

Review

The paper comprehensively discusses the challenges of managing transboundary river flood management along the Ciliwung River Basin, which largely covers the Jakarta Metropolitan Area. While the topic is timely, several issues need to be addressed before considering the paper for publication: (1) cite more recent literature on Greater Jakarta's urbanisation and peri-urbanization/ suburbanisation, which amplify the magnitude of the floodings; (2) add some key/ critical quotes from the expert interviews in the Discussion; (3) make sense the findings by outlining its relevance for or contribution to the global literature development in the areas of transboundary river/ flood risk management; and (4) address grammatical and typo errors throughout the paper (e.g. incomplete or fragmented sentences and paragraphs, non-standard citations, incorrect table numbering/ cross-reference, use of articles).

No	Reviewer #2	Harkunti P. Rahayu Response
1	Cite more recent literature on Greater Jakarta's urbanization and peri-urbanization/ suburbanization , which amplify the magnitude of the floodings;	<p>Add to after Line 40:</p> <p>Several factors have contributed to the increased magnitude of flood impacts in Greater Jakarta over the past few decades (Budiyono et al., 2016), i.e. precipitations, land-use, sea level rise and land subsidence. Meanwhile urbanization in Jakarta between 1995-2014 decreased runoff regulation, which related to a decrease in green spaces and bodies of water, as well as landscape pattern changes (Maheng et al, 2021), and spatial characteristics, which included industrial parks, mixed-use new towns and large-scale residential areas, and shopping centers (Firman and Fahmi, 2017).</p> <p>However, massive urbanization in Jakarta has strongly influenced the land use change. Silver (2007) has identified that the Jakarta land use change was initiated in the early 1980s, where many agricultures and forest area in suburban of Jakarta were transformed into large-scale subdivisions and new towns. There were more than 30 large new suburban towns and industrial parks built in the peripheries of Greater Jakarta between 1990 and 2010, with average size from 500 to 30,000 hectares (Firman, 2014).</p> <p>As Jakarta lies in lowland area with 13 river system. All tributaries and river basins located in the Greater Jakarta and its peripheries. The vast peri-urban development in the last three decades may cause the massive conversion of water catchment area, wetland, and green areas, which lead to the increase of flood threat to the Jakarta.</p> <p>Moreover, Priyambodo et al (2022) study found that urbanization was clearly seen to increase not only the intensity and volume of precipitations, but also the runoff, river flow discharges, which all lead to the increase of flood threat.</p>
2	Add some key/ critical quotes from the expert interviews in the Discussion	<p>1. Spatial plan: quote will be added to Line 215-229:</p> <p>Ciliwung-Cisadane River Basin Authority (BBWS Ciliwung Cisadane) stated that "There were massive land use change at the upstream of river basin, where this became main flood driver. However, the flood itself was worsened by the extreme rainfall".</p> <p>Ministry of Environment and Forestry (KLHK) – Agency for Citarum-Ciliwung River Basin Management (BPDAS – Balai</p>

		<p>Pengelolaan Daerah Aliran Sungai Citarum-Ciliwung) assumed that "The landcover and the land use change become primary contributor to Ciliwung River Basin flood. For example the deforestation of the upstream Ciliwung River Basin may cause flooding on downstream. Thus, the spatial plan needs to consider the flood risk".</p> <p>National Planning and Development Agency (BAPPENAS) said that "Starting from 2010, average runoff coefficient has been recalculated due to land use change. There was an increase up to 0.4 and 0.5 in 2014".</p> <p>West Java Planning and Development Agency (Bappeda Jabar) assumed "The development in the catchment area should consider transboundary commitment for rehabilitation of conservation and protected area. The more land use change, the less water catchment area, which lead to flood"</p> <p>2. Stakeholder Coordination and cooperation: quote will be added to line 230-243</p> <p>Ministry of Environment and Forestry (KLHK) – Agency for Citarum-Ciliwung River Basin Management (BPDAS – Balai Pengelolaan Daerah Aliran Sungai Citarum-Ciliwung) stated that "Ciliwung river is very complex in its governance. Jakarta Provincial Government responsibility is the downstream, while West Java in upstream only. The transboundary river management should have one leader. If the Ministry of Environment and Forestry (KLHK) take a lead, it will be difficult for managing the inter and cross sectoral issues. For example, the management of Citarum River was assigned to Citarum Harum lead by National Military based on the presidential decree. Thus, the Ciliwung river management needs to have similar governance structure. The existence of Coordinating Board for Jakarta Metropolitan Area Development (BKSP Badan Kerja Sama Pembangunan) has not been optimal and sustainable."</p> <p>National Planning and Development Agency (BAPPENAS) said that "However, the transboundary coordination function could be managed by the Project Management Officer (PMO) of Jakarta Metropolitan Area (Greater Jakarta), which will be later substitute the Coordinating Board for Jakarta Metropolitan Area Development (BKSP) in coordinating the three provinces, i.e. Jakarta, West Java and Banten provinces. However, this seemed to be in effective since there is no involvement of national government. In the future, it is expected that there is coordinating body lead by Minister of Agrarian Affair and Spatial Planning with Minister of National Planning and Development Agency as the vice, with its think tank at the existing Coordinating Board for Jakarta Metropolitan Area Development (BKSP)."</p>
3	make sense the findings by outlining its relevance for or contribution to the global literature development in the areas of transboundary river/ flood risk management	A holistic approach is needed in the development of flood risk management, covering the upstream, midstream and downstream. Controlling the upstream and midstream development through integrated spatial planning are necessary to reduce flood risk at the downstream. Since Ciliwung river is one of the longest river basins passing through 3 province and 5

		<p>regencies/cities, the role transboundary coordination in water resource and flood risk management become very critical from the perspective of ego sectoral as well as ego area jurisdiction.</p> <p>This is in line with the findings of the study, using key flood driver's framework and MICMAC analysis, that shows the spatial plan (A12) and stakeholder cooperation and coordination (A10) are the most critical flood risk driver in Ciliwung River Basin management. Both key flood drivers are independent drivers which the most powerful influence on other key flood drivers. This study has emphasized on the important of non-structural mitigation through spatial planning, covering the issues and challenges of Ciliwung flood risk governance in reducing/managing the Ciliwung River Basin flood risk and achieving sustainable catchment area.</p> <p>Findings of this study could be as the inputs for other cities/metropolitan which has similar problem transboundary river flood management.</p>
4	address grammatical and typo errors throughout the paper (e.g. incomplete or fragmented sentences and paragraphs, non-standard citations, incorrect table numbering/cross-reference, use of articles).	<ol style="list-style-type: none"> a. Grammatical and typo errors (incomplete or fragmented sentences and paragraphs) have been check using Grammarly Check Tool and proofread. b. Non standard citations have been checked and revised. c. Incorrect table numbering has been revised. d. Incorrect cross-reference has been revised. e. Uses of articles have been check using Grammarly Check Tool and proofread.

References:

Silver, C. (2007) *Planning the Megacity: Jakarta in the Twentieth Century*. London and New York: Routledge.

Firman, T. (2014) "The Dynamics of Jabodetabek Development: The Challenging of Urban Governance." In: Hill, H. (ed.) *Regional Dynamics in a Decentralized Indonesia*. Singapore: Institute of Southeast Asian Studies.

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Firman, T., & Fahmi, F. Z. (2017). The privatization of metropolitan Jakarta's (Jabodetabek) urban fringes: The early stages of "post-suburbanization" in Indonesia. *Journal of the American Planning Association*, 83(1), 68-79.