

# Environmental Inequalities in the Mekong River Basin: A systematic mapping of existing knowledge

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### PITCH

How do accelerating environmental changes impact inequalities and how do rising inequalities affect, in reverse, environmental dynamics? Numerous studies have tackled one specific aspect of the relation between environmental changes and inequalities in the Mekong region, but no holistic assessment has been conducted so far. We propose a systematic mapping of the inequality/environmental change nexus in five Mekong countries: Cambodia, Laos, Myanmar, Thailand and Vietnam. 14570 scientific and grey literature references are collected. After title and abstract screenings, 6042 items enter full-text screening, and 2355 items are included in the end for the mapping. Such systematic mapping provides a picture of existing knowledge, scientific gaps and scientific support for evidence-based policy making. A repository of the bibliographic database is created to help future research and projects in this area!

### ISSUES

In a review at global scale, Hamann et al. (2018)<sup>2</sup> show that far from being

independent, inequality and the biosphere interact in many different ways. The impacts of environmental change vary among groups of people and are themselves influenced by existing social inequalities. In the context of environmental change, inequalities appear in various forms such as unequal access to environmental goods or different degrees of exposure to environmental risks or the unequal effects of policies related to land, water, forest, and climate change.

The Mekong River Basin plays a crucial role in the livelihoods of millions of people. Current environmental problems in the region, such as land use changes, development of hydropower dams and water infrastructure, extreme weather events and pollution, have caused major disruptions and threatened the lives and livelihoods of the basin's inhabitants.

We considered it essential to map the scattered knowledge, highlighting the diverse quality of studies, their data sources, their representativeness and their gaps, or on the contrary the well-

established results that could support science-based decisions.

### METHODS

Through the systematic mapping method<sup>3</sup>, conducted between 2019 and 2021, the authors seek to map the evidence on the inequality - environmental changes nexus in the Mekong River Basin countries. It includes the following steps: expert committee gathering; research team building in five countries; construction of search equations based on the list of tests established with experts, with four main elements, P- Population, E- Exposure, C- Comparator and O- Result; Search of literature (both scientific and grey literature) with apparent guidelines; Screening of the results at three levels, title, abstract and full-text.

At the full-text screening stage, inclusion and exclusion criteria are established between the reviewers and the scientific committee. The relationship between environmental change and inequality is examined in both directions.

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**Geography** Cambodia, Laos, Myanmar, Thailand, Vietnam, Mekong Region

**Key words** Environment Inequalities, Systematic Mapping, Mekong, Rights, Climate, Pollution

**Themes** Systematic Mapping, Human Ecology, Political Ecology, Development, Sustainability

**Find out more about this project:** <https://www.afd.fr/en/inequalities-and-environmental-changes-lower-mekong-river-basin>

## RESULTS

In terms of geographical coverage, there are more publications in Thailand (38% of studies, including regional studies – Mekong, Southeast Asia, Asia and Global), Vietnam (24%), and fewer publications on cases in Cambodia (12%). Myanmar and Laos (8% each) are the countries with the fewest publications in the collection. This geographic imbalance demonstrates the difference in national scientific production and the inequality of research capacity or interest in the subject between countries. In addition, Thailand, and more recently, Myanmar, are the subject of more work related to or emerging from the discussion about human rights, environmental protests and non-governmental organizations.

The evolution of the mapping with time is interesting per se. There is a significant increase in studies on inequalities and environmental changes during the 2000s, especially in Vietnam and Thailand. The following decade (2011–2020) witnessed a booming in scientific works on the vulnerable groups in the face of environmental stressors.

The share of knowledge production is higher from international experts since the 1990s, most of them have worked and stayed in the region for extended period. The publications from local researchers have grown, illustrated in the current increase in the number of publications, especially after 2000s. It is part of the growth in research facility worldwide, and due to the growing interest in the impacts of policies, development and environmental changes.

A thematic analysis shows how the majority of studies focus on rural areas and highland regions. While a number of studies consider local communities in general as the key population at risk, the most studied actors in terms of vulnerability to environmental changes and their consequences are farmers/smallholders, mountain/ethnic people or the poor. There is a growing but recent interest, in gender-biased impacts of environmental changes, on urban populations, especially the urban poor, or the so-called slum communities in the city.

Among others, three aspects of the environment – inequality nexus stand

out: the issue of rights and access to resources (land, water, forest, fish resources); climate change and disaster impacts on vulnerable groups; and a growing interest on pollution.

With the present systematic mapping of scientific and grey literature, knowledge gaps are identified, to which more research and attention are needed. Populations such as fishers, seafarers, migrants, refugees, and non-traditional groups such as small and medium enterprises, or street vendors are much less investigated.

Transboundary issues such as commercial crop investment, hydropower building, water quality across countries were investigated with a growing focus on their policy implications. Also, there is a growing interest in sustainability both in terms of methodology and as an autonomous research topic.

Environmental inequality, inequity and injustice are new terminologies in our mapping and only a limited amount of research directly mention them.

## RECOMMENDATIONS

- ▶ Research institutions should focus more on notions of equality, equity and justice. Scientific and policy institutions should strengthen their connection and develop applied research programs on environmental inequalities in order to advance sustainability science and policies.
- ▶ Research capacity building is particularly needed for Laos, Cambodia and Myanmar, as well as for integrated regional perspectives. New specific lines of research need to be launched targeting new population groups, such as fishermen, seafarers, migrants, refugees, urban small and medium enterprises, or street vendors.
- ▶ Inequalities in the face of environmental change, if they remain high or even increase, will hamper development efforts. New governance paradigms need to emerge that take more account of the root causes of imbalances: the nature of ethnic identification bias (as forest destroyer in forest conservation policy), the current structure and status of the state where effective participation is not common practice, and the undervaluing of indigenous and local livelihoods.

1 Based on Huynh, Thi Phuong Linh, Etienne Espagne, Stéphane Lagrée, and Alexis Drogoul (2021). Inequalities and Environmental changes in the Mekong region: A systematic mapping of existing knowledge. AFD Working Paper.

[https://www.zotero.org/groups/2366065/mekong\\_equality/collections/EWDLR984](https://www.zotero.org/groups/2366065/mekong_equality/collections/EWDLR984)

2 Hamann, Maike, Kevin Berry, Tomas Chaigneau, Tracie Curry, Robert Heilmayr, Patrik JG Henriksson, Jonas Hentati-Sundberg, Amir Jina, Emilie Lindkvist, and Yolanda Lopez-Maldonado (2018). "Inequality and the Biosphere." *Annual Review of Environment and Resources* 43:61–83.

3 Armstrong, Rebecca, Belinda J. Hall, Jodie Doyle, and Elizabeth Waters (2011a). "Scoping the Scope" of a Cochrane Review." *Journal of Public Health* 33(1):147–50.

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