

# 87. VALUING RANGELAND VARIABILITY: A GLOBAL INITIATIVE FOR MOBILE PASTORALISM

ACTION AREA	CLIMATE RESILIENT DEVELOPMENT PATHWAYS
SOLUTION CLUSTER	CLIMATE ADAPTATION, MITIGATION & RESILIENCE
THEMATIC AREA	ARID, SEMI-ARID LANDS AND DESERTS
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## WHAT IS THE RISK, SHOCK, STRESS THAT THE SOLUTION IS TRYING TO ADDRESS?

**Solution:** Establish a transformational global Initiative for Mobile Pastoralism Valuing Rangeland Variability

Modern agriculture, including livestock, has been built on the assumption of a distinctive difference between humanity and nature, and attempts to emancipate food production from the variability and uncertainty of the natural environment. Setting the boundaries of the food production system so as to exclude the natural environment has placed the latter out of sight, effectively turning nature into a dumping ground for externalities.

With global climate change upon us, there is little doubt that the separation from nature was just a fiction maintained by keeping a methodologically narrow focus. A highly variable natural environment is the norm and variability is increasing with climate change to the extent that it can no longer be negated.

## HOW DOES THE SOLUTION IMPROVE OR ENHANCE RESILIENCE OF FOOD SYSTEMS?

### **The systemic role of pastoralism**

Today, some of the most evident lessons for producing food by working with nature are found in traditional pastoral systems. These mobile systems are run by some half a billion people operating in most of the grazing ecosystems worldwide, from the edges of the Sahara to the Arctic Circle, maintaining grazing-dependent natural rangeland ecosystems and often connecting them with agricultural areas in complex forms of crop-livestock integration and circular economy. Mobile pastoral systems have shown far more resilience and adaptability to climate stress and pandemics than has settled farming. Rangelands are all forms of grazing ecosystems, including tundra, savannas, grassland and desert margins, and cover an estimated 50% of the world's land surface. Pastoral systems worldwide are very diverse, reflecting the diversity of the ecosystems they use, but they all share the same operational logic.

Grazing by migratory herbivores is a fundamental component of many of the world's ecosystems. In most of these ecosystems, livestock moving along expertly managed grazing itineraries has functioned as a very efficient proxy. Key ecosystem services provided by mobile pastoral systems include seed dispersal, landscape shaping and biodiversity structuring. Pastoralism contributes to food systems well beyond its livestock outputs. Many crops depend on livestock for its support to pollinators and for the role of manure in the recycling of organic matter and the restoration of soil fertility.

Rangelands and grasslands have been considered by outsiders in the past to be degraded forests and/or wastelands. Not so by pastoralists, nor by recent science. Increasing evidence from vegetation science shows that such landscapes were shaped by large, mostly presently extinct wild herbivores during the

whole Quaternary. Today it is recognised that the natural state of such landscapes is dependent upon herbivory.

### **The game-changing idea**

In the face of climate change, a growing number of producers and consumers in the Global North are looking for 'nature-positive' or agro-ecological ways of producing food. Meanwhile, producers in small-scale farming systems in the South, especially in mobile pastoralism, are under political and economic pressure from globalisation and national governments to abandon their sustainable specialisation and enter the outdated fiction of practising agriculture apart from nature.

This game-changing idea is about breaking free from this vicious cycle. The idea rests on the broader principle of 'valuing variability' in food systems as a necessary path to both sustainable agriculture (including aiming for higher productivity) and social justice in the face of climate change.

Whether nature's variability is a problem or an asset for food production depends on the strategy of production. Mobile pastoral systems have intrinsic properties that make them an ideal entry point for supporting and scaling up nature-positive production and natural restoration and regeneration of ecosystems. Mobility remains their most effective strategy.

### **Supporting, scaling up and improving pastoral mobility**

Relative but sustainable stability in outputs can be achieved by matching the variability in potential inputs from the environment with the variability integrated in the processes of production. The absence of livestock mobility has historically led to rangeland degradation. Mobility reduces environmental externalities for both economy and ecology.

Pastoral mobility — managing grazing itineraries at a variety of scales so that livestock gain a better diet than they would without management — is the most evident example of variability embedded in the processes of production. Other elements providing the necessary adaptability are flexible land-tenure systems, high levels of domestic animal diversity within the herd, and reliance on complex learned behaviours as well as on genetic traits in livestock breeding.

Recognising, supporting, scaling up and improving the logic of matching variability in inputs with variability in production processes is key to secure relative but sustainable stability in outputs for modern food systems in the face of climate change. With regard to pastoral systems and their integration with crop farming and the wider economy, this starts from supporting, scaling up and improving pastoral strategic mobility.

This solution is actionable, sustainable and has high potential for impact to scale. It recognises, supports and improves the logic of 'valuing variability': achieving relative but ecologically sustainable stability in outputs by matching variability in inputs with variability in processes. This is a major change from the approach of current conventional agronomic practices, because it avoids the high inputs, high fossil-fuel burden and large environmental impacts necessary to mitigate natural variability in industrialised production systems. When adopted, this approach will have far-reaching consequences for achieving sustainable animal-based food production in the coming century.

A fundamental readjustment of parameters, indicators, scales of observations and procedures in the collection of public data on food systems (all of which to date have been developed with the assumption that a separation of agriculture from the natural environment is both desirable and possible) will help to measure impacts to scale, costs and long-term sustainability.

## **IS THE SOLUTION RELEVANT TO BUILDING FOOD SYSTEMS RESILIENCE?**

Anticipate shocks/risks/stress and/or reduce vulnerability, Manage risks, Prevent (reduce exposure), Absorb, respond/cope, Adapt to shock-affected scenarios and evolving risk scenarios, Transform the Food System when the current Food System is no longer sustainable

## IN WHAT REALMS OF INTERVENTION IS THE SOLUTION DESIGNED TO ACT ON RESILIENCE?

Individual, Household, Community, Land/sea-scape, Institutional

## WHO ARE THE MAIN ACTORS THAT WOULD PUT THIS ACTION INTO PLACE?

Policymakers (government), Private (businesses, etc.), Civil (NGOs, etc.), Farmers, Scientists, Indigenous groups

## IS THE SOLUTION APPLICABLE AT GLOBAL LEVEL, OR SPECIFIC CONTEXTS & PARTICULAR COUNTRIES?

The logic of valuing variability is actually relevant to all food production in the face of increasingly variable natural environments. However, this particular Initiative for Mobile Pastoralism Valuing Rangeland Variability is meant to be applied to all mobile pastoral systems worldwide – which, at last count, covered more than 75 countries in both developed and developing regions.

This idea requires a global-scale intervention and, therefore, could be one of the outcomes of the UNFSS. Governments, civil society and other stakeholders would be asked to contribute to the financing of the Initiative. Activities and actions would be carried out at all governance levels as exemplified above. The exact organisational structure needed to implement and govern the Initiative requires further elaboration, but could be built on existing financing structures

Global level: UNFCCC and FAO to incorporate the neutral character of pastoralism-derived GHG emissions and the positive role of carbon fixation in rangelands managed by pastoralists in their evaluations. UNCBD, UNCCD and IPBES to incorporate scientific evidence on the real extent of grazed ecosystems, including ecosystems with alternative states previously interpreted as deforested areas. UN Agencies to disaggregate data so as to categorise pastoralists separately from crop farmers and other land users, and thereby to gather statistics relevant to pastoralism. Overall, create sufficient flexibility and options for commensurability in appraisal mechanisms and guidelines for the generation of relevant public data, to allow the necessary adaptation at national level (see national level).

Regional level: Lobby for veterinary health policies for the world's different regional commerce blocks to stop undermining mobile pastoralism and favour instead mobile livestock production systems through adequate proven tools. Extend transnational cooperation models (such as ECOWAS or IGAD protocols for transhumance) to other regional blocks with transboundary pastoralism, including provisioning and marketing routes. For developed countries, recognise the ecosystem services provided by mobile pastoralism by specifically supporting their practice and reducing the differential profit-making with more polluting livestock production methods.

National level: Protect pastoralist mobility, including both transhumant routes and mobility not involving gazetted corridors. Adopt legal frameworks capable of representing and protecting the forms of flexible/negotiable and intermittent/seasonal use of the land functional to the performance of pastoral systems and their integration with crop farming systems and the wider economy. With people in pastoral systems as the modelling entry point, develop ways of providing basic/social services in contexts where operating with high levels of variability is the norm (as such contexts are on the increase). Overall, adapt mechanisms of appraisal for the generation of public data (procedure, parameters and indicators, scales of observation) to make them capable of representing pastoral systems and more broadly food production systems operating as part of nature (nature-positive), that is, in contexts where high levels of variability are the norm.

## WHAT ARE THE KEY ACTIONS REQUIRED TO ADDRESS THIS SOLUTION?

The initiative would be dedicated to supporting, scaling up and improving pastoral strategic mobility and its underlying logic of achieving relative but sustainable stability of outputs by matching variability of potential inputs with variability in the processes of production. The initiative would identify benign or harmful policies and legislation, help share best practices, develop global certification standards, incentivise investments, and help build capacities of pastoralists to self-organise and represent themselves in local, national and global policymaking.

A minimum programme of work would include:

1. Legal recognition of pastoral strategic mobility both in-country (a successful example is the formalisation of the vías pecuarias in Spain) and across national borders on a regional scale (e.g. the transhumance passports in West Africa).
2. Legal status available for land users and communities who wish to manage rangelands through common property tenure, including ownership of buffer zones, and the notion of flexible boundaries.
3. Legal recognition of pastoralism as a form of land use and land development on an equal basis with crop farming (as, for example, in the Kenya pastoral development policy: Sessional Paper No. 8 of 2012).
4. Introduce traceability system for marketing of pastoral food products, which will certify its origin and source as healthy rangeland, healthy animals produced through environmentally friendly pastoralism.
5. Decentralised electricity supply, using solar and wind power from rangelands, with pastoralists benefitting from the royalties or being in a position to sell electricity generated on their communal land.
6. Systematically applying true cost accounting to livestock products worldwide, thus ensuring balanced and equitable trade in livestock products, both domestically and internationally.
7. Payment for ecosystem services provided by mobile pastoralism, including maintenance of pollinators for crops, seed dispersal and ecosystem maintenance.
8. Investment in mobility-friendly infrastructure, including basic services (health, education), 100% coverage of rural areas with mobile phone and broadband networks, mobile or on-demand water points (e.g. portable large-capacity water 'bladders' served by trucks in Sudan), marketing options and abattoirs, and repairing roads and bridges for accessing remote pastures.
9. Development of mobile and distant services (health, education) and mobile-phone based services to help with transportation, marketing, planning grazing itineraries and watering, providing weather forecast data for day to day pasture land management activities, sourcing feed supplements and veterinary products, etc. Vocational training and professionalization of herders. Celebrating pastoralism and programming exchange, educational and leisure events to boost the social links and trade-offs between mobile pastoralists and local communities, thus enhancing access to protein-rich animal products.
10. IPCC to update its formulas for calculating carbon sequestration from rangelands and other non-equilibrium ecosystems, and inclusion of the natural ecosystem flows of greenhouse gases such as CH<sub>4</sub> or N<sub>2</sub>O as natural baselines of grazed ecosystems.
11. IPBES to comprehensively map ecosystems recognising rangelands as a distinct category and the role of livestock in maintaining natural landscapes.
12. Effective integration of pastoralist itineraries and infrastructures in the sustainable development strategies of the regions hosting this activity, enhancing the synergies with local economy and other productions such as crops, orchards, timber plantations, silvopastoral systems, etc

## ARE THERE ANY FINANCIAL SOURCES / FUNDS THAT IS SUPPORTING THIS IDEA?

There are a few good examples of projects and programmes scattered around the world that support mobile pastoralism and value rangeland variability. However, according to the Gap Analysis conducted by UNEP in 2019, the portion of ODA provided by OECD countries to the livestock sector as a whole is marginal compared with other sectors and is not commensurate with the estimated importance of the sector in the world economy. It is not possible to tell what proportion of this ODA reaches pastoralists and rangelands due to a lack of disaggregated data. Global Environment Facility (GEF) projects with pastoralist and rangeland components comprise only 1.2 per cent of available funding. This Initiative aims to significantly expand the funding base in support of mobile pastoralism and valuing rangeland variability.

HOW DOES THIS SOLUTION CONTRIBUTE TO (A) EMPOWER WOMEN AND COMBAT GENDER INEQUALITIES, AND (B) THE FULFILMENT OF HUMAN RIGHTS, ESPECIALLY THE RIGHT TO FOOD AND THE RIGHT TO WATER, (C) MAKE USE OF INNOVATIONS (TECHNOLOGIES, INSTITUTIONS, PROCESSES)?

In principle, every group is involved. However, 'valuing variability' is likely to be particularly advantageous for women and youth. The ongoing pressure to shift pastoralists away from their traditional nature-positive approach to production and into the nature-negative globalised approach hits particularly hard women and youth.

The Initiative will directly address the rights of pastoralists, who for too long have been left behind in development efforts, whose mobile management system has been misrepresented and misunderstood, whose lands and rights to water have been expropriated on the grounds that their lifestyle is archaic and that they should emulate sedentary forms of agriculture, and who have been largely misrepresented in local, national and global governance processes. Many (but not all) pastoralists consider themselves as indigenous peoples.

This idea is about process innovation. Achieving relative but sustainable stability of outputs by matching the variability of potential inputs from the natural environment with variability strategically integrated in the processes of food production — starting from pastoral systems where this approach is already particularly developed and manifest. We are proposing a conceptual framework for 'valuing variability' and an implementation mechanism: the Initiative for Mobile Pastoralism Valuing Rangeland Variability.

Increasing mobility of livestock on rangelands through mobile pastoralism can meet the challenges of increasing climate variability. Furthermore, maintaining healthy rangelands through sustainable pastoralism will rehabilitate grasslands and ensure continued functioning of such ecosystems as effective carbon sinks. There are multiple innovations and technologies that will be required to enable this transformation, including changes to land tenure legislation, technological decentralisation, and innovative financial mechanisms.

In many countries, reviving, upgrading and protecting pastoral mobility and rangeland variability will face challenges, not least because of existing misperceptions, harmful policies and subsidies, and a legislative structure that cannot accommodate common property tenure. It is also unfortunate that pastoralists continue to be seen either as victims or as villains – whether this be related to climate change, land degradation or conflict resolution.

But pastoralism benefits around 1.3 billion people along the value chain worldwide. Rangelands support 50 per cent of all global livestock production. The world's future cannot afford to neglect pastoralists and rangelands anymore.