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Knowledge evolution and policy changes in rangeland management of HKH region

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Key words : common pool resources, rangeland policy, Hindu Kush-Himalaya, disequilibrium system

Introduction Rangelands, typical common pool resources, constitute more than 60% of ecosystem of the Hindu Kush Himalaya (HKH) Region. Over the years, theoretical advancement added new knowledge to rangeland ecology and common pool resources management. The academic circle has generally accepted that a major policy re-orientation based on sound ecological and social understanding is needed (Blench, 2001). This paper seeks to examine how the new knowledge has shaped the rangeland policy in the region.

Materials and methods Research findings on rangeland ecology and policy documents that are in force in the HKH Region have been gathered. The policy documents have been studied to discern the correspondence between the research findings and policy provisions.

Results and discussion The role of self-governing indigenous institutions is critically important for sustainable management of common pool resources (Dietz et al, 2003). Stakeholder participation with secure tenure right and clear property boundary is indispensable to guarantee the flexibility needed for pastoralists to make use of the highly variable, heterogeneous and patchy resources. This finding is a breakaway from the theory of "Tragedy of the Commons" upon which many governmental policies on common property management have been founded. On the other hand, new current literature suggests that rangelands in arid and semi-arid regions are "disequilibrium systems" (Gilson, 2007). In this system climatic variability, especially erratic rainfall, often keeps the animal population below a threshold. Density-dependent animal-vegetation interaction never occurs, making the concept of carrying capacity, which has been successfully used by commercial ranches for livestock management, irrelevant. Further, pastoralism is increasingly recognized as a socio-ecological mode of culture and rangeland resources in the arid and semi-arid regions should at best be used through extensive grazing. Animal mobility, as opposed to sedentarization, is of utmost importance for sustained development as the role of technological innovations in raising rangeland productivity is limited (Blench, 2001). Especially, market-oriented development will be highly detrimental to rangeland ecosystems.

The rangeland policies in the HKH region differ from country to country, though, invariably, across the region, the ownership of the rangelands is vested with the State. Except in China there is no rangeland policy *per se*. The rangeland matters are either governed by other policies and policy instruments such as Forest and Land Policies and Acts. Some countries (Afghanistan, Bhutan, China, Nepal) grant user rights to the pastoralists, while in some cases (Pakistan, India) some pastoralists do not have guaranteed user rights while some have. In some cases (Bhutan, China, India, Nepal) the user rights are spread across the summer and winter grazing areas allowing season-dependent vertical migrations. In some cases (Bhutan, India, Nepal, Pakistan), there are conflicting land use between Forestry and Pasture. In China, India and Pakistan the policy intention to sedentarize the pastoralists is discernable.

Conclusions The review of rangeland policies of the governments in the HKH region reveals that none of the governments have pursued policies to promote the management of rangeland resources through self-governing indigenous institutions. The policy expression to sedentarize pastoralism and promotion of intensive use of rangeland is obvious in some countries (China, India). In some cases (China, Nepal and Pakistan), other land uses such as afforestation, community forestry, horticulture, etc. have undermined the sustainable use of rangelands.

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