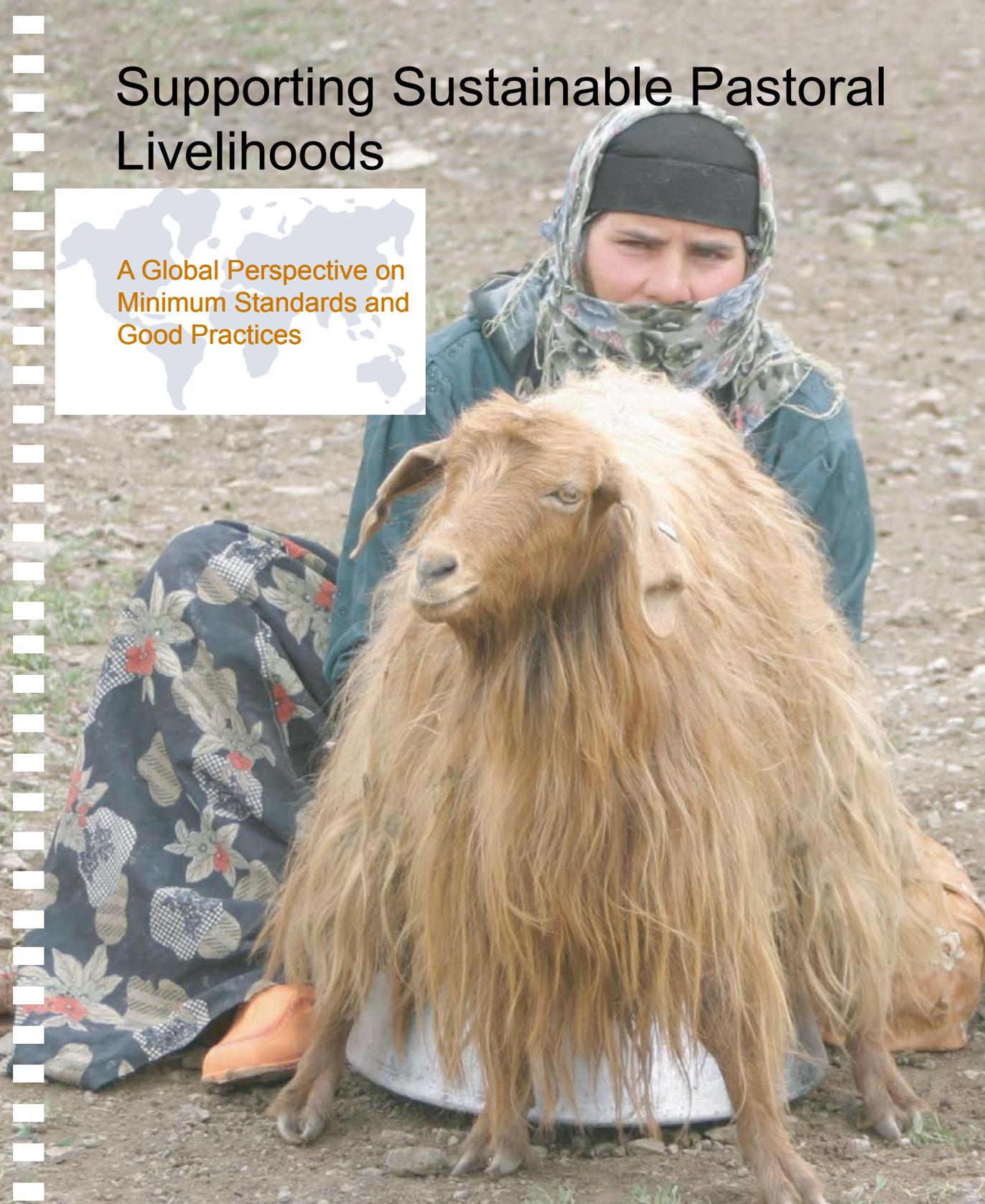


Supporting Sustainable Pastoral Livelihoods

A Global Perspective on
Minimum Standards and
Good Practices



FORDFOUNDATION



About IUCN

IUCN, International Union for Conservation of Nature, helps the world find pragmatic solutions to our most pressing environment and development challenges.

IUCN works on biodiversity, climate change, energy, human livelihoods and greening the world economy by supporting scientific research, managing field projects all over the world, and bringing governments, NGOs, the UN and companies together to develop policy, laws and best practice.

IUCN is the world's oldest and largest global environmental organization, with more than 1,000 government and NGO members and almost 11,000 volunteer experts in some 160 countries. IUCN's work is supported by over 1,000 staff in 60 offices and hundreds of partners in public, NGO and private sectors around the world.

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About the World Initiative for Sustainable Pastoralism

The World Initiative for Sustainable Pastoralism (WISP) is an advocacy and capacity building platform that seeks a greater recognition of the importance of sustainable pastoral development for both poverty reduction and environmental management. WISP is a global network that is designed to empower pastoralists to sustainably manage drylands resources and to demonstrate that their land use and production system is an effective and efficient way of harnessing the natural resources of the world's drylands.

WISP is hosted by IUCN, International Union for Conservation of Nature, and is funded by grants from grants of the International Fund for Agricultural Development (IFAD), the Ford Foundation, ASARECA and NWO. WISP works through partnerships at global, regional and national levels to promote knowledge sharing that leads to policies, legal mechanisms and support systems for sustainable pastoral development. WISP provides the social, economic and environmental arguments for pastoralism to improve perceptions of pastoralism as a viable and sustainable resource management system.

For more information visit the web site at www.iucn.org/wisp.



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Using this Document

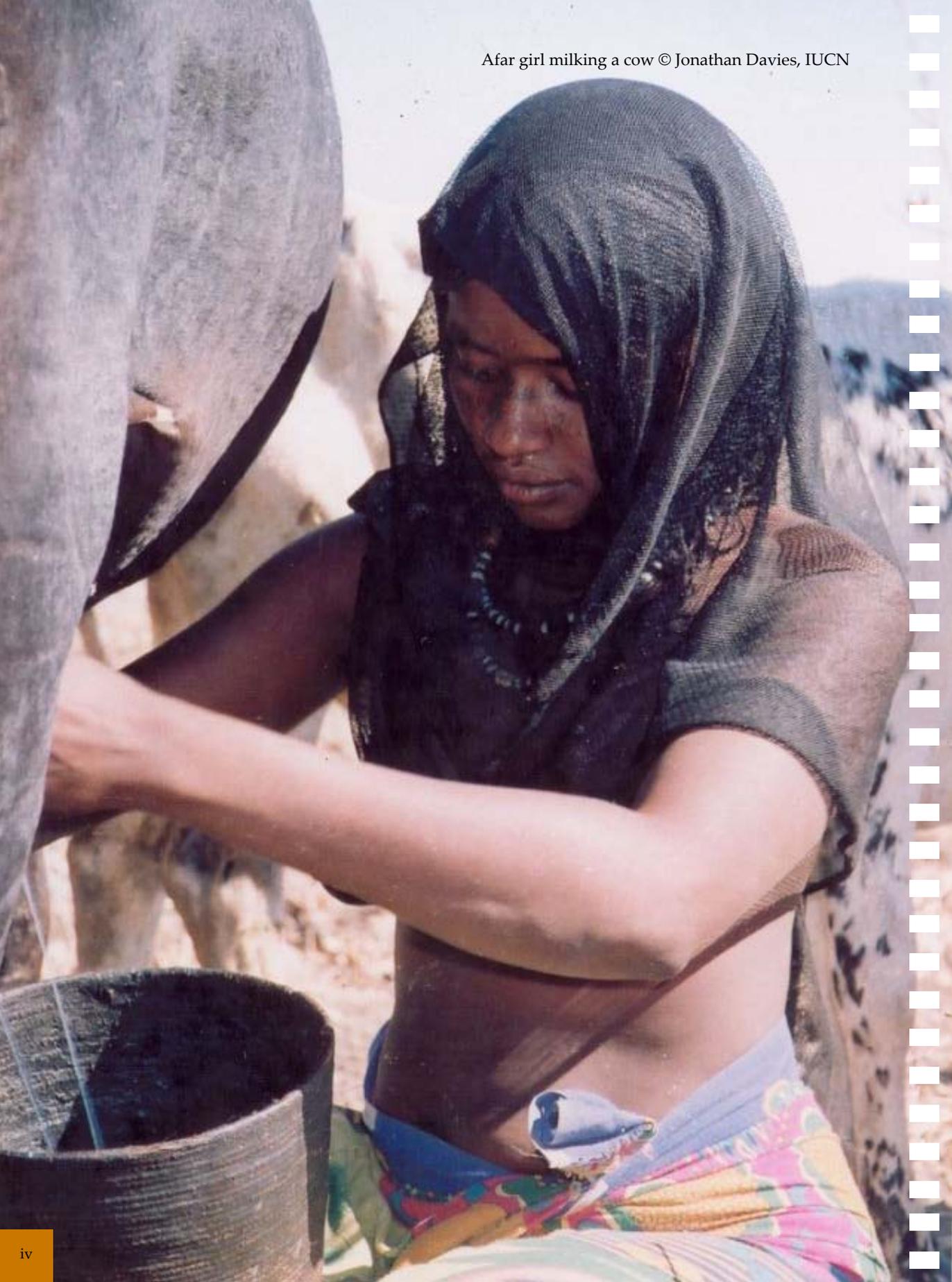
These guidelines have been prepared to help decision makers, who may not work routinely on pastoralist issues, to make better decisions over policies and investments that impact on pastoralists and their environments. They are somewhat technical by design, but are intended to simplify complex or disputed issues into more operational basics. The guidelines have been designed to help development and conservation experts familiarise themselves with the principles underlying pastoralism as well as some of the opportunities and constraints to sustainable development.

The guidelines are designed to breakdown the challenges around pastoral development into component parts and to provide illustrations of how these components can be addressed. Examples are provided throughout the text, with links to web resources that provide much more comprehensive information. The examples are provided to inspire the reader to look for solutions but are not intended as prescriptions in themselves. The appropriate solutions may differ according to each context. What the examples should do is make the reader realise that, whatever the challenge, a solution can be found that does not compromise the basic logic of pastoralist resource management.

The Guidelines are also under development with a view to being institutionalised: within International Development Partners; within Nongovernmental Organisations; and eventually within National Governments. This process of institutionalisation will require a long process of thorough review and agreement as well as the cultivation of partnerships with agencies that are interested in improving their own performance.

Many of the examples used in this report have been gathered through the work of the World Initiative for Sustainable Pastoralism (iucn.org/wisp). This network of experts has contributed many case studies to a number of global Good Practice reviews, through which the principles underpinning good practice have been analysed. Links to these reviews are found throughout the text.

This document will be developed further over the coming years. The First Edition has been published to stimulate debate and will form the basis of a number of Learning Forums around the world between 2011 and 2013. The document will be revised according to the input from these forums, giving it greater global reach as well as greater endorsement from a wide array of different experts. It is envisaged that this will become a living document that will be periodically updated through both the process of consultation and through the process of ongoing learning as pastoralist development advances around the world. Future editions will include lessons that have not yet been learned. It is hoped that the guidelines will also contribute to a growth in effective pastoralist development and a burgeoning of such examples.



Contents

Introduction	1
Pastoralism now: a summary of new thinking	2
Who are pastoralists?.....	2
Pastoralists as mobile indigenous peoples	3
Defining pastoral mobility	3
Rangelands and drylands	4
Supporting pastoral livelihoods.....	6
Outcomes and Goals of pastoral livelihoods	6
Livelihood context.....	9
Livelihood platform: assets.....	12
Livelihood strategies employed by pastoralists	21
Factors mediating over access to resources and livelihood strategies	23
Minimum Standards for Sustainable Pastoral Development	28
Develop country strategies that recognise and support pastoralism	28
Avoid non-pastoral investments and policies that undermine pastoralism	28
Place governance and rights, including those of minorities, at the centre of pastoralist development	29
Promote investments and policies that support pastoralism.....	29
Conclusion	30
Bibliography	31



Introduction

Since the late 1990s there has been growing interest in, and awareness of, sustainable pastoral development, most notably in Sub Saharan Africa and Central Asia. Huge swathes of the world are under pastoral custodianship and these areas are more prevalent in the world's poorer countries, and have unique poverty characteristics. Prior to the 1990s, particularly outside of the Soviet Union, "pastoralist development" was considered almost as an oxymoron: "development" was assumed to mean substituting pastoralism with something new. The result of this thinking is plain to see in the numerous failed development projects and the legacy of sustained underinvestment in pastoralists.

The past decade has seen a number of changes that have improved pastoralist development: greater attention to Human Rights, empowerment and participation; new understanding of Rangeland and Dryland ecology; a shift away from cultural definitions and backward looking perceptions towards an acceptance of pastoralism as a modern livestock production system. Despite this shift, the old prejudices and misunderstandings of pastoralism remain deeply embedded and the "new" thinking may even seem counterintuitive. As a result, we find many ambiguities and inconsistencies in development approaches, with inappropriate development practices still widespread and policies that still encourage transformation of pastoralism into something less sustainable and resilient.

This report takes a step towards consolidating some of the new thinking and illustrating how it has influenced development planning to achieve tangible improvements in pastoral livelihoods and tangible reductions in pastoral poverty. This is a work in progress, since it ties in with the ongoing programme of work of the World Initiative for Sustainable Pastoralism (WISP)¹, which continues to explore good practice in a range of themes that are relevant to sustainable pastoral development.

The following report uses the Livelihoods Framework to structure the discussion of how to support sustainable pastoralism. The first section provides a summarised background of recent advances in understanding pastoralism in order to explain the unique features of pastoral livelihoods. Subsequent sections dissect pastoral livelihoods to explain how different elements can be supported, and as far as possible these sections are illustrated with examples of Good Practice. Links to on-line resources are included to allow the reader to gain more detailed insight on each issue. Where such examples and resources are in short supply, WISP is working on filling the gaps through a number of global knowledge management projects and Good Practice studies. Finally the report concludes with a brief discussion of the implications of this new understanding for investment and policy. The paper does not go into detail about the livelihoods framework, and if more background is needed the reader should use some of the excellent online material that is available.²

¹ www.iucn.org/wisp

² <http://www.ifad.org/sla/framework/index.htm>; <http://www.fao.org/sd/erp/FAOpresentation5.pdf>; <http://www.eldis.org/go/livelihoods/>; <http://www.odi.org.uk/resources/specialist/keysheets/overview.pdf>; <http://www.eldis.org/vfile/upload/1/document/0812/LAC.pdf>

Pastoralism now: a summary of new thinking

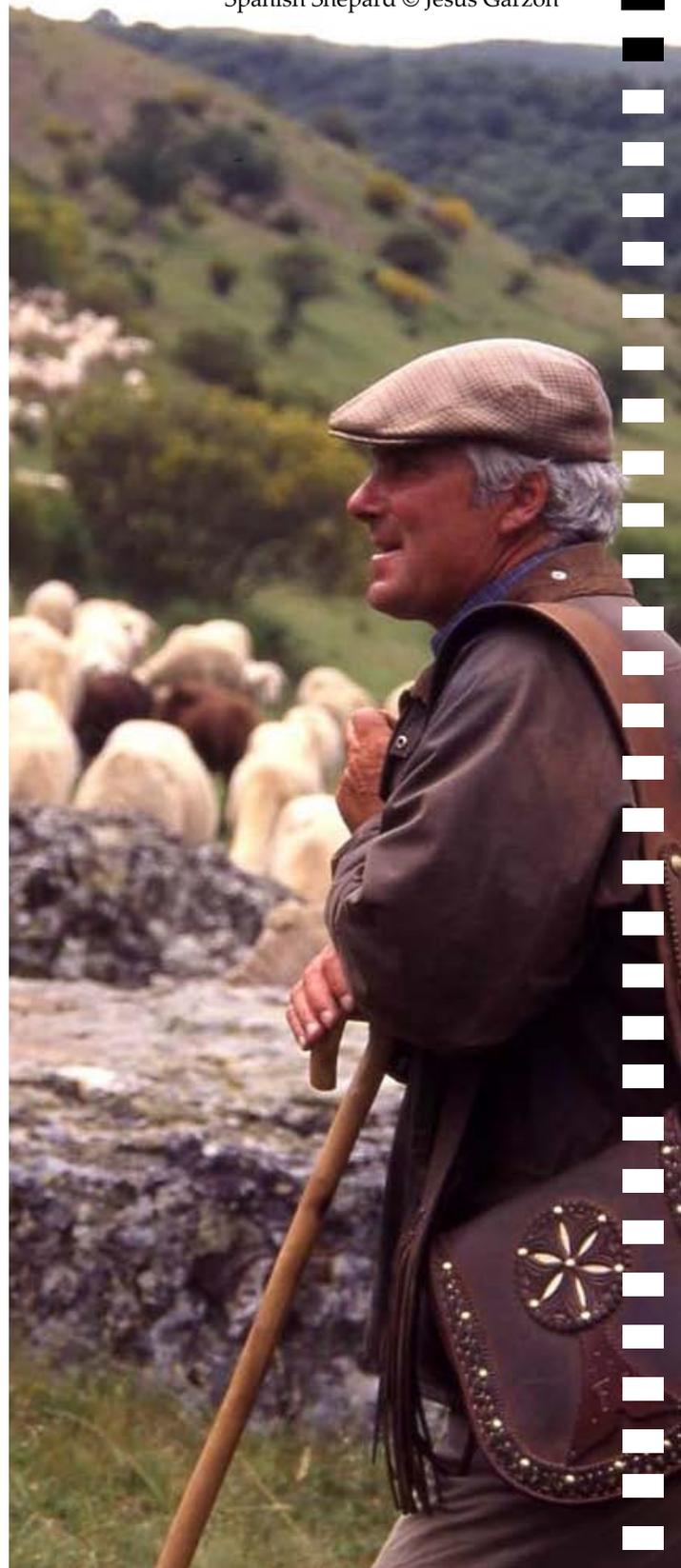
Who are pastoralists?

According to the FAO, pastoralism is a global phenomenon, practiced from the Asian steppes to the Andean regions of South America and from the mountainous regions of Western Europe to the African savannah. It is practiced on 25 per cent of the world's land area, provides 10 per cent of global meat production, and supports an estimated 200 million pastoral households and herds of nearly a billion camelids, cattle and smaller livestock, in addition to yaks, horses [and] reindeer.³

In deriving these figures, FAO was using a broad definition of pastoralism: "extensive livestock production in the rangelands". In the English language at least, this agrees with most dictionary definitions of a pastoralist as a person who lives by keeping flocks of sheep or cattle, especially when their main source of fodder is natural pasture. Yet around the world, pastoralism is interpreted in different ways and can mean very different things to different people. For example, pastoralism is often associated with a particular group of producers – such as the Maasai or the Bedouin – so that it is often very hard to dissociate the livestock production system from the practitioners. For some people, the term pastoralist denotes ethnic origins rather than reliance on a particular production system. In the Americas, many pastoralists do not identify themselves as such and their ethnic identity relates to other factors.

Across the continents the way pastoralism is practiced varies greatly, from the highly technologically advanced pastoral systems of Australia or the USA to partially subsistence systems in parts of Africa. The degree of social and political support for pastoralism is equally diverse, with some African governments strongly opposed to it, whilst many European countries increasingly promote mobile pastoralism in order to manage and conserve biological diversity.⁴ Despite the variations, certain features of pastoralism are very common, including the use of common property regimes, the management practice of organised herd mobility, and the use of locally adapted livestock breeds, which are almost universal throughout European, South American, Asian and African pastoral systems.

Spanish Shepard © Jesus Garzon

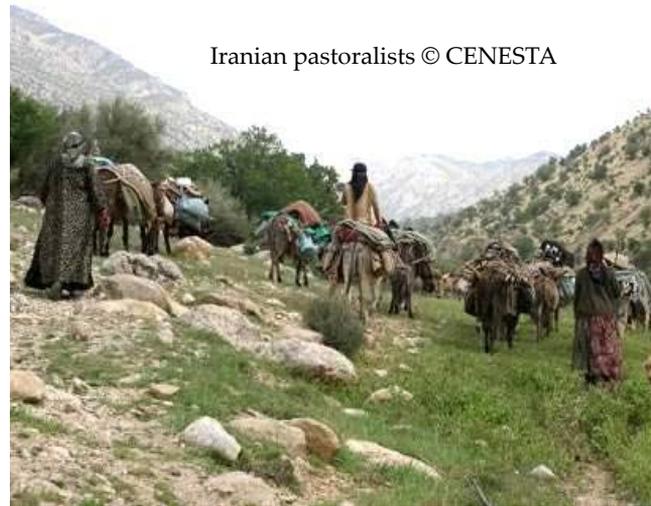


³ FAO 2001

⁴ Agri-Environmental Schemes are designed for maintaining biodiversity in European farmland areas (Whittingham 2011). The article 22 of the 1257/1999 European Regulation fixes subventions for extensive pastoralism. Its transposition into Spanish legislation (Real Decreto 4/2001) fixes specific subventions for transhumant systems.

Pastoralists as mobile indigenous peoples

Pastoralism is an ancient form of human activity and present-day pastoral peoples carry forward an array of diverse cultures, ecological adaptations and management systems that have changed with modernity. The use of pastoralism as an ethnic label has grown in recent years and it has implications for the way pastoralist development is carried out. According to the United Nations High Commissioner for Human Rights (UNHCHR), pastoralists in Africa can be classified as Indigenous Peoples, as long as they are culturally different from the rest of the national population. This means that it is increasingly common for “mobile indigenous peoples” or “nomadic peoples” to claim the right to maintain their own mobile cultures and the right to use their grazing lands. For many of these people, the term “pastoralist” is an ethnic label rather than a description of somebody’s profession, so it is possible to be a pastoralist without having anything to do with livestock or rangelands.



Iranian pastoralists © CENESTA

grounded in the principles of empowerment and participation to tackle “voice poverty”. This has corresponded with a better understanding of dryland environments, so pastoralist empowerment may not be the only determinant of these development success stories.

Defining pastoral mobility

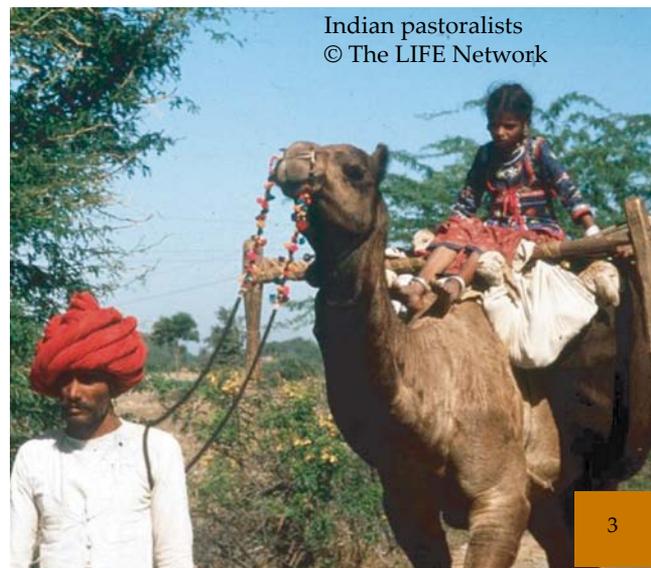
Mobility is recognised as a very common feature of pastoral systems, and it is in fact a fundamental strategy to take advantage of the heterogeneity in the distribution of natural resources. US-style ranching systems have often considered as an alternative to pastoralism in Africa, yet in the definition used here it is a subset of pastoralism: one in which much of the land is privately owned or controlled (although certainly not all) and herd mobility is limited (although extensive seasonal livestock movements are found in some parts of the USA). In fact, mobility is only one of a number of commonalities between pastoral systems, along with the use of communal (as well as private) resources, the use of indigenous livestock breeds, and a strong reliance on social capital.



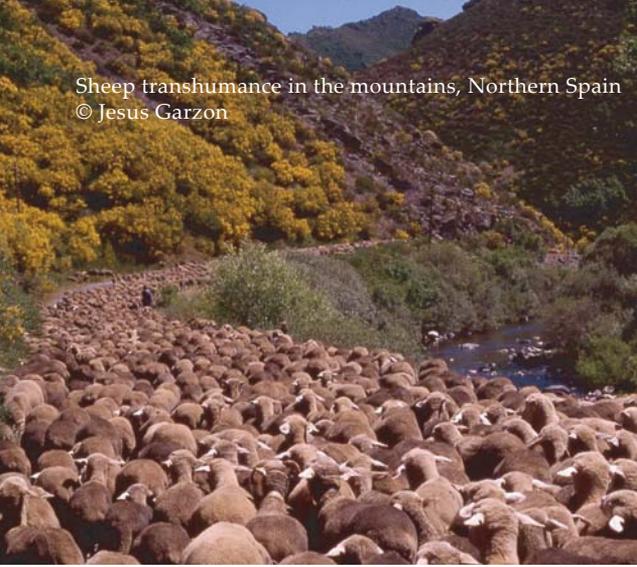
Maasai pastoralist woman from Kenya © Ed Barrow

The UNHCHR Special Reporter on the Situation of Human Rights and Fundamental Freedoms of Indigenous Peoples, in his annual report of 2007 (A/HRC/4/32), stated that protecting the rights of pastoralist peoples is one of the main challenges for indigenous peoples in the future. He recommended that “development projects should allow pastoral peoples, if they so wish, to preserve their way of life; and the traditional lands required for them to do so should be developed with indigenous participation.”

The increased attention to pastoralist’s rights (and the corresponding responsibilities which all citizens have) has an important impact on pastoralist development. The past decade has seen an upturn in the success of pastoralist development projects,



Indian pastoralists
© The LIFE Network



There are many types and degrees of pastoral mobility, which may vary according to environmental conditions, or according to the stage of a household's life cycle. For example, mobility can be highly regular, following a seasonal pattern, using clearly demarcated corridors between well-defined pasture areas that have been fixed for centuries, or it can be comparatively random, opportunistically following the rains and seldom the same from one year to the next. Livestock movements may be driven by the search for resources (e.g. salt pans, seasonally-available pastures), the evasion of stress (e.g. seasonal diseases, conflicts), by periodic opportunities (e.g. markets or political events)⁵ or by managing uncertainty in pasture availability.⁶

The term Nomad is often used to describe pastoralists, yet this term is also interpreted differently in different contexts and by different people, sometimes indicating the absence of any permanent home and other times

synonymous with seasonal movement of livestock between distinct resource areas (such as wet and dry season or winter and summer pastures, or high and low altitude zones) – a phenomenon more correctly called transhumance. Dictionary definitions of the word Nomad imply itinerancy: “a person who continually moves from place to place – wanderer” (The Collins English Dictionary⁷) and the word has taken on the connotation in the present day of “no fixed abode”. This is the reason why people with no relation with livestock or pastoralist livelihoods are included in the definition, as is the case for Roma. In many cases, Nomad is interpreted to mean “owning no fixed property”. For this reason the term is avoided by many, since it has been used in the past to justify appropriation of lands that pastoralists consider their own territory.

Rangelands and drylands

Rangelands are not easily defined, and they overlap greatly with other ecosystems (such as forests), and this makes it hard to know their extent. Many rangelands are drylands, although temperate and mountain rangelands may not be classified as drylands despite sharing many characteristics. As a result, estimates of the amount of the Earth's land surface covered by rangelands vary from 18% to 80% depending on the definition used and the methodology for their measurement.⁸ Drylands are easier to define, although they do not account for all pastoral systems: drylands are best defined as areas below a certain ratio of total precipitation to total potential Evapo-

⁵ Niamir-Fuller 1999

⁶ Krätli and Schareika 2010

⁷ Note that translation between languages is imperfect and the equivalent of Nomad in other languages may carry a different meaning.

⁸ Lund 2007



transpiration.⁹ This paper focus primarily on drylands pastoralism because of the particular characteristics of the drylands, the features that these demand from local (pastoral) livelihoods, and the prevalence of drylands in developing countries.

Drylands are characterised by a high degree of uncertainty in the amount and distribution of rainfall between years. Erratic rainfall leads to unpredictability in pasture growth and in access to those pastures. It is this unpredictability as much as the low level of rainfall that gives the drylands their characteristics and pastoralism in the drylands can be described as a system of adaptation to this uncertainty. Primary production in the rangelands (fodder production in the form of pasture and browse) varies greatly between years and between locations, and pastoralists essentially follow an opportunistic management strategy: moving to where the resources are at the time that they are available, and having highly variable herd sizes that can track the inter-annual availability of those resources.

In most dryland areas there are patches of resources that are comparatively more stable – usually these are areas along rivers where water is available year-round, or near other permanent water sources.

However, these areas are a small portion of the total area available and pastoralists usually reserve these zones as a buffer that they can retreat to when other resources are inaccessible or exhausted – these are sometimes referred to as dry-season reserves. These reserve zones are also referred to as “rich resource pockets” but this can be misleading. The prevalence of animal diseases in these areas is usually higher, and they can also be very unhealthy for humans. Pasture quality is often highest not in these areas, where water is available year round, but in the driest areas, where annual grasses predominate and where plants have a short growing season and must put down vegetable protein (in the form of seeds) as a priority. When the rains come, they not only encourage pasture growth in these driest zones, but they also provide temporary surface water that gives pastoralists access to high-quality fodder for short periods of time. It is not surprising that domestic as well as wild herbivores usually breed in the drier areas. However, drylands are sensitive to changes in the albedo, which can alter local climate¹¹, and therefore efforts to provide permanent water sources in these zones can lead to land degradation if governance mechanisms for managing the numbers and the duration of livestock watering are not in place.

Box 1: Rangeland dynamics¹¹

In the recent past, the dominant theory for understanding rangeland condition was that of ecological succession¹², which refers to inevitable and predictable changes in an ecosystem that ultimately lead to a stable end state, or climax vegetation. This succession could be set back, or held up through external impacts such as human management, and sub-climax states could be sustained through appropriate management, but when management is removed, the environment would steadily revert to climax.

Since the early 1990s however, rangeland ecologists have challenged this theory as inadequate for describing the wide range of vegetation dynamics, especially in the drylands. In particular, scientists have challenged the assumptions that dryland vegetation dynamics are continuous and reversible, that grazing impact is of greater importance than natural events (such as drought, flood and fire), and that plant communities only have one stable community composition in a given area.

Alternative theories have therefore been proposed to explain dryland vegetation dynamics, including State and Transition models, and non-equilibrium dynamics. State and transition, as the name implies, suggests that dryland ecosystems can exist in different stable states, at which they may rest until an external event (e.g. fire or over-grazing) triggers a transition to a new stable state. By contrast, non-equilibrium theory assumes that dryland ecosystems are in constant flux due to the extreme climatic variability, and they have no defined climax (or equilibrium) state.

What does this mean in practice?

Traditionally, rangeland management has used the concept of Carrying Capacity to determine appropriate stocking rates. Non-equilibrium thinking challenges this concept on two grounds: because of the highly unpredictable nature of the rangelands, carrying capacity may fluctuate continuously, making the establishment and application of stocking rates meaningless and possibly harmful and; because of the powerful influence of climatic shocks on rangeland condition, the impact of livestock over-grazing may be comparatively negligible. The dynamic nature of the rangelands also creates a challenge for effectively determining and monitoring rangeland health and there are numerous cases where rangeland degradation has been diagnosed or predicted where in fact the rangelands are in a healthy state.

⁹ http://archive.wri.org/newsroom/wrifeatures_text.cfm?ContentID=722

¹⁰ Millennium Ecosystem Assessment 2005

¹¹ Key resources on this complex subject include: Behnke *et al.* 1993, Vetter 2005, Briske *et al.* 2008

¹² Clements 1916

Supporting pastoral livelihoods

This section presents the elements of the Livelihoods Framework as it applies to pastoralism, and is illustrated with case studies as far as possible, with links to useful online resources for a more detailed examination and analysis. The section starts with 1) a discussion of the Outcomes and Goals of pastoral livelihoods, 2) discusses the implications of the pastoralist livelihood context, presents, 3) presents the main Pastoral Livelihood Assets, 4) examines the diverse livelihood strategies that pastoralists employ, and 5) touches upon some of the factors that govern access to resources and livelihood strategies.

Outcomes and Goals of pastoral livelihoods

A vital component of the Livelihoods Framework that is frequently overlooked is that of livelihood objectives. All too often, development planners make assumptions about the priorities and goals of the people that they are working with, and frequently this leads to an ethnocentric approach. This has often been the case in work with pastoralists where the attitude and behaviour of pastoralists towards risk has been misunderstood. For example, poverty reduction strategies have sometimes failed where they have overlooked the importance of investment in social institutions as a means to mitigate uncertainty, or as a means of guaranteeing a minimum level of subsistence in even the direst circumstances.

Box 2: Total Economic Value of Pastoralism¹³

To understand the goals and aspirations of pastoralists it is important to keep in mind the diversity of values that their production system yields. Pastoral systems the world over are under-valued by development planners, and land use changes are often promoted that impose costs which outweigh the benefits. Pastoralists are motivated to produce or protect Direct Values, such as milk, meat, fibre, hides, employment or transport, as well as Indirect Values, such as inputs to agriculture or tourism, environmental services, culture, and risk management. Although many of these values are hard to measure, their loss is felt as a real cost by many people both within and outside the pastoralist system. Comparing pastoralism with other production systems on the basis of a narrow range of these values leads to undervaluation and poor decision making.



Dairy products from Mauritania © Tiviski



Yarn from Alpaca wool in Peru
© CECOALP



Udaitu Balanaites aegyptica
Ethiopia © Jonathan
Davies, IUCN

When a more thorough evaluation is conducted, pastoralism is found to contribute significantly to the GDP of many developing country economies: for example, about 20% of GDP in Kyrgyzstan, 30% in Mongolia, 8.5% in Uganda and 10% in Mali. In these countries no other form of drylands agriculture is more productive or supports as large a population. However, basing policy and planning on the contribution of pastoralism to GDP alone can be misleading as it inevitably overlooks important values of pastoralism that are not readily captured in national accounts. Important environmental services of pastoralism include:

- Maintenance of the water cycle, water regulation and purification;
- Carbon sequestration;
- Maintenance of Biodiversity and ecological processes;
- Maintenance and formation of soil;
- Promotion of pasture growth;
- Reduction of natural hazards such as fire.

Major research and data gaps exist that render effective planning difficult and a significant investment is required to provide decision makers with more complete information. Many of these values impact on the system as a whole and their reduction is particularly difficult to measure: an example is when the conversion of riparian habitat to crop cultivation leads to loss of seasonal pastures for wildlife and cattle, with an impact that is felt across a vast landscape.

¹³ IUCN 2008a

This section does not suggest what pastoral livelihood goals are or should be – the goals of different pastoralists differ widely – but it highlights two areas that are poorly understood by many non-pastoralists. Wherever sustainable pastoral development has become a reality it is grounded in empowering approaches that give pastoralists the final say over how development fits with their goals and aspirations. It is increasingly common to carry out explicit envisioning exercises with pastoralists to help them to look beyond their immediate livelihood challenges and to develop plans that move them towards more ambitious development goals.

Risk management

Pastoralism has sometimes been described as a risk-averse system, with pastoralists running from one climatic event after another. This description is inadequate, and in contrast pastoralism can be seen as a system that pro-actively manages risk. Many pastoralists seek reliability in highly risky environments: they accept the variability of productive inputs and modify their herding and social systems appropriately.¹⁴ In such uncertain dryland environments, livestock wealth fluctuates greatly: decimated by periodic

Box 4: Early Warning Systems (EWS)¹⁶

Climatic uncertainty and associated risk is high in pastoral areas and this has led to a number of efforts to develop systems for Early Warning of impending stress or disaster, including climatic shocks and livestock disease.¹⁷ Meteorological droughts cannot be avoided, but their impact can be mitigated, particularly by supporting pastoralists to plan ahead for impending drought. Effective EWS can allow livelihood stress to be detected before lives are threatened, although impact depends on how these early warnings are used and responded to. However, to date EWS have not always been effective, providing either the wrong type of information or at the wrong time to allow effective response.

Measuring rainfall, forage performance and water sources will provide an early warning, but measurement of these 'endowments' needs to be complemented with monitoring of entitlements such as grain and livestock markets, access rights to water and forage, or access to alternative sources of revenue. Climate shocks in particular can lead to a "price scissors", where livestock values plummet just as cereal costs surge, leading to a large shift in the terms of trade.¹⁸

Effectiveness of early warning and response depends on the institutions responsible, which is determined particularly by connectivity to pastoralists on the ground – both for effective monitoring and for effective communication. To be useful, warning and response cannot be effective in isolation and need to be integrated into a broader process of Drought Cycle Management or Disaster Risk Reduction, or similar approaches to strengthening adaptive capacities and entitlements. Strengthening adaptive capacity requires an awareness of the implications of a threat, knowledge of the options for reacting effectively to the threat, the means to implement a chosen strategy and the freedom and right to pursue the chosen course of action.¹⁹

Box 3: High reliability pastoralism

High Reliability Economics is usually associated with the management of nuclear reactors, air traffic control systems and intensive care units. High Reliability Institutions are those in which accidents or failures are successfully avoided in an environment where accidents are expected due to risk factors and complexity. Roe *et al.* (1998) use the economics of high reliability institutions to describe pastoral systems, because in pastoral systems risk cannot be simply traded off against gain since the cost of failure of the system is not incremental but cataclysmic.

droughts and recovering with surprising speed in the aftermath, particularly where indigenous breeds are still used¹⁵. This variability may have merit, considering the extreme variability in primary rangeland productivity: striving for static herd sizes has frequently proven to be environmentally destructive and economically unsustainable.

Instead of striving for stability, many pastoralists invest their wealth in social capital, capitalising on periodic good fortune to ensure that they have long-term insurance through elaborate systems of obligation and reciprocity. Such systems are extremely difficult for development planners to comprehend or to explicitly support. Nevertheless,

Box 5: Helping pastoralists to improve natural resource management

Landcare²⁰ is a community-based approach to improve sustainability of agricultural production systems, address environmental issues and protect natural resources, which originated in Australia in the 1980s. It is based on the concept and practice of community members providing their time and energy to identify, plan and implement on-the-ground land management works. Landcare is a partnership between communities and government, supported by scientists, and fostering a cooperative approach to natural resource management. Landcare has been adopted by other countries, including South Africa, and the approach is used to address not only environmental problems but also social and educational issues in rural communities.

¹⁴ Roe *et al.* 1998

¹⁵ In a post drought period the fittest females often survive and dominate the flock or herd, and they are likely to have suppressed ovulation until the recovery period, leading to high fertility rates in the immediate aftermath of drought resulting in very high levels of herd expansion in the first year of post-drought recovery. This more noticeable in small ruminants that have short gestation periods and higher incidence of twinning, but is also seen in indigenous breeds of cattle that have adapted to the challenges of seasonal dry periods (Dahl & Hjort, 1976; Wilson 1991, Wilson 1995).

¹⁶ Sommer 1998

¹⁷ <http://www.fews.net/Pages/default.aspx>; <http://www.drought.unl.edu/>; <http://www.ifad.org/Irkm/range/drought.htm>; http://www.na.unep.net/geas/docs/Early_Warning_System_Report.pdf

¹⁸ Davies 2006

¹⁹ IUCN 2010

²⁰ www.landcareonline.com

Box 6: Conservation of biodiversity by pastoralists

The typically unpredictable nature of rangeland plant productivity makes pastoralism particularly reliant on biodiversity, as more diverse vegetation gives a greater guarantee of fodder under different climatic conditions and seasons. The overall resilience of the whole grazing ecosystem is enhanced through richer biodiversity. The benefits of pastoralism for wildlife have also been well documented, such as “big game” species in Africa²¹ or scavenger birds in Europe²², and the economic benefit directly associated has contributed to a change in the paradigm of conservation areas (see Box 25).



Elephants, one of the big game species found in the drylands of Africa. Kiina, Kenya © Norah Ngeny, WISP-IUCN

More subtle effects of pastoralism have been documented on plant and insect biodiversity: among the best bio-indicators for ecosystem health. These effects have been deduced from the biodiversity crises that have followed the abandonment of traditionally grazed landscapes.²³ Domestic herbivores replaced wild herbivores in many ecological processes many centuries ago, and their disappearance now leads to shrub encroachment and loss of biodiversity. Transhumance is important in this regard by opening up use of marginal areas and enabling periodic intensive grazing pressures that favours particular plant species. Transhumance is a powerful driver of plant and insect dispersal²⁴ and livestock routes have been found to support greater biodiversity than the habitats they cross²⁵.

social capital forms the bedrock of many pastoral systems and many planners of emergency and development assistance have been frustrated to discover that pastoralists respond by giving their assets away to other members of their community. Such behaviour may reflect a trade-off between poverty and vulnerability, with pastoralists intent on minimising their vulnerability (by investing in social insurance) even when it can mean greater poverty or lower incomes in the short term.

Sustainable livelihoods

Pastoralists' attitudes towards natural resource management are often deeply embedded in their culture and there are many rules governing which resources can be used, when, and by whom. For example, trees are often well protected in pastoral tradition, sometimes for their economic value (for providing shade, fodder, food, medicines etc.) and sometimes without a clear economic

Box 7: Supporting pastoral customary institutions improve rangeland productivity²⁵

Save the Children and SoS Sahel have worked with Arsi, Borena and Gujji communities in Liben District (Ethiopia) since 1999. Participatory mapping methodologies have been used in collaboration with customary institutions to map resources and to develop community action plans which resulted improvements in water resources, dismantling of inappropriate private enclosures, re-opening of former stock routes and rangeland pastures, improved use of fire to control invasive woody plants, restoration of degraded communal rangelands, and increased mobility of more than 160,000 livestock to former wet season grazing areas, resulting in the resting of dry season grazing and associated water points.

Through this work, formerly abandoned elders' councils (*jaarsa dheeda*) have resumed monthly meetings, which has led to significant changes in herd management (including greater herd mobility), which has in turn resulted in improved rangeland productivity. Meetings of the *Jaarsa Dheeda* have been attended by local government officials and by elders from other pastoral areas, and efforts have been scaled up to neighbouring districts including Arero in Oromiya Region and Dollo Ado, Dollo Bay and Filtu in Somali Region.

This work of Save the Children and SoS Sahel in Ethiopia provides a number of important lessons:

1. Customary pastoral institutions can be re-invigorated and their knowledge of the rangelands can be harnessed for development purposes;
2. Traditional leaders are able to re-assert customary rights over natural resources and to mediate over disputes;
3. With appropriate assistance, local government can engage meaningfully with customary leaders.

²¹ Vavra 2005

²² Marinković and Karadžić.1999, Olea and Mateo-Tomás 2009

²⁵ Bunce et al 2004

²³ Fischer et al 1996, Manzano and Malo 2006

²⁴ Azcárate et al 2010, Robleño et al 2011

²⁵ Wagkari 2009

rationale. Whether it is rangeland, forest, water, or biodiversity, it is clear that many pastoralists value their natural environment deeply and desire its protection and sustainable management.

However, the capacity to manage the environment sustainably for many pastoralists has rested on the capacity of their institutions to make and uphold rules and sanction breach of those rules. These institutions have been weakened in many countries, and even eliminated in some of the former Soviet rangeland countries, and this poses a significant threat to sustainable natural resource management. Many pastoralists have struggled to cope with rapid and large-scale changes in local governance, which has led to damage to their environment. Maintaining, or rebuilding, these systems of governance (which reach far beyond natural resource management) is often another important livelihood goal of pastoralists, and one which may be promoted over the livelihood goals anticipated by development practitioners from non-pastoral societies.

Livelihood context

“Context” here refers to the trends and shocks that characterise the pastoral system, which may or may not be unique to pastoralism. Climate change for example affects most people, but because pastoralists occupy climatically marginal areas they may face unique challenges and opportunities. In the case of climate change, challenges may come in the shape of more extreme climatic shocks, such as blizzard or drought, but opportunities may also arise, for example where pastoral resources become less coveted by neighbouring crop farmers, or where pastoralism proves to be a better adaptation to uncertainty.

Another important challenge, particularly in Africa, is population growth, although understanding of this emotive issue is hampered through the very weak data on most pastoral regions. Data from Northern Kenya suggests that the population has multiplied four fold over the past 40 years, whilst rainfall has declined slightly and the livestock population now is more or less the same as it was then (despite significant inter-annual variation). Aside from debates over whether the population level has become unsustainable, which cannot be answered without much more information, there can be little doubt that this demographic shift has implications for the way pastoralists construct their livelihoods.

Changes in attitudes towards development, such as increased attention to democratisation and human rights, impact positively on many pastoralists. Development approaches now place much greater emphasis on developing people than developing

Box 8: Managing and mitigating climate change through pastoralism²⁶

“Mobile pastoralists are amongst those most at risk to climate change, yet they are also amongst those with the greatest potential to adapt to climate change, and they may also offer one of the greatest hopes for mitigating climate change.

The vulnerability that is associated with climate change in some pastoral environments has its roots in the restriction of tried and tested pastoral coping strategies. Pastoral adaptation faces a myriad of challenges, of which climatic change is but one, and indeed, the challenge of climate change seems insignificant to many pastoralists who are faced with extreme political, social and economic marginalisation: relax these constraints and pastoral adaptive strategies might enable pastoralists to manage climate change better than many other rural inhabitants.

The capacity to adapt is something intrinsically pastoral, and sustainable pastoral development must be founded on the understanding that adaptive capacity is what makes pastoralism work: restoring and enhancing adaptive capacities must therefore be central to development plans. The flexibility, mobility and low-intensity use of natural resources afforded by pastoralism may increasingly provide livelihood security in environments where sedentary production fails.”

their production base, with the dual outcomes of more relevant productive development and more general empowerment of communities to engage with government of policy and planning. This is leading to greater security of land rights, support for mobility and for communal tenure, and tailoring of services to the needs of pastoralists. However, this shift is slow, and in some countries is barely evident.

Globalisation of markets is another important trend that impacts on pastoral livelihoods, although as with climate change, pastoralists could benefit from this, but not if the status quo is maintained. In other words, pastoralists are in a strong position to capitalise on burgeoning global markets for milk and meat and ever increasing access to those markets, but they usually lack the investment and support required to grasp these opportunities.

Aside from these ongoing trends, many pastoralists are also frequently confronted with shocks to their livelihood, which may be occasional or periodic shocks, such as extreme climatic events, or they may be idiosyncratic, such as conflict or disease outbreaks. Understanding these shocks is critical for understanding pastoralism, since a number of these “shocks” are a fundamental part of the environment to which pastoralism is an adaptation. For example,

²⁶ Davies and Nori 2008.

Box 9: Defining drought²⁷

Drought and its causes are frequently misunderstood, and are often assumed to be climatic events over which pastoralists have no control, and it is therefore important to distinguish between different types of drought. In many rangelands, poor management, restriction of pastoral mobility and undermining of natural resource governance have led to land degradation, which leads to reduction in 'effective' rainfall: rain falls and runs off rather than penetrating the soil. As a result pastoralists can be at increasing risk of drought even when rainfall is good (or even improving), and in the same year they can be exposed to the risk of flash-flooding. This phenomenon is notable for example in the Somalia areas of Eastern Africa.

Meteorological Drought

Meteorological drought is defined usually on the basis of the degree of dryness (in comparison to some "normal" or average amount) and the duration of the dry period. Definitions of meteorological drought must be considered as region specific since the atmospheric conditions that result in deficiencies of precipitation are highly variable from region to region.

Agricultural Drought

Agricultural drought links various characteristics of meteorological (or hydrological) drought to agricultural impacts, focusing on precipitation shortages, differences between actual and potential evapotranspiration, soil water deficits, reduced ground water or reservoir levels, and so forth. A good definition of agricultural drought should be able to account for the variable susceptibility of crops during different stages of crop development, from emergence to maturity.

Hydrological Drought

Hydrological drought is associated with the effects of periods of precipitation shortfalls on surface or subsurface water supply (i.e., stream flow, reservoir and lake levels, ground water). The frequency and severity of hydrological drought is often defined on a watershed or river basin scale. Although all droughts originate with a deficiency of precipitation, hydrologists are more concerned with how this deficiency plays out through the hydrologic system. Factors such as changes in land use (e.g. deforestation), land degradation, and the construction of dams all affect the hydrological characteristics of the basin.

Socioeconomic Drought

Socioeconomic definitions of drought associate the supply and demand of some economic good with elements of meteorological, hydrological, and agricultural drought. Its occurrence depends on the time and space processes of supply and demand to identify or classify droughts. Socioeconomic drought occurs when the demand for an economic good exceeds supply as a result of a weather-related shortfall in water supply.

in hot drylands (for example in Africa) drought can be commonplace, but it is easily misrepresented. Such areas have hot dry seasons every year and this normal situation has to be understood before deviations from the norm can be identified.

The changing nature of pastoralism

The intrinsic adaptability of pastoralists means that their lifestyle, their economy and their culture, like any culture, is in a state of continuous change. Although this document recommends restoring traditional systems of land management, governance and production, it is neither desirable nor possible to turn the clock back to an imagined prior state. Pastoralism has changed and will continue to change according to the external and internal forces acting upon it. However, although such changes are often the best solution to a given stimulus, they may not be desirable for the long term sustainability of the system.

An example of such an undesirable change in response to a stimulus is the over-stocking of

rangelands that has occurred in response to production-oriented subsidies in places such as Europe, North Africa and West Asia. In countries such as Jordan and Algeria this has been associated with reduction in mobility and settlement close to market centres, creating a de facto intensive production system that heavily over-exploits rangelands and is primarily reliant on purchased feeds²⁸. In fact, the Tragedy of the Commons – whereby individual users over-exploit open-access resources without regard for the consequences – could be considered as just such a rational response to an undesirable situation.

Many of the changes in pastoral systems are inevitable and often desirable, or the consequence of another desirable change. For example, greater school attendance amongst children of pastoralist families has many long-term positive consequences, but is associated with both short-term labour shortage and usually with long-term outmigration from the pastoral economy. As countries develop and industrialise, the challenge of labour shortages in pastoral areas has been identified as a significant

²⁷ National Drought Mitigation Center, University of Nebraska-Lincoln <http://drought.unl.edu/whatis/concept.htm>

²⁸ Davies and Hatfield 2008



driver of change.²⁹ However, in developing countries, labour surplus is a challenge, with a growing number of pastoralist drop outs and destitute families who are unable to leave the pastoral economy, but in the absence of livestock they have little option other than to rely heavily on the extraction of natural resources, for example to produce charcoal or sell firewood.³⁰

A shift in the pastoral economy from a subsistence and self-reliant family (or clan) enterprise towards greater commodification of labour is widespread. A 1995 IFAD study of the Jordanian steppe revealed that 54.5 per cent of the holdings employ shepherds, 97.7 per cent of whom are paid in cash; the other 2.3 per cent are paid in kind (partnerships or grants). Jordanians represented 23.7 per cent of the shepherds and employees, implying a significant reliance on immigrant labour.³¹

It is common to find increasing mechanisation of pastoralism as countries industrialise, whether as a cause or an effect of changing labour availability.

In many cases this is seen as a positive step, for example making it easier for households in Mongolia to carry generators, TV sets and satellite dishes on their annual migrations, which has enabled education for many families. However, mechanisation can have undesirable consequences, particular in relation to the rangeland environment. Extensive use of trucks for moving feed and water in Jordan and Syria has contributed to degradation of the Baadia Steppe, by allowing animals to remain in one location throughout the year instead of tracking rangeland resources.

An obvious solution is to use trucks (or trains) to move animals between pastures, rather than to move the pastures to the herds, and this solution has been followed in a number of countries, but not necessarily with the desired results. Although mechanical transhumance can reduce labour demands and increase the speed with which livestock are moved to new pastures, there are significant environmental consequences that were not foreseen in the past. In Spain, after 50 years

²⁹ Manzano Baena and Casas 2010

³⁰ Davies *et al.* 2010

³¹ Blench 1995

of such mechanical migration, the rangeland was becoming noticeably degraded and research has clearly shown the importance of the migrating livestock themselves in maintaining biodiversity corridors, in transporting seeds and improving rangeland fertility. In 1996 the Government of Spain passed an Act of Parliament to re-open 120,000km of transhumance corridors and to promote transhumance on foot³², and there is anecdotal evidence of clear biodiversity benefits that are yet to be scientifically measured.

Livelihood platform: assets

Natural capital

Pastoral systems are associated with livestock production, but the importance of non-pasture resources to pastoral livelihoods must not be overlooked. The diversity of pastoral livelihoods is important to their resilience and overall productivity, and that diversity relies on the exploitation of a wide range of natural resources. Rangeland biodiversity is well used and highly valued by pastoralists, including a wide range of medicinal plants, fruit trees, and other plants that are used for construction, tools and handicrafts. Biodiversity is increasingly being harnessed in African and European pastoral systems through ecotourism, which is proving to be an important way for pastoralists to capitalise on the natural aesthetic and environmental friendliness of their system.

Although pasture is not the only natural resource of importance to pastoralism, it is nevertheless very important. It is also a very diverse resource, with a wide range of palatable grasses that may be valuable at different stages of the productive cycle (weight gain, lactation, rearing young stock).

Trees are a crucial component of 'pasture' systems, providing important fodder (particularly during dry seasons, usually in the form of fruits or leaves),

³² IUCN 2008b



Diversity in the drylands '*Gonometa postica*', an African silk worm © Jonathan Davies, IUCN

Box 10: PhytoTrade Africa³³

Africa contains a quarter of the world's biodiversity and has great potential for developing natural products, including fruits, oils, herbal remedies and nutritional supplements that have never reached Western markets. The raw materials for these natural products are derived from a variety of different African ecosystems (ranging from the harsh Kalahari desert, through to savanna grasslands, miombo woodland and moist tropical forests), and are all harvested from the wild by rural producers.

PhytoTrade is a non-profit Trade Association representing producers in Botswana, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe. PhytoTrade's "Triple Bottom Line" goal (i.e. promoting environmental, social and financial sustainability), consists of three elements: Industry development; Product development; Market development. The association plays a role in linking clients and suppliers, assuring quality control, profiling ecological products, and assisting with import/export regulations and contracts. They also provide a clearinghouse for research and development information on African natural products.

medicine, shade and other functions. Salt is also vitally important for effective livestock production and most pastoralists maintain migration to salt pans as part of the annual transhumant cycle. Other minerals may be important natural resources too, and pastoralists increasingly sell these resources.

Critical to the protection of Natural Capital is security over natural resource use. Over centuries, pastoralists have developed elaborate systems of customary resource management that enable them to manage their resource base. These management systems are usually adapted to the specific features

³³ <http://phytotradeafrica.com/default.htm>





Cows feeding on lopped branches, Afar, Ethiopia
© Jonathan Davies, IUCN

of pastoralist resources, in particular the uncertainty over when and where these resources will be available given the context of highly uncertain climate, armed conflicts, or demographic changes. In recent decades however, land tenure has become increasingly insecure and pressure over resources has grown: through growing pastoral populations; through pressure from neighbouring groups; through agricultural investments and; through annexation for conservation areas. Tenure insecurity has created a number of challenges to pastoral livelihoods, and has led to weakening of the institutions that traditionally have managed natural resources. New, Statutory, institutions have not been strengthened to fill the void and as a result there are

Box 11: Improving rangelands through co-management³⁴

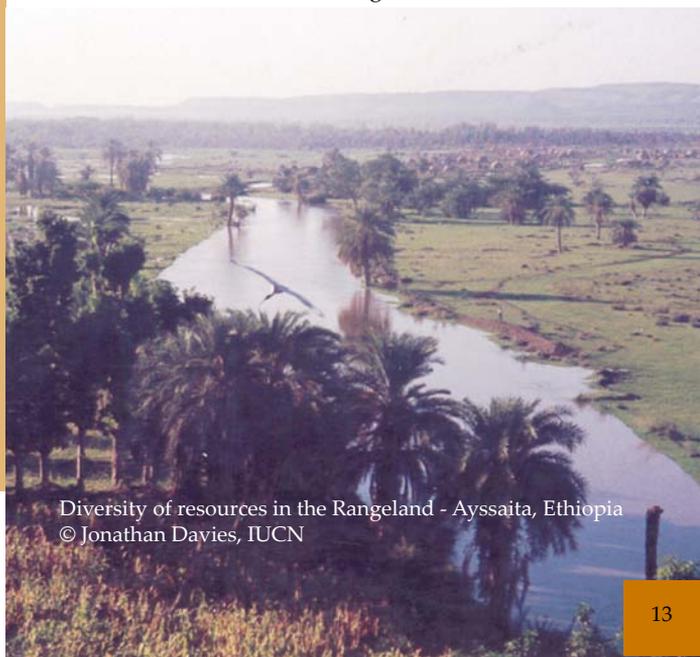
Co-management approaches to grassland management are becoming increasingly popular around the world. In Xiao Zhongdian, China, participatory approaches that implemented the usual approaches to fodder and animal husbandry had proven unsuccessful, so from 2006 co-management was introduced. Training was carried out for villagers, village committee members, township and prefecture technicians and township officials who together developed a locally-appropriate approach to co-management.

Evaluation in 2007 showed that the activities implemented have made a considerable contribution to the rehabilitation of degrading grasslands. The most important activity was not the introduction of new technology, but the enforcement of new grassland management regulations by the community. Improving institutions for the management of grasslands is the core of the co-management approach.

numerous cases where an open-access commons has been created. Simultaneously, customary institutions have been weakened by other changes and have further weakened the control that pastoralists exercise over management of their natural resources.

In many pastoral rangelands, management is characterised by a mosaic of co-existing and overlapping claims to resources with weakly defined boundaries and flexibility of rights and negotiations, which some refer to as “fuzzy access rights”³⁵. Rights and responsibilities are disaggregated by the type of resource (grass, trees water), the resource use, the user (individuals, families, primary and secondary right-holders), the season of use, and the nature and strength of rights and responsibilities (exclusive, shared, permanent or temporary rights).

It is possible to distinguish between different types of territorial units: 1) the customary territory, belonging to the tribe; 2) flexibly defined annual grazing areas within the territory with priority use by several clans, sections or sub-sections; 3) dry season bases where a specific group is the primary user and other are secondary or tertiary users; 4) key sites within the dry season base; 5) Group or individual resource/ areas, such as trees, where a household or group of households are primary users; 6) Migrant rights while on transit through territories of other residents or tribes³⁶. The rationale of these divisions is based on the scattered and unpredictable nature of rangeland resources, which needs nested rights ranging from very tightly controlled tenure arrangements to more open communal access rights within the larger common property system. This tenure system enables pastoralists to maximise productivity in times of abundance and reduce loss of productivity in times of scarcity. This leads to a high degree of complexity of the property and use rights which are often poorly reflected in Land Laws and legal resources.



Diversity of resources in the Rangeland - Ayssaita, Ethiopia
© Jonathan Davies, IUCN

³⁴ Wilkes *et al.* 2007.

³⁵ Aredo 2004

³⁶ Niamir-Fuller 1994, Aredo 2004

Physical capital

The physical capital that pastoralists rely on to construct their livelihoods includes infrastructure, such as roads, markets, government buildings, power and telecommunications, as well as various tools and machinery. Among the more mobile pastoral communities, the accumulation of non-portable equipment may be resisted, but many pastoralists use vehicles to improve their access to pastures or markets.

Access to physical assets for many pastoralists may be constrained by their mobility, the low density of pastoral populations, and frequently by low public expenditure in their areas. Road density is often very low, which can impede access to markets, and power supply is a major hurdle to overcome. Communications are generally weak in pastoral

areas, but telecommunications are improving greatly with the advent of mobile phone technology and many pastoralists in Eastern Africa now have access to this technology and its associated innovations, including money transfer services, and market and climate information.

Water infrastructure is a crucial constraining factor for many pastoralists, although in many countries water development has contributed to widespread environmental degradation and has frequently undermined pastoral livelihoods.

Dryland environments can be degraded when livestock remain in one area for too long. The placement of water points is very sensitive and can lead to settlement of people and livestock in areas that cannot support it despite the high resilience of rangelands. Land degradation following the

Box 12: Land reform and pastoral land tenure³⁷

Many countries that are home to pastoralists, particularly in the developing world, have seen land reforms in the recent past. These are taken in the context of decolonisation, as for example in many Sub Saharan African countries, or de-nationalisation as in the case of the former Soviet States. In Bolivia, Agrarian Reform was the consequence of a continued “colonialist” order and led to abolishment of the large Latifundia estates in 1953 against the background of a serious social and political upheaval. In China, land reforms were a consequence of the democracy reformation in the late 1950s where all land formerly owned by tribes, nobles and monasteries was nationalized. At a later stage, in the process of the opening up since 1978, the liberalization has led to privatisation of livestock and land. Similar processes took place in the central Asian republics of Kazakhstan and Kyrgyzstan.

In many African States constitutional reforms introduced guarantees of basic human rights and political freedoms such as the right to organize and the right of liberty of opinion leading to multi-party politics. At the same time processes of land-reform were initiated. An exception to these processes is Chitral in Pakistan's North, where until the accession to Pakistan in 1969, a feudal system existed and rights to pastures are still in a transition from customary law to formal provincial law.

Land reforms have led to different systems of allocating rights over grassland resources, with different strengths and weaknesses for sustainable rangelands management :

- Rights given to the communities: for instance in Nepal the communities have the right to use and manage the State land. The same is true for the grassland surrounding the communes in Kyrgyzstan and Kazakhstan. In these three cases the land remains in common use.
- Communes become the owners of the communal land: this has been the case in India, where communes have the right to sell parcels to private parties. Non-communal land remains in State ownership, where the policy appears to be to distribute and privatise land, particularly in the interest of landless farmers.
- Customary use of State land by pastoralists: for example, in Argentina transhumant pastoralists have, since time immemorial, used land that is now State land. As they are a small minority, there is no formal regulation, and no explicit recognition of their customary rights.
- Rent of State land: in Kyrgyzstan and in Kazakhstan, pastures can be rented for a certain time. Kazakhstan also provides the option to buy pastures, up to a limited maximum size in order to prevent land grabbing.
- Private property of pasture land: found for example in China and Kenya. In China there is an ongoing process of privatising all farmland, whereas in Kenya one of several parallel tenure systems provides for group-owned ranches, which in some areas has led to sub-division and individualisation of ownership.
- Common property systems: in Kenya pastoral communities can develop by-laws to formalise their natural resource governance arrangements and give legal protection against encroachment on their land. Similarly in Uganda, customary rights to land ownership and management can be formalized by registration of the respective communities as “Communal Land Associations”.

³⁷ IUCN 2011a

Box 13: Mechanisation of pastoralism

Herd sizes amongst the Bedu of Jordan are thought to have been constrained in the past by the availability of family labour, with stock numbers seldom surpassing 150 to 200 animals. However, provision of subsidised feeds has created a major incentive to increase herd sizes, and in the Badia – the rangelands covering most of eastern Jordan – herds of 1,000 to 2,000 sheep are now common. Pastures cannot support herds of this size, and the rangelands have become little more than a holding ground for livestock whilst feed and water is trucked in.³⁸ An FAO survey conducted near Palmyra, Syria, in 1998 found that 80% of households owned a truck, tractor or car. In the past, when the drinking water reserves had vanished, it was time to leave the Badia, but nowadays water is transported to the herds and vegetation recovery periods are considerably reduced. In Syria, the use of large trucks has further degraded the soil surface and led to significant patches of erosion.³⁹

However, mechanisation may be unavoidable for some pastoralists, such as the Koochi Sub-tribe from Iran who are forced to migrate along roads by truck because of fragmentation of their transhumance routes (CENESTA 2004).⁴⁰ Similar phenomena have been reported by other pastoralists, such as the Raika of India, or Spanish shepherds. In Spain restriction of movements began around 1960, but more recently government has recognised the environmental degradation caused through reduction of transhumance by foot and has enacted policy to encourage the traditional practice, with immediate benefits for the environment.⁴¹

construction of poorly planned water facilities in pastoral areas has been observed in developing countries such as Mongolia as well as in industrial countries such as Australia.⁴³

Financial capital (and substitutes)

Financial services are poor in most pastoral areas but have an important role to play in pastoral development. Pastoralists depend on markets

³⁸ Blench 1995

³⁹ FAO 2003:

Water infrastructure in Garba Tula, Kenya
© Norah Ngeny



Maasai Man on a mobile phone © AWF

Box 14: Improving infrastructure

Roads have been demonstrated to contribute greatly to sustainable pastoralist development. The opening of the Karakoram highway in Pakistan has had a noticeable effect on both crop cultivation and animal husbandry of the area. The road link has permitted easy transport of cereals from the plains and land that was formerly used for subsistence cultivation of cereal is now used to cultivate winter fodder. Improved fodder technology and cultivars have now been adopted, increasing investment in extensive livestock production.⁴²

to maintain the resilience of their livelihood, to convert livestock products to grain at (usually) highly advantageous calorific terms of trade, and to purchase other consumables, equipment and services. In many pastoral areas the price of grain and livestock fluctuates enormously (for example, terms of trade between grain and livestock has been seen to undergo a nine-fold change during the

⁴⁰ CENESTA 2004

⁴¹ Manzano Baena and Casas 2010.

⁴² Ehlers and Kreutzman 2000

⁴³ Fernandez-Gimenez 2000, Bastin et al 1993

Neuquén, Argentina © Pablo Manzano, WISP-IUCN



Box 15: Pastoral leadership in water resource management⁴⁴

Water and pasture management amongst the Borana of Kenya are governed by elaborate rules, with authority vested in community elders, who determine the use of pasture and water resources at different times of the year. In Isiolo district, elders from Merti Division set up a membership committee as part of the Merti Range Users Association (RUA), to manage pasture and water resources and to ensure effective allocation of resources within their area. This committee managed existing boreholes and took responsibility for the citing of new boreholes installed with donor money. Boreholes were located according to the location of grazing resources and livestock management was coordinated accordingly. The committee has proven effective in determining water development and has on occasion rejected new facilities from government, NGOs and Politicians where there was a likelihood of environmental degradation. This committee charges fees for the use of water facilities, using the income to cover operating costs and to invest in repairs, new facilities, and emergency water needs.

course of a drought in Ethiopia⁴⁵). A system of cash savings can be a simple way to enable pastoralists to exercise greater choice over when they sell their livestock and when they buy their grain, instead of being forced to carry out both at the same time.

Credit has proven to be a useful stimulus to development in many contexts, but has been poorly developed in many pastoral areas. Credit can be used to strengthen pastoralists management of volatile markets, to enable producers to respond to emergencies (for example to procure drugs), and to promote private sector development, for example in the processing and trade of pastoral goods.

Insurance schemes have an important role to play in pastoral development, particularly given the extreme uncertainty of pastoral environments. Many pastoralists invest heavily in social institutions to provide their insurance, which can be very effective, but runs the risk of the insurer (i.e. the community) collapsing at the very time that the insured needs pay out. Furthermore, with the weakening of customary institutions in many pastoral societies, social insurance mechanisms may come under strain and be less effective, rendering market-based alternatives more attractive.

Box 16: Credit for pastoralists⁴⁶

In the Tibetan Autonomous Region of China access to credit facilities for pastoralists is almost impossible and an innovative “sheep bank” has been set up as an informal alternative. Pastoral communes were dismantled in the early 1980’s and since then there has been growth in the number of poor pastoral households, owning small numbers of livestock. To tackle this problem, a revolving sheep bank has been established to lend fertile adult female sheep to poor families for five years, allowing them to keep all the products (offspring, milk, wool, butter, cheese) and requiring them to repay the same number of fertile female sheep, half in the fourth year and the remaining half in the fifth year. The approach is structured to ensure that recipient households attain economic self-sufficiency and to ensure that the ‘sheep bank’ become self-sustaining.

With the Financial assistance of an Australian non-governmental organisation, BODHI, a five year revolving sheep bank was initiated in 2000 in two areas in the Tibetan Autonomous Region. Each year four poor nomad households were given a loan of 50 ewes, which were purchased from richer nomads in the same area. During the trial period, a total of 1000 sheep were provided to 20 households. An evaluation conducted in 2005 indicated that the trial had been effective, that households had increased their herd size, improved their standard of living and have started to repay their loans on time.

Remittances are important in many pastoral societies and many pastoralists invest in education with a view to diversifying sources of household income. Cash is remitted from local urban centres and from abroad and local financial institutions can play a vital role in this transfer: Somalia famously receives remittances of approximately 750 million USD per year by some estimates. In parts of Africa, mobile phone technology is now used to exploit the demand for financial services in pastoral areas (e.g. m-pesa in Kenya) and it is easier than ever to transfer money through a simple text message.

Human capital

Pastoralism is a highly skilled practice that requires a high degree of labour input, and human capital is the most important productive input in the system. Human health obviously impacts importantly on this strenuous livelihood, particularly in times of stress when labour demand increases (e.g. drought when migrations can increase and hauling of water is more challenging). The rich knowledge that enables pastoralists to exploit their environment is

⁴⁴ IUCN 2011b

⁴⁵ Davies and Bennett 2007

⁴⁶ Miller 2008.

Box 17: Index-Based Livestock Insurance⁴⁷

Since 2005, Mongolia has piloted index-based livestock insurance to share risks amongst pastoralists, insurance companies and government. The project combines self-insurance, market-based insurance, and social insurance. Herders bear small livestock losses that do not significantly affect their livestock enterprise, whilst larger losses are transferred to the private insurance industry (market insurance through a Base Insurance Product).

Herders pay a market premium rate for the base insurance product, which pays out to individual herders whenever the livestock mortality rates in a given location exceed a defined threshold. Excess mortality reflects a combination of dry, windy summers and cold, high-snowfall winters, so the insurance index is linked not to a weather event, but to historic mortality data. Insurance payments are thus not directly linked to the individual herders' livestock losses but payments are based on local mortality. This reduces the risk of moral hazard (individuals 'playing the system'), reduces costs, and creates an incentive on the part of the herders to adopt effective risk management techniques.

In developing this insurance program it was necessary to have reliable data over a significant time span, which was a possibility in Mongolia, where livestock mortality and climate data has been routinely collected for over 30 years. Based on this data it is possible to determine the mortality rates that would trigger indemnity payments under the insurance scheme. Such payouts are expected to be used for livestock production activities, such as replacing livestock or purchasing related goods and services. Since 2008 a similar model has been under trial in Kenya.

not easily transferable outside their system however and formal schooling is increasingly sought by pastoralists, both to enable household members to work outside the pastoral economy, and increasingly to enable active pastoralists to take advantage of new knowledge, technologies and markets. For example, education has been shown to have an important impact on transaction costs and educated pastoralists often play a role in mediating between producers and buyers.

Delivery of health and education services to pastoralists has traditionally been poor, and is hampered both by high costs and the challenges of adapting delivery systems to the local realities.

⁴⁷ Miller 2008

⁴⁸ Leyland and Catley 2002, Catley *et al.* 2004

Box 18: Training community Animal Health Workers⁴⁸

Community Animal Health Workers (CAHWs, also known as paravets) have been trained in many countries of Eastern Africa and have met with a high degree of success in treating and vaccinating livestock and in surveillance of disease. CAHWs also play a role in educating and mobilising communities and provide an important link between livestock keepers and government authorities. In most countries, CAHWs exploit the opportunity created by privatisation of veterinary supply, although considerable efforts have been required to link CAHWs with markets to access



Community Animal Health Worker (CAHW) injecting a cow in Afar, Ethiopia © Jonathon Davies, IUCN

equipment and drugs. Some ambiguities have been identified between the role of Government vets and these local service providers, but synergies are now being exploited whereby CAHWs local knowledge and trust are allied with the technical expertise of qualified vets to capture the

best of both worlds, for example in mass contact vaccination programmes. In countries such as Uganda and Ethiopia, local government veterinary services have begun to collaborate with CAHWs in the provision of training, quality control and disease monitoring and response.

However, in both sectors there are examples of successful adaptation of services to the pastoral way of life. This does not necessarily imply mobility, but can require training of services providers to be sensitive to the pastoral culture, training of pastoralists themselves to provide the services, and adaptation of services (e.g. curricula) to make them relevant to the needs of pastoralists. Advantage can also be taken of the pastoral cycle of natural resource use, such as the higher concentration of pastoralists in a certain place during the dry season.

In the health sector, fewer innovative approaches can be seen and there are particular challenges of ensuring quality in service provision. Industrial countries have applied solutions that are too

Box 19: Innovation in pastoralist education⁴⁹

Pastoralists around the world are steadily winning greater access to education, and as more pastoralists get educated, so the respect (and demand) for education rises. However, standard education approaches have sometimes proven limited for a number of reasons: the curricula is skewed towards the interests of farming communities; teachers lack the relevant language skills and cultural sensitivity; the academic calendar is designed for crop farmers rather than livestock keepers; and in some cases immobility of schools is the problem.



Iranian tented school for pastoralist children © CENESTA

These challenges have been resolved in a number of innovative ways in different countries, and according to which constraints are faced. In Iran, a Tent School system has now operated for Qashqa'i pastoralists for over 50 years, and has successfully educated several generations of nomadic children. Teachers from a pastoral background are trained, equipped with a white school tent and schooling material, and join a group of pastoralist

households, often in an elder's camp with enough children for a mixed-age class. After 5 years of elementary education, graduates are admitted to boarding school for nomadic children. This approach developed out of a literacy plan for Qashqa'i tribes people and has evolved to the point where it now includes a Teacher Training School, Elementary School, Middle School, High School, Technical School and Carpet Weaving School.

Education for pastoralists in Sudan has included mobile multi-grade, single-teacher schools in the past, but these schools have faced many problems including high levels of drop out, shortage of trained teachers, and wide gender disparity in enrolment. From 2003, Oxfam began to support 11 mobile schools by providing books and school materials, providing sheep as incentives to attract and retain teachers, as government salaries are insufficient. Direct support to schools is complemented by capacity-building at community level and lobbying at community and state level. Special attention is given to reduce the imbalance between girls' and boys' school enrolment.

An alternative to mobile schools has been Distance Learning, which has been successfully implemented in Mongolia's Gobi desert. The first Distance Learning programme targeted 15,000 nomadic women with training in livestock management and processing of animal products, family care, literacy support, survival skills, income-generation using locally available raw materials, and basic business knowledge for a new market economy.⁵⁰

Teaching was carried out via weekly radio broadcasts from the state-owned Mongol Radio in Ulaanbaatar and three provincial radio studios and supplementary materials were produced locally, including printed booklets on topics such as family planning. A teacher-training programme was developed, with 'visiting teachers' who travelled around by horse, camel or motorbike and who were responsible for about 15 learners.

expensive for less developed economies, such as the Flying Doctor Service in Australia. However, in many pastoral communities, the major target groups for health services (women, children, and the elderly) are comparatively sedentary and therefore immobility of services is not necessarily an impediment. Often similar constraints to those

mentioned above for education are found: service providers lack local language skills or are culturally insensitive and service centres are poorly stocked or are not reliable.

A feature of many efforts to strengthen Human Capital in pastoral areas is the reliance on indigenous knowledge and strengthening of existing, culturally accepted, practices

⁴⁹ Swiss Tropical Institute 2009

⁵⁰ Robinson 1999

Box 20: Providing health services to pastoralists⁵¹

Providing mobile medical services has proven to be expensive and challenging for governments to sustain, so some countries have experimented with combined mobile-static health services. In Niger, mobile units were run from 1968, and in 1971 fixed health structures were built next to pastoral zones, but utilisation by nomads was infrequent. In 1988 the Expanded Programme on Immunization (EPI) made the link between static and mobile delivery structures. This approach was particularly successful, for example reaching 40% of the population with BCG vaccine.

An alternative approach was taken in Chad of jointly providing veterinary and human health services. In the year 2000 the prevalence of fully immunized nomadic children and women in Chari-Baguirmi and Kanem was zero, yet in the same nomadic camps the livestock were compulsorily vaccinated by circulating veterinary teams. Chadian public health professionals expressed their need for strategies to reach the remote pastoral communities in the border regions and agreed to the implementation of several joint human and animal health campaigns. Between 2000 and 2005, 14 vaccination campaigns for nomadic children, women and the camp's livestock were carried out among the three principal nomadic ethnic groups (Fulani, Arabs and Dazagada) in the Chari-Baguirmi and Kanem of West-Chad. The approach is greatly valued by pastoralists and has led to significant reduction in diseases such as measles and whooping-cough.

In Northern Kenya the government has supported training traditional birth attendants and complementing their skills with more formal training. District fora were created to discuss common issues and approaches in training standards and curriculum content for quality control and village health committees were created to monitor and oversee the Community Health Workers (CHWs). CHWs provided basic advice to villagers on health and hygiene and identified people with serious illnesses for referral to well-equipped clinics or hospitals for better treatment. In 1999 CHWs were running five government dispensaries and provided 95% of all basic health services, such as treatment against malaria, diarrhoea, worms and eye infections. Small groups of CHWs also pooled their resources together to establish drug stores. Traditional Birth Attendants also provided ante-natal care and advice on the importance of vaccinations, and subsequently over 90% of the children in some areas were vaccinated.

or institutions. There has been surprisingly little investment in strengthening indigenous rangelands management practices, and a tendency of agricultural extension workers to introduce new concepts or approaches that do not relate to current management strategies. An important area for significant attention in many countries is developing rangeland management advice that complements and reinforces existing practices and local knowledge.

Social capital

Social capital plays a very important role in many pastoral livelihoods and, although it may appear intangible to outsiders, accumulating this capital is often one of the over-riding pastoral livelihood goals. It may seem hard to rationalise social capital in strict financial terms, since the network of debts and obligations in pastoral societies is not usually quantifiable in terms of money, and the "currency" can be solidarity, gifts of livestock or milk, and even cultural belonging. This should not trivialise social capital, since it has long been the bedrock of sustainable pastoralism. However, it does render social capital hard to explicitly build or work with, at least for non-pastoralists. It is important for development actors to spend time understanding the "livelihood goals" of pastoralists, since this can help draw attention to non-material aspirations and cultural values that outsiders may not relate to or fully respect.

Box 21: Supporting pastoral empowerment and social capital⁵²

Empowerment is the process by which the powerless gain greater control over the circumstances of their lives. It includes both control over resources (physical, human, intellectual, financial) and ideology (beliefs, values, attitudes). It means greater self-confidence, and an inner transformation of one's consciousness that enables one to overcome external barriers to accessing resources or changing traditional ideologies⁵³. Group formation can be a way for poor communities to empower themselves, generate social capital and create new income opportunities.

In the Republic of Lebanon, women's food cooperatives were created as part of a wider livestock development programme. By pooling resources and sharing risk, women were able to access loans from the project, and through the work of the cooperatives, women were able to find employment. Women cooperative members identify improvements in their social standing and a greater sense of empowerment, and social capital has been built through dismantling of socio-economic barriers.

⁵¹ Swiss Tropical Institute 2009

⁵² Flintan 2008

⁵³ Sen and Batliwala 2000

The key to enabling pastoralists to maintain and invest in their social capital is to pursue a strongly empowering approach to development. Such approaches put decision making power firmly in the hands of pastoralists, which enables them to determine their development goals and priorities. This can be associated with visioning exercises, which are a tool that can help pastoralists move towards more ambitious goals rather than only look at the short term, which could foster path dependency.

Social capital can mean not only internal networks and relationships, but those external to a community too, such as trade networks and market contacts. These can be very different, and require very different skills. Pastoralists who lose their internal (sometimes called bonding) social capital often develop stronger external (bridging) social capital than their peers, and are often found playing intermediary roles, for example between pastoral producers and traders or government. This form of social capital has been shown to grow in relation to the degree of education of an individual.

Box 22: Strengthening social capital by working with social capital⁵⁴

Social capital networks often come to the fore during periods of hardship, when individuals within a community seek temporary support from other community members. Mechanisms of social support are very widespread in pastoralist communities and in Africa these social support systems are often cited as defining features of pastoralists. However, working through the appropriate social mechanisms to support rather than undermine these institutions appears to be challenging, particularly during times of hardship when emergency interventions need to deliver results fast and lack the time or human resources to invest in understanding social capital. The outcome can be weakening of social institutions as external assistance supplants some of their roles.

In Karamoja, Uganda, NGO support for communal grain banking has been carefully developed to work with existing community group, often based on extended family lines. Small groups of 4-5 women construct a communal grain bank, which is a traditional practice⁵⁵, and NGOs provide stock during periods of food insecurity. Different women's groups then form larger units with an additional communal grain store, which can operate on commercial lines but is also restocked during periods of hardship by supporting NGOs. In this way the NGO meets its objectives whilst ceding management control of resources to the local beneficiaries, who determine when to use the stored food and who should benefit.

⁵⁴ Oxfam 2005

⁵⁵ More urban practices such as Merry go round in Kenya possibly have their origin in these traditional practices.

⁵⁶ Halbach and Ahmad 2005, Gura 2006.



Participatory visioning exercises in Sudan © IUCN

Box 23: The changing nature of pastoral production⁵⁶

In the Pashun areas of eastern and southern Afghanistan, as in many pastoral societies, milk was produced for home consumption and it was considered shameful to sell fresh dairy products like milk, yoghurt or buttermilk. Any surplus of these products was given to relatives or to people in need, although butter, cheese and qurut (dried whey) were sold.

However, recent years have seen an increased diversification of household income and a move towards a more semi-migratory lifestyle, with livestock incomes often supplemented by other livelihoods such as crop production or wage labour. There has been a parallel cultural shift, away from the taboo on selling dairy products towards a greater engagement with markets. Recent experiences with the successful introduction of two pilot milk-marketing schemes in Kandahar and Kabul show that many farmers have strong interests to increase milk production from cattle and to sell the products.

Dairy products remain important in the local diet, especially curd and buttermilk, which are mainly produced at home, but there is a large potential to commercialise dairy products, and some products enjoy a nationwide reputation. However, the benefits of developing the dairy sector have to be weighed against the costs of lost social capital and as a result lower livelihood security, unless alternative forms of social security replace those lost.



Dairy products (camel icecream) in India © The LIFE Network

Livelihood strategies employed by pastoralists

At the heart of most pastoralist livelihood strategies is the extensive production of grazing and browsing livestock, and many other livelihood strategies are designed to fit around the demands of the livestock system. Many pastoralists rear different species of livestock to tap into a range of different rangeland products and markets and to cope with different threats.

Box 24: Managing livestock diversity

Indigenous breeds are well adapted to the regions they inhabit. This adaptation results in specific features that not only shape the breeds themselves, but also the products they yield. Livestock from Africa, Asia or South America deliver specific milk, fibre or meat products whose special characteristics can allow higher added value when specifically targeted in marketing strategies, thus securing pastoralist livelihoods from an economic point of view⁵⁷. Industrialized European countries have also boosted rural development through this mechanism, establishing specific formulae to protect and encourage these local products.⁵⁸

Development strategies that focus only on one livestock species, and only on one of the multiple products from that species, will greatly reduce the overall output from a rangeland system. Traditional pastoral production systems, in all their diversity, have been shown to greatly out-perform cattle-focused meat ranching on African rangelands – being between 2 and 10 times more productive.⁵⁹ However, such diverse production systems can be labour intensive and require specialist features, such as freedom of movement to seasonal pastures and diverse resources, communal forms of tenure to allow management at an appropriate scale, appropriately adapted livestock that can withstand the rigours of mobility, and access to markets for a variety of products that may only be seasonally available.



Alpaca in Bolivia, used to produce wool, milk and other products © SAVIA



Ecotourism lodge in the Kalama Community Wildlife Conservancy © AWF

Box 25: Conservation based livelihoods in Kenya⁶⁰

A number of Conservancies have been set up by communities in Northern Kenya, exploiting the high tourism potential of the country and the natural complementarity between extensive livestock keeping and wildlife conservation. The Naibunga Conservancy Trust for example is a community initiative collectively owned and managed by nine group ranches in Laikipia North district, with 43,000 acres set aside as a conservation area. The conservancy was created in 2003 to address the challenges of poaching, cattle rustling, insecurity, and water and livestock movements.

As a result of creating this conservancy the Naibunga community has improved biodiversity, including wildlife and medicinal plants and has developed lucrative Eco Lodges that provide tourist revenues and employment opportunities. Dividends from the conservancy are managed by a Community Trust and have been used for school bursaries, investing in water projects, and improving communication and transport facilities.

The Kalama Community Wildlife Conservancy is a similar initiative, covering 32,945 hectares of land and 5000-6000 people in Samburu East district. The conservancy was established in 2001 in order to derive alternative sources of income for livestock keepers, with 16,000 hectares set aside as a buffer zone, of which 6,000 hectares are designated as a core conservation area. Members of the conservancy graze livestock in the buffer zone during the dry season but access to the core conservation area is restricted except in the worst drought years. The conservancy is managed by an elected board which draws its membership from different parts of the group ranch. Benefits to the community include secure land tenure, new employment opportunities, greater security, better water facilities, improved grazing management, and improved transport and communication networks.

⁵⁷ LPP, LIFE Network, IUCN-WISP and FAO 2010

⁵⁸ The 509/2006, 510/2006 and 1791/2006 European Regulations give protection of traditional products under the denominations of Protected Designation of Origin, Protected Geographical Indication and Traditional Speciality Guaranteed

⁵⁹ Scoones, 1995

⁶⁰ IUCN 2008c

For example, in much of Sub Saharan Africa, camels are kept to harvest browse from rangeland shrubs and to thrive in the drier zones, whilst cattle may be less resilient but are favoured for their high market value and milk yields. Sheep and goats may be kept for their faster reproduction rates and ease of marketing.

However, pastoralists use a range of livelihood strategies under different circumstances, shifting emphasis from one strategy to another according to need and the availability of resources. Strategies can be both natural resource-based and non-natural resource-

Box 26: Wool processing and marketing in Kyrgyzstan⁶¹

NGO projects in Tokbai-Talaa, Kyrgyzstan, have reinvigorated the wool industry and improved incomes for local women. Women in the village customarily produced handicrafts as part of their cultural identity but they found it difficult to sell their products. Assistance was therefore given to develop products and identify markets. Support included experience sharing, study tours, training with handicraft groups and development of new products through assistance of an international designer. A local women's group created a catalogue to improve visibility of their products, which helped them to open up new markets in the region's capital Osh and overseas.



Cashmere from pastoral systems in Kyrgyzstan © Carol Kerven

As a result of the training, women's groups have started to keep records of their sales and to invest part of their revenue in their enterprise. Since 2002, group members have seen an increase in their individual incomes and an increase in overall group savings. Many group members use the additional income to reinvest in their livestock enterprise and some groups have used their savings to invest in community projects, such as water supply systems or village workshops.

based, and can include food production strategies, such as livestock production, crop cultivation, and collection of wild produce, and non-food strategies such as sale of minerals, migrant labour, trade and remittances. Households often diversify the labour force to ensure a range of income sources at different times of the year, or under different conditions. In this respect, pastoral households increasingly value education as a means of providing some family members with off-farm employment.

Development projects must recognise the importance of these different strategies for building resilient and sustainable pastoral livelihoods, but must be aware of the possible tensions between livelihood strategies. Some strategies can be highly complementary, such as harvesting and sale of wild products (e.g. medicinal plants) and livestock keeping. Other may trade off against each other, such as livestock and crop production which can compete over labour and land resources. This trade off does not necessarily imply a net cost – overall the productivity of the system can be greater when a diverse range of strategies are pursued and many livelihood options can be mutually supportive (e.g. livestock provide manure for crops and crop residues provide fodder for livestock). Agro-pastoralist peoples often have these systems integrated in their livelihood.

Development planners need to distinguish between complementary livelihoods strategies and alternative strategies. For example, migrant labour is an alternative to pastoralism in which the individual is absent from the system. This option may still be a very useful way to diversify pastoral labour and the remittances of migrant labour are important for many pastoralists. However, when the alternative livelihood to pastoralism takes excessive resources (including labour) from the system then it will compromise the livestock component of the livelihood with important consequences for overall sustainability and success. Some livelihood strategies may be complementary with livestock keeping up to a point and then compete against it, as in the case of charcoal production. Making charcoal is integral to the livelihood of many pastoralists, and is a fall back measure for pastoralists to generate income during periods of hardship. However, when the number of people relying on charcoal making rises too much, it can become very harmful to the environment and to the sustainability of the livestock system.

⁶¹ Ubaidilaeva, undated

Factors mediating over access to resources and livelihood strategies

Social relations

The relationship between pastoralists, their government and their compatriots is an important factor in their development, particularly in countries where pastoralists form an ethnic minority, which is the case in most of Africa, Latin America, parts of Asia (particularly the Indian sub-continent and China) and northern Europe (Scandinavia). With growing efforts to educate pastoralists, and improving democratic institutions in some countries, pastoralists are getting better representation which strengthens their social relations. Nevertheless, development projects have sometimes compromised this relationship, either by excluding pastoralists from the development mainstream, or by supporting non-pastoralists who compete with pastoralists over resources.

Box 27: Linking customary and statutory institutions⁶²

Land in Garba Tula District of Northern Kenya is held in Trust by the County Council. However, the community of Garba Tula – some 40,000 people on 10,000 km² land – lack confidence in the reliability of their Council to allocate land fairly. In 2008, community elders met with Councillors and other Government Officials to demand greater respect for customary rules and laws on natural resource governance.

An agreement was reached to document customary rules over the management of specific natural resources, such as water and pasture, and to adopt them as by-laws for the county. Through this process, the traditional rules are legitimized and given greater authority, providing a platform for more coherent arbitration, reducing opportunities for people to exploit legal inconsistencies and to appropriate land, and raising the confidence and capacity of customary institutions.

Within pastoral societies, social relations are often uneven, and in particular women are frequently not afforded their rights. Pastoralism is usually characterised by a marked division of labour, although it is difficult to generalize about which roles women play in different societies. It is fair to say that in most pastoral societies, women do not hold land rights and are afforded less economic independence than men. This has profound consequences for overall development in pastoral areas, impacting for example on the capacity of women to access services or on their capacity to

⁶² IUCN 2011b



Women's traditional role of yarning wool in Spain
© Jesús Garzón

Box 28: Changing social relations for pastoralist women⁶³

Not all progress in pastoral women's empowerment is the result of the interventions of development agencies. Increased education and changing economic conditions have led to spontaneous adoption, by women, of new employment opportunities and income generating activities. Many case studies highlight a common phenomenon of women reinvesting their income in the household, for example in children's medical and school fees. The outcome in many communities is a measurable improvement in health status and decrease child mortality rates, and with this comes a shift in attitudes within societies. Such processes have sometimes been facilitated through support for pastoral women's education (e.g. credit and literacy classes).

Explicit NGO support for women's empowerment has also been successful in many cases, often by supporting women's groups to form and to adopt new economic activities, or to tap into new markets for existing goods. In Egypt, the increasingly sedentarised Bedouin rely on women to make an income selling handicrafts to tourists, assisted by NGO support to set up a marketing centre and to train members in administration of their business and marketing of their products. Such businesses have created a new incentive for families to allow women members to get an education.

⁶³ Flintan 2008

sustainably manage many natural resources that are nominally under their control.

In the drive to empower pastoral societies as a whole there is a risk that women's empowerment gets sidelined, and that women may even disenfranchised as a result of conferring unprecedented local power on male leaders. This may compromise the sustainability of pastoral societies as is the case in industrial countries, which have suffered from a big exodus of women from rural areas that has compromised the long term social sustainability of livelihoods there. Development projects may compound gender inequality in pastoral societies, by failing to engage women in planning processes and thereby not understanding their development priorities, and by focussing on economic activities that are typically the domain of men (e.g. meat marketing rather than milk marketing in African pastoral societies). Although it is less noticeable, the same inequitable approaches to empowerment may lead to further marginalisation of other sub-groups within pastoral societies (e.g. lower castes, such as artisans in some African pastoral societies). Nevertheless, there are a plethora of success stories in empowering pastoral women, some of the most interesting of which target directly the roles and responsibilities that are customarily associated with men.

Institutions

Pastoralists often have strong institutional arrangements that govern many facets of their life, including natural resource management, social relations, and conflict management. As mentioned earlier, these institutions play a very important role in mediating over livelihood outcomes, and weakening of these institutions has been associated with overall loss of resilience in pastoral livelihoods. Breakdown of customary governance, and failure of the State to fill the gap, has been implicated in many of the pastoral development failures in Africa.

Land tenure and land use relations (and by extension water rights) have traditionally been governed by pastoral institutions, such as the council of elders in some societies, and therefore land tenure has weakened alongside the deterioration of customary governance. The State has sometimes contributed to this breakdown, by deliberately undermining customary leadership, which has been perceived as a threat to the State, and by nationalising ownership of land. This has led to resource conflict and the creation of open-access pastures in places that were traditionally communally managed, and in some cases has led to the "tragedy of the commons". It must be stressed that this "tragedy" is not an inevitable outcome of pastoral land management, but is the outcome of breakdown of pastoral land management. The ideal



Mongolian pastoralists © IFAD

Box 29: Property regimes in Mongolia and their Impacts on the pastoral environment⁶⁴

Since 1990, Mongolia has transitioned from a centrally planned to a market-oriented economy. During the process of Structural Adjustment prescribed by the World Bank in the 1990s, all collective properties including livestock, livestock shelters at winter and spring camp sites as well as collective machinery and buildings were privatized. Grazing lands, however, remained under the control of the state. Although privatization improved individual property ownership, the absence of formalized land rights for pastoralists together with the absence of customary institutions and arrangements to manage land led to land grabbing by the wealthy, conversion of land to non-pastoral uses such as mining, and widespread overgrazing and environmental degradation.

The 2003 "Law on Land" and the 2006 "New Amendments to the Law of Nature and the Environment" reversed this situation by placing greater control of natural resources in the hands of customary institutions. Subsequent efforts to organize herders in community groups and restore customary institutions and common property management regimes have resulted in significant improvements in environmental quality and the economic status of group members. Herders are reverting to traditional risk management strategies, developing multi-species herds and returning to customary and more localized levels of cooperation for the management of labour and the production of hay and other inputs. This has led to numerous benefits for both livelihoods and the environment. Incomes have risen, poverty has fallen, and environmental condition has improved as a result of the resurrection of community pasture use rules, increased seasonal movement, improved access to pastures, and increased control over productive resources such as water points. The conservation benefits have been directly felt by pastoral households through tourism and improved livestock and products marketing. Extensive areas of rangeland have been rehabilitated through the application of effective grazing regimes, the use of alternative fuels, and through improved community efforts to monitor and protect against illegal use of resources.

⁶⁴ Sandagsuren 2007

Box 30: Constraints to international livestock trade⁶⁵

Pastoralists in many developing countries are currently denied access to potentially important international markets due to stringent international animal health standards, set by the Office International des Epizooties (OIE), that are designed to facilitate safe trade in livestock and livestock products. The OIE's Terrestrial Animal Health Code requires countries to eradicate important transboundary animal diseases to reduce the risk of exporting disease to trading partners.



Somali Livestock Market Place © Ilse Koehler-Rollefson

Many of the listed diseases are widespread throughout Africa, such as foot and mouth disease and Rift Valley fever. Eradicating these diseases in Africa is costly, technically challenging, and unrealistic in the foreseeable future and this renders many countries unable to trade livestock and livestock products under WTO rules. However, the African Union's Interafrican Bureau for Animal Resources (AU-IBAR) has produced "simple, realistic and achievable alternatives to improving access to high value livestock commodity markets without the necessity of first eradicating all 'epizootic diseases'".

The approach proposed by AU-IBAR is based on the principle that different livestock commodities pose different risks in terms of spread of disease, particularly those communicable to humans, and more appropriate approaches can be developed within Africa to ensure food safety without having to eradicate diseases. The advantage of these approaches is that they require processing of livestock commodities in-country, which means value is added at source rather than overseas.

solution in many cases is to restore control and governance to local institutions, with the support and blessing of local and State government.

Another crucial institution for sustainable pastoral livelihoods is the market and market failures often impact heavily on pastoral livelihoods. Weak infrastructure and poor communication facilities means that many pastoralists have limited access to markets and poor understanding of how they are operating. For many goods and services of pastoral systems markets are simply not available (e.g. markets for medicinal plants or for dairy products in many African pastoral areas), and when markets are available (e.g. for livestock) they are easily distorted by better informed and resourced brokers and middlemen.

Development of markets has delivered many benefits to pastoralists, but also presents new risks and distortions. In Eastern Africa, the emphasis on marketing of meat and livestock can reflect the development priorities of donors and government as well as the relative ease of marketing these products compared to dairy products. Yet in some African pastoral societies the market value of milk exceeds that of meat by 2-4 times, and the emphasis on marketing livestock, which is often the preserve of men, contributes to changes in both the household economy and the overall livestock production objectives⁶⁶. However, developing markets for goods that are traditionally managed by women has in some cases led to usurpation by men, as has been observed in the commercialisation of dairy products in Kenya⁶⁷. The solution is not necessarily to avoid investment in these markets, but to do so as part of a wider process of women's empowerment, thereby giving women a greater say in how change takes place in the household.

⁶⁵ Thomson *et al.* 2004

⁶⁶ Davies and Hatfield 2008

⁶⁷ Joekees & Pointing 1991

Box 31: Challenges of milk marketing

In some settled villages along the main roads, Borana women in Ethiopia sell milk and yoghurt to passing cars during the main rainy season. They sell their products quite cheaply (approximately US\$0.05 for a large cup). Somali women in Jijiga, Babile and other small towns sell cow and camel milk to consumers. Milk is highly perishable, and yoghurt goes sour after several days. If there are no buyers the women give the unsold stocks to their families before it spoils. Experience has shown however that, with assistance women can organise into marketing cooperatives, and can put more effort into manufacturing butter, which is a less perishable product.⁶⁸



Milk collection point in Mauritania © Tiviski

In Somalia, women in urban centres maintain links with female relative in rural areas to sustain an elaborate marketing network for fresh camel milk. Women are better able to maintain such relations than their husbands due to the complex clan relationships in the country, but they employ men as transporters, with milk collection networks stretching hundreds of kilometres into the bush. These marketing networks are two-way, with goods flowing back to rural areas, and play a critical role in many rural livelihoods.⁶⁹

Markets for diverse pastoral goods (such as gums, fruits, medicinal plants, and miscellaneous livestock products) are often absent and could be fostered through improved infrastructure, better education and training in the pastoral areas, and greater access to credit. Markets in general can benefit greatly from improved information flow, particularly to strengthen bargaining power of pastoralists in the market place and to enable producers to use markets more strategically.

Organisations

Pastoral organisations have been discussed earlier in this paper in relation with their role in supporting social capital and community empowerment. Many efforts have been made to build pastoral organisations, either building on existing community structures or replacing traditional pastoralist institutions as in the case of the former Soviet Rangelands States, and many of these efforts have achieved a degree of long term success. This is particularly the case where pastoralist

Box 32: CECOALP, a pastoralist marketing cooperative⁷⁰

CECOALP is a self-managed organisation of 1000 Alpaca producing families in the Peruvian Andes. The members are grouped in 8 cooperatives, with the principal objective of managing the commercialisation of Alpaca products, including fibre and meat. CECOALP develops means of improving value addition, for example through processing wool and manufacturing high quality garments, and supports marketing, particularly overseas. The cooperative contributes to overcoming socioeconomic problems, to improving welfare at the household level, and to mediating between producers and government.

associations are developed by communities rather than imposed upon them, and where complementarity is found between customary institutions and the new organisations.

National Governments can support pastoralism by ensuring that relevant policies and investments support local rights and responsibilities for natural resource management. National Government planning is often required to leverage public finance for pastoral development and to ensure that the necessary frameworks and structures are in place to ensure local government can play its role in supporting pastoral development. Leadership is also required at the National Level to ensure that local government devolves appropriate decision making authority to community leaders, whilst ensuring that traditional leadership does not reinforce inequity, but instead accommodates the rights of all citizens.

⁶⁸ IIRR 2004

⁶⁹ Nori 2007

⁷⁰ <http://www.corredorpuno-cusco.org/getdoc.php?docid=189>

Box 33: Pastoralist Organisations for Communal Land Management⁷¹

Pastoral organisations have been created in many countries to improve management of common resources, and to improve the livelihoods of herders. In Kyrgyzstan, NGOs have supported livestock-keepers to form a Pasture Users Association, registering them as a step towards protecting their use and access rights to distant pastures. In Kazakhstan, an association called the “Farmers’ Foundation of Kazakhstan” facilitates shared pasture use in an area where individualisation of land into small parcels had compromised the sustainability of pastoralism. In the Tibet region of China, communes have developed cooperative agreements for pasture management, again in response to the impoverishment caused by land privatization.

In Nepal, traditional management practices are accommodated within two sets of local organisations: Community Committees and Civil Associations. A Community Committee is an elected body that controls and regulates access to pasturelands and other fodder resources through enforcement of well-defined and mutually agreed rights and rules, backed by various social controls and sanctions. Civil Associations by contrast are self-identified groups of households with common interests or shared resources. Elected sub-committees are established under the Community Committee for each Civil Association, with both men and women represented, although decisions over pasture management tend to be made by women who are resident throughout the year.

A recurring challenge in developing pastoral organisations is that of representation. The goal of empowering local leaders may be negated if organisations are created without effective consultation or democratic selection. Indeed, natural resource degradation has frequently been linked to weakening of traditional leadership

as a result of undemocratic processes and the conferring of power on new leadership. In order to overcome these challenges, development agencies are paying more serious attention to development processes that genuinely empower communities, and are moving beyond limited interpretations of participation.

Box 34: Promoting pastoral political representation⁷²

In Eastern Africa, a number of political efforts have been made to increase pastoralist representation in political affairs. Pastoralist Parliamentary Groups or Standing Committees (PPGs) have been created in Ethiopia, Kenya, Uganda and Tanzania and have been operational since the late 1990s. These committees



UNCCD Executive Secretary, Arba Diallo meets community representatives from Kenya at the COP © Ed Barrow

have had different degrees of success, although Kenya’s creation of a Ministry of State for Development of Northern Kenya and other Arid Lands may have been considerably influenced by the Kenyan Pastoral Parliamentary Group. PPGs in different countries have broadly similar aims, including identifying and disseminating policy issues, raising knowledge and capacity on policy issues and providing technical support in policy formulation. Although membership of parliamentary groups may be short-lived – being determined by 4 or 5 year political cycles – the representatives can claim a degree of legitimacy and accountability that other pastoralist spokes-people sometimes lack.

⁷¹ IUCN 2011a

⁷¹ Reconcile/IIED, 2004

Minimum Standards for Sustainable Pastoral Development

The aim of this paper is two-fold: to help planners and policy makers avoid investment strategies and policies that impact negatively on pastoralists and; to enable them to ensure that specific policies and plans for pastoral development are more closely tailored to the needs of pastoralists. In the first case, there are many examples of policies and investments that have undermined pastoralism and increased poverty in the drylands. Examples include some investments in irrigation agriculture in the drylands, especially in dry-season grazing reserves, as well as some policies that have promoted 'fortress' conservation in which land owners are excluded from land and resources. The negative implications of a policy can often be hard to ascertain, and competing interests have to be reconciled, but there may be many unnecessarily adverse situations that can be simply avoided if planners and policy makers are more aware of the opportunities and constraints of pastoralism.

When it comes to tailoring specific pastoral development to the needs of pastoralists, it is more important to pursue genuinely empowering approaches that go beyond mere consultation, and to address underlying governance and institutional failures, rather than to look for technical blue prints. Examples cited in this report are not prescriptions for pastoral development, but they are examples of what can be achieved when appropriate development processes are followed and pastoralists are given a greater say in policy and planning. It is important to maintain a global view of pastoralist development since there are many informative experiences to draw on from industrialised as well as developing countries. However, it is important to keep in mind the failures of the past, where successful approaches of pastoralists have been discarded and technologies borrowed from rich countries have ultimately increased poverty and degradation, because pastoralists were not consulted and because outsiders assumed that they knew the development objectives of pastoralists.

Develop country strategies that recognise and support pastoralism

1. Understand what pastoralism is and how varied it can be. Pastoralism is practiced in about 75% of the countries of the world, and even in industrialised countries pastoral groups are often disadvantaged due to their remoteness. Country strategies need to be developed in cognisance of the diverse pastoral groups found within and across national borders.

2. Understand the value of pastoralism, which is not only measured in the obvious products such as meat or milk, but includes other livestock goods (e.g. hides and fibre) and services (e.g. transport and manure), non-livestock goods (e.g. timber and non-timber forest products), important environmental services (e.g. water cycling and wildlife conservation) as well as social and cultural services.
3. Recognise that many of the most significant values of pastoralism (including milk and even meat) are poorly captured by market data since many transactions occur outside the market. Economic development should not be solely guided by market data in a context of widespread market failure and more appropriate methodologies should be used to gather data beyond that found in national accounts and surveys.
4. When considering options for the drylands, take into consideration resilience as a key feature of livelihoods and a primary development objective. In highly uncertain environments, producers maximise yield in good times and limit loss in bad times. Conservative attitudes of pastoralists to development often reflect the observed poor understanding by outsiders of a complex production objective. The mentioned logic applies to new technologies that seem compatible with pastoralism as well as to livelihood strategies that are still advocated as an alternative to pastoralism.
5. Based on a more complete economic valuation of pastoralism, recognise the opportunity costs of alternative land uses and the impact of promoting alternatives for non-pastoralists (including destitute former pastoralists) on pastoral production, and recognise that these costs are felt at the landscape scale. Each hectare of riparian pasture excluded from the pastoral system may imply many more hectares of non-riparian land that are rendered less productive in the overall system, and simple hectare per hectare comparison is inappropriate.

Avoid non-pastoral investments and policies that undermine pastoralism

1. Recognise that non-pastoral projects can impact heavily on pastoralism, such as irrigation projects that reduce water flow to dry lowlands. Investment in crop cultivation at a national level often leads to distorting incentives in drylands to

adopt less resilient livelihoods at the expense of pastoralism, leaving people in the drylands more vulnerable to drought whilst simultaneously undermining the resilience of pastoralism.

2. Do not abrogate responsibility for equitable rights in pastoral lands. In many developing countries, land tenure is weaker in pastoral systems and policy favours settled farmers. In this case, investments and policies supporting non-pastoral land use in either pastoral or in adjacent lands can lead to alienation of resources from pastoralists, and are likely to result in increased pastoral poverty and conflict.
3. Ensure balance in national consultations and planning, in recognition of the fact that pastoralists may be disadvantaged minorities and that other land users compete with pastoralists over land, water and other resources.
4. Understand that pastoralism is a multiple land use system and not simply a form of livestock production. The system can therefore be undermined by investments that compromise non-livestock incomes and natural resource use.
5. Integrate pastoralism in biodiversity conservation policies.

Place governance and rights, including those of minorities, at the centre of pastoralist development

1. Create and support multistakeholder fora to ensure inclusion of pastoralists and non-pastoral actors in local and national planning processes and to promote dialogue between these groups, and particularly between government and pastoralists. Multistakeholder fora should be constructed in cognisance of the fact that pastoral territories can be large and stakeholders may live far beyond district and even national boundaries.
2. Promote empowering approaches for development planning and develop capacity, particularly amongst local government, to understand the role of participatory approaches as an empowering process rather than an implementing convenience.
3. Ensure that empowerment includes all sectors within a society, going as far as ensuring that empowerment of marginal groups (especially women) forms the foundation of pastoralist development.

4. Ensure appropriate support for Civil Society, recognising the distinction between Civil Society Organisations and Non-Governmental Organisations.
5. Combine community empowerment with institutional accountability by building the capacity and willingness of government to endorse and support community empowerment.

Promote investments and policies that support pastoralism

1. Invest in pastoralism as a diverse land use strategy as opposed to exclusively a livestock production system, with recognition of important complementary as well as alternative livelihood options.
2. Invest in pastoral livestock production based on the assumption that pastoralism is rational, and that it can be reinforced with appropriate technological and management adjustments, but cannot be sustainably substituted.
3. Address the fundamentally important question of land rights, ensuring that pastoral development is built upon greater security of access to and use of natural resources. In many cases development must address more than just land rights and has to take into consideration the bundle of rights that pastoralists are denied if significant steps are to be made in sustainable development of pastoralism.
4. Invest in basic services, including education, infrastructure, and health. These investments may yield slow returns, but they are the surest way to guarantee sustainable development and poverty reduction in the long term. Basic services include markets, and the use of markets will be greatly improved through greater access to and uptake of financial services, including credit, savings and insurance.
5. Invest in local governance, in linking customary and statutory institutions, and in building local government capacity to govern more effectively in partnership with pastoralist communities.

Conclusion

This paper has mentioned the failure of past development efforts that have been created based on a poor understanding of pastoralist livelihood goals. It is not possible to generalise about the development objectives of pastoralists, which differ not just from community to community, but from household to household and no doubt even within the household. However, in quite general terms we can safely say that for most pastoralists managing uncertainty is an over-riding priority, and the uncertainty that pastoralists face is enormous – from year to year and from season to season. For many pastoralists, a guaranteed minimum income is more important than the chance of a higher average income, since a higher average is of little comfort if in a bad year your livelihood fails completely.

Development thinking has long been driven by a tacit objective of increasing certainty in the drylands and imposing order, both on dryland people and on their environment. This is at odds with the strategy of many pastoralists, who tend to accept the extreme uncertainty of the environment as a given and manage their production system accordingly. Pastoral development will be more effective where

greater effort is concentrated on building resilience, which means supporting the adaptive capacity of pastoralists. This is increasingly important now that Climate Change is increasing the degree of uncertainty in the drylands: much more effort is needed to understand how pastoralists manage risk and how investment and policy can support rather than impede their adaptations.

Finally, a lot has been made in this paper of the importance of empowering pastoralists. This may seem at odds with the objectives of some investors and policy makers, but it is crucial for enabling pastoralists to articulate their needs and to use their existing capabilities. Even if the livelihood objectives are perfectly understood and the “right” technology is provided, there is no guarantee it will be accepted by pastoralists if they are not empowered to make informed choices about what they adopt and what they reject. In this respect, pastoralist development must be based on realistic expectations that reflect the historic marginalisation of pastoralists and the gulf that exists in terms of human development between pastoralists and their co-citizens.



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