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The impact of human activities on the grassland water cycle and its ecological restoration

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Abstract: As the human activities become more and more intense, the grassland has deteriorated severely. The water cycle of grassland has changed for the excessive grazing and global climate change. The application of renewable energy is necessary for the conservation of the grassland. This paper analysis the grassland water resources condition in Qinghai during the past 50 years. There is a deep reduction in the grassland yield for the past. The grassland hydrological process has disturbed by the high human activities. The possibility and feasibility of PV pumping irrigation is discussed under different precipitation and slope conditions. The area appropriate for PV pumping irrigation is about 8.145 million hectares, accounting for 22.3% of the natural grassland area of Qinghai Province. The results show that there is a great potential for applying PV pumping system. In addition, the measures for ecological restoration for achieving the ecological balance are also mentioned.

Key words: Grassland; Renewable energy; Human activity; Ecological restoration