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Pastoralists—the solution to sustainable dry landscape management, yet undermined and seen as the "problem"

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Summary

Pastoralists are well adapted to harsh environments and have a vast repertoire of local knowledge about their natural resources, which is complex and based on a variety of survival and insurance measures. But they have also suffered from drought, famine, political interference, physical insecurity, armed aggression, increasing impoverishment, and marginalization. Despite these obstacles, pastoralists have long managed their lands for various purposes including livestock mobility, which depends on large commonly owned landscapes, knowledge of ecosystem productivity, and on the ability to negotiate access to resources. Even as their traditional institutions and social cohesiveness are being eroded, they continue to play a significant role in natural resource use.

There currently exist two broad strategies to address environmental degradation: 1) expand protected and conserved areas; and 2) improve management of agricultural- and rangelands. Too often, these solutions are viewed as incompatible.

Locally driven actions must shift finance and decision-making power to local peoples to support local solutions. That is where Rights and Resources Initiative (RRI) can play an important role in making the case for pastoralism and sustainable dryland natural resource management through two of its guiding principles—secure rights and responsibilities to land and resources, and through the lens of governance.

RRI can support this by undertaking the following activities:

1. Understanding the drivers of irresponsible investments in drylands;

2. Understanding how herders manage risks and resilience;

3. Advocating for pastoralism as a conservation strategy;

4. Making the case for market integration and the subsistence economy of pastoralism;

5. Understanding how loss of biodiversity and ecosystem services impact pastoralists;

6. Understanding 'sectoralism'—commonly dominated by actors and sectors deemed globally powerful and influential—and how it negatively impacts the environment, fragments the landscape, and results in loss of resilience, biodiversity, and connectivity;

7. Making the case for security of tenure and resource rights; and

8. Understanding how Integrated Landscape Management (ILM) is mediated by equitable governance.

Pastoralists: Part of the solution, not the problem

Pastoralism is an ancient practice rooted in Neolithic times and is found across the globe on all continents (except Antarctica) though each region is shaped differently by geography and culture. The rangelands pastoralists use—especially wet season ranges—are often unsuitable for cultivation. However, pastoralist dry season-rich patch vegetation, which is critical to the overall success of pastoralism, has often been expropriated for cultivation and conservation.

Pastoralists customarily live and manage the world's drylands, which currently covers 42 percent of the Earth's terrestrial surface area, and 61 percent of this—or 12.5 million km^2—is in Africa.[1] Pastoralism refers to livestock-based production based on extensive land-use and mobility. There are many

different types and degrees of pastoral mobility, which vary according to range and environmental conditions, and can be seasonal or regular between well-defined pastures. It may also follow fixed transhumance routes or vary from year to year.

Over time, pastoral societies have adapted to harsh environments and acquired a vast repertoire of local knowledge about their resource base, its weaknesses, and its strengths, as well as its utilization and management from specific species to ecosystems. Pastoralism is complex and based on various survival and insurance measures to mitigate against hard times such as drought and disease. Yet, there is consensus that most development interventions have not helped pastoralists: they have survived despite development, not because of it. Over the last century, pastoral societies have suffered from drought, famine, political interference, physical insecurity, armed aggression, increasing impoverishment, and being ignored. Ignorant interventions by governments and Non-Governmental Organizations (NGOs) have often made things worse[2] where systems are weakened due to land expropriation (agriculture, protected areas) or geographically inappropriate conservation methods.

But, the role of traditional knowledge is gaining increased recognition in the development sector, and the World Commission on Environment and Development notes:

> *"The isolation of many such (Indigenous) people has meant the preservation of a traditional way of life in close harmony with the natural environment. Their very survival has depended on their ecological awareness and adaptation. These communities are the repositories of vast accumulations of traditional knowledge and experience. Their disappearance is a loss for the larger society, which could learn a great deal from their traditional skills in sustainably managing very complex ecological systems. It is a terrible irony that as formal development reaches more deeply into rain forests, deserts and other isolated environments, it tends to destroy the only cultures that have proved able to thrive in these environments."*[3]

It is in pastoralist landscapes where strong participatory natural resource management and conservation policies are desperately needed. However, because of the vastness of these landscapes, the mobility of the people, and the variety of the challenges faced, such work is often discussed but rarely implemented. Development in drylands should not be copy-pasted from high potential areas as is often seen in development dominated by agriculture and sedentary lifestyles or the opinions of the political and technical classes and decision makers.

Indigenous and Community Conserved Areas (ICCAs) can address the shortcomings of protected areas, and place conservation firmly in people-dominated landscapes in an integrated manner. This is particularly so for pastoralism. Few ICCAs are formally recognized by governments, yet they are consistently amongst the oldest protected areas in the world. Other effective area-based conservation measures (OECMs) such as conservancies, sacred groves, or pastoralist dry season grazing refuges can help build the necessary respect and recognition for ICCAs globally.[4] Pastoralists have a wealth of environmental knowledge, contribute to the preservation of the diversity of species and habitats, and are inextricably linked with conservation. Respecting pastoralists' environmental knowledge and encouraging pastoral mobility is essential since their awareness of climatic, spatial, and temporal variability is indispensable for the planet's survival. The key to successful dryland conservation lies in pastoralists' ability to manage for variations in vegetation and precipitation—temporarily and spatially—to maintain sustainable livelihoods and economic growth.

There are attributes of pastoralism which contribute to conservation. The objectives of pastoralists are not just to increase herd size, but increase milk yield, maintain an appropriate herd structure for short- and long-term success, and ensure disease resistance by selective breeding. Herd

heterogeneity enhances a diverse production base, and flexibility is an insurance that sustains livelihoods and promotes conservation outcomes. Some pastoralist management attributes[5] include:

- Livestock adaptation ensures pastoralists have diverse livestock consisting of grazers and browsers based on survival and productivity needs, and are well suited to climatic conditions;
- Livestock mobility enhances the efficiency of forage conversion and is a risk management strategy requiring movement on different scales and at different times;
- Rangelands are diverse mosaics of species and ecosystems where pastoralists manage grazing and browsing species to optimize and conserve range resources; and
- Herd splitting as a risk reduction strategy maintains long-term productivity of the range, ensures sustainable production, and is an integral component of customary institutions.

Pastoralists manage their rangelands using strategies such as water development, bush clearing, tree restoration and protection, and the use of fire, all of which contribute to conservation ILM. Pastoralists' landscapes are like a web held together by different threads and threats[6]:

- Setting aside rich patch vegetation for dry and drought times is needed, but many such lands have been expropriated for cultivation or protected areas, compromising larger pastoral systems;
- Using controlled fires to manage rangelands, control disease, destroy unpalatable species and encourage palatable species while such methods are deemed destructive and backward;
- Water is controlled and rights are negotiated in places where range and water management go hand in hand. But water that is freely available tends to shift pressures onto rangelands causing degradation and pastoralists are subsequently blamed;
- Practicing opportunistic farming blurs the distinction between pastoralists and agro-pastoralists, yet development emphasizes cultivation so the best lands are converted; and
- Depending on a variety of resources and factors influencing resource use, the diversity that exists relating to pests and diseases, the timing of cultural gatherings, the growing seasons, and market access are keys to conservation success. Yet, the development sector continues to alienate this diversity.

Pastoralists and ecologists have a lot in common when it comes to managing landscapes and understanding the trade-offs between grazing and no-grazing, both temporally and spatially. Politicians, the dominant agricultural communities (with their focus on crops), and conservationists (with their focus on protection) rarely understand pastoralism and why it is the way it is. Pastoralism and conservation are two sides of the same coin but are separated by "silo'ized" government sectors and education that focuses minimally on the values of pastoralism and rangeland management. Yet, pastoralists manage lands for various purposes, such as building materials, utensils, fodder, and medicines. They can recognize most of the plants growing in their rangelands and are aware of seasonality, toxicity, pharmacological benefits, and nutritive values. This awareness is vital for pastoral livelihoods to preserve fodder, provide shade, and protect long-term the environmental benefits that plants and trees provide.

Livestock mobility depends on large, usually commonly owned landscapes, knowledge of ecosystem productivity, and on pastoralists' ability to negotiate access to resources. Traditional institutions and social cohesiveness, which once helped pastoralists regulate natural resource use and survive periods of stress, are now being eroded, but continue to play a significant role in natural resource use and conservation[7]:

- Pastoral communities designate roles of resource protection to different institutions (e.g., the Laibons among the Loita Maasai in Kenya who control certain sacred resources);
- Traditional institutions for range management, such as Qaaran in Somalia, Iribu in Afar, and Bussa Gonefa in Borana, are diverse and support pastoralists who lose livestock due to drought, raids, or diseases; and
- Collective action is a social safety net that enhances labour sharing and increases security during periods of stress which are vital for effective rangeland management.

Dominant agricultural and conservation narratives marginalize pastoralism

In pastoralist landscapes, there are failures of development due to a lack of local participation and respect. Often based on 'Western' ideas, projects are planned and implemented without understanding the pastoral system. Local knowledge and associated governance systems are ignored. Too often, project representatives, and their donors and planners, advocate for equal participation, awareness, and social responsibility while reality on the ground is reminiscent of tree nurseries and planting or irrigation and cultivation in isolation of larger systems. Current dominant models of development offer alternatives such as irrigation or fishing rather than strengthening pastoralism to produce more for the local and national economy in terms of livestock and improved food security. Unfortunately, these models are also often oriented towards countable projects and measurable "deliverables" (e.g., land area under irrigation, number of trees planted, or water structures installed). From here, arguments generally revert to commonly held views: pastoralists are backward, primitive, nomadic, and conservative. They are often minorities, relatively powerless in political structures and development discourses and have little say in policies that govern them. Development is planned for them and implemented by outsiders who are unfamiliar with pastoralism.

Man-made pressures, land use disputes, sedentarization, industrial encroachment, institutional challenges, land alienation for conservation and agriculture, climate change, lack of influence on policy dominated by a cultivation bias all exacerbate pastoralists' ability to sustainably manage their dwindling lands, especially where they do not have a say on broader land use issues and the decisions that impact them.

Pastoralism is compatible with ecosystem management, yet conservation efforts have expropriated large areas of important rangelands. For example, approximately 75 percent of Kenya's wildlife reserved estate was originally owned and managed by pastoralists. Combined with increasing pressures from other forms of land use, such as for cultivation or settlements, mean pastoralists and wildlife managers are forced into uneasy alliances. Pastoralism and wildlife conservation are both incompatible with intensive agriculture, but they also often conflict with each other when it comes to disease, forage, and water access.

However, short-term degradation does not necessarily compromise long-term resilience. Pastoral communities build up herd size in good years as a buffer against uncertain times related to drought or disease. This does not necessarily cause long-term degradation due to natural checks and balances. Pastoralists face many constraints that are not of their own making[8], including:

- Many pastoralists are now sedentary as a result of settlement programs or to take advantage of new resources such as water access points and social services;
- In places where pastoralists are forced to farm, there is competition for labour which undermines the pastoral system and mobility;

- Charcoal production for fuel in urban centres is seldom regulated and has devastating effects on the environment (e.g., more than half of the charcoal in Kenya derives from drylands);
- Infrastructure projects such as schools and health facilities often curtail mobility; and
- The proliferation of water access points that do not consider the surrounding environment disrupt migration and can lead to permanent grazing pastures, reducing plant vigour, fostering a shift from palatable to unpalatable species, and leading to biodiversity loss.

Land-use change and resource competition issues[9] proliferate, including:

- Encroachment of cultivation into rangelands restrict mobility and contribute to fodder shortages, particularly during periods of stress;
- Development favours western ranching methods involving fencing land which reduces mobility (e.g., pastoralists in Somalia tend to enclose land, conflicting with mobility);
- Clearing woodlands for farming, like in Sudan, is considered "modern and non- damaging", whilst localized overgrazing around water access points is grossly exaggerated;
- Pastoralism is one of the few land-use systems compatible with conservation. Yet, it is ironic that pastoralism is also increasingly undermined through exclusion from protected areas;
- Encroachment of invasive species such as *Prosopis juliflora*, *Euphorbia tirucalli* and *Amaranthus spinosa* leads to the deterioration of rangelands, exacerbated by restrictions to traditional burning; and
- Resource conflicts between pastoralists and other land users can constrain mobility and result in increasing grazing pressures in one place and under grazing in another.

Gaps and opportunities–landscape management is key

The people with the knowledge and institutions to manage risk-prone rangelands are the ones accused of degrading them while their best lands have been expropriated by government and other actors for cultivation, protected areas, settlements, or other uses. Traditional herd management has conservation benefits and are an integral part of climate adaptation, yet resilience is compromised by the conversion of rich patch vegetation to croplands, the expropriation of rangelands for protected and conserved areas or settlements, and under-investment.

Two strategies currently exist to address environmental degradation: 1) expand protected and conserved areas; and 2) improve management of agricultural- and rangelands.[10] Too often, solutions that fall into either of these strategies are seen as incompatible: people involved in agriculture associate conservation with the creation of national parks and with food insecurity. On the other hand, conservationists tend to associate cultivation and agriculture with land conversion, degradation, and biodiversity loss. These two approaches to land management use different languages, do not talk to each other, and publish in different arenas. Yet, both strategies are essential for the health of people and planet.

Locally led action must shift finance and decision-making power to local peoples, including pastoralists, to support local solutions. Despite increased pledges for local-level finance in recent years, it is clear that national, regional, and global actors still control most of the finance and decision-making power needed to achieve global conservation goals. This lack of finance and decision-making power at the local level is also one of the reasons for development failings on pastoralists' lands since they fail to support local actors and do not create space for the recognition of their extensive local, intergenerational, indigenous, traditional, and cultural knowledge.

Climate-smart agriculture can help meet global needs for food, fibre, and energy by contributing to food and water security, climate regulation, the United Nation's Sustainable Development Goals (SDGs), as well as national and international targets for halting climate change, reversing biodiversity loss, and preventing further land degradation. Pastoralism is a Nature-based Solution (NbS) and can enhance soil management, support conservation outcomes, and contribute to wealth creation.[11] [12] Rewards for ecosystem services and incentives for climate-smart farming could move us from a focus on 'food, fibre, fuel' formulas to 'production, water, climate and nature'—this is what pastoralism does.

We must bridge the knowledge and institutional gaps between pastoralist knowledge and institutional systems with those of science and formal education. Reciprocal learning to better understand these differing perspectives will help in respecting the knowledge pastoralists have and resolving some conservation challenges (connectivity, sustainable use, conserved areas). The value of traditional ecological knowledge must be respected. Current education systems focus on dominant paradigms (economics, agriculture, industry) and do not teach the value of traditional knowledge, including pastoralism.

Understanding how pastoralist governance and institutional arrangements have worked in the past can help us improve and legitimate pastoralism as a whole. This should include understanding and having appropriate institutions to support local ownership. This is the foundation for realizing the value and diversity of the products pastoralist land use makes possible, including the sustainable marketing of products and their value chains to support sustainable pastoralism and improved livelihoods.

Governance is closely related to tenure security and associated responsibilities. Yet pastoralists globally currently lack this security. Specific tenure rights that characterize pastoralism and many drylands tend to fall broadly under communal usufruct which usually lack security and/or formal recognition under national and international law. Examples of community-based tenure systems exist in Kenya in the form of group ranches and conservancies and in Tanzania in the form of village lands. However, for drylands, tenure rights are more likely to be granted to individuals for commercial or cultivation purposes. Tenure rights are even less likely to be granted for rangelands which tend to remain under traditional usufruct. This means that pastoralists' rights are weak and can easily be usurped for cultivation, commercial ranching, or the creation of protected areas.

National policies usually favour sectoral approaches to conservation because of how nation states and governments operate. Adopting ILM approaches and fostering integrated natural resource management can help. Such policy understanding hinges on pastoralists having secure rights to and responsibilities for their landscapes and their ability to defend these landscapes from expropriation and unsustainable use.

Niche role for RRI

RRI can play an important role in making the case for pastoralism and sustainable dryland natural resource management. This can be achieved through two of RRI's pillars: 1) secure rights and responsibilities to land and resources, and 2) through the lens of governance.

Understand the drivers and impacts of irresponsible investment in dryland management, including the role of dominant political classes, and pastoralists not having a seat at the decision-making table and suffering the consequence of decisions made in ignorance. Accusing pastoralists of overgrazing is an oxymoron since they know overgrazing is bad. However, understanding how overgrazing differs

is important because pastoralists, conservationists, agriculturalists, and landscape decision makers all have different understandings.

Understand how herders are shrewd managers of risk and resilience, since they know more about climate in harsh, hot and dry environments—especially at the landscape level—than climate experts. Pastoralists manage their livestock and lives in response to a constantly evolving environment. Pastoralist knowledge and institutional systems should be harnessed, not alienated or denigrated. They are the foundation for sustainable land use but need lands to be sustainably managed to yield critical products such as meat, milk, and dryland non-timber forest products.

Respect and advocation for pastoralism as a conservation strategy are key since it continues to be under-recognized as central to securing livelihoods and their harsh risk prone environments. Conservation authorities underestimate the importance of pastoralism despite it being one of the few compatible land-uses. Pastoralism needs to be respected and developed as a sustainable land-use strategy that integrates climatic factors, the necessity for mobility, and sophisticated local knowledge and institutional systems.

Make the case for market integration and the subsistence economy of pastoralism through incentives and regulations that can encourage sustainable use. But this depends on having incentives to promote social and economic security by ensuring greater benefit flows from conservation and supporting natural resource management and diversification beyond livestock production. It also hinges on improving land rights and tenure security for pastoralists based on customary arrangements to support opportunism and flexibility as keys for sustainability.

Understand how losses of biodiversity and ecosystem services impact pastoralists, including: 1) the degradation of land and conversion of ecosystems for monocrop cultivation; 2) lost access to wild foods, fruits, and herbal medicines; 3) increased risk for the most vulnerable; and 4) reduced food quality. Landscape simplification through monocultures, intensification, and loss of natural vegetation all have negative effects on pollination and pest control. More diverse landscapes offer greater richness of biodiversity and ecosystem services.[13]

Understand the impacts of 'Sectoralism' which is dominated by powerful sectors and impacts the environment, fragments the landscape, and results in loss of resilience, biodiversity, and connectivity, all have severe consequences on pastoralism. The conversion of dry- and range-lands for agriculture undermines and reduces land productivity and compromises sustainability. Demonstrating connectivity and the importance of the environment to land use and livelihoods are key to sustainable pastoralism. Diverse arrays of crops, trees, bushes, and rangelands promote pollination, enhance yields, and improve soil fertility. The Convention on Biological Diversity (CBD) now acknowledges the importance of nature in agricultural systems.[14]

Make the case for security of tenure and rights by focusing on the environment as the place where tenure happens. Insecure rights result in a loss of responsibility for nature and land. Greater awareness is needed on the scale, scope, and extent of a variety of ICCAs and communities' tenure rights for conservation and development. Custodian rights and responsibilities can be strengthened, better respected nationally and globally, and recognized as valued cultural, livelihood, and conservation assets.

Understand how ILM embraces integrated environmental, water, agricultural, and livestock management mediated by equitable governance that respects various activities[15] [16] which must be integrated with appropriate environmental governance and tenure systems. Without appropriate governance, the result may be degradation. Technical and governance solutions should be "owned"

by the landscape user or owner through simple community-based land use action plans that build on—or negotiate—existing individual or collective property rights and governance institutions. Intermediaries can facilitate locally owned planning, but the focus and ownership should be local and should not be usurped[17].

Conclusion: The case for pastoralism (tenure, governance, institutions)

> *One may wonder how much goes unknown because of unseeing eyes, unhearing ears, professional conditioning, and the biases of rural development tourism. Neither rural people nor outside scientists can know in advance what the others know. It is by talking, travelling, asking, listening, observing and doing things together that they can most effectively learn from one another.*[18]

This pithy quotation is as relevant now as it was when it was written nearly 40 years ago.

Sustainable environmental management is the foundation for ILM, agriculture, development, and conservation.[19] Pastoralism is ILM and is predicated on secure rights for land and other natural resources to support environmental management, create incentives for climate-sustainable land use, and help protect ecosystem services. Strengthening community-based landscape governance and securing rights will produce benefits in terms of products and natural resources for landscapes.

Promoting actions to integrate diverse resource uses (e.g., agriculture, pastoralism, forestry, nature, water, environment) demonstrate the importance of ecosystems.[20] Environmental management is important for democracy, governance, peace, and is restorative.[21] Landscape approaches that integrate land, water, and biodiversity use and are based on participatory governance and secure tenure strengthen the role conserved areas can play in promoting and sustaining diverse resource use. But, these conserved areas, which national governments have been expanding since 2010, often focus on state owned and managed areas rather than the holistic approach ICCAs apply.[22]

Environmental stewardship is key. Stewardship combines sustainable management, tenure security and local governance with the understanding that these resources are more than their economic value.[23] But we have tended to exploit rather than steward the Earth and recognize the intrinsic value of all life.[24] Focusing on landscapes, localism, and stewardship can solve problems of the networked character of landscapes: more local community action and interdisciplinarity; fewer central and siloed approaches; and more local and less national or international economics. Stewardship hinges on ensuring that rights and responsibilities are devolved to the lowest accountable level and should not result in a de-concentration of government powers which, although might be administratively expedient, might also degrade or downgrade the role of traditional institutions.

Pastoralists have extensive knowledge about their environments, and they have sophisticated institutions that enable them to exercise this knowledge. These institutions are under threat from a wide variety of changes and pressures that impinge on their rangelands. Overcoming rangeland degradation requires enabling customary and local institutions to best use traditional and other knowledge to ensure that pastoralism continues to be practised effectively.

Policy options that improve the conservation of drylands are those that work with customary institutions and respect traditional knowledge. Conservation and sustainable management of rangelands require security of rights and land, as well as understanding of local livestock production, risk management strategies, and collective action. Pastoralism represents one of the few ways to improve livelihoods and create wealth. We need evidence for pastoralism—an evidence base to

make policy, implementation, and investment decisions a core component of the livestock, conservation, and climate change adaptation sectors. Pastoralism is not just the domain of one sector and research to make such a case is important and cannot be left to journals. Rather, it should be used to advocate for the real benefits pastoralism brings. Pastoralism, conservation, and integrated landscape management are allies, not enemies.

About the Rights and Resources Initiative

The Rights and Resources Initiative is a global Coalition of 21 Partners and more than 150 rightsholders organizations and their allies dedicated to advancing the forestland and resource rights of Indigenous Peoples, Afro-descendant Peoples, local communities, and the women within these communities. Members capitalize on each other's strengths, expertise, and geographic reach to achieve solutions more effectively and efficiently. RRI leverages the power of its global Coalition to amplify the voices of local peoples and proactively engage governments, multilateral institutions, and private sector actors to adopt institutional and market reforms that support the realization of their rights and self-determined development. By advancing a strategic understanding of the global threats and opportunities resulting from insecure land and resource rights, RRI develops and promotes rights- based approaches to business and development and catalyzes effective solutions to scale rural tenure reform and enhance sustainable resource governance.

RRI is coordinated by the Rights and Resources Group, a non-profit organization based in Washington, D.C. For more information, please visit www.rightsandresources.org.

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Endnotes

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