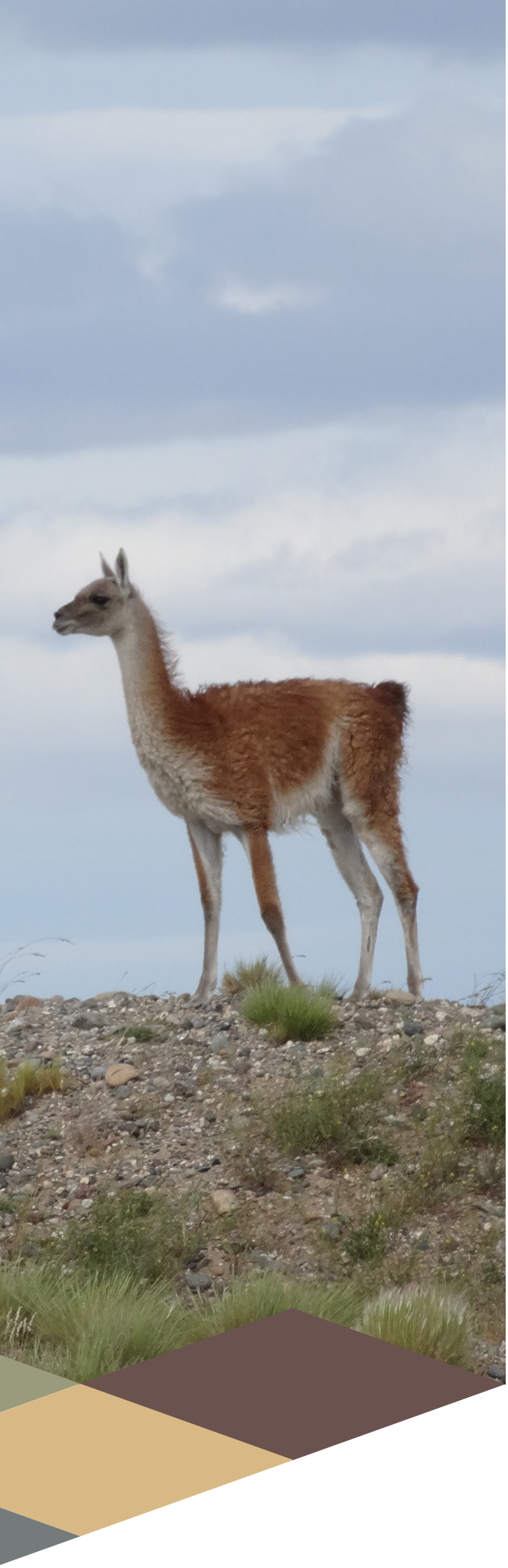
# Rangelands, pastoralism and biodiversity:

## Key messages and policy recommendations

**IYRP Biodiversity Working Group**

IYRP 2026 INTERNATIONAL YEAR OF RANGELANDS AND PASTORALISTS

JUNE 2025



Rangelands span over 54% of the global terrestrial surface and encompass diverse ecosystems, including grasslands, savannas, shrublands, deserts, steppes, tundra, and wetlands to represent the largest land category on Earth. These vast landscapes are far from marginal; they are hotspots of biodiversity, harbouring unique assemblages of flora and fauna, including significant Key Biodiversity Areas (KBAs), and supporting some of the planet's most spectacular large herbivore migrations. Critically, rangelands are fundamental to the livelihoods, food security, and cultural identity of over two billion people, particularly pastoral communities who have stewarded these lands for millennia through dynamic systems adapted to environmental variability.

Pastoralists are increasingly losing access to their lands due to land tenure changes driven by development initiatives targeting pastoral lands. Policies and projects promoting privatization of land, which include land acquisition, poorly justified afforestation and carbon offset projects and renewable energy are harming rangelands worldwide. Some of these initiatives are state-controlled and have even imposed restrictions on livestock movement, enforced sedentarization, displaced pastoral communities, and continue to disrupt customary governance systems that are generally based in collective decision-making processes, the commons. However, the restrictions come against this and most often contribute to environmental degradation and biodiversity loss while diminishing traditional ecological knowledge and values and stepping on the rights of the pastoral communities which play a vital role in maintaining the rangelands' biodiversity.

Despite their immense ecological, economic, and socio-cultural significance, rangelands are amongst the least protected biomes worldwide and face accelerating threats from land conversion for agriculture, inappropriate afforestation projects, infrastructure development, unsustainable land management practices, and the impacts of climate change. Approximately, 50% of global rangelands are estimated to be degraded to some extent, but estimates vary widely. Potential biodiversity losses on rangelands translate into a significant gap in achieving international targets for biodiversity conservation, climate change mitigation and adaptation, and land degradation neutrality. Explicit integration of rangelands into the Global Biodiversity Framework, the UN Framework Convention on Climate Change (UNFCCC), and the UN Convention to Combat Desertification (UNCCD) is not just beneficial, but essential for meeting global goals.

**Recognising the importance of rangelands for global biodiversity and the crucial role of sustainable pastoralism in conserving rangeland biodiversity, the IYRP Biodiversity Working Group presents the following key messages and recommendations.**

1. **Recognise Rangelands as crucial ecosystems integral to achieving Target 1 of Kunming-Montreal Global Biodiversity Framework (KMGBF).**

   Rangelands host high biodiversity that provide important ecosystem services both locally and globally. Rangelands encompass more than 1,341,354 km² of the Global Key Biodiversity Areas and make a significant contribution to the persistence of biodiversity across terrestrial, freshwater, and marine ecosystems (ILRI, 2021).

   Rangelands and tropical rainforests are recognised to host the largest number of plant species per unit area (Wilson et al. 2012). Specifically, rangelands play a major role in conserving light-loving, open habitat, species that cannot survive in forest, or other woody-dominated systems. Rangelands harbour some of the most diverse and biologically unique systems on the planet, such as the Brazilian Campo Rupestre, the Cape Floristic Kingdom in South Africa, or the Australian Southwest (Hopper et al. 2016).

   Pastoralists are the prime inhabitants of rangelands who rely on a great diversity of production systems for their livelihoods and resilience. Rangeland ecosystems contribute significantly to global food and fibre production while also maintaining large open spaces critical for wildlife connectivity between different areas and ecosystems.

   Pastoralists, as natural allies in conservation, play a crucial role in sustaining rangelands and their biodiversity.

   Despite the value of rangelands, they remain some of the least protected land category in the world (Hoekstra et al. 2005). They are largely overlooked for their contributions to global biodiversity conservation and sustainability. For example, the Global Ecosystem Restoration agenda does not adequately identify, address, or integrate the value of rangelands in the global discourse, and therefore leaving them at the risk of further degradation through land conversion, fragmentation, inappropriate policy interventions and mismanagement.

   Sustainable management of rangelands will deliver conservation outcomes that directly support the KMGBF. To ensure long-term success of biodiversity conservation objectives, programs and practices should be co-developed with pastoralists as custodians and rights holders. Participatory monitoring systems should ensure that conservation efforts respect pastoralist rights, promote biodiversity, and enhance ecosystem services on a global scale.

   **Promotion of the conservation and restoration of rangeland biodiversity will require:**

   - A deeper comprehension of value of rangeland biodiversity and ecosystem services to human well-being.
   - A call for the mobilisation of communities, countries and decision-makers to assess and communicate the significance of rangelands for conservation and global sustainability goals including biodiversity conservation, climate, ecosystem restoration and land degradation neutrality.
   - A formal recognition of the role of rangelands and pastoralists in National Conservation Strategies and National Biodiversity Strategies and Action Plans (NBSAPs).

- Policymakers to understand and act on the knowledge that achieving Target 1 of KMGBF requires including rangelands to reduce biodiversity loss while respecting the rights of Indigenous Peoples Groups and local communities.

2. **Recognize the value of pastoralism for maintaining rangeland biodiversity and secure pastoralists' rights over rangelands, including recognition of OECMs and ICCAs to help achieve the global 30x30 biodiversity targets.**

   Pastoralism is one of the world's most biodiversity-friendly food production systems and can make a significant contribution to achieving global and national conservation goals. A growing number of countries have recognised that their richest wildlife is found in pastoral rangelands and have enacted measures to promote pastoralism as a sustainable land use system. For example, Kenya which derives more than 10% of its GDP from wildlife tourism, found in the early 2000s that 70% of its wildlife resided in pastoralist lands and now the country boasts a greater area of land under pastoralist conservancy management than in national parks.

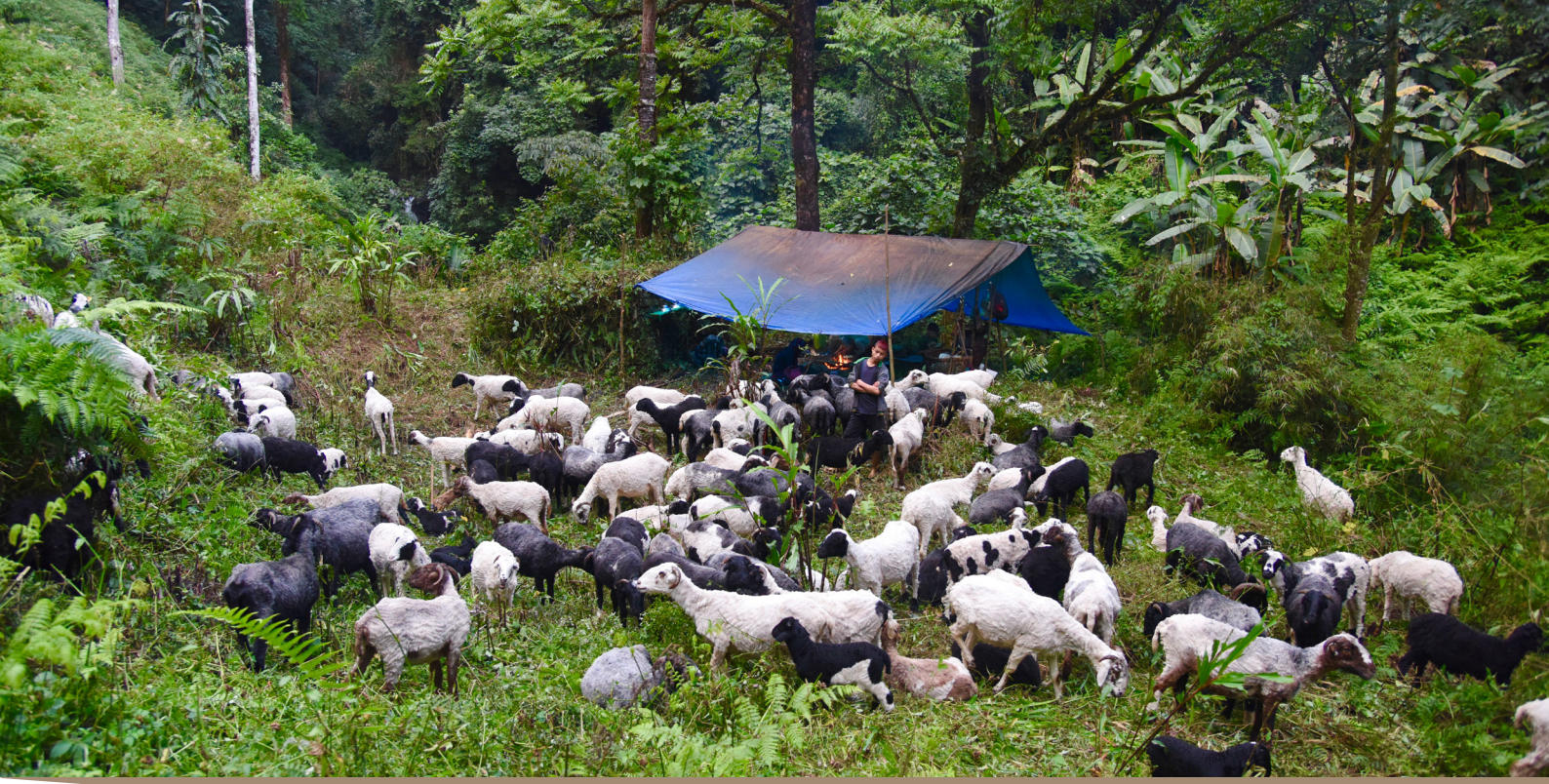
   This co-existence is no coincidence. Most grasslands have evolved over millions of years in the presence of herding ungulates and depend on grazing action and herding behaviours to sustain their ecological communities. Pastoralist herd management confers many of the benefits to grassland ecosystems that are provided by wild ungulates, and pastoralist societies have a strong cultural attachment to biodiversity and rangeland heritage. Rangeland biodiversity is modified by grazing, but the degree of modification can be conceptualized by the intermediate disturbance hypothesis (Milchunas et al.), which predicts that diversity will be maximized in areas that receive moderate disturbance due to grazing. Grazing animals make foraging choices based on subtle clues in what can be called a foraging hierarchy (Senft, Rittenhouse, and Woodmansee) that varies from landscape scale selection (migration for example) to a local scale (meadow versus hill side for example) and at the finest scale might be between plant species (differential palatability) or even between different growth stages of the same species.

   **Pastoralist management practices include several measures that promote rangeland health:**

   - Balancing the forage supply with the forage demand
   - Managing the season of grazing to allow or minimize grazing during periods of forage resistance or sensitivity to grazing
   - Managing the duration of grazing to minimize the continual re-grazing of individual forage plants
   - Providing adequate rest between grazing to allow forage plants to regrow, recover, and re-establish leaf area

   These practices are central to the rangeland management principles that are promoted in sedentary ranching systems as well as to customary herding strategies found in communal and mobile herding systems. Rangeland degradation in either system is commonly associated with loss of these practices. The most severe rangeland degradation has occurred where rangelands have been converted to other uses and pastoralists contribute to conserving biodiversity simply by maintaining their rangelands.

   Rangeland conservation can be promoted using measures that incentivise protection of biodiversity through herd management. This can be achieved through a wide range of measures to reward ecosystem services, from protection of water supply and storage of carbon to harbouring of wildlife. Pastoralists in several countries now benefit from biodiversity related income that complements livestock production, for example through ecotourism



3. **Protect pastoral mobility and access to the commons to enable biodiversity conservation, restoration of rangelands and improving climate resilience to pastoral communities along with other ecosystem and cultural services.**

   Policies that uphold pastoral access to grazing lands which are often communal, are essential for maintaining rangeland biodiversity. In many countries, this depends on protecting mobility and safeguarding the correct functioning of the commons. At the same time, pastoral mobility and ensuring land connectivity which are generally administrated communally, are essential for achieving Target 2 of the Kunming-Montreal Global Biodiversity Framework (KMGBF) on ecosystem restoration and Target 8 on enhancing climate resilience. Mobility enables pastoralists to sustain biodiversity in rangeland ecosystems through rotational grazing, allowing recovery periods and promoting ecological connectivity. Pastoral movement and well-planned grazing can foster plant regeneration, control woody species, promote sustainable fire regimes, maintain soil fertility, and keep the understory clear in pastoral areas.

   However, pastoralists face increasing restrictions to their mobility, communal performance and customary rights due to a range of socio-political factors, including changes in land tenure systems and state policies which restrict cross-border and interstate movements, shifts in agricultural policies, land privatization, exclusionary conservation models, and state-driven afforestation as well as the most recent green energy transition initiatives. These disrupt traditional land-use patterns and undermine pastoral mobility leading to rangeland degradation and loss of biodiversity.

   The maintenance of healthy rangelands aligns with the United Nations Convention to Combat Desertification (UNCCD) commitment on restoration of rangelands through nature-based solutions to achieve land degradation neutrality. Pastoral mobility is a key restoration strategy that ensures sustainable rangeland management and contributes to global commitments on biodiversity conservation, climate adaptation and mitigation and land degradation neutrality.

   Upholding pastoralist rights on mobility is fundamental to biodiversity conservation. It requires

policies that secure pastoral land management and which recognize the value of seasonal movements are crucial for rangeland regeneration, carbon sequestration, and water cycle regulation. These strategies will not only enhance biodiversity conservation, but also the adaptive capacity of pastoral livelihoods and the ecosystems on which they depend. Long-term investments that maintain landscape connectivity and prevention of rangeland fragmentation are critical for preserving biodiversity and providing ecosystem services.

At the same time there is a strong and growing awareness, especially after Elinor Ostrom's Nobel Price for her work on the commons, that these systems can be a positive regime vis-à-vis environmental conservation, local communities' well-being and global sustainability, making them being recognized today by some of the main international environmental and development agencies (e.g. CBD, IUCN, UNEP and UNDP). The consortium on Indigenous People and Local Community Conserved Areas and Territories (hereafter ICCAs) and the United Nations Environment Program estimate more than one fifth of the Earth's land surface is still managed as commons, many of which are pastoral. The World Wildlife Fund for Nature (WWF) indicates that 31% of the Earth's land surface represents commons, which overlaps with over 20% of the world's Key Biodiversity Areas. There is a strong and growing scientific and political awareness that the commons can be a positive regime for environmental conservation, local communities' well-being and global sustainability.

Pastoral commons are typically managed by local pastoral institutions that draw on generational knowledge of the local ecology and are well-versed in navigating uncertainties within regional social and political dynamics. They include assemblies of pastoralists, under the local pastoral governance system, that after careful discussion and negotiation impose a total or partial limitation of access to a pastoral space or resource during a determined period.

**The rights and governance of pastoral commons can be enhanced by:**

- Recognition as OECMs and ICCAs, while ensuring their contribution towards global biodiversity conservation is accounted for.
- Securing customary and collective land tenure, access and use rights of pastoralists to sustain effective grazing systems that support biodiversity and ecosystem health.
- Participatory governance models that integrate pastoral knowledge and strengthen customary institutions as key partners in conservation.

**4. Acknowledge Pastoral Knowledge, Women's Leadership, and Youth Engagement in Biodiversity Conservation of Rangelands.**

Conservation approaches should integrate Indigenous and traditional knowledge and ensure the meaningful participation of pastoral women and youth in conservation efforts. Specifically, a gender-sensitive approach could improve the understanding and enhance the interventions aiming for improving biodiversity, by integrating the knowledge, capacity and skills transmitted by pastoralist women, which play a critical role in pastoral communities.

Supporting pastoralist-led governance requires a hybrid model that combines the strengths of local institutions with enabling investments from national governments. Local pastoral institutions—rooted in generational knowledge and ecological adaptability—are best positioned to manage rangelands and respond to environmental and social uncertainties. However, their efforts need to be complemented by public policy, services, and infrastructure that support pastoral mobility and livelihoods. These include mobile veterinary care, access to water and grazing corridors, as well as adapted education and health services that are responsive to pastoral ways of life. Such a governance model not only enhances ecological resilience but also strengthens local economies. Moreover, promoting and upscaling locally developed,

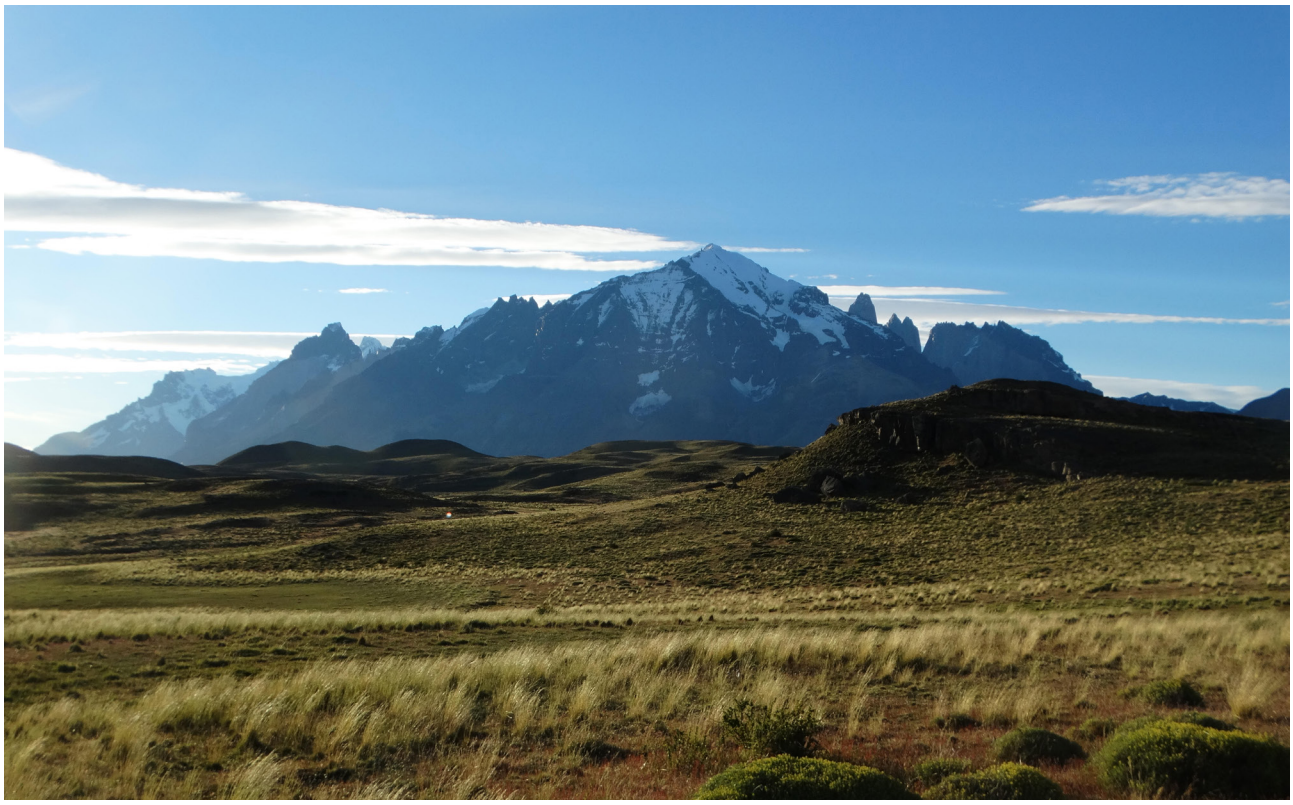
tradition-based, biodiversity-friendly innovations can help pastoralists adapt their practices and sustain their livelihoods in the face of rapid socio-ecological change.

This recommendation directly addresses Target 21 by ensuring the full integration of Indigenous and traditional knowledge in biodiversity conservation through the recognition and support of pastoral management systems. It also aligns with Target 23 by promoting the active participation and leadership of pastoral women and youth, strengthening their role in conservation governance and decision-making.

Sustainable biodiversity outcomes depend on the recognition of rangelands as biologically valuable, diverse and unique systems, and on locally rooted, community-driven conservation efforts that align with traditional pastoral practices.

## The key messages and recommendations supporting rangeland biodiversity:

1. Highlight the profound biodiversity value and ecosystem service provision of global rangelands, emphasizing their unique ecological characteristics and contribution to achieving KMGBF Target 1 - spatial planning for biodiversity.
2. Underscore the critical role of pastoral commons and mobility in maintaining rangeland health and biodiversity, and advocating for their recognition as conservation stewards, including OECMs and ICCAs, and highlighting the importance of securing pastoral land tenure rights to support KMGBF Targets 2 – land restoration), 3 (30x30 goals), and 8 - climate resilience.
3. Emphasize the importance of integrating Indigenous and local knowledge, particularly from pastoral communities, including the vital roles of women and youth, into conservation planning and implementation, aligning with KMGBF Targets 21 and 23.
4. Provide actionable recommendations for policymakers, conservation practitioners, and development agencies to ensure that rangelands are effectively managed, conserved, and restored through participatory approaches that respect rights and enhance both ecological and socio-economic resilience.



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## Endnotes

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**Picture Credits:** Ulises Balza, Pablo Dominguez, Jonathan Dincan

**Suggested citation:** IYRP Working Group on Biodiversity Conservation. (2025). Rangelands, pastoralism and biodiversity: Key messages and policy recommendations. Secretariat of the IYRP, Global Alliance.

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