

# Stories of Impact

*A series highlighting achievements in disaster risk management*

## Protecting School Infrastructure Against Earthquake Risks in Peru



**REGION:** LATIN AMERICA  
AND THE CARIBBEAN  
**FOCUS:** RISK IDENTIFICATION,  
RISK REDUCTION  
**COUNTRY:** PERU



### RESULTS:

- The Ministry of Education (MINEDU) conducted a School Infrastructure Census of 50,000 public school facilities to evaluate their current condition.
- The World Bank and MINEDU, through a Reimbursable Advisory Service (RAS), analyzed the results of the census, defined structural and functional indicators, and conducted a seismic risk assessment of 1,969 school facilities in Lima. Based on the RAS results, the government has started intervention on the 252 most vulnerable school facilities, with an estimated \$17 million investment.
- The World Bank and MINEDU are working together to define and design the National School Infrastructure Plan and identify retrofitting alternatives.

Metropolitan Lima is subject to frequent seismic activity that can damage critical infrastructure such as schools and threaten the lives of schoolchildren. In Lima, more than 64% of schools are highly vulnerable to earthquakes, which leaves more than 600,000 children at risk.

The Peruvian Ministry of Education (MINEDU), in partnership with the World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR), is working in Lima to mitigate against damage, protect students against the impact of earthquakes, and ensure the potential for educational development. Through a National School Infrastructure Plan and Structural Retrofitting Program, MINEDU is striving to strengthen the conditions of school infrastructure, as well to reduce potential seismic vulnerability.



**GFDRR**  
Global Facility for Disaster Reduction and Recovery



**WORLD BANK GROUP**

## CONTEXT:

In the Lima Metropolitan area, which has a combined population of over nine million people, earthquakes can cause severe damage to public infrastructure. Aware of the gravity of this risk, the government of Peru is striving to advance its seismic risk management efforts.

As part of a long-standing collaboration, GFDRR and the World Bank have worked with the government of Peru to strengthen the country's technical and institutional capacity in disaster risk assessment to reduce seismic vulnerability.

## APPROACH:

Through the Probabilistic Risk Assessment (CAPRA) Program, an initiative that aims to strengthen institutional capacity for assessing, understanding, and communicating disaster risk, the World Bank and the government of Peru have worked to promote the application of risk-related data for better informed decision-making. The program applies the use of CAPRA software, a free resource for risk analysis and decision-making. GFDRR has supported these efforts through technical assistance and advisory services.

Within the framework of this engagement as well as close collaboration among MINEDU, GFDRR, and the World Bank, steps have been taken to define levels of intervention, conduct an analysis of investment requirements, and develop and implement vulnerability reduction plans. Key activities include:

- Collaboration with institutions such as the Geophysical Institute of Peru to prepare national-level seismic hazard maps and models.
- Tailored workshops to train practitioners from academic institutions and government agencies to better understand disaster risk and use seismic modeling software (such as CAPRA) to estimate hazard, exposure, and vulnerability for public schools in Lima. These studies revealed that only 8% of public school infrastructure complied with seismic-resistant design codes.
- Support to the government of Peru to incorporate risk-related information into an intervention strategy that involves maintenance, retrofitting, and at times, relocation of schools to ensure the safety of schoolchildren.

## NEXT STEPS:

The results from the School Infrastructure Census have highlighted the magnitude of existing infrastructure issues in the country. MINEDU faces the challenge of defining an articulate intervention strategy that addresses both short-term infrastructure needs, as well as medium- and long-term measures for better planning, efficiency, and sustainability of school infrastructure. To help address these challenges, MINEDU will formulate the National School Infrastructure Plan to construct, rehabilitate, replace, improve, and maintain school infrastructure country-wide, as well as to identify, design, prioritize, and implement the required public investments according to the Plan. The World Bank and GFDRR will support MINEDU in preparing this plan in 2015.

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\*ALL MONETARY VALUES IN USD



*"The government of Peru, through the Ministry of Education, is committed to the improvement and rehabilitation of school infrastructure throughout the country. The Program for School Infrastructure has made advancements in adjusting its institutional structure, implementing an ambitious short-term intervention plan in Lima and designing the National School Infrastructure Plan. The World Bank and GFDRR have been strategic partners in this process by providing timely technical assistance"*

– Gustavo Canales, Director of the Program for School Infrastructure, Ministry of Education

## LESSONS LEARNED:

**Collaboration among institutions is essential to leverage the expertise of each stakeholder and achieve key milestones.** The engagement of the Ministry of Education, the Ministry of Economy and Finance, the Peru Geophysical Institute, and the private Pontifical Catholic University of Peru capitalized on the combined know-how of each organization, contributing toward a stronger National School Infrastructure Plan for reducing seismic vulnerability in school infrastructure.

**Efficiently addressing challenges requires alignment of institutional priorities and customized technical assistance.** An increased number of field visits, meetings and consistent communication among GFDRR, the World Bank, and the Peruvian Ministry of Education helped to identify issues related to a lack of knowledge of the potential impact of earthquakes on Lima's school buildings. Understanding the local context favored the alignment of institutional priorities and the integration of technical assistance into institutional processes, such as the design of a capacity building program to assess the seismic risk of 1,969 schools. Information generated by this study is now being used to inform decision-making for disaster risk reduction in Peruvian schools.