

Mitigating hydro-meteorological hazard impacts through improved transboundary river management in the Ciliwung River Basin

On the island of Java, Indonesia, the Ciliwung River flows from its source in Bogor Regency and passes through two provinces and four municipalities, including the capital city Jakarta, to reach the Java Sea. The river is prone to flooding and management of the hazard in this complex transboundary river basin environment poses a significant challenge. With a focus on risk governance, the project *Mitigating hydrometeorological hazard impacts through improved transboundary river management in the Ciliwung River Basin* will examine the influence of current river management arrangements on flood hazard impacts and will formulate plans for improved transboundary river governance to tackle current and future flood risk.

ISSUES & How the project will address them

MULTIPLE MUNICIPALITIES, MANY STAKEHOLDERS:

The Ciliwung River crosses two provinces and four municipalities, hence there are many stakeholders concerned with the management of the river.

The project aims to bring stakeholders together and to foster basin-wide dialogue between institutions.

FRAGMENTATION:

Due to Indonesia's decentralised governance structure, each municipality has the authority to develop its own plans and address its own priorities. However, this can lead to fragmentation of actions which may exacerbate flood risk.

Through consultations with key stakeholders, the project will investigate existing levels of collaboration within the basin and how the current management arrangements influence flood impacts.

SEVERE FLOOD IMPACTS:

Jakarta has one of the highest flood risks globally.

Flooding in 2013



Through improved transboundary coordination, the causes of flooding in the Ciliwung Basin can be addressed in a more holistic manner and the impacts of flood events can be reduced.

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MULTIFACETED FLOOD RISK:

Flooding in Jakarta has both physical and socio-economic origins -



Land subsidence



Poor drainage and storage capacity



Sedimentation and pollution



High intensity rainfall



Rapid population growth and urbanisation



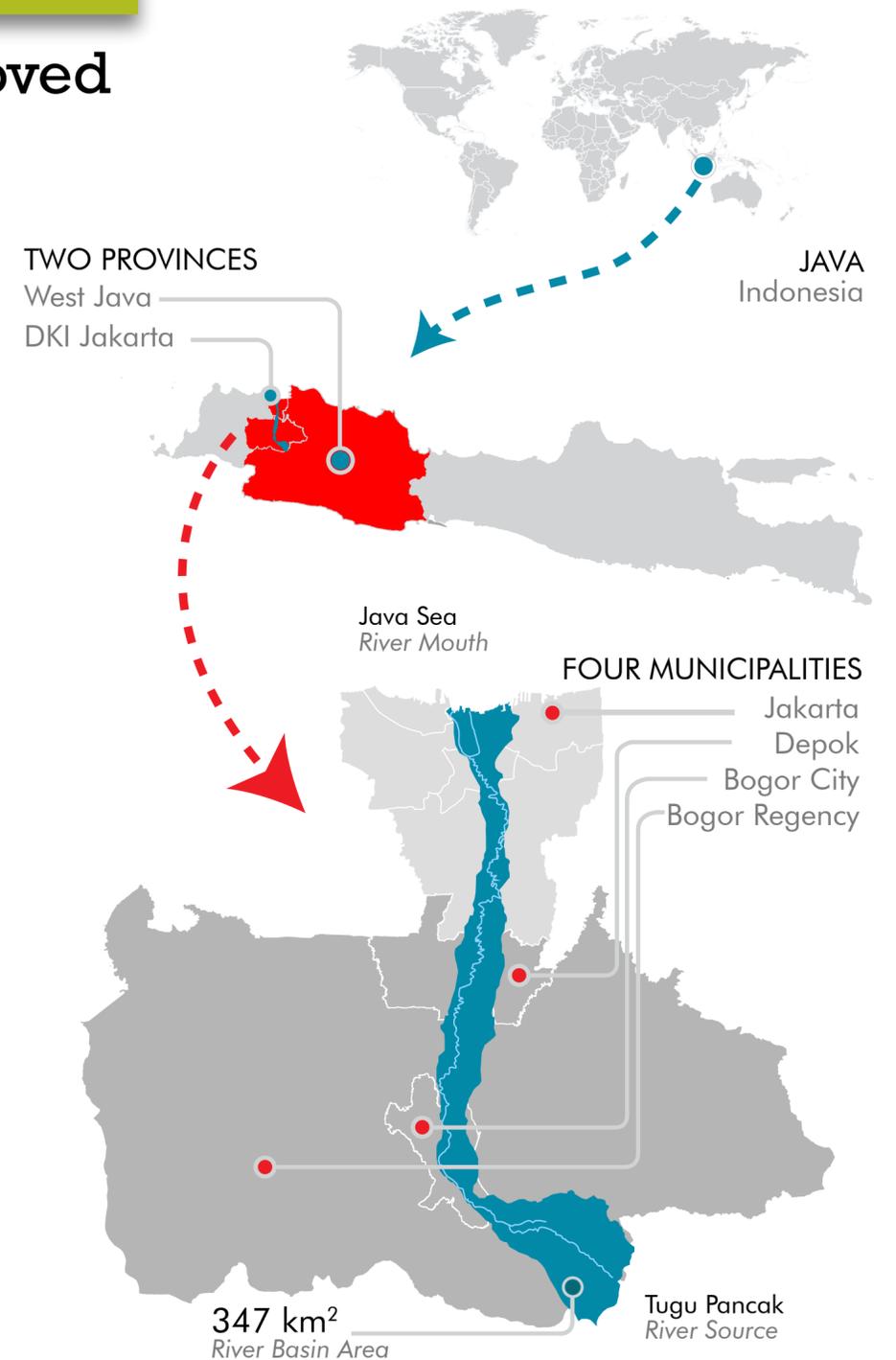
Unplanned development

Hydrodynamic and urban flood modelling will be employed to understand the drivers of flooding and identify flood risk zones. The impact of climate change on the variability of flood drivers will be considered. The findings will inform recommendations for improved flood management arrangements.

EFFECTIVE EARLY WARNING:

Early warning can be a useful tool for saving lives and preventing damage, but such systems require effective coordination, communication and data sharing between stakeholders from upstream to downstream, as well as engagement of the community.

The project will seek to understand current decision making processes and community perceptions to develop effective operating procedures for end-to-end early warning."



THE NERC FUNDED PROJECT IS A COLLABORATION BETWEEN UK AND INDONESIAN INSTITUTIONS:

- Global Disaster Resilience Centre, University of Huddersfield, UK (Lead)
- College of Engineering, Swansea University, UK
- Dept of Regional and Urban Planning, Institute of Technology Bandung, Indonesia
- School of Meteorology, Climatology and Geophysics (STMKG), Indonesia

IN CONJUNCTION WITH NATIONAL AND PROVINCIAL STAKEHOLDERS:

- BMKG (Indonesian Agency for Meteorology, Climatology and Geophysics).
- BNPB (National Disaster Management Agency)
- Balitbang PU (Ministry of Public Works – Research and Development Center)
- BAPPENAS (National Planning and Development Agency – Directorate of Irrigation and Water Infrastructure)
- BBWS CC (Authority for Ciliwung and Cisadane River Watersheds)
- BPBD (Disaster Management Office of the West Java Province)
- Dinas Tata Ruang dan Cipta Karya (Department of Building, Spatial Planning and Land Affairs, Jakarta Province)