Rainforest Alert: Frequently Asked Questions

When and where was this study conducted?

Between March 2018 and March 2020, amongst 76 indigenous communities in the Loreto department of the northern Peruvian Amazon.

How much territory was monitored against deforestation in the study?

The 36 communities of the randomized control trial that were selected for the territorial monitoring program collectively covered approximately 250,000 hectares (nearly 1,000 square miles).

How much deforestation was averted in the study?

Compared to the unmonitored control group, researchers estimate that territorial monitoring saved 456.3 hectares (1,127.5 acres) of forest over the two-year duration of the study.

How much did the studied program cost?

$1,236,574 over 2.5 years. That figure includes several months of set-up, training, and supplies for the monitors and technicians, data analysis and transport, payments to monitors for their patrols, and funding for the study itself.

How long did it take for the forest scouts (known within the scientific community as "community monitors") to learn how to use the technology in the study?

Trainings were carried out over seven months, with 9-15 scouts trained per training seminar. Seminars lasted from three to seven days, with three-day reinforcement training seminars conducted quarterly for two years.

Overall, 120 people were trained.

Where do you want to expand this technology in the coming years?

Throughout all formally acknowledged indigenous peoples' territories in the Amazon Basin, which is an area encompassing roughly one-third of the Amazon.

How much would a scale-up of that nature cost?

While calculating the myriad complexities of a scale-up of this size is fraught with nuance, we estimate that our monitoring system will cost approximately $6/hectare, which includes both the

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costs of the whole monitoring system (data analysis, staffing, etc.) plus payments directed to the communities for the forests they are protecting.

There are approximately 65 million hectares (or 251,000 square miles) of territory controlled by indigenous people in the Amazon Basin with conditions similar to the study. A scale up covering all that area would cost approximately $390 million per year.

How quickly could that scale up happen?

Funding and staffing are the biggest inhibitors to an aggressively scaled-up monitoring system. In the event that funding were secured, Rainforest Foundation US estimates that we could train and implement territorial monitoring throughout the aforementioned territories within ten years, with the Peruvian Amazon covered in the first two of those years.

Extrapolating from the pilot program numbers, how much Amazon rainforest can be saved with this technology?

Given the size and variety of conditions that exist throughout the Amazon Basin, it's impossible to pinpoint the exact effect that a continent-wide territorial monitoring program would have. But if the study results are an indicator, the effect would be substantial.

Applying the study's numbers to formally acknowledged indigenous peoples' territories across the Amazon Basin for ten years would result in 4,400 square miles (1,140,000 hectares) of saved rainforest, or a collective area approximately one and a half times the size of Yellowstone National Park.

In the simplest of terms, what would the net effect of this scale up be in terms of blunting climate change?

If the previously stated numbers proved correct, we would prevent nearly 100 million metric tons of carbon dioxide from entering the atmosphere each year, reducing the world's annual carbon dioxide emissions by about 0.3%.

It would be like taking 21.4 million cars off the road.

Don't you need good WiFi and/or reliable cellular service to do smartphone-based forest monitoring? And isn't that an obstacle for large swaths of the rainforest, where there often is no internet?

Not exactly.

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You need the internet to download the satellite deforestation data which forest monitoring depends on. But the individual forest scouts only need GPS map points in order to investigate deforestation.

Put another way: You don't need internet access to conduct forest patrols, you only need it to figure out where the patrols should be conducted.

Our system relies on informational "data hubs," where internet is readily available and deforestation alerts come in. Those alerts are uploaded onto thumb drives and carried up (or down) river to the forest scouts, who in turn download the information onto their phones, equipping themselves with everything they need to efficiently patrol the area.

In terms of equipment and labor, what does it take to introduce a monitoring system like this?

In addition to the aforementioned trainings for the scouts working in the field, every community that participates in territorial monitoring needs:

- A relatively accessible data hub.

Because so many of these communities lack internet access and mobile phone coverage, they must be served by internet-connected informational data hubs (see: previous answer). All of the communities in this study were served by a data hub located in Iquitos, which was less than one week's travel from the farthest locations.

- 3 smartphones per community
- 1 drone per 8 communities

In the study, these were managed by the Indigenous People's Organization of the Eastern Amazon (ORPIO), and deployed "as needed," with need determined by a variety of factors including: security concerns for the forest scouts involved (e.g. when there was a high probability that land has been cleared for illegal coca cultivation), and severity of deforestation (i.e. when the drone's bird's eye view was needed to better photograph the extent of the damage).

- Boots
- Machetes
- Rain gear

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