

# ► Project *brief*

Thünen Institute of International Forestry and Forest Economics

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## How much are Ecuadorian households willing to pay for forest conservation?

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- We examined preferences and willingness-to-pay (WTP) of Ecuadorian households for a proposed forest conservation program aiming to avoid 500 km<sup>2</sup> of deforestation in Ecuador (i.e. the annually deforested area).
- The monthly mean WTP per household lies between \$6.28 - \$3.17, depending on analysis method.
- Aggregated over all households, Ecuadorians are willing to pay more than 150 million US\$ per year for avoiding deforestation in their country.

### Methodology

We developed a questionnaire presenting a contingent scenario describing forests in Ecuador and the effects of deforestation, along with a concise description of the activities and agency responsible for the implementation of a proposed forest conservation program. We combined two different approaches to elicit the maximum WTP for forest conservation: (1) a single dichotomous-choice (DC) referendum question (as proposed in the literature to ensure incentive compatibility); (2) two open-ended (OE) questions directly following the referendum (constructed in a way that aims at enhancing consequentiality). WTP from DC responses was analyzed using parametric and non-parametric methods, whereas WTP from OE questions was calculated using the arithmetic mean. Data were collected by a population survey, which was based at a geographically stratified random sample of 976 households.

### Results

98% of the surveyed households in Ecuador find the proposed forest conservation program worth supporting. Their WTP is estimated at USD 6.28 per household and month when using a non-parametric method to analyze DC answers. The OE responses yielded lower (and thus, more conservative) results: average WTP was USD 3.17 per household. Our finding is consistent with existing literature in that OE questions usually return lower mean WTP than DC questions.

Additionally, to determine households' preferences for regions and types of forests, we asked them to select in which geographic region and with which type of forest it would be most important to begin first with the proposed forest conservation program. There is a preference for primary forest (41%), followed by planted (31%) and, lastly, intervened forests (27%).

### Discussion

Our findings are well comparable to those in other countries. Even if we assume a conservative estimate of WTP, the aggregated annual mean WTP per household exceeds current implementation costs of actual forest conservation programs by far. One such program is Socio Bosque, which was instituted in 2008 as a government-led program providing financial incentives to private and communal forest owners upon mutually agreed conditions aiming at conserving forestlands. For 2018, approximately 16.000 km<sup>2</sup> were under conservation by the Socio Bosque program, demanding about USD 11 million for its implementation.

Even if keeping in mind that our survey has addressed forest protection in a general fashion rather than detailing a concretely specified forest protection policy, we can conclude that the benefits of forest conservation in Ecuador are higher than the respective costs - and most probably, they are much higher. Our results also indicate that the Ecuadorian people would expect from their government to invest considerable funds in the conservation of forests.

### Further Information

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#### Publication

Gordillo, F., Elsasser, P., Günter, S: Willingness to pay for forest conservation in Ecuador: Results from a nationwide contingent valuation survey in a combined "referendum" – "Consequential open-ended" design. (Forest Policy and Economics 105: 28-39.)

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