

Country Name	Reconstruction of Earthquake-Affected Areas in the Ica Region
Peru	(El Programa de Reconstrucción del Área Afectada por el Terremoto en la Región de Ica)

## I. Project Outline

Background	On August 15, 2007, the powerful earthquake hit in the coastal area of Ica Region of Peru. This devastating earthquake killed more than 600 people in the Ica Region and the capital city of Lima. The Ica Region was affected severely, and school facilities and water supply facilities were badly damaged. Against such circumstance, reconstruction of affected educational and water supply facilities was urgently needed to recover the daily activities.		
Objectives of the Project	<p>&lt;Education Component&gt; To provide safe and appropriate environment to students by reconstructing elementary / secondary schools and a vocational training school and by procuring furniture and equipment necessary for rehabilitating existing school facilities.</p> <p>&lt;Water Supply Component&gt; To provide safe and stable water by reconstructing water tower and related facilities and by procuring equipment necessary for rehabilitating the existing water facilities.</p>		
Outputs of the Project	<ol style="list-style-type: none"> <li>1. Project Site: Chincha province, Pisco province and Ica province in Ica Region</li> <li>2. Japanese side <ol style="list-style-type: none"> <li>(1) Reconstruction of 5 School facilities. *Actual output was 4 facilities (See Efficiency for detail).</li> <li>(2) Reconstruction of Water Tower (1,500m<sup>3</sup>) as well as rehabilitation of water pipe, distribution pipes and lifting pump</li> </ol> </li> <li>3. Peru side: <ol style="list-style-type: none"> <li>(1) Land acquisition (Environmental and social considerations)</li> <li>(2) Permanent disposal of scrap material</li> <li>(3) Provision of electricity, telephone and piped water</li> </ol> </li> </ol>		
E/N Date	17 March, 2008	Completion Date	13 January, 2010
Project Cost	E/N Grant Limit: 785 million yen, Contract Amount: 785 million yen		
Implementing Agency	<p>Implementing Agency: Reconstruction Fund for the South (FORSUR)</p> <p>Operating Agency:</p> <p>&lt;Education Component&gt; Educational Infrastructure Office (OINFE) of Ministry of Education (MINEDU),</p> <p>&lt;Water Supply Component&gt; Ministry of Housing, Construction and Sanitation (MVCS) and Ica Municipal Drinking Water and Sanitation Company (EMAPICA)</p>		
Contracted Agencies	(i) Yachiyo Engineering Co., Ltd., (ii) Japan International Cooperation System Corporation, (iii) Ejecutora De Obras S.A.C., (iv) Marquisa S.A.C., (v) CIESA Contratistas Generales S.A.C.		
Related Studies	Basic Design Study: November 2007 – February 2008		
Related Projects	<p>Japan's Cooperation:</p> <ul style="list-style-type: none"> <li>• Study on Housing Reconstruction with Seismic-resistant Houses (Feb 2007 – April 2009, Development Study)</li> <li>• Dissemination on Construction Technology for Low-Cost and Seismic Resistant Houses II (May 2007 – April 2010, Technical Cooperation)</li> </ul> <p>Other Donors' Cooperation:</p> <ul style="list-style-type: none"> <li>• Emergency assistance from Spain on fishery, health, education and communication (2007)</li> <li>• Other emergency assistances from bilateral organizations (US, Switzerland, German, UK, Australia and Belgium) as well as multilateral organizations (Red Cross, FAO, UN, IDB, WB and CAF).</li> </ul>		

## II. Result of the Evaluation

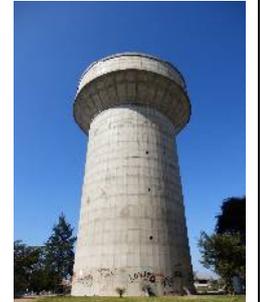
1 Relevance	This project has been highly relevant with Peruvian development policy ("rehabilitation and restoration of infrastructure affected by the earthquake" in the National Disaster Prevention and Attention Plan (2004) as well as education and water sector policies <sup>1</sup> ), development needs ("restoration of education environment and water supply affected by the earthquake in Ica Region"), as well as Japan's ODA policy for Peru (2007) with the priority area of global issues including assistance for disaster prevention and reconstruction, at the time of both ex-ante and ex-post evaluation. Therefore, relevance of this project is high.
2 Effectiveness/Impact	The project has partially achieved to provide the safe and appropriate environment to students and largely achieved to provide safe and stable water in the Ica Region. As to the Education Component, the project initially targeted five schools, however, four schools (San Antonio de Padua School, John F Kennedy School, Jose de la Torre Ugarte School, and Julio Cesar Tello School) were reconstructed by this project and the remaining one school (Jose Carlos Mariategui School) was reconstructed by Peruvian government and Peru-Japan Countervalue General Fund (FGCPJ). According to the interview results with directors and teachers, they have been satisfied with the more earthquake resistant educational facilities reconstructed according to the recent National Building regulation, and they felt more secure in the new facilities. Meanwhile, the total number of students in the target five schools was 7,339 in 2013, which has not fully met the target value of 9,400 (78% of achievement). For reference, a degree of achievement for four schools was 74% in 2013. The main reasons why the schools have not recuperated their number of students at the same level as 2007 are: (i) due to surrounding socioeconomic and family

<sup>1</sup> The Disaster Prevention and Attention Strategic Plan by MINEDU (2004) for education sector; and the Reconstruction Plan for the Earthquake-Affected Area in Ica Region (2007) for water sector.

situations after the earthquake: some students have migrated to other cities and haven't returned to the affected areas (Jose de la Torre Ugarte School), (ii) since in schools that have secondary school and primary school, only secondary school facilities were reconstructed and students of the primary schools still have to study in temporary classrooms, and lavatory facilities were not reconstructed<sup>2</sup>, hence some students have moved to other schools which offer better educational facilities and services (Julio Cesar Tello School, Jose Carlos Mariategui School), (iii) increasing competition with private and newly opened schools (Jose de la Torre Ugarte School), and (iv) the norms of 35 students per class room was applied (John F Kennedy School) and the "same zone" norm (students should go to schools in the same zone where they live) was applied after 2008 (Jose de la Torre Ugarte School, Jose Carlos Mariategui School); as a result, the number of students at the target five schools decreased<sup>3</sup>.



As to the Water Supply Component, the number of population served in the Manzanilla area, Ica province, reached approximately 26,000 in 2009, which was exceeded the population who was able to access to water supply before the earthquake. After the construction of new water tower by the project as well as development of new wells by EMAPICA as replacement of existing wells with old and low water supply capacity, the number of population served recovered to 29,240 in 2013. According to interviews with EMAPICA and community people, water users have been satisfied with the water quality, which meets current water quality standards of Peru. Moreover, they felt their quality of life was improved due to improved water supply facilities and services. The water tower has been operating 15.3 hours per day, which provides the water supply to the intended community for 20 hours per day.



No negative impact on natural environment was observed. The land acquisition was properly implemented according to the related guidelines and regulations in Peru.

Therefore, effectiveness/impact of this project is fair.

### Quantitative Effects

Indicator	Baseline value (2007)	Target value (2009)	Actual value (2009)	Actual value (2013)
<b>Indicator 1 (Education Component)</b> Number of students studying in five (5) schools <sup>(Note 1)</sup> renovated	8,091	9,400	7,367	7,399
<b>(Reference)</b> Number of students studying in four (4) schools renovated by the Japanese grant aid	Total: 5,546 (1) San Antonio de Padua: 904 (2) John F Kennedy: 2,546 (3) Jose de Torre Ugarte: 915 (4) Julio C. Tello: 1,181	6,800	Total: 4,983 (1) 960 (2) 2,203 (3) 796 (4) 1,024	Total 5,044 (1) 1,088 (2) 2,332 (3) 775 (4) 849
<b>Indicator 2 (Water Supply Component)</b> Number of population served by water tower	18,000	26,000	26,000	29,240

Source: OINFE and EMAPICA.

Note 1: The categories of schools are: (i) primary school: San Antonio de Padua & Jose de Torre Ugarte, (ii) primary and secondary school: Julio Cesar Tello & Jose Carlos Mariategui, and (iii) vocational training school (secondary school): John F Kennedy.

### 3 Efficiency

The outputs for the education component were changed: the number of target school was decreased from 5 to 4 since bidding price was higher than the planned cost as a consequent of soaring steel price. However, the remaining one school was constructed by Peruvian government and Peru-Japan Countervalue General Fund (FGCPJ). Although the project cost was within the plan (ratio against the plan: 100%), the project period was longer than the plan (ratio against the plan: 131%) because of repetition of the tender process. The first tender for the education component fell through because a bid price exceeded the ceiling price of tender. Also the first tender for the water supply component was unsuccessful because there was no bidder. For this reason, the project was obliged to conduct re-bid for both components. Therefore, efficiency of the project is fair.

### 4 Sustainability

The daily operation and maintenance (O&M) of the schools component is carried out by each school. Meanwhile, the Regional Education Directorates and Local Education Management Units (DRE/UGEL) under the Ica Regional Government monitor budget execution by each school and provide necessary technical support for appropriate O&M by each school through provision of training. Moreover, OINFE of MINEDU supervises the activities of DRE/UGEL and provides technical advice to them. The DRE/UGEL assign O&M technical staff but most of the operators and technicians are not skilled enough in the field of architecture and engineering required for appropriate O&M of schools. In the schools, the O&M manuals for public schools have been used and the regular check-up and maintenance has been carried out by each school. Each school receives the O&M budget from MINEDU, the Ica Regional Government and the parents association. The necessary budget for maintenance

<sup>2</sup> The primary school classrooms and the lavatory facilities of Julio Cesar Tello School were not reconstructed because it was not included in the project plan. The secondary school facilities of Jose Carlos Mariategui School was already reconstructed by Peru-Japan Countervalue General Fund (FGCPJ), and reinforcement work for the primary school classrooms is under implementation. However, this work has been delayed due to a contractor's nonfulfillment of contract. At the time of ex-post evaluation, detailed design for the reinforcement of primary school classrooms of Jose Carlos Mariategui School was elaborated in order to complete the work.

<sup>3</sup> The ex-ante evaluation of the project also speculated "the provided educational facilities is expected to be used as shelters at the time of disaster." However, school buildings in Peru are not designated as shelters (and are not promoted for use) even at the time of disaster in order to guarantee the right to education and the continuity of educational services. The ex-post evaluation, therefore, did not confirm such effect.

of school infrastructure has been allocated from MINEDU to each school. However, the budget allocation for day-to-day O&M activities from Ica Regional Government to each school has been insufficient. This is because the Ica Regional Government including DRE/UGEL does not have sufficient institutional capacity in execution of the budget after the decentralization reform in the 2000's although the Regional Government has enough revenue source to be spent for O&M budget. Regarding this budget issue, the budget shortage for day-to-day O&M activities has been covered by the financial and human contribution of the parents association of each school. Therefore, the budget issue has not badly affected the O&M of the school component.

The O&M of the water supply component is conducted by EMAPICA. EMAPICA has 90 staff members in its technical department, and 12 staff members of them are directly engaged in the water supply facilities in the Manzanilla area. According to EMAPICA, it has sufficient number of staff, and their technical staff members are skilled with relevant technical training and conduct the O&M activities appropriately. However, EMAPICA concerns emergency cases such as unexpected blackout because they do not have an appropriate system to respond to such cases. EMAPICA has received stable revenue from water charge in the last three years, which covered the necessary O&M costs. Regarding the current status of O&M of project facilities, both school and water supply facilities have been maintained in a good condition.

This project has some problem in structural and technical aspects of Education Component, hence sustainability of this project effect is fair.

#### 5 Summary of the Evaluation

The project has partially achieved to provide the safe and appropriate environment to students and largely achieved to provide safe and stable water in the Ica Region. As to the Education Component, on the one hand, the project successfully provided safer and more resistant educational facilities for students and teachers; on the other hand, the total number of students in the target schools was not recaptured at the same level as 2007 before the earthquake. Its main reasons are: (i) relocation of students' family after the earthquake, (ii) incomplete reinforcement work of some primary schools, (iii) increasing competition with other private and newly opened schools, and (iv) introduction of new norms in the education sector such as limitation of students' number per class room and school district system. As to the Water Supply Component, the number of population who can obtain the water from the water towers has fully met its target value with 112% of achievement. The project beneficiaries such as teachers and students of the schools and the water users have been satisfied with the improved infrastructure by the project. The water users felt their quality of life was improved due to improved water supply facilities.

As for sustainability, the project has some problem in structural and technical aspects of Education Component since there is a weakness of administrative capacity and a lack of technical skills for O&M in DRE/UGEL staff level. For efficiency, the project period exceeded the plan due to re-tendering.

In light of the above, this project is evaluated to be partially satisfactory.

### III. Recommendations & Lessons Learned

#### Recommendations to implementing agency:

##### <Education Component>

- 1) It is indispensable to strengthen the administrative and technical capacity of DRE/UGEL to sustaining project effectiveness. MINEDU, as a supervisory authority of DRE/UGEL, should take necessary measures, such as provision of more frequent training and technical advice, so that DRE/UGEL can support each school adequately to carry out their operation and maintenance activities. For example, regarding the technical issue, training on plumbing, electricity, carpentry and industrial security are recommended. Regarding the institutional issue, training on speeding up of documentation work and coordination among the regional government, DRE/UGEL and schools are recommended.
- 2) MINEDU should accelerate the delayed reconstruction plan of primary school classrooms of Jose Carlos Mariategui School in order to provide the safe and appropriate study environment.

##### <Water Supply Component>

- 1) It is important to continue providing the water supply services even if at the time of emergency like unexpected blackout because water supply is one of the most essential lifeline services. It is recommendable that EMPICA takes urgent measures, such as preparation of self/back-up generators at pumping stations in order to assure continuity of the water supply services under any circumstances.

#### Lessons learned for JICA:

##### <Education Component>

- 1) As for the indicators of grant aid projects for disaster reconstruction, the target number of students studying in renovated school buildings was set on the presupposition that the number would increase from 8,100 before the project (before the earthquake) to 9,400 in the target year. However, this target is very high considering the actual population (school-age population) trends in the school areas. The reconstruction of the schools does not necessarily guarantee the return and increase in number of students because of various factors such as relocation to outside the region, satisfaction of school facilities, competition with new/other schools and newly introduced policy.
- 2) The qualitative aspects also should be taken into consideration. In the project formulation phase, even in an emergency assistance, it is important to consider the reconstruction of integral educational facilities from the viewpoint of users' safety and appropriate educational environment.
  - It is desirable to reconstruct not only classrooms itself but also surrounding facilities such as lavatory facilities affected by the earthquake in order to offer a safe and adequate educational environment since lavatories are priority facility for safe and comfortable school environment, which sometimes becomes important factor when students choose schools.
  - In case of educational institution which has both primary and secondary schools, reconstruction projects should target both schools so that schools can equally secure safe school environment for either primary or secondary students.