

Socio-technical Synthesis

Understanding the Network of Relationships between Land & Water Use and Society in the Mekong River

(Technical Topic)

Development of Hydropower as an Energy Source and its Effects on Long-Standing Societal Norms

(STS Topic)

By

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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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The industrial growth in the Lower Mekong Region (Cambodia, Laos, Myanmar, Thailand, Vietnam) is being developed to produce more resources and promote further economic growth. Since the early 1960's, the production of hydropower has been a crucial factor for urbanization and economic growth. However, before any of the existing land use drivers took hold, the Mekong River and those inhabitants around it were part of a mutually beneficial relationship. The lack of industrialization allowed the river to flow in a natural manner. However, there is now a crossroads between tapping further into the potential it provides and conservation of life. The World Wildlife Fund (WWF), one of the world's largest non-profit environmental conservation organizations, noted that the Mekong Region is "currently facing a defining point in its history where proposed developments and imminent environmental changes will directly impact economic performance for decades to come," (WWF, 2016) Further than simply economic performance, our group needed to take into account many other industries native to the region for a holistic product. Each of these aspects encapsulates the ongoing situation as a product of hydropower development as well as provides a unique angle to understanding the network as a whole.

The Mekong River region's long-term social and economic sustainability is being threatened by the growing development of hydropower and its impacts on the river, surrounding populations, and vital industries. In this study we have analyzed these unintended impacts through data analysis in hopes of quantifying trends associated with the rapid hydropower development. It is important to consider the human and social dimensions of hydropower in the area as the dams' effects trickle down to the natives of the Mekong Region, the river itself, and all other life dependent on it. We conducted our research by utilizing data sets and surveys released by certain organizations such as the FAO (Food and Agriculture Organization), the WB

(World Bank), and CGIAR (Consultative Group for Agricultural Research) International to develop a basis for drawing conclusions.

In this study, we segment the analysis into five sectors: hydropower, agriculture, fisheries and aquaculture, economy, and land use. We then correlate dam implementation and hydroelectric capacity with impacts to the Mekong River Basin. Through our research, we expect to find quantifiable correlations between the increased development of hydropower and the resulting impacts on the Mekong's inhabitants and the region's overall well-being.

So, the technical portion of this thesis will dive into the analysis of the land and water use in the Mekong to quantify the effects of hydropower on the economies, farms, and fisheries in the Mekong river system. Very closely tied, the STS research paper will explore the development of hydropower as an energy source as it relates to the long-standing societal norms of the region, exploring the process of what could occur to a community when a dam is put in place. The goal is to analyze both current infrastructure and proposed infrastructure development in the region and its effects on the lives of the local people, business, and cultural tradition. An analysis of hydropower development in the Mekong and similar valleys will be completed to shed light on how it may be affecting societal norms in these underdeveloped regions. In conducting research, it became apparent that there is a lack of community-level data (as opposed to macro-level data such as GDP) gathered from the Mekong and similar developing regions. This proved to be an obstacle in providing concrete conclusions about the direct effects of hydropower implementation. However, in analyzing both case studies and reports of dam displacement programs, the question of how exactly development of hydropower in the region is affecting the societal norm can be better answered.

References

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