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Pastoralism is rarely viewed as a major future form of land use, because of well- documented cases of rangeland degradation, attributed to irrational overstocking by pastoralists, and the subsequent losses of ecosystem services. However, pastoralists were actually encouraged to settle and adopt such strategies, copied from rangelands with higher and more reliable rainfall. This curtailed mobility resulted in a shift from opportunistic and extensive land use to more intensive and settled forms of use. The purpose of this review is to examine the link between pastoralism and the provision of ecosystem services by rangelands, focusing on biodiversity conservation and carbon sequestration. Pastoralists employ several techniques to manage rangeland resources, including mobility, herding, corralling, grazing reserves and the use of re. With these strategies, pastoralists have contributed to the enhancement of rangeland biodiversity and the long-term conservation of important wildlife habitats. Pastoralists also possess detailed knowledge of rangeland plants and their uses, which could be valuable in the assessment, conservation and utilisation of rangeland biodiversity. Similarly, traditional pastoral rangeland management practices, such as the use of seasonal grassland reserves and livestock mobility, influence vegetation composition, coverage and abundance in rangelands and offer tools for biomass and soil carbon restoration, contributing to the mitigation of climate change. However, various internal and external factors have curtailed traditional management practices and livestock mobility, breaking the co-evolved balance of vegetation, wildlife and land use, thus exposing rangeland to continued livestock pressure, which often leads to degradation. Rather than abandoning pastoralism, the revitalisation of traditional practices and indigenous knowledge is vital to secure sustainable livelihoods for millions of pastoralists and to maintain rangeland biodiversity and ecosystem services.

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