

Geospatial analysis of buffer zones for aerial pesticide spraying on banana plantations, Costa Rica

¿Why did we perform this study?

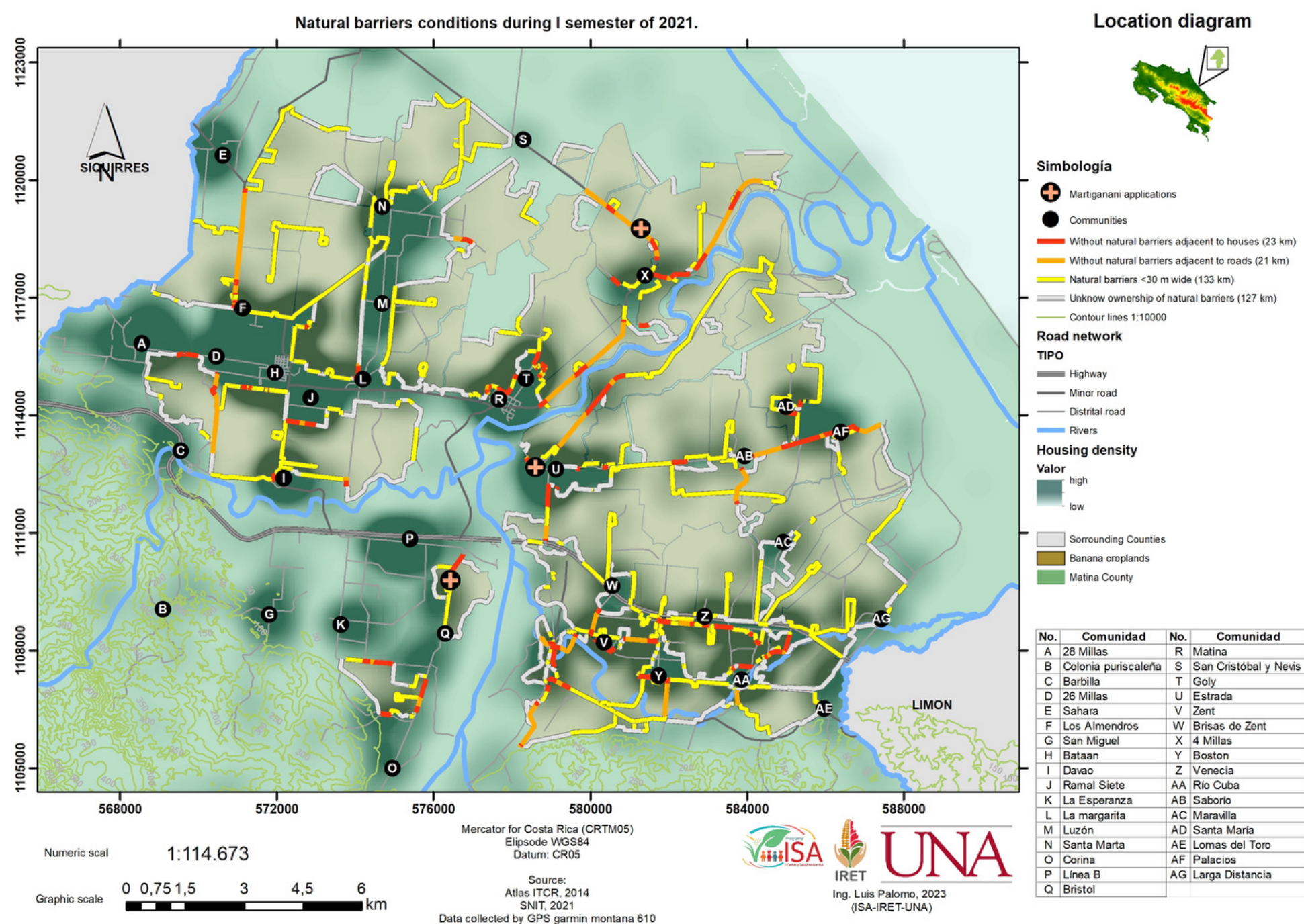
We aimed to analyze buffer zones and aerial spraying practices on banana plantations situated in Matina County, Costa Rica, within the context of national regulations in 2021.



What did we do?



During the I semester of 2021, we used Google Earth satellite images (years: 2019 - 2021) for landscape recognition and the identification of buffer zones. Then, we visited 63 sites without natural barriers and interviewed 58 neighbors about spraying practices using a structured questionnaire. We analyzed the collected data in ArcGIS 10.7.



What did we find and what did we conclude?

We identified 44 km of field borders without natural barriers, of which 52% adjacent to houses and 48% to roads. Eighty-eight percent the interviewees reported to have observed aerial spraying at <100 meters from public spaces in sites without, or <30 meters in sites with, natural barriers, during the last month. Also, 48% percent had observed workers inside the crop field during aerial spraying during last month, and 59% indicated having observed aerial spraying in windy conditions. With SIG, we estimated an area of 3.3 km² of banana crops grown in protected areas that should be destined to riparian forests. **Our results suggest that banana companies from Matina County only partly fulfill Costa Rica aerial pesticide spraying regulations**

Reference: Palomo-Cordero, L., Rodríguez, R., Hoppin, J. y van Wendel, B. (2023). Geospatial analysis of buffer zones for aerial pesticide spraying on banana plantations, Costa Rica. Environment and Technology. Accepted: August 30, 2023.

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For more information: www.isa.una.ac.cr