A. Country and Sector Background

1. China’s rivers and floodplains have been the focus of human settlement since the dawn of civilization. Floodplains offered vast tracts of fertile land and areas along rivers were where urban and industrial development has taken place. Today, the floodplains provide a home to the bulk of the China’s population, most of its urban and industrial development, and the vast tracts of farmland that feed a population of 1.3 billion. Unfortunately, the China’s most impressive economic growth over the last 30 years has brought some negative effects including that many of these vastly productive areas are extremely vulnerable to flooding and the associated disruption and loss of life and property, and that environment in these areas is heavily impacted.

2. The Provincial capital of Qinghai Province, Xining City and surrounding Municipality lies in the eastern part of the province and has a population of 2.12 million people. The Municipality is located in the Huangshui River Basin, and at the confluence of two other branches, the Nanchuan and Beichuan Rivers. This entire river system surrounding the Municipality forms a significant branch of the upper Yellow River. The Huangshui River Basin is heavily impacted by human activity, consisting predominantly of grassland (25%), wasteland and marginal land (41%), and only 10% of the watershed is covered by forest or woody vegetation. Sixty-one percent of the watershed is considered vulnerable to soil erosion. In the
summer months, the watershed experiences intense rainfall episodes lasting an average of several hours which causes periodic but intense flooding in many areas that is accompanied by soil erosion. As a result many areas are dominated by gullies that have grown over time limiting land use and threatening infrastructure. Therefore the City is exposed to periodic floods that are characteristically concentrated, high velocity, short duration events caused by high intensity rainfall in the steep catchment areas upstream of the city.

B. Objectives

3. The development objective (PDO) of the project is to improve the protection of property and safety of people from flood events and bring about sustainable utilization of land and water resources within Xining Municipality. The PDO is to be achieved through the provision of (a) a greater level of flood protection and enhanced flood management; (b) improved wastewater collection; (c) improved soil and water conservation of catchments; and (d) institutional strengthening and capacity building in Xining Municipality.

C. Rationale for Bank Involvement

4. The Bank is currently involved in a number of relevant projects, which support both structural and non-structural measures (for example, the Yangtze Dikes Strengthening Project), as well as provide support to river basin commissions and provincial agencies for participatory approaches for water resources management (recent examples include the GEF Hai Basin Integrated Water and Environment Management Project, Loess Plateau Rehabilitation, Changjiang and Pearl River Watershed Rehabilitation Project). The many lessons drawn from these projects have been incorporated in the design of this Project. Therefore, Bank involvement would allow the use of experience, particularly in development of non-structural measures, as well as introduction of international and national technical assistance, new technology, materials and construction methods.

5. The proposed Project would also ensure that adequate attention is given to sustainability issues during the Project preparation and design stages, including institutional reforms and enhanced O&M arrangements of the investments made. The 11th five-year plan for water resources development for Xining Municipality states that "the changes should be made from controlling flood events to managing flood events by the integration of structural and nonstructural measures...". The Xining Municipal Flood Control Plan (1999) identifies that nonstructural measures are very important for the development of an integrated flood control and management system. However, the efforts by the Municipality so far still focus on structural level investment only.

6. The project would also finance sewage and drainage collection systems. The construction of these systems will transport wastewater that was previously disposed directly into open drainage canals flowing into rivers to sewage treatment plants for treatment. For all urban areas, plans have been made to ensure the necessary treatment capacity is in place at the time the construction is completed. Arrangements have also been made to ensure the sludge produced from the treatment plants is properly disposed in landfills.
D. Description

7. The delivery of the PDO would be accomplished through the implantation of 6 components. The total investment of the project is US$207.57m, with financing from IBRD of US$100m and the Municipal Government, including the three Country governments within the municipality.

Component 1: Flood Control and Management (US$105.02million)

8. This component would include both structural and non-structural activities including dikes strengthening, access roads, cross dike structures, and water level controls structures, an integrated flood warning system and riverbank landscaping works. This component would invest in three sub-components for flood control works that would improve the level of flood protection in selected areas of Xining Municipality; and in a comprehensive flood warning system.

• Sub-Component 1.1 Dike Strengthening, River and Waterway Improvement (US$77.13 million)

9. This sub-component would fund the strengthening of about 53.76km of main rivers and 35 km of minor tributary water and drainage courses within the Municipality. The main rivers to be strengthened include Huangshui River Truck in Xining Downtown area and Huangyuan County, Nanchuang River in Downtown area, Beichuan River in Downtown area and Datong County, and Dongxia River in Huangyuan County. The minor tributary water and drainage courses to be strengthened include 28 key gullies in remote districts of Xining Downtown administrative areas, Datong, Huangyuan and Huangzhong Counties.

• Sub-Component 1.2 Flood Warning System (US$2.97 million)

10. This sub-component would fund the development of flood forecasting, flood warning and emergency preparedness for the Xining Municipality, including strengthening the capability of the Xining Municipal Flood Control and Drought Relief Organization (FC&DRO).

• Sub-Component 1.3 Landscaping Recreation Areas (US$24.92 million)

11. Conjunction with the dike strengthening works, this sub-component also includes river bank landscaping works. Three landscaping recreation areas would be constructed consisting of Xichuan landscaping recreation area along Huangshui River Truck, Nanchuan landscaping recreation area along Nanchuan River, and Beichuan landscaping recreation area along Beichuan River. Total landscaping area is 2.72km2. Landscaping works are mainly constructed in Xining city areas.

Component 2: Wastewater Collection (US$ 10.13million)

12. This component would invest the construction of about 72.5 km of both wastewater and urban storm water collection pipeline systems to intercept an estimated 33 million tons of wastewater and storm water drainage, which at present flows freely to the river systems in the
Municipality, to deliver to existing or planned wastewater treatment facilities. This component includes Xining Wastewater Collection Main Pipe construction, Xiaoqiao Rainstorm Collection Improvement, Rainwater Drainage Truck Improvement in Huangzhong County, and Water Supply and Drainage Main Pipe Network Improvement in Qiaotou Town of Datong County.

**Component 3: Participatory Watershed Management (US$19.49million)**

13. This component would involve three integrated sets of sub-activities to support three integrated sets of sub-activities for community based soil and water conservation, land use, and socio-economic development in seventeen high priority sub-watersheds within the Municipality. These three sets of activities would be packaged into an integrated set of interventions for each sub-watershed.

14. This component would first support three pilot sub-watersheds by using the participatory measures; then the experiences and lessons learned from these three sub-watersheds would be applied to the other fourteen sub-watersheds in late project implementation stage. Participatory Watershed Management Plans (PWMPs) for each of the three pilot watersheds have been prepared and accepted by the Bank. A Participatory Watershed Management Manual (PWMM) guiding the preparation and implementation of the Plans has also been prepared and accepted by the Bank. The PWMP for each of the other fourteen (14) sub-watersheds would be prepared prior to watershed rehabilitation of the each sub-watershed during the project implementation.

- **Sub-Component 3.1 Soil and Water Conservation Measures (US$4.26 million)**

15. This sub-component would include predominantly physical investments (works and goods) aimed at improving soil and water conversation. Activities to be financed would be (i) afforestation by planting a mixture of selected species of trees and shrubs about 3053hm²; and (ii) vegetation protection about 6185hm².

- **Sub-Component 3.2 Engineering Measures (US$9.37 million)**

16. This sub-component would include (i) silt retention and water/erosion check and control structures, designed to slow the flow of flood water in the tributary gullies and sub-watersheds including 7 bigger check dams and 1082 small check dams; and (ii) terracing of the slope land 795.5hm².

- **Sub-Component 3.3 Livelihood Improvements (US$5.87million)**

17. This sub-component would include predominantly physical investments (works and goods) that are primarily designed to improve the livelihood of farmers, but at the same time, bring about a change in the prevailing unsustainable land use practices. The project would provide sub-grants to finance (a) animal husbandry activities, including building sheds and procuring animals; (b) renewable energy activities, including constructing bio-gas facilities and procuring solar stoves; (c) construction of green houses; (d) procuring grass choppers; and (e) construction of village level infrastructure, including improvement of access roads and farm access tracks.
Component 4: Institutional Strengthening and Capacity Building (US$11.12 million)

18. This component would support construction of a flood warning center, provision of office equipment, consulting services, technical study and research, training and study tours. The component includes two subcomponents: (i) flood warning management center construction; and (ii) consulting services and training.

- Sub-Component 4.1 Flood Warning Management Center (US$3.51 million)

19. This sub-component would finance a building for the flood warning center to operate the flood warning system.

- Sub-Component 4.2 Consulting Services and Training (US$7.61 million)

20. This sub-component would fund provision of office equipment, consulting services, technical study and research, training and study tours.

Component 5: Resettlement and Environmental Management (US$35.00 million)

21. This component would support carrying out resettlement and rehabilitation of displaced persons in connection with the implementation of the Project, and managing the adverse environmental impacts resulting from the implementation of the Project through establishment and operation of environmental management offices, provision of consulting services and carrying out monitoring and supervision. The component includes two subcomponents: (i) Resettlement Action Plan Implementation and (ii) Environmental Management Plan Implementation.

- Sub-Component 5.1 Resettlement Action Plan Implementation (US$33.86 million)

22. This sub-component would fund the resettlement action plan activities to be developed for the project. A total of 1635.1 mu of collective land is to be requisitioned from 39 rural villages that will affect 3549 farmers in 888 households. In addition, 538 people in 132 households will be relocated for their house demolition (among them, 313 people in 89 households are affected by loss of both land and houses). In addition, 22 commercial enterprises will be also partially affected that employ 66 staff.

- Sub-Component 5.2 Environmental Management Plan Implementation (US$1.14 million)

23. This sub-component would fund the implementation of activities for managing the adverse environmental impacts resulting from the implementation of the Project through establishment and operation of environmental management offices, provision of consulting services and carrying out monitoring and supervision.

Component 6: Project Management (US$18.11 million)
24. This component would support development and operation of a management information system and strengthening the capacity of Xining Municipality to carry out procurement, construction supervision, quality control, financial management, and monitoring and evaluation with respect to the Project.

E. Financing

25. The financing arrangement is as follows:

<table>
<thead>
<tr>
<th>Source</th>
<th>($m.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrower</td>
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<tr>
<td>International Bank for Reconstruction and Development</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>207.57</strong></td>
</tr>
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</table>

F. Implementation

26. The proposed Project management structure includes Xining Municipality Project Leading Group (XPLG), Xining Municipality Project Coordination Office (XPCO), Xining Municipality Project Management Office (XPMO), Expert Panel (EP) of XPMO, County level Project Leading Groups (CPLG) and PMOs of Huangyuan, Huangzhong and Datong Counties.

G. Sustainability

27. The Project is designed to be sustainable and replicable in several ways. To the extent possible all implementation actions are based on technologies and methodologies that are cost-effective, replicable and environmentally sustainable. Many factors are important for the sustainability of the Project, some of which are: (a) effective project management and implementation arrangements; (b) sound design and implementation standards; (c) strong leadership and effective coordination at various Municipal and County government levels to ensure adequate funding and efficient use of funds, timely completion of procurement plans and high quality design and construction of works; and (d) the introduction of efficient and sustainable operation and maintenance (O&M) procedures and effective arrangements at both government and community levels to assure adequate funding for O&M after project completion. These factors have all been addressed during project preparation and have been incorporated in the design of the Project.

H. Lessons Learned from Past Operations in the Country/Sector

28. Project Management. Detailed organizational and staffing arrangements for project coordination, management and implementation, particularly with a strong linkage between PMOs and administrative departments, should be formulated and agreed well before project implementation starts.

29. Counterpart funds. Counterpart funding should be committed before project implementation starts while minimizing the amount of counterpart funds from poor counties.
30. Institutional Arrangements. Water resource management needs to have top-down, bottom-up and vertical and horizontal integration. Top-down activities include establishment of laws, policies, and regulation standards. Bottom-up activities include working with the counties and the townships, villages and individual water users and beneficiaries in the entire planning and implementation process. Horizontal integration includes cross-sector cooperation and coordination of actions; and vertical integration includes direct linking and constant interaction between the central, river basin and local component activities.

31. Capacity Building. Projects should include institutional development support for the strengthening of the project implementing and management organizations as well as provincial and local government bureaus, including transfer of know-how and technology from elsewhere.

32. Technical Design. International and national consultants and technical panels can make substantial contributions to improving the designs of works, economic impact assessment, and resettlement planning and design.

33. Participatory Approach. People affected by a project should be involved from the early stages of project preparation and throughout the implementation period, to gain and maintain their support.

34. Procurement. Procurement for the construction of major civil works should start early in the preparation period so that bid awards will correspond with loan effectiveness, which will avoid delays and cost overruns.

35. The above lessons, together with the key success factors identified by the Bank such as strong government commitment and ownership, beneficiary participation, adoption of realistic O&M plans, introduction of cost recovery fees, and financial autonomy of project entities have been reflected where appropriate in the design of the proposed Project.

I. Safeguard Policies (including public consultation)

<table>
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<td>Environmental Assessment (OP/BP 4.01)</td>
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<td>Projects on International Waterways (OP/BP 7.50)</td>
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* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas.
J. List of Factual Technical Documents

(1) FSR Main text and Annex on Cost Estimates
(2) Participatory Watershed Management Manual
(3) Participatory Watershed Management Plans
(4) EIA and EMP
(5) EA Summary
(6) Flood Warning System Preliminary Design Report
(7) Project Technical Assistance and Training Plan
(8) Project Procurement Plan
(9) Dam Safety Assessment Report
(10) Social Assessment
(11) Ethnic Minorities Develop Plan
(12) Project RAP
(14) Project Implementation Plan
(15) Project Concept Note
(16) PCN Review Meeting Minutes
(17) Mission Aide Memoires

K. Contact point
Contact: Ximing Zhang
Title: Water Resources Specialist
Tel: (86-10) 58617692
Fax: (86-10) 58617800
Email: xzhang4@worldbank.org

L. For more information contact:
The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-4500
Fax: (202) 522-1500
Email: pic@worldbank.org
Web: http://www.worldbank.org/infoshop