To preserve tropical forests, empower local communities

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The tropical forest of the Maya Biosphere Preserve in Guatemala. Credit: Francisco Estrada-Belli

The world's tropical forests offer immense value to humanity, and the evidence of this is now overwhelming. Drugs derived from plants in

tropical forests are used to treat cancer, diabetes and more. Trees sequester carbon, and the forests help to regulate regional and even global climate systems. One estimate of the ecosystem services these forests provide—the direct and indirect contributions they offer to human well-being—is more than $40 trillion dollars annually. That's almost twice the $24 trillion in products that countries around the world produce each year. Yet, tropical forests continue to face incredible challenges.

Some of those challenges and models to address them were the topic of a recent discussion as part of the Resilience Media Project, which is a part of the larger Initiative on Communication and Sustainability at the Earth Institute of Columbia University.

In Central America, much of the threat to tropical forests comes from narco-trafficking. "An estimated 86 percent of cocaine reaches the US by moving through Central America," said Elizabeth Tellman. She's a human-environmental geographer and researcher at Columbia University's Earth Institute. According to her research and that of others, those shipments amount to some $6 billion in annual profits. And much of that cocaine transits through northern Guatemala, in the Maya Biosphere Reserve. Tellman said the narco-traffickers look for land that can quickly be burned and cleared for airstrips where drugs are flown in. Trucks then move the cocaine to Mexico, for eventual transit to the U.S. Often, additional land is cleared to raise cattle, which is then sold in Mexico to launder the illegal drug proceeds. Eventually these secluded areas are discovered, but rather than stop their activity, the drug cartels simply move to new land.

"The reason narco-trafficking is so widespread and difficult to eradicate is because interdiction continues to spread traffickers into new areas," said Tellman. "And we've seen the impact of that on Central America's forest."

Tellman and her fellow researchers use satellite data, reports from the region's news media and drug trafficking data collected by governments to track the movement of both drugs and deforestation. "And what we found is that new patterns of anomalous, rapid and large clearings are appearing for the first time as drugs have moved through Central America."

Much of the protected land in the northern portion of Guatemala has been affected by narco-trafficking. But one area has so far mostly avoided these problems. This is where community land use concessions were granted in the late 1990s. Under these concessions, the local communities manage the forest, using sustainable practices to create jobs through logging, while also controlling fires. Iliana Monterroso is a scientist and co-coordinator of Gender and Social Inclusion Research with the Center for International Forestry Research (CIFOR). She said the communities "have been able to establish community forest enterprises, allowing them to diversify their activities and drive economic and environmental benefits." Through those forest enterprises, she said, they have been able to generate more than $5 million a year from sales of timber. That money represents as much as 60 percent of family income. And according to Andrew Davis, a researcher at the PRISMA Foundation, an environment and development research center based in El Salvador, as much as $500,000 of that money is spent on fire control. "These resources have gone to clearing vegetation, to patrolling firebreaks, roads and rivers, and on the ground activity." All this has meant that the forests in the concession areas are healthier and more protected than the lands not under local control.

The benefits of the concessions also extend beyond the forest itself, says Monterroso. "Since these concession contracts have been signed, more than two million dollars in taxes have been paid to the Guatemalan government."

According to archeologist Francisco Estrada-Belli, the land concessions are in a part of the Biosphere Preserve that also contain Maya ruins. "In this area, there are hundreds of archeological sites, some of them extremely important in terms of the role they play in telling the story of Maya civilization and civilization that emerged in this area about 1000 B.C. and continue uninterrupted until the arrival of the Spanish 500 years ago." Protection of those ruins is also an important benefit of the land concessions. "There's been absolutely no looting, archeological looting since the concessions were first created in the late 90s." Estrada-Belli said that's because the concessions "have created a very effective buffer to prevent invasion and deforestation, as well as archeological looting."

Learn more about the land concessions by watching our webinar. And look for resources and story ideas for journalists below.

We also devoted a Sustain What webcast to the issues surrounding clashing visions of conservation and development in Guatemala's Maya Biosphere region. The discussion focused on two big stories that raised questions about the tourism-centered proposal promoted by the archeologist Richard Hansen and described evidence that community-based forest management, while imperfect, was effectively holding forest clearing and fires at bay.

We heard from Julia Lindau, the producer of a June Vice report in which Hansen disparaged Guatemalans for having "no vision" for the region. You can watch the episode here: "Mayan Ruins in Guatemala Could Become a U.S.-Funded Tourist Attraction."

Veteran environment reporter and author Fred Pearce described the findings in his June story for the online environmental magazine Yale e360: "Parks vs. People: In Guatemala, Communities Take Best Care of the Forest."

A key conclusion? "The areas theoretically under tightest protection are being decimated," Pearce said. In contrast, he added, "Only 1 percent of the fires that happen every year happen in the community areas."

The discussion also included experts from the previous day's sessions, including Beth Tellman from the Earth Institute, the expert on where the drug trade passing through the region is, and isn't, eating away at forests. She said decades of data and analysis show the pattern and the dynamic is pretty straightforward. "It's much easier to pay off a park ranger or to co-opt a couple of people in government and get them involved in narco-trafficking, and then to use that land, than it is to infiltrate an entire community whose livelihoods are vested in protecting the forests in those lands," Tellman said.

Another recent Sustain What session focused on climate change and human migration in Guatemala and surrounding countries. In this case the discussion centered on a newsroom innovation in which the investigative reporting organization ProPublica commissioned its own scientific model gauging the role of climate change in international migration in Central America. Here's the ProPublica report.

More information: David J. Wrathall et al. The impacts of cocaine-trafficking on conservation governance in Central America, *Global Environmental Change* (2020). DOI: 10.1016/j.gloenvcha.2020.102098

Nicholas R. Magliocca et al. Modeling cocaine traffickers and counterdrug interdiction forces as a complex adaptive system, *Proceedings of the National Academy of Sciences* (2019). DOI: 10.1073/pnas.1812459116

Kendra McSweeney et al. Grounding traffic: The cocaine commodity chain and land grabbing in eastern Honduras, *Geoforum* (2018). DOI: 10.1016/j.geoforum.2018.07.008

Jennifer A. Devine et al. Narco-Cattle Ranching in Political Forests, *Antipode* (2018). DOI: 10.1111/anti.12469

Jennifer A. Devine. Community forest concessionaires: resisting green grabs and producing political subjects in Guatemala, *The Journal of Peasant Studies* (2016). DOI: 10.1080/03066150.2016.1215305

Sophia Gnych et al. Is community tenure facilitating investment in the commons for inclusive and sustainable development?, *Forest Policy and Economics* (2020). DOI: 10.1016/j.forpol.2019.102088