

# Pastoralists turn variability into food

We are accustomed to see environmental variability as a constraint to agriculture and development. So we try to eliminate it or isolate agriculture from the natural environment. But despite many decades of efforts and considerable investments, environmental variability persists and indeed is increasing with climate change! Our very efforts to introduce stability seem to have contributed to make nature even more volatile. Perhaps, we have not tried hard enough? Or is there another way? With little room to manoeuvre in order to keep global warming below 1.5°C increase, we badly need ways of saving *both* agriculture *and* the natural environment. Could *making use of* variability rather than fighting it be such a way? Could environmental variability itself be turned into a resource? As pastoral systems worldwide are specialised to do precisely that, we think they have more to offer than normally believed.

This brief document is aimed at people and organisations committed to lobbying and advocacy for pastoralists. It spells out in simple terms the most basic points in understanding pastoralism and their most direct implications for lobbying and advocacy. We hope the document will prove a useful reference for building consensus and consistency when working with and for pastoralism.

## The absolute basics

### Environmental variability is the rule

Where rain falls in unpredictably itinerant showers, patchy in time and space, as in most pastoral regions, environmental variability is the rule, not the exception. Variability triggered by the weather is increased as it combines with other variables in the ecosystem, for example, biodiversity or terrain. This offers brief but important opportunities for grazing animals. Pasture becomes available in sequences of patches as the rainy season advances. Contrary to what common sense might suggest, the more valuable concentrations of nutrients can be found where biomass is less abundant, for example, at high altitudes or in drier regions. Pasture is also more nutritious at night after a day of photosynthesis, and just before flowering (in annual plants). The total amount of nutrients for livestock on any given rangeland in a given year (its 'carrying capacity') thus depends not only on the location of the land but also on *when* it is being grazed, down to the day and the hour. Being able to graze in the right place at the right time can make all the difference.

### Pastoralism is a specialisation to make a living from environmental variability

Where environmental variability is the rule, the capacity to take advantage of it leads to higher productivity and resilience. Successful livelihood systems under these conditions — of which pastoralism is a good example — have evolved to work best *with* variability rather than against it. 'Pastoralism' refers to a wide family of livestock-based livelihood/food-production systems that are highly diverse but all share the specialisation to make a living from the variability of the natural environment. This consists in improving the animals' diet and welfare by managing their grazing itineraries at a variety of scales in time and space. In this sense, pastoralism is emblematic of farming with nature. Adding value by managing grazing itineraries *requires* the high levels of variability found in natural environments. The productivity of a pastoral herd is increased *because* of its active engagement with the ecosystem, not despite it. In absence of variability, the advantage of pastoralism is drastically reduced.

This specialisation takes different forms to match different ecosystems, and the degree of specialisation also depends on the availability of additional livelihood options such as trading and cultivation or rural– urban connections. The exact number of livestock keepers who specialise in pastoralism is unknown but likely to be in the hundreds of millions, currently divided and hidden in public data under an array of different categories: pastoralists, agropastoralists, nomads, semi-nomads, transhumants, shepherds, herders, ranchers, graziers and even farmers.

By matching in real time the variability in inputs characteristic of the natural environment with variability in their operational processes, professionals in pastoral systems — men and women — can give their herds an *experience* of stability relative to the 'here and now' of the animals, leading to correspondingly lower variability in livestock outputs. A particularly evident example of variability embedded in the operational processes, pastoral mobility, is therefore first and foremost a *production* strategy, a way of matching variability in natural inputs, taking advantage of it so as to add value in terms of herd productivity. Other examples of process variability are flexible/communal land-tenure systems, the circular economy of crop-livestock integration through seasonal collaboration between specialist groups of cultivators and livestock keepers, or new forms of rural–urban linkages (e.g. youth migration, investment of pastoral surplus in town-based business). Distinguishing variability in natural inputs from variability in operational processes, and capturing their real-time functional relationship, is a critical step to understand how pastoral systems work.

#### ... which goes together with ecological sustainability...

The productivity of pastoral systems can increase together with its ecological sustainability — another counterintuitive feature of pastoralism. Ruminants can process only a given amount of biomass per digestion cycle. Where nutrients for livestock are unevenly distributed amidst biomass that is of little or no use to the animals, ingesting as much undiscerned 'biomass' as possible means wasting digestive potential on useless material. In normal conditions, ruminants faced with a poor diet lose appetite and, soon, weight. Overgrazing by allowing their animals to consume as much pasture (biomass) as possible, even if by free-riding on communal rangeland, is therefore *not* in the short-term interest of individual pastoralists. Quite the contrary. The specialisation that characterises pastoral systems is precisely in adding value (increasing productivity) by targeting *only the most nutritious plants* in the biomass of the available pasture (managing grazing itineraries of the herds). The more a pastoral system is allowed to keep productivity high by operating according to its specialisation, the further away it moves from the risk of overgrazing. When allowed the space to be sustainable, pastoralism contributes to biodiversity and landscape functionality.

#### ... and generates significant economic value

The efficiency of pastoralism is also reflected in its economic importance in the face of decades of underinvestment and lack of services. Although poorly captured in public data, case studies from many countries across the world consistently point to a substantial economic contribution by pastoral systems, often also at regional level. Such empirical evidence suggests that pastoralism is not only the main source of livelihood for millions of people, but also plays a major role in domestic and export markets, creates jobs both in primary production and along several value chains, supports crop-farming systems through providing manure and draught animals, and provides tax revenue. Pastoralism is also an inexpensive way of producing high-quality animal proteins. Indeed, pastoral systems are far superior to any other livestock production strategy in terms of protein efficiency (the net human-edible proteins produced against those consumed through the production cycle). Despite all the well-known challenges, these systems continue to contribute to food security by providing affordable meat to domestic markets and milk to millions of vulnerable households in remote rural areas.

# Implications for lobbying and advocacy

In respect to the 'do no harm' principle, this basic knowledge about pastoralism and its interaction with the natural environment should be reflected in any statement or other outputs produced for lobbying and advocacy purposes. The following practical implications also call for particular attention:

We need to refrain from representing pastoral mobility as a 'coping strategy'. Representing pastoral mobility as a coping strategy in the face of a hostile environment is harmful to pastoralists because it negates their most-defining strength: their ability to turn environmental variability into a resource. Calling pastoral mobility a 'coping strategy' frames it as a measure to reduce risk or contain damage. In reality, pastoral mobility is a risk-taking strategy, complex, proactive, built on sophisticated institutions and expert knowledge and primarily intended to add value — which is why it is typically more intense when opportunities peak. Pastoralists' specialisation to 'navigate' the opportunities of the rangelands is no more a 'coping strategy' than is the fishermen's capacity to navigate the sea. When this does not appear to be the case, and pastoralists do seem to be facing a challenge, we should not fall back into the default view of environmental variability as a problem. Instead of echoing narratives that pin pastoralists' problems on natural (unavoidable) causes, we should ask what man-made conditions are responsible for preventing pastoral systems from functioning well according to their specialisation.

We need to refrain from representing pastoralism as a livestock system belonging to 'marginal' lands. Pastoral systems all over the world do have the unique capacity to turn into food and livelihoods the high levels of variability characteristic of regions such as drylands or mountains. However, they do so by taking advantage of *seasonal* opportunities, and this is possible only if their livestock — their means of production — can survive from one season of opportunities to the next. In order to do that, pastoralists must spend part of the year in wetter or warmer (lower-altitude) regions — often regions where crop farming predominates. This has always been the case. It therefore harms pastoralists to 'lock' them — even if just conceptually — into the lands they can use sustainably only during the annual period of opportunities.

We need to refrain from supporting divisive categorisations. Pastoralists are united by their specialisation, but divided by the categorisations commonly used in public administrations and even in research. While saying little about pastoralists' specialisation as livestock keepers, these categorisations split them according to agroecological zones (by degree of aridity), or whether or not they practise cropfarming ('agropastoralists'), or between settled and nomadic, or fixed and random migratory routes ('nomads' and 'transhumants'). These classifications 'lock' pastoralism onto particular practices and regions, although the strength of the actual pastoral systems is in opening up options and keeping them open (operational process variability) in order to match the variability in natural inputs over time and space. Besides, pastoral systems often run across all these imaginary boundaries. Pastoralists' use of agroecological zones changes both seasonally and over the years to match the variability in natural inputs. Specialist cultivators and specialist livestock keepers can be tied by seasonal forms of cooperation or even be brothers within the same family. People categorised as 'settled' might be more mobile than people categorised as 'nomads', at least at certain times of the year, and many move regularly between settlements and mobile camps. Migratory routes are actually never 'random' but carefully planned, and 'fixed' migratory routes are only fixed because their normal degree of variability has been prevented. Supporting this legacy of categorisations harms pastoralists by disaggregating them into small discrete entities in the eyes of decision makers and disregarding the dynamics that make pastoralism strong.

Based on Misereor (2019). Pastoral Development Orientation Framework, Misereor, Aachen.