



### Is Sugarcane a Sweet Deal for Sustainable Development?

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Is it possible that a major agricultural investment could be good for the forest in the Bolivian Amazon? Yes, but only under ideal, some might say atypical conditions.

During the last three decades multiple waves of migrants have arrived in the lowlands of northern La Paz, Bolivia, establishing settlements and clearing forest lands for agriculture. Agricultural expansion continues to be the basis for several national and local government development schemes. Today, the most significant proposal includes installation of a sugar mill in San Buenaventura, and thousands of hectares of cane to feed it. The initial investment would be US\$ 90 million, with an additional US\$ 40 million in a second phase.

We assess the financial and economic feasibility of this project to help inform all groups with a stake in it. The analysis investigates whether the project will succeed financially and whether it will contribute to Bolivia's economy as a whole. We analyze the farming and processing phases separately, and in combination. The research does not determine whether the investment analyzed represents the most efficient use of public resources nor does it analyze the potential social and cultural changes that would occur due to the introduction of this new crop to the region.

Results suggest that the program's feasibility hinges largely on crop yields and sucrose contents, which are as yet unknown for this region. Another crucial variable is the price of refined sugar. Assuming a sucrose content of 12.5 percent, agricultural yields of 55 metric tons/hectare (2.5 acres) and a sugar price of US\$ 17 per quintal (1 quintal = 46 kilograms), the overall project would be financially unattractive but economically beneficial for the national economy. The financial net present value (NPV) would be negative US\$ 15 million, and the economic

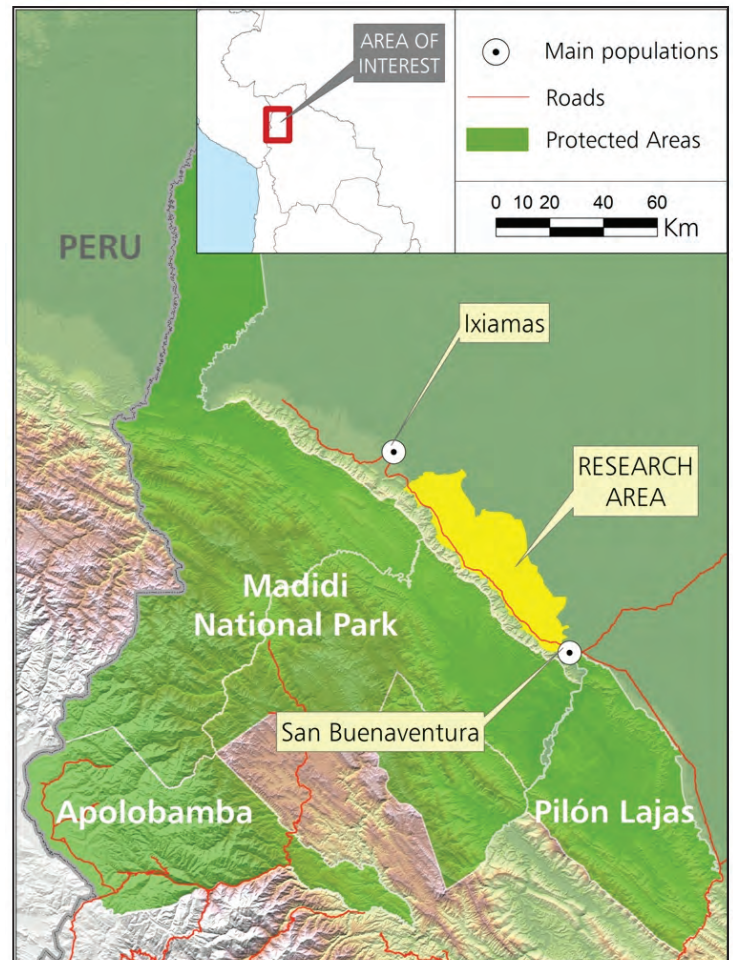


figure US\$ 12.1 million. Note that any NPV above zero indicates that the project is feasible; below zero means the opposite.

The weak link in the project is the mill, which would not be financially attractive to investors because their share

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of revenues (traditionally negotiated with farmers) would not provide a return sufficient to cover costs. The mill would lose US\$ 34.3 million in present value terms, while the more than 1,300 farmers involved in the project would gain US\$ 19.3 million in total over 20 years. The industrial part of the project would therefore either require public subsidies or and possibly renegotiation of profit sharing with farmers.

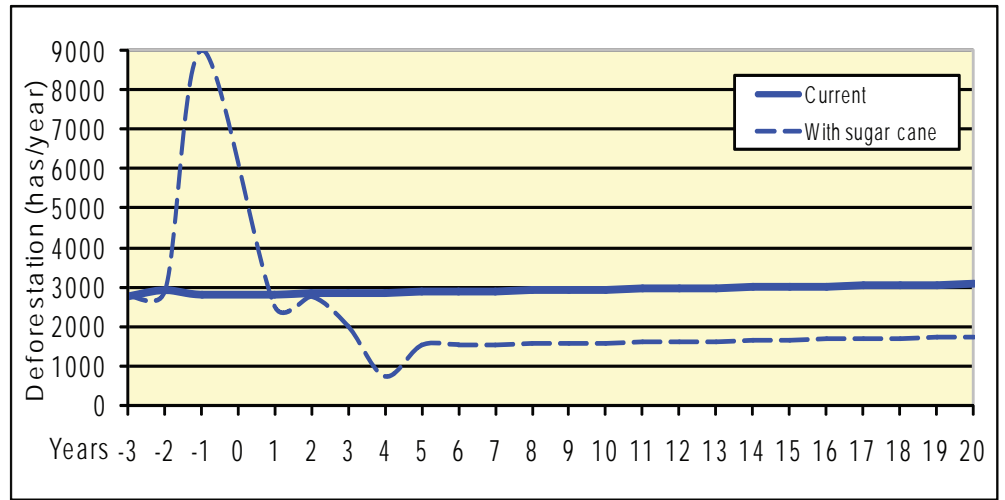


Figure 1 – Net deforestation

If sugar cane is substituted for traditional crops the project would not increase the deforestation rate in the region, a scenario that means it could be good for Bolivia's economic wellbeing overall. During the 20-year time-frame of the analysis 19,000 hectares of mature forest would be spared (Figure 1). This is because traditional crops demand new land each year whereas sugar cane is a long-lasting crop if managed correctly. This projection is only valid if certain conditions hold: the cane industry is developed under a community-based farming model; no additional mills are built in the region; no new pro-migration policies are implemented; current land tenure is respected; and the Bolivian government maintains its position of not entering into the biofuels market. If the project is implemented and the assumptions described above are not met, negative environmental externalities could make the whole project economically wasteful, with a net loss to the Bolivian economy of at least US\$ 13.6 million.



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