

Julian Kirchherr, University of Oxford, United Kingdom

Nacala Dam construction in Mozambique, Africa. Source: Corps New England, Flickr Creative Commons

More dams are built these days than ever before. Their potential negative impacts are broad-ranging and must be thoroughly understood in order to address them. Yet the academic literature supposed to map these impacts remains limited in scope. This article outlines current biases in the scholarly work on the topic as well as these biases' implications.

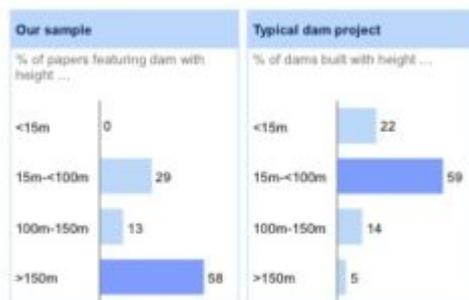
A major boom in dam development is under way with at least 3,700 dams¹ either planned or already under construction. These are expected to increase global hydropower production [by 73% to 1,700 GW¹](#) in the coming years. [37 GW of capacity](#) was added in 2014 alone², equivalent to almost three times [Africa's current total installed capacity³](#). Asia is a particular hotspot of dam construction with capacity additions of almost [29 GW in 2014²](#), more than in any other region of the world.

Yet dams remain extremely controversial due to their myriad environmental and social impacts. Dam-induced displacement is [the most emotive issue⁴](#): [up to 200 million people](#) have been displaced because of infrastructure development in the past century⁵; possibly [80 million](#) of these were displaced due to dams⁶. Examples of currently disputed large dam projects are Myanmar's [Myitsone Dam⁷](#), Brazil's [Belo Monte Dam⁸](#) or Mozambique's Mphanda Nkuwa Dam⁹.

Many negative environmental and social impacts of large dams could be significantly mitigated with [state-of-the-art knowledge and experience¹⁰](#) on planning and management practices. Yet dams' negative impacts must be thoroughly understood in order to design tailor-made interventions addressing them. Scholarly work can be instrumental for both conceptualizing and mapping these impacts.

Academics have investigated dams' impacts [since the late 1950s](#)¹¹. Thousands of studies have been published until now on the topic by scholars from a variety of disciplines – both by social scientists (e. g. anthropologists, political scientists, sociologists, geographers and economists) as well as natural scientists (e. g. biologists or engineers). Publications on the topic have [surged in the past 25 years](#)¹².

However, many significant knowledge gaps remain. This is [the key finding of a study](#) my colleagues at the University of Oxford and I have just published¹². This study is the very first systematic review ever carried out on dams' social impacts. For this purpose, we have created a sample of 217 articles on the topic at hand that we have systematically analysed across more than 40 categories.



Height of dams. Source: Supplied by author.

These are five major insights from our work:

First, we found that scholars study dams that are much larger than [the average dams built](#) (Figure 1)¹³. Two mega-dams (China's Three Gorges Dam, [the world's largest dam](#)¹⁴, and India's Sardar Sarovar Dam) are particularly well-studied, as our work evidences. This bias is problematic since the impacts of mega-dams may be very different to those of small(er) dams (this statement does not mean to imply that small(er) dams only result in [small\(er\) impacts](#))¹⁵.

Second, we found that most of the literature (almost 90%) focuses only on these mega-dams' resettlement area impacts. Yet dams' spatial impacts go far beyond this. For instance, dam

development may threaten the [food security of 60 million people in the Mekong River Basin](#)¹⁶ because of dams' downstream impacts. In order to assess the viability of a project, dams' resettlement area impacts as well as dams' social impacts occurring downstream, upstream as well as for the entire country (and beyond) must be considered.

Third, we found that the vast majority of articles neglect perspectives beyond those of the displaced communities – a direct result from the focus on resettlement area impacts, we assume. For instance, only about 20% of articles present the view of the dam developer or the international donor in a dam project, compared to 80% of articles presenting the views of displaced communities.

Fourth, we found that almost no articles (only 5%) are positive regarding their overall judgement of dams' social impacts. NGOs may be tempted to infer from this data that (allegedly objective) scientists largely condemn dams. Yet we fear that the identified bias in the unit-of-analysis focus (with an over-emphasis of displaced communities' views) may have biased the judgement of scholars on the overall project since displaced communities are likely most critical of a dam.

Fifth, we found that most scholars (approximately 70%) only evaluate impacts that occur 5-10 years upon dam completion. Yet impacts can already commence [in the planning phase](#)¹⁷ (with governments withholding investments for villages to be displaced years prior to the construction start already, for instance) and may [last for decades](#)¹⁸. Such impacts must be highlighted by scholarly work in order to be addressed by practitioners.

The [impact of academic work](#) on practitioners is considered to be limited nowadays¹⁹. Yet perceptions of the social impacts of dams are driven in large part by the scholars analysing them. Indeed, this field of study is extremely applied. For instance, Thayer Scudder, arguably [the world's leading authority on the social impacts of dams](#), is currently consulting within Laos' Nam Theun 2 Dam project²⁰. Meanwhile, Michael Cernea, also an eminent scholar on the topic, was the World Bank's senior advisor for sociology and social policy introducing sociological and anthropological approaches to the organization.

Yet our study suggests that practitioners must be extremely cautious when reading scholarly work on the social impacts of dams. Currently, decisions are taken to pursue small dams over large dams without a full understanding of the trade-offs involved because of an incomplete literature on the subject. Academic writings on the topic also do a disservice to the people who experience positive impacts of dam development, and those negatively impacted other than by resettlement from large dams.

The University of Oxford hosted a conference on dams and development in late 2014. All panellists - indeed, those supporting as well as those opposing the construction of large dams - agreed that more evidence is needed on the topic at hand. This is also showcased by the meta-synthesis my colleagues and I have carried out. I very much hope that our new study will stimulate debate among scholars researching dams' social impacts. Much more research on this timely topic is urgently needed.

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Julian Kirchherr is a doctoral scholar at the School of Geography and the Environment, University of Oxford. The final version of the University of Oxford study on the literature analysing dams' social impacts can be accessed [here](#). A free-of-charge pre-print version of the study is available [here](#).

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