheme which is included in its 12th Water Resources Development Plan¹. The second phase Wudu Irrigation Scheme includes the construction of Wudu Reservoir (storage capacity 572 million cubic meters), and is to be completed by the end of 2010. It would also include the construction of Jinfeng Reservoir (storage capacity 98 million cubic meters) to be built by the Prefecture. The irrigation scheme would include the construction of Xizi Main Canal for a total length of about 108 km and with a capacity of 28.5 m³/s -12.5 m³/s. It would cover about 100,000 hectares of irrigated land and would also provide some water for domestic uses. The rest of the irrigation systems has been planned to be constructed under the proposed project as above mentioned.

4. Safeguard policies that might apply

[Guideline: Refer to section 5 of the PCN. Which safeguard policies might apply to the project and in what ways? What actions might be needed during project preparation to assess safeguard issues and prepare to mitigate them?]

¹ The first-phase of water diversion works was completed in 2002 which provides water for different irrigation systems.

Safeguard Policies Triggered	Yes	No	TBD
<p data-bbox="203 275 763 306">Environmental Assessment (OP/BP 4.01)</p> <p data-bbox="203 346 979 678">The impacts of the proposed project on the environment are expected to be overall positive as the project puts strong emphasis on sustainable use and management of water resources. The project includes the construction of irrigation works in three counties (Jiangyou, Zitong and Yianting counties) of Mianyang Prefecture, including construction of Jinnong sub-main canal and 11 branch canals, to provide the reliable and supplementary access of irrigation water to farmers. It also includes construction and rehabilitation of the on-farm system including laterals, sub-laterals and farm ditches covering the above area.</p> <p data-bbox="203 716 979 1413">The main environmental issues associated with these components are expected to include, among others, construction issues, e.g. noise, dust, soil erosion etc. Based on the current proposed components and initial environmental screening, the proposed Bank-financed project located in the well developed agricultural areas, the adverse impacts from the Bank-financed project are site-specific and temporary, and mitigation measures could be designed readily. However, Bank-financed project is part of the phase II of the Wudu Water Diversion and Xizi Irrigation Scheme, which includes Xizi canal, Jenfeng reservoir and 5 branch canals to be fully financed by government, and the one sub-main canal and 11 branch canals to be partially financed by the Bank. The Task team proposes the project as Category A project based on its scale of civil works, the type and location of the project, nature and magnitude of the impacts of the second phase Wudu Water Diversion and Xizi Irrigation Scheme and the Wudu Reservoir. One EA report with WB safeguard standards for the entire phase II of the Wudu Water Diversion and Xizi Irrigation Scheme will be prepared to identify, prevent, minimize and mitigate adverse environmental impacts and enhance positive impacts.</p> <p data-bbox="203 1451 979 1749">Wudu Reservoir, which is now under construction and to be completed by the end of 2010, will be subject to due diligence reviews by the Bank to confirm compliance with Chinese national environmental laws and regulations, as well as consistent with the World Bank applicable safeguards policies. In particular this due diligence review will include an assessment of the EMP implementation as well as any potential significant and/or reputational risk issues or impacts, and the follow up mitigation actions.</p> <p data-bbox="203 1787 935 1885">The draft EIA Report for Sichuan Wudu Irrigated Agricultural Development Project was provided to the team during the mission. The EIA Report was prepared by Chengdou</p>	<p data-bbox="1052 275 1089 306">X</p>		

Safeguard Policies Triggered	Yes	No	TBD
<p>Investigation, Design & Research Institute (CIDRI) of China Hydropower Consulting Group (CHCG) in January 2010. The mission reviewed the EIA Report for the Project, and discussed it with Mianyang Prefecture PMO and its EIA consultant (CIDRI). The mission found that the EIA report was basically well prepared and identified a few key environmental concerns and developed mitigation measures properly. However, the presentation, format and context of the EIA are different from the Bank's EA requirements.</p> <p>To meet the Bank's EA requirements, the task team has required the PMO and EA Consultant to prepare an EIA Report and one stand-alone EMP. The following key aspects of the EA will be supplemented or further strengthened, especially including a separate chapter for alternative analysis, preparation of EMP and PMP, public consultation and information disclosure, more specific soil and water conservation measures, resettlement and social impacts assessment, and cumulative impacts analysis, etc.</p>			

Safeguard Policies Triggered	Yes	No	TBD
<p>Natural Habitats (OP/BP 4.04) According to current project proposal, the draft EIA conducted by the EA institute, and the initial screening conducted by the project team, the proposed project locates in the well developed agricultural areas, the project will not affect any protected areas, known natural habitats, or established or proposed critical natural habitats. The TT will further review the EA report for phase II Wudu water diversion and Xizi irrigation scheme to determine whether there are potential adverse impacts on natural habitats within the project influence area.</p>			X
<p>Forests (OP/BP 4.36) The project will not finance activities that would involve significant conversion or degradation of critical forest areas or related critical natural habitats as defined under the policy.</p>		X	
<p>Pest Management (OP 4.09) The project will not procure any pesticides, but it will improve or newly establish agricultural irrigation systems. These activities are related to pest management and may lead to increased use of pesticides. The screening mechanism incorporated into the EA was used to survey the use of fertilizers and pesticides in the project area. A Pest Management Plan (PMP) will be prepared to include appropriate measures to address risks, support Integrated Pest Management (IPM) approaches and strengthen the capacity of farmers to reduce pesticide use.</p>	X		
<p>Physical Cultural Resources (OP/BP 4.11) The project will not adversely affect any sites with archeological, paleontological, historical, religious, or unique natural values within the project influence area based on the existing EA report. TT will further review the EA report during the preparation mission to ensure that appropriate screening and/or studies were undertaken to conclude that no areas of archeological, paleontological, historical, religious or cultural significance will be affected by the project. For the chance findings during construction occur, relevant clauses will be included in the related construction contracts.</p>			X
<p>Indigenous Peoples (OP/BP 4.10) The project ID mission made a primary Indigenous Peoples screening through meetings with project entity and local authorities including Wudu municipal ethnic and religious affairs bureau, and through field visit to several proposed project sites. The ID mission found that there were no ethnic minority groups in the project areas of influence, and hence concluded that OP4.10 would not apply to this project.</p>		X	

Safeguard Policies Triggered	Yes	No	TBD
<p>Involuntary Resettlement (OP/BP 4.12) According to the project feasibility studies, there would be construction of 12 sub-main and branch canals under this project. The primary impact survey showed that more than 3600 mu (240 ha.) of land acquisition and 2800 mu (187 ha.) of temporary land occupation would be caused by this construction, and the land acquisition would affect about 1873 people who needed full rearrangement in economic production. Meanwhile, about 978 people would have to be relocated. In this case, OP4.12 would be triggered and a full RAP would be required in compliance with the policy.</p> <p>In addition, there were some linked projects also identified in this case, that is, the construction of a Jinfeng reservoir and of a Xizi main canal, which would requisition about 9,427 mu of land and relocate a total of 5,616 people. These main structures would be constructed contemporaneously and through them water would be diverted and delivered down to the branch canals and fields. Moreover, there was a newly constructed Wudu reservoir as the overall water resources for the Wudu irrigation system. These linked projects were required the resettlement instruments (for the contemporaneous Jinfeng reservoir and Xizi main canal) in conformity with the relevant national laws and regulations, and with the Bank policy. For the new Wudu reservoir, a resettlement due diligence report was required to submit for the Bank review as well.</p>	X		
<p>Safety of Dams (OP/BP 4.37) The Project triggers the Bank’s Safeguard Policy on Safety of Dams –OP4.37, because the project will divert water from two reservoirs formed with Wudu and Jinfeng Dams: Wudu Dam is under construction and will be completed by the end of 2010, and Jinfeng Dam is to be constructed with government internal funding during the project implementation. There is also one existing upstream dam, Heping Dam, which provides flood protection for the project financed structure. Project areas will rely on the performance of these dams, failure of the these dams could cause extensive damage to or failure of the new Bank-funded structures; and also, the project areas will depend on the storage and operation of these existing dams for their water supply and could not function if the dams failed.</p> <p>Sichuan Wudu PMO has hired two independent dam safety experts after the Bank approved the TOR and CVs of the experts. Chinese Government has issued a well-prepared guidelines and regulations for dam safety management including Reservoir Dam Safety Management Regulation, Regulations on Reservoir Dam Safety Review, Guidelines for Dam Safety Review, Guidelines for Emergency Preparedness Plan, and Guidelines for Operation, Maintenance and Surveillance of Dams. The Bank task team,</p>	X		

Safeguard Policies Triggered	Yes	No	TBD
together with the dam safety experts hired by the client, will monitor the dam safety status and supervise the implementation and any remedial works of those dams to ensure the project being implemented in compliance with the Bank Dam Safety Policy.			
Projects on International Waterways (OP/BP 7.50) There are no any international rivers or waterways associated with this project		X	
Projects in Disputed Areas (OP/BP 7.60) The Project is not located in any known disputed areas as defined under the policy.		X	

5. Tentative financing

Source:		(\$m.)
Borrower		57
International Bank for Reconstruction and Development		100
	Total	157

6. Contact point

Contact: Liping Jiang

Title: Sr. Irrigation Engineer

Tel: 86 10 58617683/5788+7683

Fax: 86 10 58617800

Email: Ljiang@worldbank.org

Location: Beijing, China (IBRD)