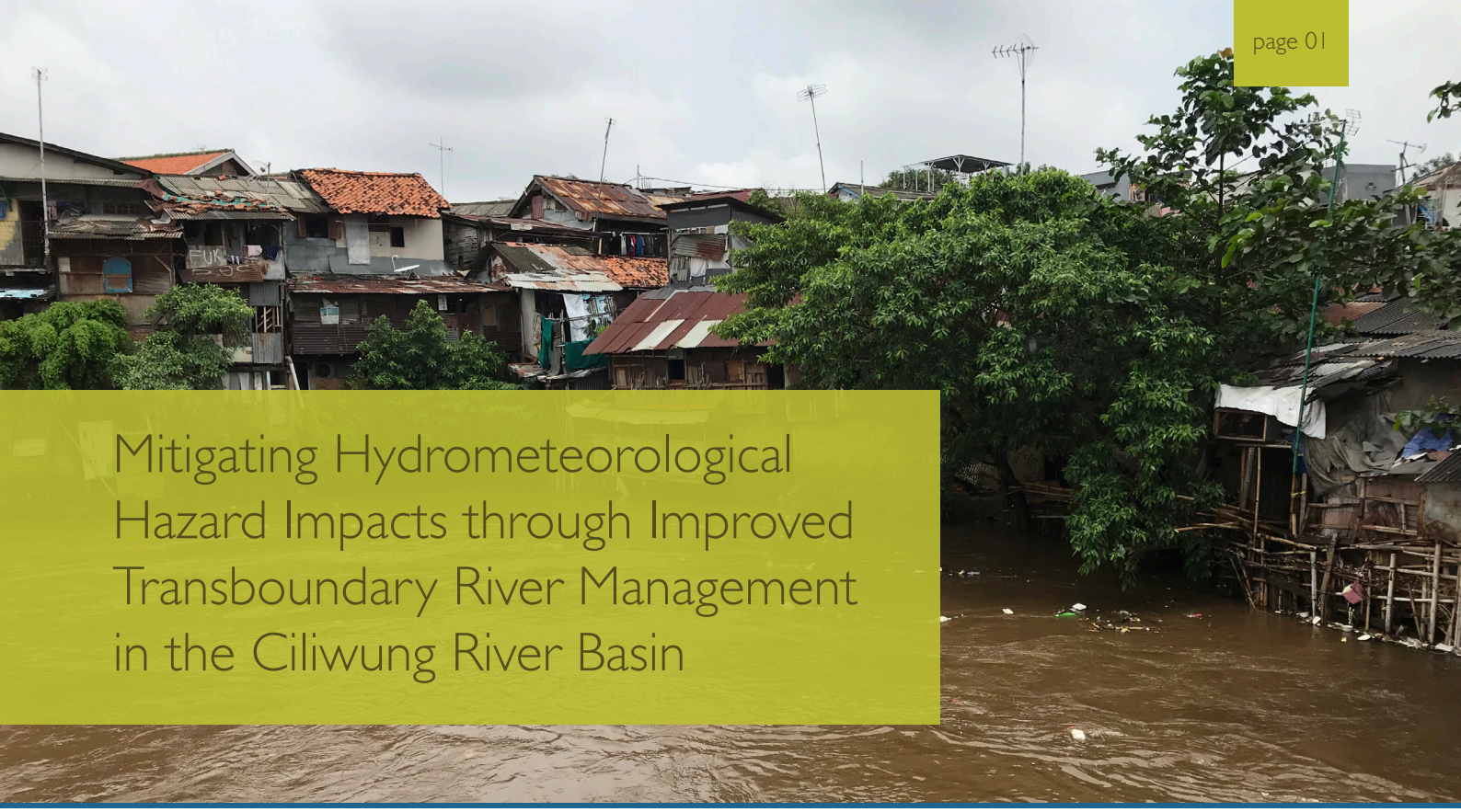

Mitigating Hydrometeorological Hazard Impacts through Improved Transboundary River Management in the Ciliwung River Basin

Aim of the Project

The project aims to inform plans for improved transboundary river governance arrangements to tackle growing flood risk in the Ciliwung River Basin, Indonesia.

Flood risk in Jakarta

In recent decades the Jakarta Metropolitan Area has undergone widespread development and led Indonesia's impressive economic growth. The Ciliwung River Basin (CRB), with an area encompassing 347 km2, starts upstream at Tugu Puncak located between Bogor and Cianjur Regencies, but runs downstream into the Jakarta Bay area. There has been rapid development within the CRB due to the increasing rate of population in the JABODETABEK (Jakarta, Bogor, Tanggerang and Bekasi City) area.

This rapid development has contributed to undesirable water-resource issues and increased flooding. Major floods in 1996, 1999, 2002, 2007, 2013 and 2014 have caused billions of dollars of direct and indirect economic damage.

The floods are of both fluvial and coastal origin, and are worsening due to a large number of drivers, including physical and socio-economic, and due to climate change impacts. Physical drivers include land subsidence, drainage and storage capacity in Jakarta's rivers and canals as a result of being clogged by waste and sediments eroded from upstream, and climate change. Socio-economic drivers include a rapidly growing population, and land use change causing a growth in economic assets located in potentially flood-prone areas. Global climate variabilities have proven to increase frequency and severity of extreme weather events.

Project consortium:

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

University of HUDDERSFIELD
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Swansea University
Prifysgol Abertawe

Project Partners:

At national level:

- BMKG (Indonesian Agency for Meteorology, Climatology and Geophysics)
- BNPB (National Disaster Management Agency)
- BAPPENAS (National Planning and Development Agency, Directorate of Irrigation and Water Infrastructure)
- Balitbang PU (Ministry of Public Works, Research and Development Center)

BMKG

BNPB

Kementerian PPN/ Bappenas

BADAN PENELITIAN DAN PENGEMBANGAN
Kementerian Pekerjaan Umum dan Perumahan Rakyat
Republik Indonesia

At provincial level:

- BBWS CC (Ciliwung and Cisadane River Watershed Authority)
- BPBD (Disaster Management Office of West Java Province)
- Dinas Tata Ruang dan Cipta Karya (Department of Building, Spatial Planning and Land Affairs, Jakarta Province)

BBWS Ciliwung Cisadane
DIREKTORAT JENDERAL SUMBER DAYA AIR
KEMENTERIAN PEKERJAAN UMUM DAN PERUMAHAN RAKYAT

NERC SCIENCE OF THE ENVIRONMENT

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

Newton Fund

RISTEKDIKTI

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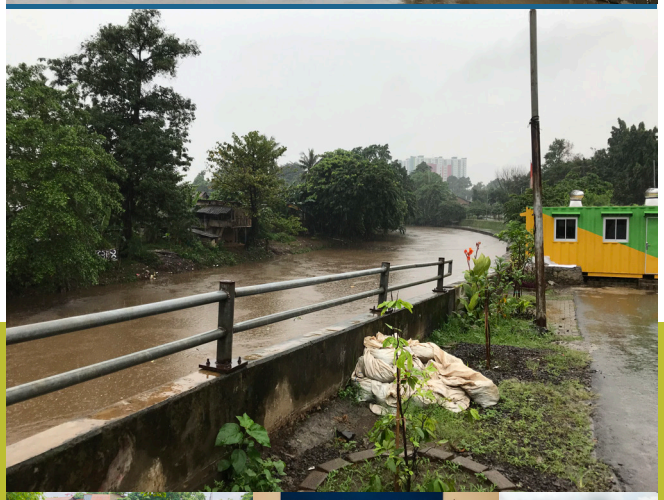
The transboundary river management issue

Despite the wide recognition that river basins should be managed as a whole, basin-wide coordination can be difficult to achieve when a river transcends administrative boundaries. Decentralisation in Indonesia has shifted authority to the local level. While this type of decentralisation is often associated with good governance and can bring many benefits, it has a tendency to create fragmentation and make coordination more complex.

The Ciliwung River crosses through two provinces (West Java and DKI Jakarta) and four municipalities (Bogor Regency, Bogor City, Depok City and Jakarta City). Each local government has the power to enact regulations, develop its own plans and programmes, and decide on their own priorities based on local interests. It has also led to more institutions at different government levels, including national, provincial, and local levels, including those responsible for flood management.

There is currently a lack of understanding of how the existing management arrangements influence flood impacts and in what ways they could be improved to achieve flood risk reduction.



How are we addressing the problem?

Through an interdisciplinary approach, the project will take steps towards informing improved transboundary river management arrangements for flood mitigation in the Ciliwung River Basin.

Developing successful plans first requires a clear understanding of flood risk. To do this, the project will employ hydrological and urban flood modelling to identify the key flood drivers and explore how flood risk may alter in the future under climate change. The project will examine the existing river management arrangements and identify how they affect (either positively or negatively) the functioning of flood risk management in the basin. These arrangements include legal frameworks, roles and responsibility-sharing, modelling, data and information sharing in support of flood forecasting and early warning, dialogue and coordination mechanisms, and stakeholder participation.

Together, the results will be used to develop an in-depth understanding of the environmental, socio-economic, political and organisational landscape associated with flood risk. From this, a vision paper outlining recommendations for improved transboundary management arrangements will be produced.

The project is jointly led by the Global Disaster Resilience Centre, University of Huddersfield, UK and the Institute of Technology Bandung, Indonesia and is supported by several national and provincial government institutions who are involved as project partners. Stakeholder engagement is a key aspect of the project, with several public engagement and capacity building events planned in order to foster basin-wide dialogue and to ensure that relevant and impactful solutions can be realised.

How will the research make a difference?

The research will contribute to improved governance and institutional arrangements, including clearer roles and responsibilities, better coordination mechanisms, improved models and information sharing procedures and increased stakeholder participation in the Ciliwung River Basin. The project will strengthen the knowledge and awareness of decision makers and foster greater dialogue between actors. More broadly, the research will contribute to understanding how transboundary governance can be improved to benefit flood risk management and provide a model for the governance of transboundary basins elsewhere.

For more information about the project please visit
www.resilientciliwung.com
or contact Richard Haigh (r.haigh@hud.ac.uk) and
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