

The complex relationship between deforestation and diet diversity in the Amazon

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Commercial agriculture, such as palm oil and cocoa plantations, is expanding along the Amazonian forest frontier. Credit: © CIAT

Ten years ago, non-indigenous households from three communities in the Ucayali region in Peru regularly ate fish, wild fruits, and other

products collected from the Amazon forest. Combined with whatever they grew and harvested on their lands, this contributed to a relatively diverse diet. Today, the same households have changed their production strategy and how they get food on the table. Agricultural production, complemented by hunter-gatherer activities, aimed to satisfy both household consumption and income generation. However, this has been largely replaced by commercial agriculture such as palm oil and cocoa. This shift in agricultural production objectives has affected the sources of food for local communities and appears to be associated with relatively less diverse diets, according to a new study authored, among others, by CIAT (now the Alliance of Bioversity International and CIAT) scientists.

"Our objective was to test the hypothesis that the economic transformations linked to the expansion of cash crops in mestizo communities, especially oil palm, were associated with deforestation and reduced agricultural biodiversity and that this was likely to be associated with changes in [food](#) access," says Genowefa Blundo Canto, co-author and Post Doc researcher at CIAT at the time of the study.

The study represents one of rather few attempts to trace changes in food access, livelihood strategies, deforestation and agricultural biodiversity over time. The scientists collected data on livelihood strategies and [nutritional health](#) among 53 families in the Ucayali region in Peru and compared the results with data gathered from the same families in the early 2000s. Despite the small sample, caused by significant outmigration from these communities, the results were remarkable.

"We found that in the 15-year study period, farming households shifted from diets based on limited consumption of meat and dairy items and high consumption of plant-based foods from their own production, towards diets with high protein and fat content, with food items increasingly purchased in the market. In parallel, production systems

became less diversified, more market-orientated and specialized toward commercial crops, oil palm and cacao in particular," says Blundo Canto.



The team recommends that future development actions at the Amazonian forest-agriculture interface should address deforestation and promote agrobiodiversity to ensure food and nutritional security. Credit: © CIAT

The scientific team concluded that the expansion of commercial agriculture, such as [palm oil](#) and cocoa plantations at the Amazonian forest frontier, appears to be associated with simplified food [production systems](#), reduced agricultural diversity and less access to food, measured

in terms of the household dietary diversity score.

"This study is crucial to understand how deforestation not only affects the climate, but also has profound socio-economic and nutritional impacts on the communities living on the forest frontier. Even though Peru and other Latin American countries have progressed in economic terms, there are high malnutrition percentages especially among children. Something tells us that even though farmers might now make more money from, for example, oil palm farming, this might not improve other life quality aspects such as nutrition for children," explains another co-author Marcela Quintero, Multifunctional Landscapes Research Area Director at the Alliance.

The marked rise in obesity in rural areas of Peru reflects a worldwide trend. While the study only looked at the diversity of household diets and not the nutritional value, the increased consumption of foods high in saturated fats and ultra-processed foods demands the attention of local policy makers.

"These results, which are consistent with emerging evidence for a dietary transition in the Amazon, have major implications for land use and food policies in the region as well as for health policies, since it has recently been highlighted that unhealthy diets are the main cause of disease worldwide. We therefore recommend that future development actions at the Amazonian forest-agriculture interface should address deforestation and promote agrobiodiversity for more diverse diets and local markets over the expansion of cash crops, in order to ensure long-term food and nutritional security among farmers and the rural communities that they supply," concludes Blundo Canto.

The research team wants to complement the research with a specific study on how the nutritional quality of the diets might have changed to further argue for focused research and policy development that will

work for the benefit and well-being of communities living on the borders of forests around the world. Likewise, the team is seeking opportunities to replicate this study with indigenous communities. Meanwhile, the Alliance is working with oil palm producers and the regional government of Ucayali to re-design their business models in a way that are deforestation-free.

More information: Genowefa Blundo-Canto et al, Changes in food access by mestizo communities associated with deforestation and agrobiodiversity loss in Ucayali, Peruvian Amazon, *Food Security* (2020). [DOI: 10.1007/s12571-020-01022-1](https://doi.org/10.1007/s12571-020-01022-1)

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