



PASTORALISM AS PATHWAY TOWARDS SUSTAINABILITY

*Mobile livestock keeping, climate resilience, biodiversity conservation,
and the rights of pastoralist peoples in global rangelands and mountains*

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~ 500 M pastoralists worldwide, herding roughly 1 billion head of livestock	54% of the world's land surface is classified as rangeland	30% of global soil organic carbon stocks held in rangelands	Around ½ of the world's rangelands are already degraded
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Even if only estimates, these figures indicate the scale of the issues at hand.

Source: [FAO & IYRP 2026](#)

WHY PASTORALISM MATTERS NOW

2026 is the [United Nations International Year of Rangelands and Pastoralists](#), also known as IYRP 2026 (Briske et al., 2026a). More than half of the Earth's land surface is now recognised as rangeland (ILRI et al., 2021), supporting around 500 million pastoralists and about 1 billion grazing animals. [These figures matter](#) because



Pastoral livestock using scarce water and forage in the Gobi rangelands

rangelands are not merely marginal lands or leftovers after forests, farms, and cities have been counted (Briske et al., 2025). Instead, they are social-ecological systems in which livelihoods, water, biodiversity, carbon, cultures, worldviews, and governance are all tightly intertwined.

The 17th [UNCCD Conference](#) (COP17) will be held in Ulaanbaatar, Mongolia, from 17 to 28 August 2026. Guided by the overarching conference theme *Restoring Land, Restoring Hope*, the role of pastoralism in global biodiversity, climate, and development dialogues is now unmistakable, not

least because of IYRP 2026's sustained, widely supported awareness-raising efforts. Plateau Perspectives has supported IYRP 2026 since 2018, when Mongolia was preparing to submit its resolution to the UN General Assembly in 2019. The UN General Assembly [approved the resolution](#) recognising this special year dedicated to global rangelands and pastoralists in 2022.

With substantial convergence of interests among the IYRP 2026, the [Global Alliance for Rangelands and Pastoralists](#) (GA4RP), the UNCCD COP17 in Mongolia, and groups supporting Indigenous peoples and local communities through *rights-based approaches* in conservation (Newing et al., 2024) and *just transformations to sustainability* (Bennett et al., 2019; Dawson et al., 2024), such as [ICCA Consortium](#), there is now a unique opportunity to apply a central line of thinking from Foggin et al. (2021) to pastoralism and sustainability:

Mountains and rangelands are not merely resources set in abstract space. They are lived places where people, nature, livelihoods, knowledge, and institutions have co-evolved. Because people, places, and nature are not commodities, sustainable development should never be reduced to production or restoration targets alone. Sustainable development must also ask whose relationships with land, nature, and other people are recognised, whose knowledge counts, who decides, and who benefits or bears the costs of projects and interventions. Without these, there is no real sustainability.

This brief summarises key elements of the author's forthcoming chapter on pastoralism,¹ highlighting what pastoralism means for sustainability when viewed through the lenses of resilience, stewardship, equity, culture, and long-term wellbeing, rather than merely in terms of economics or environmental management.

WHAT PASTORALISM IS — AND ISN'T

Pastoralism is both a form of agriculture and a way of life centred on the care and movement of livestock across rangelands: lands dominated by grasses, forbs, shrubs, and sometimes trees, which are grazed or grazable by livestock and wildlife (Allen et al., 2011). Pastoralists convert grasses, shrubs, crop residues, and seasonal forage that people cannot eat directly into milk, meat, fibre, hides, manure, transport, savings, and social meaning. Robert Ekvall's (1968) phrase for Tibetan nomadic pastoralism, “fields on the hoof,” captures the underlying logic: mobile livestock convert scarce, scattered resources in variable environments into reliable livelihoods for nomadic peoples through flexible, adaptive management of living resources.

Crucially, pastoralism should not be confused with industrial livestock production. Both involve animals, but their logics differ fundamentally (Krätli, 2026a; Nori & Scoones, 2023; Scheidel et al., 2023). Industrial-scale systems concentrate animals, feed, and capital to maximise market output; pastoral systems are extensive, family- and community-based, and their productivity depends less on controlling nature than on understanding and adapting to it. Public debates about livestock and climate often collapse this distinction, attributing the environmental costs of industrial-scale production — deforestation, water pollution, concentrated emissions — to all forms of livestock production, including mobile pastoralism (Houzer & Scoones, 2021). Sustainable development in the world's rangelands requires keeping the two apart and, in some instances, recognising that supporting pastoralism as a sustainable livelihood may depend on limiting industrial forms of production based on narrow reductionist logics of commodification, efficiency, and scale.

How is the world's land used?



Figure 1. Global land used for livestock, including grazing and animal-feed cropland, is roughly

comparable to the land area of the Americas; permanent grazing land alone accounts for about two-thirds of agricultural land. Source: Ritchie & Roser (2024), calculated based on data from FAO and Poore & Nemecek (2018).

Mobility is pastoralism's defining specialisation, whether through relatively short transhumance to high summer pastures or longer-distance horizontal migrations across vast drylands. Its function is risk management and production: by tracking rainfall, snowmelt, and vegetation flushes, mobile herding keeps animals on higher-quality forage than fixed grazing alone would allow. Yet pastoralists move within recognised territories, using customary routes, pastures, camps, and water points. Restrictions on mobility, including fencing, land privatisation, government policies, and exclusionary forms of protected areas, are now widely recognised as threats to pastoral livelihoods that can even intensify the degradation they were intended to prevent (FAO 2021, 2022; Manzano et al., 2021; Yilmaz et al., 2019).



Kazakh herder moving her family belongings to summer pastures

1. The author (Foggin) is writing a textbook, *Introducing Mountain Studies: Sustainable Development*, drawing on recent developments in the sustainability sciences, including growing attention to relational values and integrative syntheses across numerous disciplines, from the natural and social sciences to the humanities, philosophy, and theology. The textbook aims to instil a greater appreciation of the roles of culture, worldviews, values, and sense of place in how we interact with nature and with other people, and to integrate these into development thinking. This Development Issues Brief draws on this work. It also highlights around 60 valuable references on pastoralism and sustainability.

THE COMPREHENSIVE VALUE OF PASTORAL SYSTEMS

The value of pastoralism cannot be measured by meat and milk alone. Direct products, including milk, wool, hides, manure, transport, and savings, sit alongside indirect ecosystem services such as soil fertility, seed dispersal, fire regulation, water regulation, and carbon storage, as well as social values, including a sense of identity, cultural knowledge, mutual aid, food traditions, and attachment to place. Recent pastoralist-focused literature identifies over 40 values of livestock systems that conventional economic accounts often overlook (Hatfield & Davies, 2006; LPP et al., 2026; McGahey et al., 2014; Tiftonnell et al., 2021; WISP 2008).

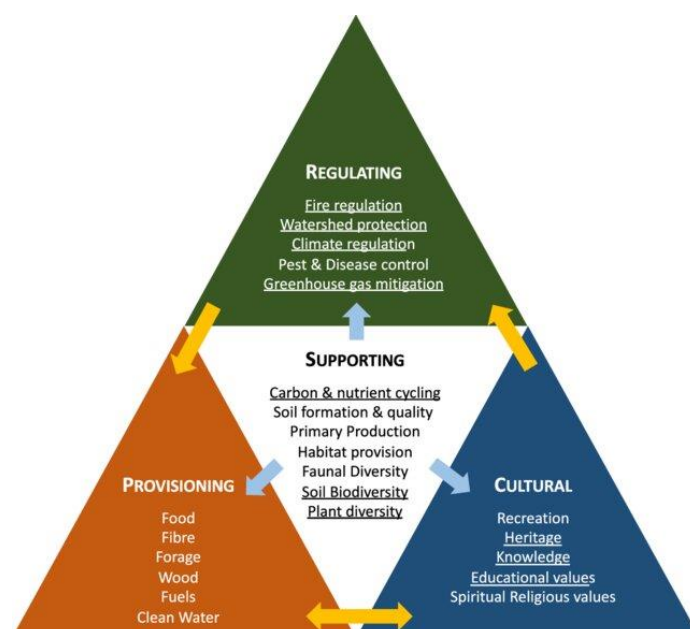


Figure 2. Ecosystem services associated with pastoral social-ecological systems, organised around Robert Costanza's (1997) ecosystem service categories. Adapted from Tiftonnell et al. (2021).

Development policies that seek to replace pastoralism with more settled forms of agriculture or industrial livestock production, exclusionary conservation, and poorly designed market incentives all risk destroying values that were never duly recognised or counted in the first place. This is a problem of economics, not of pastoralism: conventional accounts often measure only the visible part of the economy, leaving subsistence, reciprocity, ecosystem services, culture, and regenerative capacities outside the ledger. The task for policy is therefore not to choose between production and stewardship — development versus conservation — but to recognise that, in well-governed pastoral systems, economy and ecology are part of the same household, part of the same interconnected community of life (Foggin, 2012; Foggin & Foggin, 2017; Foggin, forthcoming).



Camels moving across desert-edge pasture in Mongolia

PASTORALISM AS PART OF THE SOLUTION FOR BIODIVERSITY AND CLIMATE CHANGE

Rangelands hold a major share of global soil organic carbon: FAO and UNCCD commonly report that rangelands contain about 30% of global soil organic carbon stocks, while other estimates place rangelands at roughly 20-30%. Well-managed grazing can maintain vegetation cover, root growth, nutrient cycling, and soil carbon, whereas poorly managed grazing, such as overstocking, or conversion of rangelands to cropland, will degrade land condition,

including soil carbon and biodiversity. This makes climate outcomes inseparable from governance, mobility, and land-use decisions (FAO, 2025; Louhaichi et al., 2026; UNCCD, 2024; WCRC, 2026).

Many of the world's rangeland ecosystems co-evolved with grazing by both wild herbivores and domestic livestock. Whether free-ranging or managed, animal distributions often followed a seasonal pattern, largely dictated by forage quality, maintaining biodiversity. Currently, 24 of 36 global biodiversity hotspots include rangelands. However, conservation outcomes depend on context, as the governance and management of rangelands, including grazing timing and intensity, herder mobility, and species used, shape whether grazing supports or degrades biodiversity. Pastoralists' observations of snowmelt, plant composition, disease, or invasive species can also complement formal monitoring (Briske et al., 2026b; ICIMOD, 2026).

Strengthening rangeland resilience to climate change and averting biodiversity loss requires safeguarding pastoralists' freedom of movement, securing community land tenure and customary rights, and integrating traditional ecological knowledge (Yetişgin & Canan, 2027) into climate and land-management frameworks — rather than treating pastoral mobility as an obstacle. For many local and Indigenous communities, livestock are not a luxury, and pastoralism is not a discretionary or optional land use; together, they underpin essential livelihoods, food security, culture, landscape management, and adaptation infrastructure.

GOVERNING RANGELANDS AND PASTORAL 'TERRITORIES OF LIFE'

Many pastoral systems depend on common-pool resources: pastures, migration corridors, and seasonal camps shared among households, clans, or wider customary groups. Shared use is often mistaken for open access, yet the two differ substantially. Open access implies no rules, whereas commons governance entails shared rights and responsibilities — typically operationalised through locally legitimate rules specifying who may use which pasture, when, and under what conditions.

Garrett Hardin's (1968) "tragedy of the commons" argument has shaped much pastoralist policy, but later commons scholarship showed that Hardin's model conflated open access with governed commons. Elinor Ostrom (1990) demonstrated that communities can sustainably manage common-pool resources when institutions fit local conditions and users participate in rule-making. Ali Razmkhah and Nina Aminzadeh Goharrizi (2026) extend this argument to pastoralism and link pastoral commons to *territories of life* thinking (also see Garnett et al., 2018; Razmkhah, 2026; Stevens et al., 2024; Zanjani et al 2023).

Design principle	How it appears in pastoral commons
Boundaries	Clan or territorial groups define mobile ranges (e.g. Mongolia's <i>nutag</i> , Spain's <i>cañada</i>) in line with ecological cycles, not fences.
Congruence	Use rules track forage dynamics, herd mobility, and rainfall variability rather than fixed quotas.
Collective choice	Elders' councils and seasonal assemblies adjust migration calendars and access rules.
Monitoring & sanctions	Herders observe each other's compliance daily; sanctions are graduated, from warning to seasonal exclusion.
Conflict resolution	Elders and inter-clan councils mediate disputes, often in the field.
Recognition & nesting	Legal recognition of ICCAs or community conservancies reinforces local authority across household, clan, and regional scales.

Table 1. Elinor Ostrom's (1990) design principles for commons governance, as they appear in pastoral systems. Adapted from Razmkhah & Aminzadeh Goharrizi (2026).

Recent scholarship thus links pastoral commons to the broader concept of ICCAs—territories of life. Such territories are more than physical space or material land: they encompass social relationships, governance systems, livelihoods, histories, identities, spiritual meanings, migration routes, grazing systems, watersheds, and the institutions through which ecological and social life is organised. For pastoralists, this is crucial because territory is often mobile, seasonal, and relational rather than entirely fixed or fenced. Recognising

that pastoral rangelands may also be territories of life — when pastoral communities self-identify with their land in this way — reframes mobility as a governance function rather than a problem to be solved by fencing, settlement, or land conversion (Foggin, forthcoming; ICCA Consortium, 2021, 2026; Razmkhah, 2026).

HUMAN RIGHTS, RECOGNITION, AND JUSTICE

The practical consequences of misreading pastoral commons as open access have been severe and unevenly distributed. The core issue is recognition: pastoralists and other Indigenous peoples and local communities should not be treated merely as stakeholders

whose interests are to be balanced against outside projects, but as [rightsholders](#) whose relationships to land, culture, livelihoods, and territory carry legal, ethical, and political significance. Colonial and post-colonial policy has often sought to “modernise” rangelands through individualised and privatised tenure, stocking limits, sedentarisation, and protected areas that treated nature as something to be protected from people. A global study of environmental conflicts found that Indigenous peoples were affected in at least 34% of documented cases, with loss of landscapes and livelihoods and land dispossession among the most common impacts (Scheidel et al., 2023).

This is why justice, rights, and governance are not add-ons to sustainability but *integral* to its foundation. A clean, healthy, and sustainable environment links ecological integrity directly to human dignity, health, culture, livelihoods, and justice (Riaño, 2025). Human well-being cannot be separated from ecosystem well-being, particularly where identities and livelihoods are closely tied to rangelands. Thus, restoration agendas that bypass traditional pastoral governance systems can reproduce much of the dispossession they seek to remedy, even when environmental goals are legitimate. Recent scholarship describes such dynamics as [green grabbing](#): conservation, carbon, or restoration projects that enclose or restrict access to land without recognising rights and customary governance (Fairhead et al., 2012; Raycraft et al., 2025).



Open steppe landscapes link pastoral livelihoods, mobility, and cultural life

“Not simply empty spaces where grass grows”

At the [African Pastoralist Gathering](#) in Nairobi in January 2026, Chad's Ministry of Livestock and Animal Production described pastoral rangelands as “genuine natural infrastructures” that are indispensable to livestock productivity and regional food supply, hence food security — language now feeding into a Common African Pastoralist Agenda ahead of COP17 (Krätli, 2026b).

An alternative approach treats rangelands as integrated social-ecological systems. Conservation and sustainable development must move away from exclusionary and technical approaches towards rights, governance, stewardship, and participation. Four principles follow: *pastoral mobility* should be treated as a governance function, not an obstacle; *collective tenure* should include seasonal pasture rights, water points, corridors, and overlapping territories; *local participation* should entail greater decision-making authority and downward accountability for decisions to local resource users, not merely consultations; and *biocultural continuity*, including languages, rituals, locally adapted breeds, place-based knowledge, and customary institutions, must be recognised as fundamental infrastructure for ecological resilience, not merely a cultural add-on. This approach aligns with the [Kunming-Montreal Global Biodiversity Framework](#)'s emphasis on restoration, equitable governance, and recognition of Indigenous and traditional territories where applicable (Foggin, forthcoming; CBD, 2022).

MOUNTAINS IN FOCUS

The Himalayas and Tibetan Plateau host extensive high-altitude pastoral systems, with [yak](#), sheep, goats, horses, cattle, buffalo, and other livestock herded across India, Pakistan, Nepal, Bhutan, and China. Recent research on Himalayan pastoralism identifies stresses arising from climate change, labour change, state policy, tourism, infrastructure, and declining access to rangelands and mobility routes (Foggin, 2021; Ning et al., 2025; Sheergojri et al., 2026; Singh & Kerven, 2023). Elsewhere, Bakhtiari, Qashqai, and other tribal groups in the Zagros Mountains of Iran undertake long seasonal migrations between winter and summer pastures, following traditional routes and relying on customary resting places and seasonal access for transit (Azhdari et al., 2021). Across Europe, transhumance is now formally recognised as intangible cultural heritage, with the UNESCO (2023) inscription spanning Albania, Austria, Croatia, France, Greece, Italy, Luxembourg, Romania, and beyond.

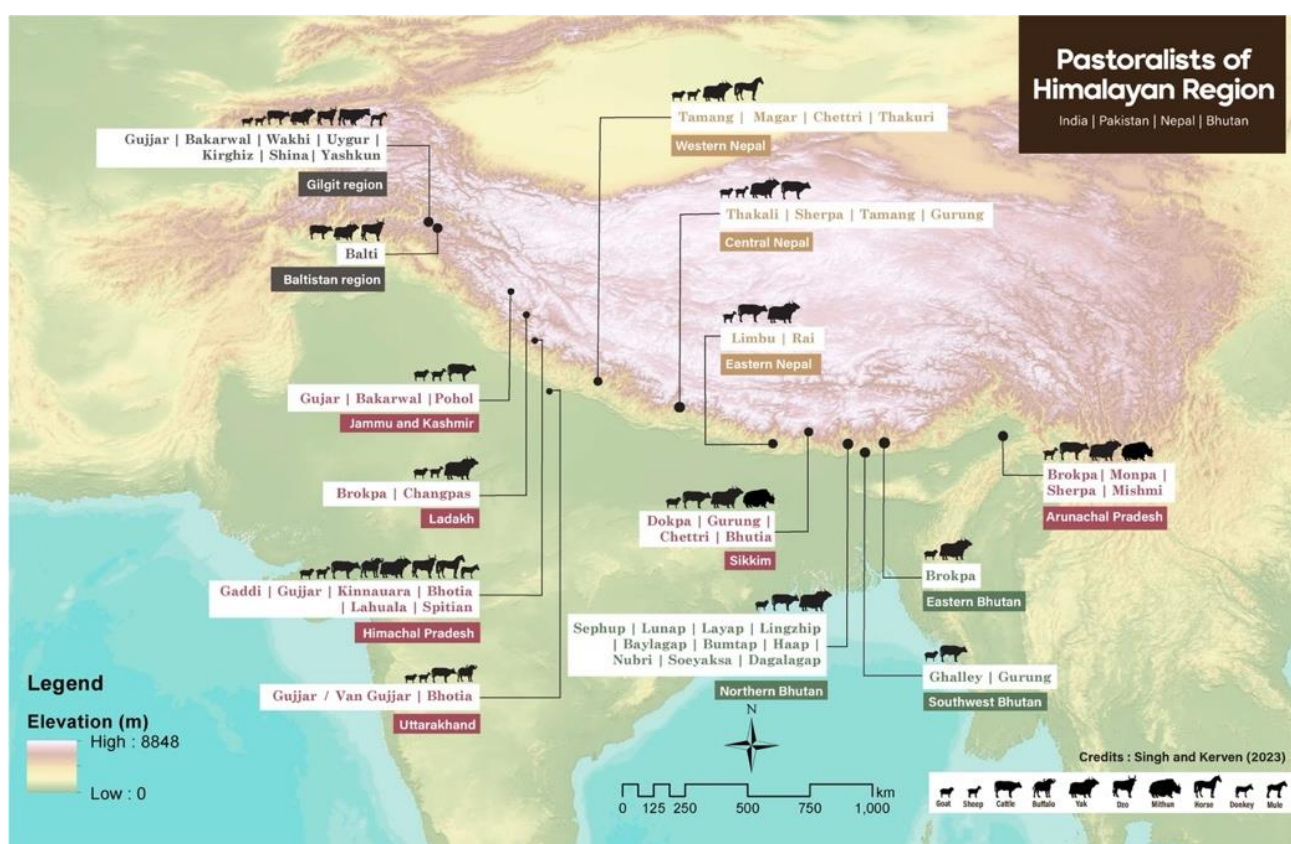


Figure 3. Pastoralist groups of the Himalayan region across India, Pakistan, Nepal, and Bhutan.
Source: Gurpreet Kaur Sokhi, as reproduced in Singh & Kerven (2023).

POLICY PRIORITIES FOR SUSTAINABLE PASTORALISM

The future of global pastoralism depends on whether wider society recognises its full value and supports its adaptive capacity. IYRP's Rangelands & Land Degradation Neutrality Working Group (2024) recommends several priority actions to support sustainable pastoralism, including the following:

- **Stop the indiscriminate conversion of rangelands** to cropland, tree plantations, mining, infrastructure, or new settlements without adequate social and environmental safeguards in place.
- **Recognise pastoral mobility as essential** to healthy rangeland ecosystems, and support it through secure tenure, appropriate safeguards, free prior and informed consent (FPIC), and community-led governance — treating it as a nature-based solution for rangeland health and essential for equitable development.
- **Reform economic policies and technologies** to support sustainable pastoralism, emphasising local livestock breeds, mobile services, renewable energy, and fair market access for pastoral products.

- **Promote integrated, multifunctional land use**, including silvopastoralism and agroforestry systems, wildlife-livestock integration, and ecotourism that benefits local communities.
- **Strengthen participatory land governance and equity** by including pastoralists, women, youth, elders, and Indigenous peoples as decision-makers, not merely as consultees in externally driven programmes.
- **Fund rangeland and pastoral projects through climate and biodiversity finance**, with resources clearly earmarked for participatory research, monitoring, and capacity-building, led by local communities.

WWF Germany offers additional policy recommendations, recognising both the global extent of threats to grasslands (and to rangelands more generally) and the “once-in-a-generation chance to turn the tide on global grassland loss” (Dudley 2026) afforded by the current international development dialogues and IYRP 2026. Grassland-focused recommendations include:

- Support pastoralist, transhumant, Indigenous, and ranching communities, their cultures, sustainable production systems, and tenure rights.
- Build a comprehensive, representative, and well-monitored network of protected and conserved areas that supports pastoralists’ land tenure and other rights and prevents exclusionary conservation.
- Integrate grassland and soil health into climate adaptation and disaster preparedness policies.
- Mobilise finance and adapt economic incentives across agricultural policies and value chains.

RESTORING LAND, RESTORING HOPE

Mountain pastoralism is one of the world's oldest and most widespread adaptive livelihoods — a system that turns seasonal variability into food, fibre, mobility, identity, and ecological management on land too steep, cold, dry, or variable for reliable cropping. It exemplifies circular-economy principles long before the term existed and, in Ostrom's (1990) sense, shows that commons need not end in tragedy when institutions fit local conditions and communities have real decision-making authority over their land and natural resources.

Pastoralism is not a relic of the past. It is a living livelihood that offers valuable lessons for an uncertain future. In contexts where environmental variability is unavoidable, human resilience depends on flexibility, diversity, cooperation, and care. Pastoralists can thus be important agents of *in situ* conservation, bringing knowledge and adaptive management practices indispensable to sustaining ecosystems (Niamir-Fuller et al., 2012; Yilmaz et al., 2019). Listening to pastoralist voices is the best place to begin (ICCA Consortium, 2026).

As UNCCD COP17 convenes in Ulaanbaatar, Mongolia, under the banner “Restoring Land, Restoring Hope” during the International Year of Rangelands and Pastoralists, the evidence points in one clear direction: successful land restoration for climate, biodiversity, and justice recognises pastoralists as knowledge-holders, rightsholders, and co-custodians of living landscapes. In its fullest sense, sustainable development restores relationships among people and with the wider community of life, with particular attention to the places, cultures, and the comprehensive livelihoods and economies involved (Foggin, forthcoming).

GLOSSARIES AND MAPS

For definitions of key terms relating to pastoralism, rangelands, and grazing systems, see:

- ⇒ [Pastoralism and rangelands: People and institutions](#) (Kelly et al., 2024)
- ⇒ [An international terminology for grazing lands and grazing animals](#) (Allen et al., 2011)
- ⇒ The Rangelands Gateway [Glossary of Terms](#) (The Rangelands Partnership, 2026)

For further information about rangelands, explore the [Rangelands Atlas](#) and the [Rangelands Gateway](#), which provides access to more than 25,000 resources.

To learn more about pastoralist peoples of the world, including their livelihoods and cultures, see the FAO [Pastoralist Knowledge Hub](#), the LPPELD [World Pastoralist Map](#), and ICCA Consortium’s [Pastoralist Voices](#).

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INTERNATIONAL YEAR OF
**RANGELANDS AND
PASTORALISTS**
2026



GLOBAL ALLIANCE FOR
RANGELANDS & PASTORALISTS



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