



DISRUPTIVE TECHNOLOGIES FOR DEVELOPMENT

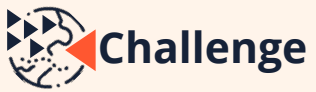
◀ Enhancing Disaster Preparedness Through Smartphone Location Data

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Enhancing Disaster Preparedness Through Smartphone Location Data



Challenge

Natural disasters cause billions of dollars in damage to cities across the world, but **strengthening preparedness by learning from past events remains difficult due to data gaps.**



Solution & Technology Used

A **data analytics tool kit using a stream of smartphone location data** (from tech firm Cuebiq) to help cities develop better-targeted urban resilience investments and emergency response plans.



Implementation

The main pilot will be focused on the 2017 Mexico earthquake – with additional smaller pilots in two Mexican municipalities and Indonesia. Pilots will use the anonymized smartphone location data for Mexico and Indonesia.



Impact

Scale-up of emergency preparedness: The project will develop a pathway to scale up this analysis within the Bank as data becomes available for more countries.
Investment prioritization: The project would support prioritizing urban infrastructure, housing, safer school, and other public asset investments under urban resilience projects.



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Pilot Results



The team **developed a code library** to be packaged into the mobility data analytics tool kit. **Puebla earthquake impact research paper** is scheduled to be finished in December 2020.

- **Produced a code library ready to be packaged into an open-source toolkit:** The team successfully developed a code library that can produce mobility patterns based on smartphone location data. The toolkit is scheduled to be delivered by October 2020.
- **Conducting Mexico City resilience analysis:** Research papers analyzing mobility patterns and infrastructure usage during and after disasters will be complete by December 2020.
- **Building a scalable solution for disaster risk management:** The team is working on a library of use cases. The goal is to build a scalable toolkit as data becomes more available globally.



Partners

- External: MindEarth, Fondazione Bruno Kessler, École Polytechnique Fédérale de Lausanne, MIT researchers.
- WBG: Development Data Partnership, ITS Lab.



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Pilot Results

Relevance in the age of Covid-19

- The team applied the tools and knowledge gained with the DT4D grant to **produce mobility patterns in Indonesia since the Covid-19 outbreak.**
- The data generated **can inform and guide policymakers' responding, reopening, and recovery plans.**

Next Steps & Beyond DT4D

- **Strengthening WBG's disaster response across Central America**
 - Newly developed analytical methods using smartphone location data can bolster the Urban and Disaster Risk Management team's engagement in the region.
 - Disaster resilience analysis will be expanded to other municipalities in Mexico beyond Mexico City.
- **Building a new Covid-19 risk management platform leveraging DT4D deliverables**
 - The team is using insights and analytic tools developed with the DT4D grant as the foundation for a pandemic response platform.