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## Supporting conservation in rural Andean communities: Linking water, human well-being and the sustainable development goals

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### Abstract

Currently, there is an urgent need to conserve natural areas, although the effort invested and the benefits, they provide are difficult to determine. The relationship between ecosystem services, human well-being and the Sustainable Development Goals (SDGs) is poorly understood globally. To address this, examining the daily activities of people is crucial, especially in regions such as the Andes, where the ecosystem service of water provision is essential for rural communities and research is scarce. Thus, the objective was to analyse the relationship between the ecosystem service of water provision, community activities and the SDGs targets. The study area was the Aguarongo Protected Forest located in SE Ecuador at 3200 m a.s.l. This humid mountain forest contains 300 water sources and 60 wetlands, which makes it an important reserve for the supply of water for irrigation, livestock and human consumption in nearby communities. Despite being exploited in the 1970s, the community began to conserve it in the 1990s, making it a case of community conservation of high interest. First, information of the ecosystem service of water provision from the conserved forest, the activities of the communities that use this service and the goals and problems of the communities were recollected through a story line using interviews to local stakeholders. With these data, we searched for relationships between these components through two indices: Level of support of Contribution and Importance of Contribution using interviews to water users. The results show that the water provision has improved with forest conservation. The activities most linked to this service in the community are diversified agriculture (vegetables, grains, medicinal plants, fodder) animal husbandry for sale and self-consumption, and ancestral health practices. Finally, the SDGs that are most related are those linked to Economic Growth, Food Security, Clean Water and Sanitation and Responsible Consumption and Production. Having a clear understanding of this type of relationship allows us to better understand how conservation can intervene not only at the ecosystem level but also at the community level through the ecosystem service, being decisive for a more sustainable future.

**Keywords:** Community activities, rural community, SDGs, water provision