



Payment for Ecosystem Services policies in Peru: assessing the social and ecological dimensions of water services in the upper Santa River basin

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Increasing pressures on ecosystems in the Latin American region as well as the adoption of multilateral conservation commitments have led to the implementation of instruments that are economic in nature but oriented towards the recovery, conservation, and functioning of ecosystems. The increasing adoption of schemes such as payment for ecosystem services (PES) has emerged as multilateral strategies to address water security problems in the mountain regions of Perú. However, their design and implementation can face many barriers when the policy is translated into practice in a local context. Socio-economic processes and hydro-climatic factors are affecting the capacity of the ecosystems of the glaciated Cordillera Blanca (Peruvian Andes) to provide water services, in terms of both, quality and quantity, to the main users of the Santa River basin. This study thus aims to analyze how the hydro-social relations affect, and are affected by, the introduction of water-related PES in the Quillcay sub-basin, one of the most populated sub-basin along the Santa River basin. The water metabolism approach was used to characterize water as a service produced by ecological systems (water as an ecological fund) and co-produced by social systems (water as a social flow). For this purpose, a classification of the different social and ecological uses and meanings of water was used, as well as the role of the different actors involved.

Based on the combination of primary data, both from an urban citizens survey (Huaraz) and semi-structured interviews with different actors, and from secondary sources, we present evidence that the metabolic pattern of water in the upper Santa basin is impacted not only by the glacial meltwater and rainwater regime but also by political, economic and cultural power relations over

water. Thus, the implementation of a PES policy in the upper Santa basin affects and is affected by, ecological and social dimensions of water. In the ecological dimension, glacial retreat makes the design of a water-related PES more complex. In the social dimension, some socio-political processes, such as the lack of experience and the limited technical and financial capacity of public water management institutions to carry out these processes, as well as the lack of political will of regional and local authorities to promote them, are affecting the way these PES schemes are implemented. Along with these institutional bottlenecks, local socio-cultural processes related to a lack of interest in participating and demanding to participate in these decision-making processes could result in the design of a mechanism in which not all stakeholders benefit equally. This raises the need to recognize the multi-dimensional nature of water in the design and implementation of policies, and the importance of identifying processes and barriers which affect the success of these policies.