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ILLEGAL MINING IN A DISTRICT OF PERU THROUGH SATELLITE IMAGES

Abstract

Peru is a country with rich biodiversity. Peru consists of coastal, mountain, and jungle regions at different altitude levels. Within the biodiversity of Peru, one can mention more than 3000 varieties of potatoes, more than 3000 varieties of orchids, among others. Thanks to the Amazon (part of the Amazon is in Peru), Peru has a great variety of fauna and flora species. Unfortunately, due to the existence of illegal mining, this Peruvian biodiversity is at risk. Illegal mining has been harmful because it causes the deforestation of areas in the Peruvian jungle. Because of tailings and waste, many Peruvian flora and fauna species die. All this contributes to climate change. To combat this situation, the authorities must act on the matter and make good decisions; however, since the effects of illegal mining are not known in a quantified manner, this decision-making takes longer than necessary. Due to the explained situation, in this work, one proposes the monitoring and evaluation of illegal mining and its consequences through the processing of satellite images. The idea is to use optical images and the images of the Peruvian satellite of Earth observation PeruSat-1 (70 cm of spatial resolution). One expects to obtain a more quantifiable evaluation of the affected areas and illegal mining progress in recent months based on image processing techniques. The obtained results are expected to have a tool that can help better decision-making by the competent authorities to combat illegal mining in Peru.