



1. Project Data

Project ID	Project Name		
P114107	CN-Wenchuan Earthquake Recovery Project		
Country	Practice Area(Lead)	Additional Financing	
China	Social, Urban, Rural and Resilience Global Practice	P152493	
L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)	
IBRD-76160	30-Jun-2014	740,000,000.00	
Bank Approval Date	Closing Date (Actual)		
12-Feb-2009	31-May-2016		
	IBRD/IDA (USD)	Grants (USD)	
Original Commitment	710,000,000.00	0.00	
Revised Commitment	695,804,208.41	0.00	
Actual	695,804,208.41	0.00	
Prepared by	Reviewed by	ICR Review Coordinator	Group
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2. Project Objectives and Components

a. Objectives

According to both the Financing Agreement (FA) and the Emergency Project Paper (EPP, in place of a Project Appraisal Document or PAD), the project's objectives are "to restore essential infrastructure, health, and education services to at least levels existing prior to the Wenchuan Earthquake, and where appropriate, to provide for expansion of services, while reducing the vulnerability to seismic and flood hazards and building capacity of local governments to manage the recovery program" (FA, page 4 and EPP, paragraph 45). The FA was supported by implementing agreements (IAs) with the Provincial Governments of Gansu and Sichuan which reiterated the same project development objectives in its respective performance



indicators (IA, Annex 1, page 10).

This review will assess the following objectives:

- 1 . To restore essential infrastructure, health, and education services to at least levels existing prior to the Wenchuan Earthquake,
- 2 . To reduce vulnerability to seismic and flood hazards, and
- 3 . To build the capacity of local governments to manage the recovery program.

The Key Performance Indicators (ICR, paragraph 7 and EPP, Annex 2) include:

- 1 . Percent of project roads with traffic restored to pre-earthquake levels,
- 2 . Percent of county towns with water supply restored, at a minimum, to pre-earthquake levels,
- 3 . Percent of reconstructed health facilities with bed occupancy rates at 2007 levels, and
- 4 . Percent of reconstructed primary and secondary schools in Gansu province with enrollment rates of 99% and 80%, respectively.

b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Will a split evaluation be undertaken?

No

d. Components

The project is divided into two geographic recovery programs: one for Sichuan province and the other for Gansu province. At appraisal, a framework approach was developed to finance specific projects for each province's recovery programs. Loan proceeds funded infrastructure, health, and project support components for Sichuan's recovery program and infrastructure, health, education, and project support for the Gansu recovery program.

The ***Sichuan Recovery Program*** (US\$ 531.5 million at appraisal, US\$ 602.84 million actual) financed the following:

- **Infrastructure** (US\$ 453.5 million at appraisal, US\$ 506.08 million actual) financed reconstruction and expansion of the following in about 16 counties in the five municipalities severely affected by the earthquake - roads and bridges, water supply, wastewater and drainage systems, municipal solid waste collection and disposal, flood control, slope protection and stabilization, and restoration of waterways. Subcomponents were allocated originally in two batches but because of cost savings during implementation, a third batch of infrastructure projects were approved under a loan restructuring (see below) and added 17 roads and rehabilitated and constructed water supply facilities.
- **Health** (US\$ 58.0 million at appraisal, US\$ 70.48 million actual) financed the reconstruction and



expansion of health services in about 19 counties in seven municipalities focusing primarily in restoring county and township level health service centers.

- **Project Support** (US\$ 20.0 million at appraisal and US\$ 26.28 million actual) financed training, building local government capacity to prepare projects for implementation, from design, social and environmental assessments, safeguards compliance, surveys, procurement, construction supervision, quality assurance and monitoring and evaluation.

The **Gansu Recovery Program** (US\$ 206.7 million at appraisal, US\$ 204.57 million actual) financed the following:

- **Infrastructure** (US\$ 136.5 million at appraisal, US\$ 121.08 million actual) financed the reconstruction and expansion of roads and bridges, bus depots, water supply, waste water and drainage systems, municipal solid waste collection and disposal, slope protection and stabilization, restoration of waterways and district heating. This component also financed the construction of the Moba Gorge dam to provide water to the Cheng county water treatment plant.
- **Health** (US\$ 32.6 million at appraisal and US\$ 36.08 million actual) financed reconstruction and expansion of municipal, county, and township level health services and facilities, in five counties including equipment.
- **Education** (US\$ 33.6 million at appraisal, US\$ 35.14 million actual) financed reconstruction and expansion of primary, secondary and vocational/technical school facilities and equipment in affected counties under the Education Sector Reconstruction Plans. As a result of a loan restructuring (see below) this component was revised to concentrate only on secondary and vocational schools since the national recovery program addressed to urgent rebuilding of primary schools.
- **Project Support** (US\$ 4.0 million at appraisal, US\$ 12.27 million actual) financed training and building capacity in environmental and social assessments, surveys, design, procurement support, safeguards compliance, construction supervision, quality assurance, monitoring and reporting.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Project Cost: The total project cost which includes the front end fee of US \$ 1.8 million, reached US\$ 740 million at appraisal and disbursed US\$ 809.21 million or 109% of total project cost. Exchange rate losses during implementation raised the cost of project components. Exchange rates recovered by the time of project close. A couple of projects were delayed and could not be completed by the time of project close but were to be completed with borrower contributions.

Financing: The International Bank for Reconstruction and Development (IBRD) financed an Emergency Recovery Loan (ERL) for US\$ 710 million. This ERL was in response to the May 2008 Wenchuan earthquake and followed the Bank's policy, OP/BP 8.00 concerning "the application of rapid response instruments to address major adverse economic and/or social impacts resulting from an actual or imminent natural or man-made crisis or disaster" (EPP, paragraph 52).

Borrower Contribution: The Government of China provided borrower contributions of US\$ 30 million at



appraisal and US\$ 113.41 million actual. The Government provided additional resources to compensate for exchange rate losses, complete delayed projects, and to add to the Provincial Government of Gansu's counterpart relocation funds.

Dates: The project became effective on June 17, 2009 and was scheduled to end on June 30, 2014. Three level II restructurings resulted in reallocating resources and extended the project end date by another 23 months (May 2016):

- on November 2012 to reallocate project resources;
- on June 2014 to extend the project end date to May 2016 to complete two delayed projects in the province of Gansu (i.e., the construction of the Moba Gorge Dam; and the ancillary water treatment project in Cheng County) and complete the six additional subprojects in the province of Sichuan financed by its costs savings (Batch III consisting of the rehabilitation and reconstruction of 17 additional roads, water supply facilities and one pump station).
- on January 2015 to reallocate resources and ensure completion of works.

3. Relevance of Objectives & Design

a. Relevance of Objectives

The project objectives remain relevant to the country's development plans. The Country's 13th Five Year Plan (2016-2020) includes urbanization and social related plans and strategies which instructs the State Councils to implement a National Comprehensive Disaster Prevention and Alleviation Plan. For example, its urbanization strategy calls for improving the safety standards of natural disaster resilience of pipes and cables under construction. In another section on insurance reform, the plan notes the need to improve the dispersion of risk for natural disasters relative to agriculture and insurance products to modernize the insurance industry.

The project objectives are also relevant to the World Bank's Country Partnership Framework (CPF) (2013-2016). Under the CPF outcome 1.2 Enhancing the urban environment, the framework states the need to help cities build resilience to natural disasters, citing the response to the 2008 Wenchuan earthquake (CPF, paragraph 50). In addition, the CPF acknowledges that the project built facilities according to government standards for flood and seismic hazards (Annex to CPF, pp. 36-37).

Rating

Substantial

b. Relevance of Design

Design called for a framework approach which identified ten selection criteria to ensure that the subprojects are part of the National Master Plan for the Reconstruction and Recovery of Wenchuan Earthquake, provincial and local reconstruction and development plans, according to new and applicable seismic and flooding codes and



standards, Bank safeguards, and other technical, social, and economic criteria (ICR, paragraph 24).

Design for the recovery and reconstruction in the Sichuan province was straightforward. The design of a similar program in Gansu province was complicated by the inclusion of the new construction of the Moba Gorge dam and the ancillary water treatment plant in Cheng county. The inclusion of the Moba Gorge dam was not consistent with the reconstruction and recovery project objectives. The ICR points out that the new construction of the Moba Gorge dam was a critical part of the water supply in Cheng County in Longnan Municipality (ICR, paragraph 25). Its inclusion may have been an opportunity to address the overall water supply in the county but not critical to its recovery. The Moba Gorge dam was complex and needed more time to implement, particularly since relocation was involved and local capacity was inexperienced. In 2014, based on the Longnan Municipality priorities, the education subcomponent was revised to focus on middle and senior secondary and vocational schools. All primary schools were instead rebuilt under the national earthquake recovery program (ICR, paragraph 15).

The results framework is simple, clear, and straightforward with regard to the contributions of the infrastructure-related intermediate indicators to the identified key outcomes of the project. The causal chain between funding and outcomes is clear and convincing. Intermediate outcome indicators refer to outputs built according to applicable government seismic and flood hazard standards. However, there are no key outcome indicators for the other two objectives (to restore essential health and education services). The ability of the local governments to manage their respective recovery programs as a result of the training and capacity building efforts received under the project is not well laid out (ICR, paragraph 27). For example, there were no specific key outcome indicators against which such capacity was measured other than output indicators (percent of staff trained in project management for earthquake reconstruction).

A significant exogenous factor derives from the participation, in addition to the World Bank, of three other multilateral and one bilateral financing institution - the Asian Development Bank (ADB), the European Investment Bank (EIB), Agence Française de Développement (AFD) and the International Fund for Agricultural Development (IFAD). All these institutions supported the Government's US\$ 1.5 billion financing envelop to fund the Master plan. Sichuan Province was allocated US\$ 1.2 billion while Gansu Province received an allocation of US\$ 200 million (ICR, footnote 10).

Rating
Modest

4. Achievement of Objectives (Efficacy)

Objective 1 **Objective**

To restore essential infrastructure, health, and education services to at least levels existing prior to the Wenchuan Earthquake,



Rationale

OUTPUTS:

In Sichuan, all 39 subprojects were completed under two batches: 15 infrastructure subprojects under the first batch and 24 subprojects under the second batch. These subprojects included roads, bridges, flood control, solid waste management, 8 water and 6 wastewater treatment plants, and 4 water supply booster pumping stations. Loan savings added a third batch of 6 subprojects which included 17 roads, water supply facilities and ancillary pipelines and one pump station. At closure, all these additional subprojects were completed except for one road which was reported completed in March 2017 using own resources (ICR, paragraph 64).

(a) rehabilitated and reconstructed infrastructure including the following:

- 240 kilometers of non-rural roads (sealed, ICR, paragraph 66; paved, Annex paragraph 12) (target 218 km, exceeded) and 8,437 meters of bridges (exceeded target of 8,181 meters). Cost savings of US\$41 million funded another six additional roads (equivalent to 17.03 km); 2 bridges, and 1 booster pumping station.
- 166,553 meters of water supply pipelines (achieved 99% of target of 167,704 meters); 442,908 meters of drainage pipelines (exceeded target of 418,018 meters); and 30,141 meters of flood control embankment (exceeded target of 29,565 meters)
- 8 water treatment plants (achieved target); 4 water supply boosting stations (achieved target); and 6 waste water treatment plants (achieved target)

(b) constructed 60 new county and township level hospitals and health care centers (achieved target) which benefited 9.82 million people, increased hospital area post-earthquake by 58%, available hospital beds increased by 67%, and treated patients increased by 22% in these newly built facilities.

In Gansu, 31 of the 29 subprojects identified in infrastructure (9 roads and bridges, 6 water supply, drainage, wastewater treatment subprojects), health (7 facilities) and education (7 facilities) were implemented.

(a) rehabilitated and reconstructed infrastructure including the following:

- 36,105 meters of roads (achieved target of 35,911 meters or 38 roads); 18 bridges and major culverts (target achieved)
- 63,492 meters of water supply pipeline (exceeded target of 62,855 meters); 49,516 meters of storm water drainage pipeline (exceeded target of 42,053 meters); 102,489 meters of sewerage pipeline (achieved 94% of target of 109,215 meters). There was no flood control embankment reported.
- 1 rehabilitation of a wastewater treatment plant (achieved target); 2 new wastewater treatment plants (achieved target); and 1 new water treatment plant (achieved 50% of target of 2) although the ICR indicates in a footnote that this would be completed by the summer of 2017, ICR, Annex 2, p.33)

(b) reconstructed 7 county and township level health facilities (achieved target). Four of the 7 project counties reported that post reconstruction resulted in an 81% increase in available hospital beds; a 67% increase in medical personnel; and a 53% increase in treated patients benefiting from the reconstructed



facilities.

(c) constructed seven new schools (2 senior high schools, 1 middle high school, 2 junior high school and 2 vocational schools) in four project counties (achieved target) which reported higher middle school acceptance and graduation rates.

OUTCOMES:

Essential infrastructure services were restored and enhanced from pre-earthquake levels in both Sichuan and Gansu (ICR, Annex 3, paragraph 18). In Sichuan, a majority of the project counties achieved universal or near universal access to clean water supply and access level in all project counties (ICR, Annex 3, paragraph 7). In the five cities where the target 16 project counties are located, the length of water supply network increased between 56% and 169%. In the area of sanitation, coverage of wastewater treatment and solid waste treatment in the project counties had either reached or exceeded the provincial urban average level of wastewater treatment coverage (85%) and solid waste treatment coverage (97%). The length of sewage network in four of the five project cities increased between 108% to 173% while urban sewage network increased on average by 65% in urban Sichuan. In the area of roads, length of paved roads increased across the board between 25% and 96%. On a per capita basis the road network increased between 10% to 58%.

In Gansu, the project focused on the seven most heavily damaged districts and counties. In at least two project counties, wastewater treatment coverage approached 100% . The storm network (separate from the wastewater network) reached more than 95% coverage in five project counties. In the area of roads, 70-80% of total roads were paved in 4 of the 7 project counties. At project close, 90% of total roads were paved. The Moba Gorge Dam was not completed at project close. This new construction was more complex and needed more time to prepare and design, and was delayed in implementation. The ancillary water treatment plant was also delayed since the raw water to be treated depended on the filling of the Moba Gorge.

Post recovery and post reconstruction positively contributed to economic recovery and development, urbanization, urban employment, and income. Rapid recovery was accompanied by restoration and enhancement of infrastructure and services as shown by robust growth in gross regional products (ICR, Annex 3, paragraph 19), increase in employment in 4 of the 6 cities (ICR, Annex 3, paragraph 20), and per capita income increase of 90% to 154% in the project cities during the same period (ICR, Annex 3, paragraph 21). The built up area in the project cities increased by as much as 14% reflecting rapid urbanization (ICR, Annex 3, paragraph 23).

The rating of this objective is substantial because the project's reconstruction and recovery objectives were substantially accomplished in the two provinces even if two sub projects which did not appear materially relevant to meeting this objective remained to be completed by project close (i.e., the Moba Gorge dam and ancillary water treatment plant under the Gansu recovery program).

Rating
Substantial



Objective 2

Objective

To reduce vulnerability to seismic and flood hazards

Rationale

OUTPUTS:

Most of the outputs under the first objective above exceeded the levels prior to the earthquake in the areas of infrastructure and health in Sichuan and in the areas of infrastructure, health and education in Gansu province and can be considered as outputs under this objective.

OUTCOMES:

- The entire reconstruction program was designed to meet earthquake disaster standards based on an 8.0 event on the Richter scale, compared with the previous standard of 6.0.
- All project financed civil works were designed and constructed strictly in accordance with the revised national codes and standards. During construction, the ICR reports that attention was given to siting buildings to reduce risks to earthquakes and floods. When the April 2013 Lushan earthquake (7.0 on the Richter scale) struck in Lushan in Sichuan, basic infrastructure and health facilities that were constructed under the Sichuan recovery program withstood the earthquake with minor damage. The roads, water supply networks and health facilities remained fully operational and supported the emergency response activities (ICR, paragraph 75).
- The strengthened national flood design standards were included in the selection for subprojects funded under this project, including river flood protection systems, riverside roads, and major drainage systems. The design of the Moba Gorge dam as well as the ancillary water treatment plant were designed and appraised to ensure compliance with relevant floods and seismic standards.

Rating

Substantial

Objective 3

Objective

To build the capacity of local governments to manage the recovery program.

Rationale

OUTPUTS:

- In Sichuan, the staff of the Project Management Offices participated in 54 training courses covering technical subjects such as feasibility studies and project design; management information systems and monitoring; project management, financial, procurement, resettlement, and environmental management



equivalent to 1,621 training days. These training courses involved 15 heads of city and district level construction bureaus, and persons directly responsible for financial, procurement, environmental, resettlement and engineering management. The staff of the Project Management Office covering the health subprojects received 1,050 days of training. All of the staff of the project management offices and project implementing units in Sichuan were trained in project management as these relate to earthquake reconstruction.

- In Gansu, eight training events were conducted covering project, financial, construction management, and World Bank procedures . This training resulted in 930 training days.

OUTCOMES:

- In Sichuan, training efficiency and effectiveness enhanced project implementation as evidenced by the completion of all the sub projects, by accumulating savings that funded a third batch of projects which took advantage of the extension under the second restructuring due to the requirements of the delayed Moba Gorge dam and ancillary water treatment plant projects in Gansu.
- In Gansu, training and capacity building efforts appear to have been insufficient to contribute to satisfactorily completing two complex subprojects (Moba Gorge dam and ancillary water treatment plant) by project close which accounted for 32% of the total cost of the infrastructure sector recovery program.

Rating
Modest

5. Efficiency

Economic and Financial Efficiency: Because of the emergency nature of the project operations, there was no formal economic analysis conducted at appraisal (ICR, Annex 3, paragraph 1). Post completion, the efficiency of the project investments was assessed using (i) cost effectiveness or comparison of the planned versus actual costs and physical outputs, (ii) levels of restored essential infrastructure services compared to pre-earthquake levels, and (iii) the level to which the resilience and recovery of the local economies correspond to the level of recovery of essential infrastructure services (ICR, paragraph 79). Higher seismic standards supported by the project resulted in higher costs of the infrastructure. Demand assumptions were realistic. The resulting resilience and improved quality of the structures were evident after the Lushan earthquake of 2013 but there was no quantification of savings realized by local governments from having the infrastructure fully operational to support emergency response efforts; minimal need for repair, and reduced disruption to local economies (ICR, paragraph 86).

Cost effectiveness - the resources were used effectively in Sichuan Province resulting in the reconstruction



and recovery of its 16 counties. Optimal design, competitive bidding, contract standardization, and close monitoring of project implementation, resulted in cost savings which, together with counterpart funds financed a third batch of infrastructure subprojects and completed during the 23 month extension. In Gansu meanwhile, resources supported seven counties in Longnan municipality. Twenty nine of the 31 subprojects were completed. The two partially completed subprojects, the construction of the Moba Gorge dam and ancillary water treatment plant amounted to US\$ 38.93 million or 32% of the total infrastructure recovery program of Gansu. In both provinces, the investments were deemed cost effective (ICR, paragraphs 80-81).

Restoration of essential infrastructure services - Essential infrastructure and services were restored and reached pre-earthquake levels (ICR, paragraph 82). Improvements were introduced in the quality and reliability of infrastructure services and enhanced the overall development in the project counties in both provinces. For example, wastewater treatment is reported to have reached 100% coverage in two counties in Gansu and in five other counties, 95% of their storm water is separated from wastewater (ICR, paragraph 82). In health services, Sichuan hospital beds increased by 67% and in the Gansu project, hospital beds increased by 81%. Satisfaction with health services was reported higher than pre-earthquake levels with no supporting survey data. In education (only in Gansu Province), seven schools were rebuilt at much higher standards and with much improved facilities and educational materials than before the earthquake. Only one middle school was delayed because of water connections implemented by the county and completed in 2016. All the other facilities were built by the end of 2013.

Resilience and recovery of the local economy - in Sichuan Province, there is evidence that restoration and enhancements of infrastructure and services have contributed to the rapid recovery of local economies as reflected in increases in gross regional products, employment rates, and per capita income in the project areas. The project counties also experience rapid urbanization, aided by the reconstructed infrastructure services. In both Sichuan and Gansu, evidence points to provision of essential infrastructure and services (water, sanitation, roads, health and education) were restored and enhanced from pre-earthquake levels.

Administrative and Operational Efficiency: The project overhead costs were acknowledged high (ICR paragraph 87). The Moba Gorge dam and the ancillary water treatment plant were delayed by 23 months although the remaining subprojects were not negatively affected. Sichuan gained some cost savings from operations that led to a third batch of subprojects which took advantage of the project extension opportunity afforded by the delayed Gansu sub-projects. There were resettlement issues in Gansu that delayed or cancelled some road sections in Cheng County. This delay plus an understaffed Longnan Project Management Office and its poor communication with project stakeholders were the main issues addressed in the 2014 restructuring (ICR, paragraph 40). By January 2015, the project restructuring paper noted that there continued to be delays in completing the diversion tunnel affecting the start of the Moba Gorge dam construction. Resettlement issues also delayed the completion of some urban roads in Wuhu District and Cheng County. Some roads were dropped or realigned to minimize resettlement needs and all activities, with the exception of Moba Gorge dam and the ancillary water plant, were expected to be completed by May 31, 2016.

Efficiency Rating

Modest



a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate		0	0 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

Relevance of Objective is substantial. Relevance of Design is modest because of two factors - (i) the inclusion of the more complex, new construction of the Moba Gorge dam as an activity for reconstruction and recovery, and (ii) the weak link between training and the ability of the local governments to manage their respective recovery programs. Efficiency is modest because of the operational and administrative delay in implementing the Moba Gorge dam and the ancillary water treatment plant in Gansu. Efficacy of objectives 1 and 2 are substantial but efficacy of objective 3 is modest since capacity building is modest in Gansu based on the delayed completion of two substantial subprojects. In accordance with the harmonized evaluation criteria agreed with OPCS, outcome is moderately satisfactory.

a. Outcome Rating

Moderately Satisfactory

7. Rationale for Risk to Development Outcome Rating

The following pose risks to development outcomes (ICR, paragraphs 95-98):

1. Exposure to Natural Disasters: The region is prone to natural hazards. An even bigger future disaster could undo the physical assets reconstructed under the project. In particular, the region is prone to earthquakes. This risk may be mitigated by strict compliance with seismic codes. The structures that were built were in compliance with seismic codes and withstood the 2013 Lushan earthquake.

2. Economic:

- Future economic shocks may disrupt economic activities in the disaster prone areas. This risk is mitigated by the Government's introduction of the Catastrophe Household Insurance Plan System (CHIPS) for households, a public-private partnership created in May 2016 to ease the burden of compensating households following a disaster (ICR, paragraph 93). Another mitigating measure may be to further expand



CHIPS to cover disaster insurance for businesses and commercial properties (ICR, paragraph 95) to reduce local economic disruptions to both households and businesses.

- Rapidly growing small cities face financial sustainability risks. Higher level governments make resources available to these cities in the short term but these smaller cities need to develop long term capital investment and asset management planning to optimize own resource generation and reduce reliance on subsidies. Urbanization is a major strategy of the country's 13th Five Year Plan and provides some mitigating measures to support the urbanization capacity needs of smaller cities.

3. Governance and Stakeholder Ownership: Some infrastructure subprojects were not completed at project close. The Moba Gorge dam and ancillary water treatment plant may not be completed according to the post-project schedule. This is mitigated by Cheng County's dam safety review committee committing RMB 40 million counterpart funds to ensure the completion of the dam, filling the reservoir, testing and control of the works.

a. Risk to Development Outcome Rating

Substantial

8. Assessment of Bank Performance

a. Quality-at-Entry

This operation was financed by an emergency recovery loan under the Bank Policy OP/BP 8.00 Rapid Response to Crises and Emergencies. The instrument selected was appropriate since this loan was made to the Government following the May 2008 Wenchuan earthquake. The Global Facility for Disaster Reduction and Recovery financed tents and technical assistance to assist the Government in its damage and loss assessment and reconstruction planning. International experts participated in "Earthquake Recovery and Reconstruction: International Experience and Best Practice Workshop" held in Beijing on June 2008. In addition, the Bank provided 17 sector-specific best practice notes for reconstruction planning. The Global Environment Facility (GEF) also provided US\$ 1 million to assess potential chemical contamination from industries affected by the earthquake. The International Finance Corporation helped small and medium-sized businesses in the Chengdu area obtain financing after the earthquake.

The results framework was simple and adequately identified the logical causality of inputs and outputs to support the reconstruction. The only drawback was the inclusion of the complex, new construction of the Moba Gorge dam in the Gansu recovery program and the ancillary water treatment plant in Cheng county. The ICR notes that, "as expected from the outset," (ICR, paragraph 25) the Moba Gorge dam project caused delays because of its complexity, resettlement issues, and inexperienced local staff.

The framework design for project selection identified ten factors to evaluate and appraise individual subprojects to be supported (EPP, paragraph 50). This approach allowed the Bank to prepare and approve the project within five months and remain flexible in responding to evolving demands from counties and districts as part of the recovery programs in each province (ICR, paragraph 101). However, there were no



key outcome indicators for the second and third objectives of reducing vulnerability and building local government capacity, respectively (ICR , paragraph 27) (see also Section 3(b), Relevance of Design).

Two task teams were organized, one in support of Sichuan recovery and the other in support of the Gansu recovery. The task team leader for Sichuan also provided overall coordination. The Bank team also worked effectively across sectors like education and health to support implementation.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

The Bank held 25 supervision missions in the first three years of implementation, 10 to Sichuan and 15 to Gansu to address the lack of capacity in Gansu. Even after 2012 more supervisory missions were directed at Gansu to improve performance. Issues were raised with the central and provincial governments to pressure the Longnan Municipality to improve project performance but with limited success (ICR, paragraph 103). After 2013 until 2015, the Bank increased the frequency of its supervision mission to address the delayed implementation progress with the Moba Gorge dam and ancillary water treatment plant project (contract rebidding, poor contractor performance, resettlement issues). The team also hired its own dam safety expert for independent advice. This kind of attention, with the help of senior staff specialists and experienced technical consultants, enhanced communications and frank assessments of achieving project outcome. The Bank reviewed, cleared, and rated fiduciary, environmental, and social safeguards as satisfactory.

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. Assessment of Borrower Performance

a. Government Performance

The Government registered a strong leadership role in the immediate relief effort following the earthquake and a strong commitment to the project. The Government led the preparation of the National Master Plan for the Rehabilitation and Reconstruction of Wenchuan Earthquake to guide sustainable recovery and reconstruction development. The plan used a strategy that addressed reducing poverty and recognized the risks that earthquakes posed to development gains. The Government wanted to bring the Bank's monitoring, safeguards and fiduciary rigor to the reconstruction program and asked the Bank to support two of the six affected provinces where the Bank was already present (ICR, paragraph 108). The Government also committed to meet the full administrative costs of the loan to avoid adding to the financial burden of the recovering provinces. However, the Government performance reflects some moderate shortcoming in having included the new construction of the complex Moba Gorge dam project and the resolution of the



issues related to its delayed implementation (see Section 9(b) below).

Government Performance Rating

Moderately Satisfactory

b. Implementing Agency Performance

Two provinces, Gansu and Sichuan, each implemented their respective recovery program. Each set up a Project Leading Group, a Project Management Office, and an Implementing Unit (ICR, paragraph 29). In July 2008, Gansu province issued its rehabilitation and reconstruction needs in eight severely affected counties while Sichuan, which had a bigger scope, issued its plan by the end of 2008. Local counterpart funds were committed to cover relocation, resettlement, land acquisition, and some sub-project preparation costs. (ICR, paragraph 109).

Sichuan province provided a high level of political support to overcome initial implementation problems, particularly in the health sector. The Province set up two Project Management Offices, one to focus on Infrastructure and the other to focus on health. The infrastructure PMO which was based in the Provincial Construction Bureau received technical assistance from French supported consultants which further strengthened its capacity to support the implementation of the infrastructure component of the province's recovery program. In addition, the infrastructure PMO benefited from extensive World Bank experience and from technical expertise of the well established Provincial Construction Bureau. The Sichuan Health Project Management Office did not have the same experience and support as the Infrastructure PMO in managing Bank projects nor in meeting its fiduciary or safeguard issues but this drawback was addressed by technical expertise from the Provincial Health Board, support from the Infrastructure PMO as well as the Provincial Government itself (ICR, paragraph 114).

Gansu Province established the Longnan Project Management Office (PMO) within the Municipal Development and Reform Commission to coordinate the recovery and reconstruction efforts in the eight counties focusing on health, education, transport, water and the Moba Gorge dam. The Longnan PMO had no experience in Bank-funded projects, and was understaffed in number and technical expertise (ICR paragraph 115). Cheng county lacked technical and financial capacity to support projects in their area. The Moba Gorge dam sub project was delayed in implementation. The bid package for the dam was rebid and against Bank advice, civil works related to earlier works were bid in three separate packages and awarded to inexperienced contractors who performed poorly. Access to the dam site was delayed. Poor coordination among different contractors and lack of strong local supervision hampered sub project progress. Notwithstanding project extension to accommodate delayed construction, at the end of the project only 2 of the 31 subprojects in the province had less than 100% completion rates namely, 85% for the Moba Gorge dam in Cheng county and for the ancillary new water treatment plant, representing 18% of total program for the province.



Implementing Agency Performance Rating

Moderately Satisfactory

Overall Borrower Performance Rating

Moderately Satisfactory

10. M&E Design, Implementation, & Utilization

a. M&E Design

This was an emergency project. M&E was kept simple since the framework approach was used in project design. The outputs and indicators at the time of appraisal were presented in percentages of achieving target activities. There were 10 intermediate indicators, four in Sichuan and six in Gansu that were designed to assess progress in meeting the second (reduced vulnerabilities) and third objectives (local capacity to manage recovery) which the ICR admits could have been elevated to key outcome indicators (ICR, paragraph 42). For the reconstruction objective, indicators used were measurable in terms of numbers, timing, and location. The EPP notes that baseline data of conditions prior to the earthquake were readily available (EPP, paragraph 101). The only drawback was the lack of quantification of the indicator used for meeting the objective of building local capacity to manage the recovery program and therefore, inability to establish the causal chain between inputs and outcome for this third objective.

b. M&E Implementation

The Sichuan Project Management Offices for Infrastructure and Health provided regular detailed progress reports which allowed stakeholders to monitor progress. Gansu reports were intermittent, weak, with little detail and made progress monitoring difficult (ICR, paragraph 43). During implementation, the primary schools component was removed from the list of subprojects under the education sector but was never removed from the Key Outcome Indicators of the Gansu recovery program.

A Mid Term Review (MTR) was conducted in May 2012 - one for Sichuan and another for Gansu. Sichuan was advised to provide more quantitative and qualitative data to reflect the impact of the project. These included (i) description of how infrastructure subproject designs were enhanced and built to higher seismic standards; (ii) number of patients admitted in health facilities; and (iii) the coverage of water and wastewater in selected cities compared to pre-earthquake levels. Most of this data is reflected in the ICR (ICR, paragraph 44). In the case of Gansu, the team identified three issues: (i) slow provincial and municipal decision making and support, particularly in coordination and funding resettlement; (ii) poor communications between stakeholders and implementing units; and (iii) lack of staff at the Longnan municipality project management office. The team suggested replacing junior support staff with more experienced technical staff and a staff person to handle reporting to address the weak reporting cited above. These issues remained even after the MTR.

c. M&E Utilization



M&E was effectively utilized in the Sichuan PMO for Infrastructure. The Sichuan provincial government addressed early on the inexperience of the Health PMO and was able to effectively utilize M&E data as reflected in completion or exceeding infrastructure subproject targets. Stakeholders were noted to have been satisfied with the reconstructed health facilities for example. The Sichuan PMO effectively responded to the MTR findings and provided sufficient data used in the ICR.

In the case of the Gansu recovery program, M&E utilization was not as effective. As pointed out in the MTR, weak reporting was exacerbated by lack of staff. There remained issues with regard to resettlement although resolution led to a realignment of roads or completely dropping specific road subprojects to avoid resettlement issues. Lack of communication with stakeholders was cited and appears to have contributed to construction delays of the two subprojects in Gansu - the Moba Gorge dam and ancillary water treatment plant in Cheng County. At project close, there remained resettlement issues at Moba Gorge dam (ICR, paragraphs 39, 49, and Annex 6).

M&E Quality Rating

Modest

11. Other Issues

a. Safeguards

This project is a Category A because a limited number of environmental subprojects may be identified during screening (ICR, paragraph 28). The following safeguard policies were triggered by the operation:

- (i) OP/ BP 4.01 Environmental Assessment,
- (ii) OP/BP 4.04 Natural Habitats,
- (iii) OP/BP 4.10 Indigenous Peoples,
- (iv) OP/BP 4.11 (in the EPP) and 4.12 (*sic* in the ICR) Physical Cultural Resources,
- (v) OP/BP 4.12 (in the EPP) and 4.30 (*sic*, in the ICR) Involuntary Resettlement, and
- (vi) OP/BP 4.37 Safety of Dams

This project was prepared under OP/BP 8.00, Rapid Response to Crises and Emergencies. The project's Operations Manual included an environment and social screening and assessment framework (ICR, paragraph 28) to streamline safeguard procedures and ensure compliance. Social assessments were carried out. Compliance with the safeguards were satisfactory (ICR, paragraph 48). At loan closing, both provinces complied satisfactorily with safeguard policies (ICR, paragraph 47).

In Gansu province, land acquisition and compensation rated satisfactory even if compensations rates for acquisition of forest lands were not resolved before closing (ICR, paragraph 50). Dam safety safeguards were also satisfied (ICR, paragraph 51) because the Bank accepted the government assurance of continuing close supervision and a final independent dam safety review after the dam was completed. However, the issue surrounding the permanent acquisition of forestland in accordance with the approved Resettlement Action Plan remained pending as of January 2017 and expected to be resolved only by the end of 2017



(ICR, Annex 6, paragraph 16).

b. Fiduciary Compliance

Procurement:

Procurement management problems encountered early in project implementation were resolved satisfactorily by the time of project close with frequent Bank supervision and training (ICR, paragraph 53). A total of 11 cases were brought to the attention of the Bank's integrity vice presidency but all were eventually satisfactorily resolved. These cases involved contracts that were not extended properly or that required variations because of design or construction supervision shortcomings were due to inexperienced and under resourced Longnan (in Gansu province) municipal project management office.

Financial Management:

Compliance with financial management was reported as satisfactory (ICR, paragraph 52) for both the Gansu and Sichuan project management offices. Independent auditors conducted audits of both provinces which received unqualified "clean" opinions.

c. Unintended impacts (Positive or Negative)

d. Other

12. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Moderately Satisfactory	There were moderate shortcomings in operational and administrative efficiencies.
Risk to Development Outcome	Substantial	Substantial	---
Bank Performance	Satisfactory	Moderately Satisfactory	There were moderate shortcomings in identification (including the complex Moba Gorge dam as part of reconstruction) and shortcomings in design of the results framework (no



			indicators for two of the 3 objectives). The inclusion of Moba Gorge dam and ancillary water treatment plant was extraneous to reconstruction objective.
Borrower Performance	Satisfactory	Moderately Satisfactory	Moderate shortcoming in performance of one of the implementing entities which led to delays in completing 18% of its recovery program.
Quality of ICR		Substantial	---

Note

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.

The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

13. Lessons

The following lessons are drawn from the ICR (ICR, paragraphs 118-125) with slight modifications:

- Project ownership at the highest level (central government) fosters ownership at lower levels (implementing levels) of government.
- Complex projects (like the Moba Gorge dam and ancillary water treatment plant) are best implemented at the right administrative level, say at the provincial level (Gansu) rather than the municipal level (Longnan). In addition, similar complex and new construction projects may benefit from a separate, stand-alone operation instead of being part of an emergency reconstruction lending operation.
- When "Building Back Better Plus" following a disaster, using a general framework approach to identify the projects to be implemented rather than specifying these ahead of time allows for prioritizing investment needs during recovery. More complex projects may be separated and allowed to mature. For example, the reconstruction of primary schools in Gansu was prioritized by the national reconstruction program. Vocational and secondary schools were added to the subprojects under the education sector. In another case, some roads that met delays because of resettlement issues were realigned or dropped in favor of other subprojects.

14. Assessment Recommended?

No



15. Comments on Quality of ICR

The ICR is clear, concise, internally consistent and follows OPCS guidelines. Lessons drawn are based on evidence. There is a frank discussion of the moderate shortcomings in design, quality at entry and performance of one of the implementing entities. There is adequate results orientation throughout the ICR.

a. Quality of ICR Rating Substantial