Submission code: L8R507RPKV

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Volcanic symbiosis: The circumstance of inhabiting with an active volcano (Turrialba, Costa Rica)

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Introduction

Volcanoes shape not only the Earth's surface, but also the course of human history, as volcanic eruptions have contributed to the fall of civilizations, changed the course of wars and caused millions of deaths, but they have also allowed soil fertility and the development of the lives of millions of people in the world; therefore, there are different interpretations, feelings and perceptions about volcanoes that communities that live with volcanoes have (Lopes (2005). The research proposal study one of these perspectives: the circumstance of inhabiting with the Turrialba volcano, an active volcanic in the central volcanic mountain range in Costa Rica, integrating the human-volcano relations over time. The importance of the volcano lies in the fact that it is the central agent of the territory, and it conditions the way in which rural communities inhabit, stablishing conservation policies and the form of production in this region. This proposal presents a study of the human-volcano relations in rural communities in Costa Rica that live with an active volcano, the Turrialba volcano (3,340 m). The objectives are: To record the rural ways of life that constitute the volcanic territory, giving visibility to the social and material aspects involved; to identify the human and non-human inhabitants that configure the territory of the Turrialba volcano, evidencing the inter-relationships between them; and to contrast the territorialized dynamics of co-habitation with the volcano. In 1955, the Turrialba volcano (and all the volcanoes of Costa Rica) were defined by law as a National Park, but 78% of the Turrialba National Park (TVNP) remained private and 22% owned by the State because it was not able to expropriate the lands. This created a paradox: to protect the volcano's biological and geological heritage from the threat of urban development, limiting the actions of rural communities within the park, but allowing intensive agriculture within the park by landowners who inherited or purchased private land within the Turrialba Volcano National Park. These turbulent social dynamics coincide with periods of volcanic eruptions, creating a scenario where the volcano and humans intertwine and express themselves in the territory, inhabiting in a volcanic symbiosis.

Method and/or Theory

The method was based on a prior mapping of stakeholders contacted by email and scheduling meetings. Interviews were conducted, and records were photographed and filmed during a three-month field trip in the study area. NDVI and NBR analysis was also performed using remote sensing. The theoretical basis is based on Wegner's Tectonics plate theory, followed by Continental drift theory, and later included the relations with humans based on theories on human-nonhuman relations studies such as "Geontologies" (2016) by Elizabeth A. Povinelli, " Carta à Terra - e a Terra responde" (2020) by Geneviève Azam, "Seres-Terra" (2024) by Marisol de La Cadena, and "Ideas to Postpone the End of the World" (2019) and "Ancestral Future" (2022) by Ailton Krenak.

Results and Conclusions

There is a political and environmental conflict between humans over land use within the national park, which is being resolved through a judicial process. Intensive agriculture is depleting the soil and its regenerative capacity, causing a development problem in the area, adding to the national park's inability to conduct tourist tours during periods of volcanic eruption. Thus, rural communities are forced to make do with "informal" tourism ventures and the production of traditional Costa Rican products and dishes from the benefits of the volcano, as soon as promises of development arrive in the area.