Tropentag, September 10-12, 2025, hybrid conference

"Reconcile land system changes
with planetary health"

Multipurpose use of Iran's Zagros rangeland ecosystem: A nature-based approaches to mitigate the effects of climate change and enhance ecosystem services

Mahshid Soori[1], Ali Noorifard[2], Morteza khodagholi[1], Saedeh Nateghi[1]

[1] *Research Inst. of Forests and Rangelands, Agricultural Research Education and Extension Organization (AREEO), Rangeland Research Division, Iran*

[2] *University of Tehran, Management Department, Iran*

Abstract

Today, due to increasing destructive effects of climate change, sustainable and intelligent exploitation of natural resources is more necessary than ever. The Zagros rangeland ecosystem of Iran is one of the most important biological reserves of Iran and have significant biodiversity and vegetation cover, recently is under multiple pressures, including climate change, excessive exploitation, and overgrazing. The rangelands destruction in this area directly increases erosion and threatens Iran's water and food security. The stakeholders of Iran's Zagros rangelands are highly dependent on this ecosystem for their livelihoods. They are involved livelihood problems due to economic and environmental constraints. In these circumstances, the single-purpose exploitation of these rangelands cannot meet the economic needs of these households. Multipurpose use of rangelands, while reducing pressure on resources, can be considered as an effective solution as a sustainable and nature-based development strategy that uses natural processes and structures to deal with the destructive effects of climate change, environmental and development problems. This research addresses the direct and indirect ecosystem services of the Zagros rangelands of Iran and the role of multipurpose use in moderating the destructive effects of climate change and improving the livelihoods of local communities. Some of the diverse ecosystem services of the Zagros rangelands of Iran include: Supplier services including: cultivation and exploitation of medicinal plants, rangeland beekeeping, Indigenous tourism and ecotourism, production of water resources. Regulatory services including: flood control, erosion reduction, carbon sequestration, reduction of surface soil heating, temperature regulation, and increasing ecosystem resilience against extreme climate changes such as drought or flood. Cultural services including: tourism opportunities, nature tranquility, education and research. Supporting services including: preserving biodiversity, improving food and water cycles. The optimal multi-purpose use of rangeland services with regard to sustainable development and reducing overgrazing pressure, can help conserve natural resources, improve the livelihoods of Indigenous people, and increase the resilience of the land against the effects of climate change. Finally, it is recommended that scientific, participatory, and long-term planning be carried out in such areas to implement these low-cost, nature-based approaches.

Keywords: Climate change, Iran, multipurpose use, nature-based approaches, rangeland

Contact Address: Mahshid Soori, Research Inst. of Forests and Rangelands, Agricultural Research Education and Extension Organization (AREEO), Rangeland Research Division, P.O. Box 13185-116, Tehran, Iran, e-mail: souri@rifr-ac.ir