



CONSERVATION POLICY IN BRIEF

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TENOSIQUE: ENVIRONMENTAL ECONOMIC ANALYSIS OF A HYDROELECTRIC PROJECT ON THE USUMACINTA RIVER

In this study we analyzed a dam proposed on the Usumacinta River in Mexico. Our objective is to stimulate discussion on the costs and benefits of such projects in the largest watershed in the Maya Forest and in Mesoamerica as a whole. We chose to analyze the Tenosique project (formerly known as Boca del Cerro), given that it is apparently the Usumacinta dam being given the most serious consideration by planners.

We analyzed the project with four criteria in mind: financial feasibility; economic efficiency; the distribution of costs and benefits; and environmental sustainability.

A project is considered financially feasible if the firm implementing it receives income in excess of its costs. According to our calculations, the Tenosique project could generate from \$248 million in net gains to \$112 in losses, depending on what assumptions one uses for certain costs and benefits.

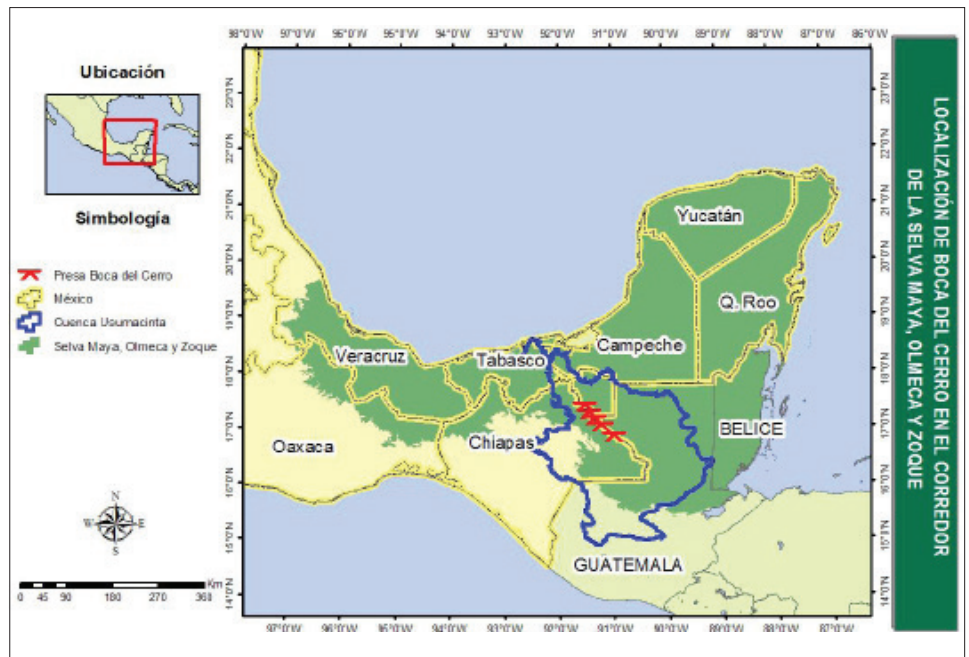


Figure 1: Usumacinta River basin and Maya jungle

What is clear, however, is that without typical government subsidies, the project is definitely not feasible, with losses of up to \$219 million. All figures are net present values (NVP).

Economic efficiency is defined more broadly, looking at the costs and benefits experienced by Mexican society as a whole. The economic net present value in a best case scenario and without considering environmental costs was estimated at -\$19 million, meaning that Mexican society would lose at least that sum of money.

The third criterion is that of the distribution of costs and benefits. This study underscores possible areas of inequity that arise from the project. As we understand the Tenosique dam plan, it would impose cash costs on the government, and do significant damage to natural resources and rural communities, while at the same time it could generate significant profits (or losses) for a private energy company.

The final factor is that of environmental sustainability. As much as we

might attempt to incorporate environmental costs in the economic analysis, the data and methods at our disposal are limited; it is not possible to monetize the impacts to all environmental goods and services. Therefore, it is important to point out, at least in qualitative terms, the potential environmental costs. Ideally, we would compare these to impacts of alternative energy projects.

What can be said about this project is that it would create an ecological barrier in a high-biodiversity region, interrupting a variety of biological and social interactions. The greatest risk appears to be the hydrological changes brought by the dam, which put in doubt the ecological health of areas both above and below the reservoir. Of particular concern are impacts on the downstream wetlands. These externalities would be indirectly absorbed by society at large by way of public and private investments to mitigate damage, through the reduction of local production, and through the loss of biodiversity.

For the full document, please visit:

http://conservation-strategy.org/sites/default/files/field-file/10_Reid_Usumacinta.pdf

- Notes:
1. Pronatura Chiapas
 2. Naturalia y ParksWatch
 3. Defensores de la Naturaleza
 4. Conservation Strategy Fund
 5. INCAE Business School



Boats on the Usumacinta river

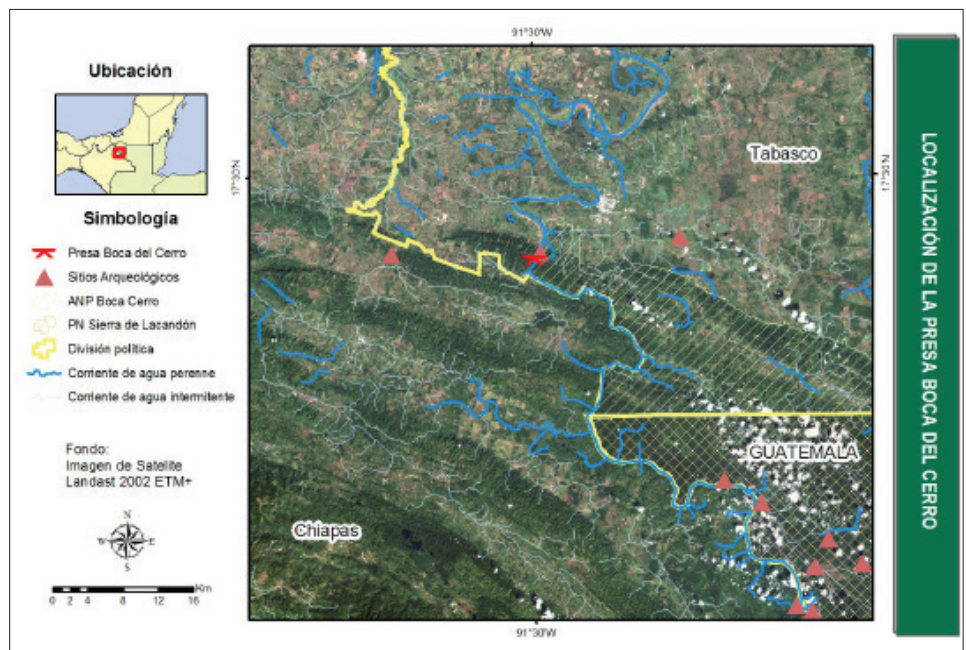


Figure 2: Affected locations



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