Development of a Low-Cost Network System to Monitor Landslides in Urban Hills

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In the Brazilian perspective, landslides became very common in risk regions where communities lacking public services are found. A Brazilian community's environment is favorable for disaster occurrences. Because of the lack of governmental attention to social, natural, and economic troubles, people have no choice, but to degrade the soil in order to survive, even though this action leads to their own death. Moreover, the global weather change announced by the Intergovernmental Panel of Climate Change (IPCC) worsens the situation, since the rains, the main trigger factor, now are more violent, thus resulting in more catastrophic disasters. In that regard, a low-cost alternative to constantly monitor specifical landslides trigger aspects is vital to assure people's well-being. Parameters are strictly related to landslide occurrence and they all are monitored by specific sensors. Categories include rain intensity, soil humidity, and geological vibrations. Beyond the sensors, there is our original optical system, which correlates light signal intensity in an optical fiber with the avalanche eminence. All the information is gathered and utilized by an online platform to construct graphics showing real-time data in a public channel for both civilians and rescue authorities. Therefore, they are capable of ensuring their safety in high geological risk sites.

Awards Won:

U.S. Agency for International Development: Second Award Working in Crisis and Conflict