

<https://helda.helsinki.fi>

---

## Making way : Developing national legal and policy frameworks for pastoral mobility

Odhiambo, Michael

FAO

2022-02-16

---

Odhiambo , M & Manzano , P 2022 , Making way : Developing national legal and policy frameworks for pastoral mobility . FAO Animal Production and Health Guidelines , no. 28 , FAO . <https://doi.org/10.4060/cb8461en>

---

<http://hdl.handle.net/10138/341818>

<https://doi.org/10.4060/cb8461en>

---

cc\_by\_nc\_sa

publishedVersion

---

*Downloaded from Helda, University of Helsinki institutional repository.*

*This is an electronic reprint of the original article.*

*This reprint may differ from the original in pagination and typographic detail.*

*Please cite the original version.*



Food and Agriculture  
Organization of the  
United Nations

ISSN 1810-0708

# Making way: developing national legal and policy frameworks for pastoral mobility

FAO ANIMAL PRODUCTION AND HEALTH / **GUIDELINES 28**





# Making way: developing national legal and policy frameworks for pastoral mobility

## Required citation

**FAO.** 2022. *Making way: developing national legal and policy frameworks for pastoral mobility*. FAO Animal Production and Health Guidelines, No. 28. Rome. <https://doi.org/10.4060/cb8461en>

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO.

ISBN 978-92-5-135700-2

ISSN 1810-0708 [print]

© FAO, 2022



Some rights reserved. This work is made available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo/legalcode>).

Under the terms of this licence, this work may be copied, redistributed and adapted for non-commercial purposes, provided that the work is appropriately cited. In any use of this work, there should be no suggestion that FAO endorses any specific organization, products or services. The use of the FAO logo is not permitted. If the work is adapted, then it must be licensed under the same or equivalent Creative Commons licence. If a translation of this work is created, it must include the following disclaimer along with the required citation: "This translation was not created by the Food and Agriculture Organization of the United Nations (FAO). FAO is not responsible for the content or accuracy of this translation. The original [Language] edition shall be the authoritative edition."

Disputes arising under the licence that cannot be settled amicably will be resolved by mediation and arbitration as described in Article 8 of the licence except as otherwise provided herein. The applicable mediation rules will be the mediation rules of the World Intellectual Property Organization <http://www.wipo.int/amc/en/mediation/rules> and any arbitration will be conducted in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL).

Third-party materials. Users wishing to reuse material from this work that is attributed to a third party, such as tables, figures or images, are responsible for determining whether permission is needed for that reuse and for obtaining permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

Sales, rights and licensing. FAO information products are available on the FAO website ([www.fao.org/publications](http://www.fao.org/publications)) and can be purchased through [publications-sales@fao.org](mailto:publications-sales@fao.org). Requests for commercial use should be submitted via: [www.fao.org/contact-us/licence-request](http://www.fao.org/contact-us/licence-request). Queries regarding rights and licensing should be submitted to: [copyright@fao.org](mailto:copyright@fao.org).

**Photo cover:** ©FAO/Luis Tato

# Contents

|  |           |
|--|-----------|
| Acronyms and abbreviations   | v         |
| Acknowledgements   | vii       |
| Foreword   | ix        |
| Executive summary  | xi        |
| <b>PART I</b>  |           |
| <b>Understanding pastoral mobility</b>   | <b>1</b>  |
| <b>CHAPTER 1. WHY LEGISLATE FOR PASTORAL MOBILITY?</b>                             | <b>3</b>  |
| 1.1 What is pastoralism?   | 3         |
| 1.2 Salience of pastoral mobility  | 4         |
| 1.3 Why legislate for pastoral mobility?   | 6         |
| <b>CHAPTER 2. DRIVERS AND DETERMINANTS OF MOBILITY</b>                             | <b>11</b> |
| 2.1 Mobility conditioned by climate and topography                                 | 13        |
| 2.2 Mobility conditioned by land tenure  | 15        |
| <b>PART II</b>   |           |
| <b>Developing policy and legal frameworks for pastoral mobility</b>                | <b>23</b> |
| <b>CHAPTER 3. CONVENTIONS SUPPORTING PASTORAL MOBILITY</b>                         | <b>25</b> |
| 3.1 International instruments  | 25        |
| 3.2 Regional and bilateral conventions   | 27        |
| 3.3 National and subnational legislation and policies                              | 30        |
| <b>CHAPTER 4. PRELIMINARY CONSIDERATIONS FOR LEGISLATING FOR PASTORAL MOBILITY</b> | <b>33</b> |
| 4.1 Analysing the legal and policy context   | 33        |
| 4.2 Engaging key stakeholders  | 35        |
| <b>CHAPTER 5. KEY ELEMENTS OF LEGISLATION FOR PASTORAL MOBILITY</b>                | <b>39</b> |
| 5.1 Legal recognition of pastoralism and pastoral mobility                         | 39        |
| 5.2 Securing pastoral mobility   | 40        |
| 5.3 Establishing an institutional framework and procedures for managing mobility   | 42        |
| 5.4 Elaborating the rights and duties of pastoralists during mobility              | 44        |
| 5.5 Providing for investment support for pastoral production systems and mobility  | 46        |
| 5.6 Providing for conflict management and dispute resolution                       | 46        |
| 5.7 Providing for monitoring, evaluation and learning                              | 47        |
| 5.8 Supporting social and cultural development                                     | 47        |

|                                   |           |
|-----------------------------------|-----------|
| <b>CONCLUSIONS</b>                | <b>49</b> |
| <b>BIBLIOGRAPHY</b>               | <b>51</b> |
| <b>NATIONAL POLICIES AND LAWS</b> | <b>63</b> |

#### **LIST OF BOXES**

|  |    |
|--|----|
| Box 1.1 Pastoralism as a tool for controlling wildfires in Andalusia, Spain            | 5  |
| Box 1.2 The rangeland household contract system (RHCS)                                 | 7  |
| Box 1.3 Veterinary fences in Botswana  | 8  |
| Box 2.1 Vertical transhumance networks through private land in the south of France     | 15 |
| Box 2.2 Travelling stock routes in Australia   | 16 |
| Box 2.3 Agdals in Morocco: community management of shared grazing resources            | 18 |
| Box 2.4 Farmer–herder relations in western India                                       | 21 |
| Box 3.1 Relevant provisions of the Universal Declaration of Human Rights               | 26 |
| Box 3.2 Other effective area-based conservation measures as an international framework | 28 |
| Box 3.3 Conditions and guidelines for mobility in the ECOWAS decision                  | 29 |
| Box 3.4 Outline of a stock route network management plan                               | 31 |
| Box 4.1 Overlaps and contradictions in Swedish law affecting the Sámi                  | 34 |
| Box 4.2 The VGGT on participation in governance  | 36 |
| Box 4.3 UNDRIP on free, prior and informed consent                                     | 37 |
| Box 4.4 Informed participation and consent in international law                        | 37 |
| Box 5.1 Participatory rangeland management in Ethiopia                                 | 40 |
| Box 5.2 Transhumance in northern Neuquén Province, Argentina                           | 41 |
| Box 5.3 Decree on implementation of the Pastoral Charter, Mali                         | 43 |
| Box 5.4 Conflict management in the Kyrgyz Law on Pastures                              | 47 |

#### **LIST OF TABLES**

|  |    |
|--|----|
| Table 1 Indigenous typologies of reasons for pastoral mobility in eastern Africa among different ethnic groups | 19 |
| Table 2 Examples of institutions mandated to manage pastoral mobility  | 44 |
| Table 3 Rights and duties of pastoralists during mobility  | 45 |

---

# Acronyms and abbreviations

|               |   |
|---------------|---|
| <b>CBD</b>    | Convention on Biological Diversity  |
| <b>COMESA</b> | Common Market for Eastern and Southern Africa   |
| <b>ECOWAS</b> | Economic Community of West African States   |
| <b>FAO</b>    | Food and Agriculture Organization of the United Nations   |
| <b>GDP</b>    | gross domestic product  |
| <b>GIS</b>    | Geographic Information System(s)  |
| <b>IFAD</b>   | International Fund for Agricultural Development   |
| <b>IGAD</b>   | Intergovernmental Authority on Development  |
| <b>IIED</b>   | International Institute for Environment and Development   |
| <b>ILO</b>    | International Labour Organization   |
| <b>IUCN</b>   | International Union for Conservation of Nature  |
| <b>MEL</b>    | monitoring, evaluation and learning   |
| <b>PRM</b>    | participatory rangeland management  |
| <b>RHCS</b>   | rangeland household contract system   |
| <b>UN</b>     | United Nations  |
| <b>UNCCD</b>  | United Nations Convention to Combat Desertification   |
| <b>UNDRIP</b> | United Nations Declaration on the Rights of Indigenous Peoples                                  |
| <b>UNDROP</b> | United Nations Declaration on the Rights of Peasants and Other People<br>Working in Rural Areas |
| <b>UNEP</b>   | United Nations Environment Programme  |
| <b>UNESCO</b> | United Nations Educational, Scientific and Cultural Organization                                |
| <b>UNFCCC</b> | United Nations Framework Convention on Climate Change   |





---

# Acknowledgements

Initiated by the Pastoralist Knowledge Hub of the Food and Agriculture Organization of the United Nations (FAO), this handbook on *Developing national legal and policy frameworks for pastoral mobility* was authored by Michael Odhiambo, a consultant on policy, legal and institutional frameworks for the governance of land, the environment and natural resources, and Pablo Manzano, a researcher at the Helsinki Institute of Sustainability Science and the Global Change and Conservation research group at the University of Helsinki. The work was led and edited by Natasha Maru under the coordination and supervision of Gregorio Velasco-Gil of the FAO Pastoralist Knowledge Hub.

The handbook has benefited from the technical advice and guidance of a team of experts who provided valuable inputs. The team was made up of staff from FAO's Animal Production and Health Division, Badi Besbes and Veronique Ancey, the Pastoralist Knowledge Hub team, comprising Serena Ferrari and Caroline Ruto, Margret Vidar from the Legal Office (LEG), and Abdal Monium Osman, Emmanuella Olesambu and Zhengqi Liu from the Office of Emergencies and Resilience (OER). Special thanks to Engin Yilmaz of the Yolda Initiative for his contribution to the document.

Thanks to Ced Hesse, Ann Waters-Bayer, Fiona Flintan, Pablo Frere and Hijaba Ykhanbai for their expert review and technical advice. A special thanks from Michael Odhiambo to Hijaba Ykhanbai and Hubert Ouedraogo for access to legislation, from Engin Yilmaz to Ali Razmkhah of the Centre for Sustainable Development and Environment (CENESTA) and Ugo D'Ambrosio of the Global Diversity Foundation, and from Pablo Manzano to Jürgen Hoth for help with reference documents. The document's final version was reviewed by Fidaa F. Haddad, Jürgen Hoth and Moctar Sacande; thank you to them.

The document was wonderfully designed and laid out by Enrico Masci, and copy-edited by Jane Shaw. Antonella Falcone provided crucial administration assistance; special thanks to them.

The publication was made possible through the financial support of FAO's Animal Production and Genetics Branch (NSAG), sincere thanks to them and all the other contributors.



---

# Foreword

Mobile pastoralism is of high global relevance; the movement of livestock and their keepers has been a widespread practice around the world. Mobility lends pastoralism the adaptive capacity to optimize the variable environmental conditions that characterize more than half of the earth's land surface. Not only is it crucial for the sustainability of pastoral livelihoods but also it benefits the environment in several ways. It provides food and livelihood security to millions of people in challenging terrains. It is an important tool for the achievement of the Sustainable Development Goals, and in facilitating ecosystem processes highlighted by the current United Nations Decade on Ecosystem Restoration. Given the advantages of livestock mobility in both economic and environmental terms, the paramount role of mobile pastoralism in achievement of livestock-related Sustainable Development Goals is clear. However, policies that support pastoral mobility are lacking. Instead, policies have historically tended to undermine and restrict mobility seeing it as an unproductive, outdated, irrational and ecologically damaging practice.

The importance of pastoral mobility is now being recognized in development discourse. Local and international development organizations are beginning to advocate for policies that favour mobility. The joint evaluation synthesis report on the engagement of the Food and Agriculture Organization of the United Nations (FAO) and the International Fund for Agricultural Development (IFAD) in pastoral development, released in 2016, acknowledges this “U-turn” in the foundational knowledge on pastoral development, which recognizes variability in rangeland environments and has implications that concern pastoralists' use of mobility. The synthesis report recommends improved knowledge and clear direction in the two organizations' work on pastoral development.

In 2016 FAO launched a technical guide on *Improving governance of pastoral lands* to support implementation of the 2012 *Voluntary guidelines on the governance of responsible tenure of land, fisheries and forests in the context of national food security*, which shows shared resource use and mobility as the twin pillars supporting pastoral production systems. A review of legal and policy arrangements for cross-border mobility entitled *Crossing boundaries*, jointly published by FAO and the International Union for Conservation of Nature (IUCN) in 2019, aims to inspire and inform action by governments and civil society actors in developing legislation and other legal instruments and cooperative agreements for transboundary pastoralism.

This handbook complements those policy tools and responds to the needs of policy-makers, pastoralist representatives and international organizations. Recent developments in the understanding of mobility break from the earlier view of mobility as backwards looking, unproductive and unsustainable, carving a new path in development discourse and policy making. The handbook promotes the right to livelihood for pastoralists; it advocates the securing of pastoral mobility as being crucial for both the practice of pastoralism as a livelihood right and environmental sustainability in the rangelands.

Initiated by the Pastoralist Knowledge Hub, the handbook has been authored by Michael Odhiambo and Pablo Manzano and edited by Natasha Maru under the supervision of Gregorio Velasco-Gil. The handbook has been prepared through close collaboration between

FAO's Animal Production and Health Division and the Legal Office applying a consultative process with an expert committee of researchers, pastoral advocates and pastoral representatives providing feedback. It has undergone a peer review process prior to publication.

---

## Executive summary

Mobility is a vital strategy employed by pastoralists to capitalize on the scarce availability of resources in variable environments, making pastoralism economically feasible and environmentally sustainable. Through mobility pastoralists are able to produce animal-source products that provide food and income security to populations in the world's rangelands. Such a practice also provides a range of benefits to the environment, while fostering the capacity to adapt to changing social and natural environments.

However, pastoralists are considered backwards looking and unproductive and have historically been undermined by adverse legislation and a lack of supportive legislation. Pastoralists are vulnerable to resource appropriation, sedentarization and restrictions on mobility. As they are squeezed out of productive areas, they are led to concentrate in and compete over limited available grazing resources. In the absence of legislation that protects and regulates mobility, pastoralists enter into conflict with other resource users and the state.

Prohibitive legislation that excludes pastoralists from certain resource areas also causes increasing grazing pressure in other areas, leading to rangeland degradation and reducing the environmental benefits of pastoralism. In Turkey, for example, restrictive forestry regulations constrain pastoralists to small areas where the positive environmental outcomes of their activities become negative (Manzano, 2017). Regarding protected areas, the example of Mexico's iconic Iztaccíhuatl-Popocatepetl National Park shows the drastic exclusion of pastoralists from native alpine and subalpine grasslands that were historically grazed by, and managed for, livestock (CONANP, 2013). Instead, the exclusion of natural and pastoralist-induced factors such as fires, and the promotion of afforestation jeopardize the ecological integrity of this relict grassland and its endemic and endangered biodiversity.

In addition, there is a direct correlation between policies and laws on pastoralism and the level of investment that governments make to support the pastoralist system. Without legislation, governments are not obliged to commit resources to promoting pastoralism or pastoralist welfare. This leaves pastoralists in a precarious position, with a lack of basic social services and infrastructure in many settings.

This handbook therefore calls for the *legal recognition and securing of pastoral mobility* as a way of safeguarding and facilitating a continuous stream of economic and social benefits for pastoralists, countries and the environment.

Pastoral systems around the world are quite diverse, with a *wide range of factors guiding mobility patterns* including biophysical conditions, market access, resource access, access to social services and infrastructure, and socio-cultural and political factors. Among these, the handbook focuses on climate and topography and land tenure as key determinants of mobility given the constraints and opportunities that they impose on resource availability and access. The handbook develops a typology based on these criteria, which speaks of horizontal and vertical movement by altitude occurring under multiple types of tenure including demarcated routes, privately owned land and commons.

Although the handbook presents a typology, including case-studies, it must be recognized that these patterns of mobility may be overlapping, exist simultaneously and alter

over time. Any legislation on pastoral mobility must be based on a deep analysis of local realities and recognition of the features of the pastoral system and must allow for flexibility in response to changing conditions.

Several conventions, laws and policies at the international, regional and national levels serve as examples and may even oblige states to legislate in favour of mobility. In general, *an analysis of laws relating to pastoralism* within a country would help improve the positioning of any new legislation and the assessment of its relationship with different sectors and the hierarchy of the various laws that exist.

Legislation must seek to *establish an institutional framework and procedures for managing mobility*. It is important to be mindful of customary institutions for the management of mobility and to include those local mobility arrangements in that framework.

In general, any process of developing legislation must *involve all key stakeholders and decision-makers*, including pastoralists and other rangeland users such as crop farmers and hunter-gatherers, as well as experts, legislators and the administrators of various government departments. An attempt must be made to include even the most vulnerable people in the stakeholder groups and to ensure that all are able to participate meaningfully.

Any legislation on mobility must strive to maintain the social relations and local reciprocity that are key to mobility and make *provisions for conflict management and resolution* in case of disputes between resource users. Pastoralists drop out of pastoralism owing to a lack of access to water, transport and communication services, market development or services such as health and education. *Investing in infrastructure, social services and forwards and backwards market linkages* is important in improving pastoral welfare outcomes and the experience of mobility.

Given the dynamic nature of pastoral production systems and their plasticity in adapting to changing circumstances, any supporting legislation must also be agile. The *development of a robust monitoring, evaluation and learning (MEL)* process makes it possible to include in the legislation any changes in context or lessons learned during implementation. Such constant engagement with the legislation and its effects will ensure the best possible outcomes for pastoralists over time.

## OVERVIEW

The overall objective of this handbook is to provide guidance on the development of legal and policy frameworks for securing mobility for various pastoral production systems and practices. Through examples and case studies drawn from various parts of the world, the handbook facilitates a deeper understanding of pastoral mobility and identifies considerations to be borne in mind when legislating for mobility. It targets policy-makers and government officials while supporting pastoralists and other advocacy groups in their efforts to influence the development of pro-pastoralist policies.

In focusing on mobility, the handbook offers a new vocabulary and approach to legislation for sustainable pastoralism. With a few exceptions, policies have largely not kept up with new scholarship and development discourse that acknowledges the importance of mobility to pastoralism. There is a lag in, and resistance to legislating in favour of mobility. The handbook seeks to fill this gap by providing the key elements for the development of legal and policy frameworks for pastoral mobility.

Pastoral mobility is embedded within complex environmental, socio-economic and political contexts.

Any legislation for pastoral mobility must respond to the assessed needs and aspirations of pastoralists. While the text provides a vast range of examples, it must be borne in mind that pastoral contexts are not only diverse but also dynamic and changing over time and space. They may even show several concurrent and overlapping features. Any policy decision must therefore be made with caution and be regularly reviewed. Legislation must include a degree of flexibility to allow pastoralists to adapt to and manoeuvre within their ever-changing natural and social landscapes.

The handbook comprises five chapters. Chapter 1 provides an introduction to pastoral mobility, highlighting the important features of pastoralism and making a case for legislating for mobility. Chapter 2 describes the various factors that determine mobility and develops a typology based on contextual factors such as climate, topography and land tenure. Chapter 3 draws on international, regional and national conventions, agreements and frameworks that support the development of national legislation in favour of pastoral mobility. Chapter 4 sets out key thematic and process considerations in the development of national legislation, with a focus on analysis of the policy and legal context and on understanding the pastoral system in the country concerned. Chapter 5 presents key elements that should be covered in national legislation on pastoral mobility, including elements of both substance and process.





PART I

# Understanding pastoral mobility



## Chapter 1

# Why legislate for pastoral mobility?

### 1.1 WHAT IS PASTORALISM?

Pastoralism is an extensive<sup>1</sup> animal production system specialized in operating in environments that show a high degree of environmental variability, such as deserts, dryland, savannah, steppes, woodland, tundra and high-altitude mountain ranges. Pastoralism is practised in many ways around the world, but mobility at a variety of scales in time and space (Kaufmann, Hülsebusch and Krätli, 2018) is a common strategy for maximizing the use of scarce fodder resources and improving production. As a land-use system, pastoralism is found on between 25 and 50 percent of the globe's total land area (Manzano, 2015) and supports hundreds of millions of people worldwide.

Livestock mobility is crucial in managing the rangeland and maximizing livestock productivity in environments characterized by spatial and temporal variations in rainfall with corresponding variations in the quantity and quality of forage. Mobility allows for flexibility and dynamism to adapt to and maximize such scattered and unpredictable resources. Pastoralists plan where and when to graze their animals so that they have access to fodder resources, ideally at their nutritional peaks, and can be more productive than in the absence of such management (Table 1). Shared and common use of natural resources and selection of breeds adapted to local conditions enable and support such livestock mobility.

In northern Norway, for example, Sámi pastoralists have developed an elaborate rangeland management system for harnessing the high diversity of plants, geological features and seasons (Krätli, 2015). The Sámi herd their reindeer across the landscape taking these factors into account, along with the herd's social structure and the productivity of the previous year. Such movement is managed through the local knowledges and institutions of the Sámi (Krätli, 2015).

Notwithstanding these aspects, pastoralism is still widely considered undesirable. Not all countries support the pastoral system, and some even discourage it. It is subject to significant policy and institutional constraints and challenges, especially at the national level, where policy development has not kept pace with advances in the understanding of pastoral mobility. Even in those countries that support pastoralism, that support is conditional and often undermined by competing interests such as civil infrastructure or industrial development that may drive the disruption of pastoral mobility. In some cases, policies that seek to support pastoralism inadvertently undermine it through an incomplete understanding of

---

<sup>1</sup> The term "extensive" in agronomical science denotes a farming system characterized by low productivity per animal and per surface area. Pastoralism is intensive in terms of labour inputs, specialized knowledge and investment in social relations. Rangelands are highly heterogenous and exploitable only under certain conditions (rainfall and security) so their low productivity should not be used to support the alienation of pastoralists because under those conditions, livestock often performs much better than other agricultural uses.

the pastoral system. This handbook therefore seeks to facilitate a deeper understanding of pastoral mobility and favourable policy support.

## 1.2 SALIENCE OF PASTORAL MOBILITY

Pastoralist livestock is a fundamental part of the global food system. It *provides food security and livelihoods to some of the world's hardest populations*. Through extensive grazing systems, pastoralism provides nutritious foods such as meat and milk where crop farming is difficult and requires high fossil fuel and/or water inputs. Such foods are especially important for the development of small children. In fact, pastoral systems are estimated to produce more protein output per unit of feed input than intensive livestock systems; for example, for every unit of feed input, Kenya produces 21.16 units of protein and India 4.3, while Brazil produces 1.17 units and the United States of America only 0.53 (FAO, 2011).

In India, the pastoral system accounts for more than 70 percent of total meat output and more than 50 percent of total milk output. Unsurprisingly, pastoralism also contributes significantly to the agricultural domestic product of several other countries; for example, in 2009 40 percent of agricultural gross domestic product (GDP) in the Niger and 50 percent in Kenya came from pastoral systems (Rhissa, 2010; Fitzgibbon, 2012). It also contributes significantly to export income; for example, livestock exports from pastoral systems in Somalia accounted for 9.3 percent of total agricultural GDP in 2014 and 85 percent of export earnings (Too *et al.*, 2015; Muhumed and Yonis, 2018). Its contribution is generally higher in arid and semi-arid countries where grazing ecosystems are prevalent and herd mobility is a necessity (Manzano-Baena and Salguero-Herrera, 2018; Molina-Flores, Manzano-Baena and Coulibaly, 2020). In such settings, mobile pastoral systems are several times more profitable than settled grazing systems; for example, it is three times more profitable than settled grazing in Botswana, twice as profitable in Uganda and up to ten times more profitable in Zimbabwe (Scoones, 1995). Pastoral systems also provide valuable fibres, hides and bones. The high added-value derived from such products is an important income source for populations in remote areas.

In agropastoral and sylvopastoral systems, pastoralists may also contribute to the economy through crop production and the collection of medicinal plants and honey. Through a form of circular economy, such systems support crop production through the exchange of livestock manure and crop residues. This offers the possibility for close crop–livestock integration, which promotes the efficient use of resources. Grazing on fallow fields or on crop residues increases the overall productivity of the system by improving farm fertility and closing nutrient cycles through animal droppings (Powell *et al.*, 1995). In some cases, pastoral mobility networks also help to sustain the trade networks that are important for economic development, not only in the livestock sector but throughout the economy as a whole. Trade routes have long coexisted with pastoral migration routes and contributed to people's interest in maintaining them.

As well as the direct economic value that pastoralism provides through products, and the indirect value of trade, it also *provides important services that benefit the natural and social environment*. Through the movement of animals, pastoralism provides a range of ecosystem services that improve rangeland health and aid its restoration. These services include improvement of soil fertility, soil carbon sequestration, nutrient cycling, pollination and seed dispersal, and the maintenance of biodiversity (IUCN, 2012; Manzano-Baena and

Salguero-Herrera, 2018; García-Fernández *et al.*, 2019). Box 1.1 describes fire prevention as an example of an ecosystem service provided by mobile pastoralism. The timing of mobility based on fodder availability allows resource regeneration during periods of non-grazing. Pastoral mobility can play a critical role in the maintenance of protected areas. It is considered positively and supported by the Common Agricultural Policy of the European Union through measures such as direct monetary support for pastoralists in “areas with natural and other specific constraints” (Nori, 2019). Livestock mobility can be useful in the management and restoration of landscapes, which demonstrates its relevance as a tool for the United Nations Decade on Ecosystem Restoration (2021–2030).

However, current processes of global change are posing challenges for mobile pastoralism. Sustained world population growth and increased demand for animal products from affluent populations in middle-income countries, along with the already high-level consumption of animal products in developed countries, are promoting the intensification of livestock production at the expense of sustainability (Gerber *et al.*, 2013), adding the pressure on pastoralists to intensify land use and increase fossil energy inputs. Current calculations of anthropogenic climate change place disproportionate blame on pastoralist systems even when the policy recommendations derived from such calculations are ineffective (Manzano and White, 2019).

#### **BOX 1.1 Pastoralism as a tool for controlling wildfires in Andalusia, Spain**

In forests, the reduction of activities such as fuelwood collection and livestock grazing has caused an increase in biomass and a higher occurrence of large-scale wildfires.

The concentration of livestock grazing in forest firebreaks has been observed to be a cost-saving and environmentally friendly alternative to conventional mechanized fire prevention. Livestock graze on the undergrowth that causes fires to spread quickly thereby preventing that spread.

However, such an approach requires that the stocking rate is adapted to the plant production rate of each season, which will vary depending on the annual rainfall. The aim is to achieve low biomass values that – while preventing erosion and sustaining biodiversity – do not sustain large wildfires.

In Andalusia, a firebreak maintenance programme has assigned sections of each firebreak to individual herders. Performance-based monetary rewards have successfully been linked to appropriate grazing levels. The performance of different species is also an important factor: goats are particularly effective in reducing shrub biomass, while cattle and, especially, sheep are effective in reducing herb biomass. Combining different livestock species, especially sheep and goats, yields particularly good results through the simultaneous targeting of different vegetation layers.

Pastoral mobility can enhance the results of firebreak maintenance by allowing heavy grazing during the plant growing season and avoiding it during the drier season, thereby preventing undesired land degradation effects and reducing the need for water or fodder provision in the firebreaks.

While on the one hand pastoralism as a livestock production system is partly to blame for climate change, on the other hand it suffers from climate-related uncertainties. The adaptability of mobile pastoralism had been proven to be key to *overcoming increasing climatic volatility* and there is growing interest in pastoral systems owing to their resilience (Manzano-Baena and Salguero-Herrera, 2018). The role of pastoral mobility in sustainability should be recognized and promoted, not only in improving rangeland conditions but also in designing nature-based solutions and strategies that include the ecological processes facilitated by pastoralism, taking advantage of pastoralism's adaptive capacity through mobility in the face of climate change, and providing food security for pastoralists and society at large through the benefits of pastoral products.

Finally, as well as contributing to food security, the economy and environmental sustainability, mobile pastoralism also *influences the social and cultural life of pastoralist communities*, and mobility is crucial to the cultural reproduction of those communities. Many pastoralist communities around the world are known for their distinctive cultural beliefs, rituals and art. For example, during the Cure Salée festival, Tuareg and Woodabe pastoralists from several countries meet at the salt flats in northern Niger at the end of the rainy season to refresh their livestock and prepare for the dry season further south. In addition, marriage alliances are made and social capital is built during the festival, thereby contributing to the maintenance of reciprocity for access to critical resources.

### 1.3 WHY LEGISLATE FOR PASTORAL MOBILITY?

Historically, pastoralism has been undermined by a combination of adverse legislation and the absence of supportive legislation. Owing to a tendency to control, track and tax populations, the state privileges settled agriculture over mobile pastoralism. Very different mindsets clash between sedentary livelihoods, including crop agriculture but also industrial uses, which are much better positioned to influence power, and mobile livelihoods such as mobile pastoralism, which have little political power in modern times. In addition, some pastoral mobility arrangements are based on arrangements that are designed by local institutions and led through social understanding, negotiation and agreement among different resource users. They have often adapted to changes in local circumstances over time but increasing pressures from the state and other actors are straining these institutions and arrangements.

Governments have sought to sedentarize pastoralists, fragmenting, enclosing and privatizing shared lands (see Box 1.2) in order to capitalize landownership. Resources to which pastoralists previously had access, such as commons or through coexistence with other tenure types, are often appropriated for industry, mining, restrictive protected areas or intensive crop agriculture. It is therefore imperative to consider resource access arrangements when developing policies for pastoral mobility.

**BOX 1.2****The rangeland household contract system (RHCS)**

The major rangeland management legal and policy framework in China is the rangeland household contract system (RHCS), which was introduced in the mid-1980s in China's main pastoral areas and has now been applied in six main pastoral provinces in northwestern China. According to the Rangeland Law (1985), rangeland is contracted to individual households in order to motivate herders to invest their money and time in grassland improvement. The purpose of the legislation is to prevent further rangeland degradation and to safeguard the livelihood of pastoralists by privatizing rangeland use rights, supporting the ecological, economic and social functions of the rangeland. The system aims to clarify

property rights and coordinate responsibilities at the household level by controlling the number of livestock and promoting the rational use of grassland resources.

In 2011, however, government officials began to identify the failures and negative impacts of the RHCS. After years of policy intervention, grassland conditions remain very poor. In response to these failures, greater flexibility in implementation of the RHCS based on local contexts has been recommended.

The RHCS divides the land rights into landownership (collective ownership of grassland) and use rights, which are themselves divided into grassland management rights separated and land contract rights. The division of grassland tenure rights into three categories – ownership, contract rights and management rights provides an effective way of solving the contradictions in the RHCS.

Livestock mobility is often restricted because of animal health concerns and the risk of zoonoses and contagious animal infections (see Box 1.3), without considering that pastoralists are themselves concerned about disease and have institutions for managing it. Border enforcement and the delimitation of conservation areas are another factor that has altered the routes and trajectories of livestock mobility. Such restrictions in mobility have hampered access to resources, including essential dry season reserves, leading to poorer animal nutrition, productivity and welfare.

While pastoralism is portrayed as backwards, uneconomic and environmentally destructive (Hesse and Thébaud, 2006), pastoralists are criminalized for their mobility. Pastoralists are considered to be invaders when they travel away from their "home" areas and are driven away from other areas by local populations and state forces, especially in the case of cross-border mobility. Insecure access to resources and other factors such as seasonal variability, population pressure, restricted cross-border mobility and expansion of other land uses have led to concentration and competition over available resources. This has resulted in further degradation of rangelands and conflict among pastoralists, between pastoralists and other land users, and between pastoralists and the state.

There is a direct correlation between absent and adverse policies and laws on pastoralism and the level of investment that governments make to support the system. In the absence of legislation, governments are not obliged to commit resources to promoting pastoralism. This leaves pastoralists in a precarious situation, without basic social services in many settings.



## BOX 1.3

**Veterinary fences in Botswana**

In Botswana, livestock movement is restricted by a series of veterinary cordon fences aimed at limiting the spread of animal diseases such as foot-and-mouth disease (FMD) and contagious bovine pleuropneumonia (or “lung sickness”). The “buffalo fence” that runs the breadth of the country is possibly the best known of these fences, which normally seek to separate the diseased livestock in the north from the FMD-free livestock in the south. A vaccination zone and a buffer zone between the areas helps prevent the spread of disease.

Areas declared FMD-free provide livestock farmers in southern Botswana with the opportunity to earn high revenue through meat exports to valuable international markets. While this has increased the value of livestock production and resulted in higher revenues for the livestock industry as a whole, it has also caused a number of problems for local pastoralists and the poorest livestock keepers.

The fences have greatly reduced pastoralists’ capacity to move and respond to climate variability, leading to land degradation and a range of associated problems. Negative

impacts on fauna have also been observed, not only through fragmentation but also through wildlife becoming trapped in the fence and unable to escape from bushfires, or through the creation of “hard edges” that may exacerbate human–wildlife conflict. Fences also require close monitoring in order to be effective, and high maintenance costs result in poor performance, with the fences failing to prevent trespassing by both livestock and wildlife.

More holistic solutions would avoid the need for veterinary fences while restoring landscape connectivity and improving the income of livestock keepers through enhancement of the beef supply chain. Wider and more effective involvement of pastoralist collectives would improve policy formulation and coordination. Participatory mapping of resources and access routes would facilitate reductions in the economic and social impacts on pastoralists. Following recent developments in international sanitary standards, livestock products can be safely exported from FMD-affected areas through adequate product processing, providing higher value at the origin of the supply chain and improving development opportunities for local populations.

Scholarship since the 1990s has shown pastoral mobility to be an expert strategy for overcoming environmental barriers, maximizing production and adapting to changing circumstances. The positive role of mobility is beginning to be recognized, and concepts such as “degradation”, “overgrazing” and “desertification”, which were associated with pastoralism, are being clarified or even challenged. The implication of this is a wider acceptance of mobility as a key strategy for sustainable pastoralism. Recognition of this “mobilities paradigm” in pastoralism (Niamir-Fuller and Turner, 1999) has inspired a new discourse in international development.

These new perspectives on pastoralism and pastoral mobility are now being popularized in discussions about development approaches appropriate to pastoralist areas among development practitioners, climate change experts, conservationists and policy-makers.

Global discourse on the rights of indigenous peoples, devolution of governance and natural resource management, sustainable development and climate change adaptation have also contributed to shifts in policy attitudes. The United Nations Educational, Scientific and Cultural Organization (UNESCO) has recognized the cultural importance of pastoral mobility in the Mediterranean and the Alps as part of humanity's intangible heritage. This new understanding of the critical role that pastoral mobility plays has informed the development of policy and legislative frameworks that facilitate pastoral mobility within and across national borders. In Africa, the Economic Commission of West African States (ECOWAS) and the Intergovernmental Authority on Development (IGAD) have developed transhumance protocols and committed Member States to collaborating in the facilitation of pastoral mobility. Similar efforts to enable and facilitate pastoral mobility are found in bilateral agreements, such as those between Belgium and France, China and Nepal and the Islamic Republic of Iran and Iraq, and legislative frameworks at the national level, such as those in Argentina, France and Spain. These are described further in Chapter 3.

While lauding such advances, the handbook also cautions against legislation that does not address pastoral needs and aspirations, is not mindful of the specificity of the pastoral system it is legislating on, or does not explore the full range of possible legal and policy arrangements that may support mobility. For example, new statutory tenure arrangements tend to delimit pastoral resources and exclude certain users. This can occur when resources are privatized or where community land rights are conferred to pastoralists, limiting their flexibility to adapt to changing conditions. It tends to neglect local and customary resource access arrangements that allow seasonal resource access and overlapping resource use based on a hierarchy of rights among multiple users, and in which negotiation and reciprocity are central features in managing variability in resources. Customary institutions may mediate such arrangements associated with the governance of land and natural resources, while through the "paradox of pastoral land" legislation aimed at securing mobility may inadvertently undermine it. As Chapter 2 further describes, it is imperative to consider resource access arrangements when developing policies for pastoral mobility and to respond to pastoral needs with regards to mobility.

States should therefore seek to recognize pastoralism as a legitimate livelihood system, and mobility as an integral part of that system. Legislation on mobility must seek to safeguard and facilitate pastoral practices in order to ensure a continuous stream of economic and social benefits for pastoralists, countries and the environment. Legislation on pastoral mobility must also ensure timely access to limited resources now and in the future thereby minimizing the risks of both rangeland degradation from excessive grazing pressure and conflict among competing land users. It should also recognize the crucial role of customary institutions in managing mobility and mediating among different user groups.



---

## Chapter 2

# Drivers and determinants of mobility

The nature of mobility and the system of land tenure and administration, among other factors, will vary from country to country, hence so should the legislation and the mechanism that it stipulates for securing pastoral mobility. Pastoral mobility may be enacted in response to multiple drivers and to meet different goals. Having explained this in Chapter 1, it is now important to understand the context in which mobility occurs, the form and shape it takes, and the ways in which it is managed.

Any policy or legal framework for supporting mobility must consider the various factors that have an impact on mobility and respond to the needs and aspirations of pastoralists. It should bear in mind wider considerations of environmental sustainability, equitable land governance and livelihood security. In some instances, it may be enough for the law to recognize the rights of pastoralists to strategic natural resources, guarantee their use of those resources and outline safeguards against the limitation or restriction of their access to the resources. However, it is important that the law stipulates that the land used by pastoralists to acquire access to strategic resources is recognized and protected from incompatible uses. For example, Spain's Act 3/1995 on drove roads provides for tourist and recreational uses of livestock corridors, such as trekking, but only if they do not disrupt pastoral use.

In some cases, a more robust framework and more active involvement of the state in directing and regulating mobility may be required. It is important to have a thorough understanding of the features of the local pastoral system in order to provide the policy provisions that may be most appropriate for the system. In all such decisions it is essential to engage experts from multiple disciplines – as well as policy-makers and pastoralists themselves – in conversations about not only pastoral mobility but also the overall livelihood system.

The following are some of the factors that may influence mobility.<sup>2</sup>

*Biophysical conditions:* The availability of grazing resources depends on plant growth, which in turn depends on rainfall distribution, available moisture, available nutrients and topography. The type of animal raised depends on the local plant resources; for example, camels are raised in hyper-arid landscapes, reindeer in the arctic, llamas and alpacas in the south American highlands, and yaks in the Asian highlands. Pastoral livestock breeds thrive by adapting to local biophysical conditions, in terms of not only their physical make-up but also their emotional and psychological preferences. For example, Scottish and Welsh sheep develop a spatial bond to the topographical and vegetation conditions of their commons through a process called "hefting" (Gray, 2014). Such an understanding is passed inter-generationally

---

<sup>2</sup> The following has been adapted from Manzano, Galvin and Cabeza (forthcoming).



Cattle being herded through a field, the Carrizo Valley, Sinaloa State, Mexico.

from mother to lamb and ensures that the sheep remain within a particular territory even in unfenced commons. The composition of the herd may also be adjusted by changing the proportions of goats and sheep depending on the abundance of shrubs. Other biophysical factors can also play a role, such as the presence of saltlicks or medicinal plants that prevent disease, or adjustments of mobility routes in response to disease outbreaks.

*Resource access:* Although ecological factors may motivate certain patterns of mobility, mobile pastoralism is possible only if food and water resources for both humans and animals are accessible. Resource ownership, availability and access also matter, whether to open-access pastures (Moritz *et al.*, 2013), farm residues, grass depots, dams and wells or any other arrangement that facilitates access to resources.

*Market access:* Pastoralists may consider opportunities for trade and marketing when deciding on migration routes. They may consider the markets not only for meat and milk, but also for allied products such as manure, fibres and hides.

*Access to social services:* Services such as education, health and veterinary care have gained importance over the years. The possibility of access to these and other social services may influence mobility patterns.

*Political, social and cultural objectives:* Pastoralist livelihoods depend greatly on social relations. Maintaining such relations and meeting certain cultural goals can greatly condition pastoral mobility, and may imply attending festivals and celebrations, or going on a pilgrimage. Avoiding enemies or political obstacles, including conflict zones and border areas, are another factor influencing the choice of itinerary.

The diversity of pastoral systems around the world is large, and the factors that structure mobility patterns in each case must be considered when designing appropriate legislation. These factors are not discrete; they overlap in a single pastoral mobility system, adding complexity that must be accounted for in policy design. Moreover, the factors inevitably change over time; for example, through border making, the opening of new markets, the building of infrastructure, changes in overall land planning and changes in the socio-economic dynamics of pastoral settings. Provisions for adapting to such changes

are therefore to be included in legal regulatory texts, but they must always respect the right to livelihoods and self-determination of the pastoralists.

Among the many factors involved, the handbook focuses on two features of the resource base from which to develop a typology of mobility: climate and topography (biophysical characteristics); and land tenure (political economic characteristics). Climate and topography are key natural features that structure mobility by having a direct impact on vegetation availability and livestock breed. Understanding environmental variability over spatial and temporal scales makes it possible to consider future needs and flexibility within the system. Land tenure reflects the local socio-economic circumstances that shape mobility by controlling resource access arrangements. Historically, both variables were the major forces structuring pastoral mobility. Today, mobility can be more clearly conditioned by other factors such as markets and animal disease, but the matrix through which livestock moves is significantly conditioned by climate, topography and tenure.

An incomplete understanding of the relationship between the resource base and pastoral mobility has led to adverse policies (see Boxes 1.1. and 1.2.). The need for secure access to resources and flexible mobility, both socially and spatially, are often seen as competing interests, even though they characterize most pastoral systems. Therefore, as discussed in this section, understanding mobility in relation to features of the resource base provides a deeper understanding of the pastoral system and the ability to respond to pastoralists' needs more effectively.

It should be emphasized that many pastoral systems show a mix of the typologies described in this section, that is, the classifications are not mutually exclusive. In some systems, mobility will have overlaps, not only between the typologies based on climate and vegetation and those based on tenure, but also within each category itself, with "nested mobilities" at various temporal and spatial scales – for example, a single mobility event may involve both livestock corridors (see next subsection) and the crossing of lands (see the subsection on vertical movements in this section). As mentioned in section 5.2, a thorough analysis of pastoral mobility within the local setting must be undertaken before legislating for mobility.

## **2.1 MOBILITY CONDITIONED BY CLIMATE AND TOPOGRAPHY**

### **Horizontal movements**

Horizontal pastoral mobility implies movement in dryland environments in response to rainfall variability and usually without a change in altitude. Pastoralists move to dryer pastures during the rainy season because the nutritional content of such pastures is better (Bremner and De Wit, 1983), but they need to move back to wetter areas during the dry season because of a lack of water and the withering of vegetation. This pattern is observed in several landscapes where significant differences in altitude are not a determining factor for mobility patterns.

In the tropics, temperatures are stable throughout the year and cold is not a growth-limiting factor. These areas experience a specific wet season or monsoon period. Rainfall is a determining factor causing massive differences in plant productivity and output quality. This is the case for most African and south Asian pastoral areas. In these regions, the productivity of the pastures with the highest nutritional quality is restricted in time, while evergreen perennial pastures, sometimes associated with forested areas, are of lower quality and higher parasite infestation but constitute a strategic resource for the dry season and

during drought. The Andean *altiplano*, an important area for South American camelid pastoralism, shows a similar horizontal dynamic of greener dry season pastures (*bofedales*) and drier wet season pastures (Zorogastúa-Cruz; Quiroz and Garatuza-Payan, 2012) because of the *altiplano*'s tropical location and the absence of temperature oscillations between winter and summer, despite being located at an altitude of 4 000 m above sea level.

The Arctic experiences extreme summer–winter temperature fluctuations, sometimes of up to 80 °C, which require the moving of livestock to graze on different vegetation types: from nutritious grasses in the open tundra in summer, coinciding with the period when reindeer calve, to a “survival diet” based on lichens from the forested taiga, which is also more sheltered from winds, in winter (Paine, 1988).

The cold steppe of central Asia (including Mongolia) also displays horizontal variability, although the absence of trees causes more subtle differences among the vegetation types used in each season. Animals survive the winter mostly on dead grass preserved under the snow cover, while water scarcity is the limiting factor in summer (Fernández-Giménez, 1999). A high degree of interannual variability, notably with *dzud* events,<sup>3</sup> also causes shifts in the types of pastures used (Fernández-Giménez, 2002).

### Vertical movements

Vertical movements imply that altitude is the factor that determines livestock mobility. Shepherding in mountain areas is a typical example in which mobility follows a more linear pattern with more fixed routes and return to the same location year after year. Such movement is also referred to as “transhumance”.

Mountain pastoralism is practised in most mountain systems that are subject to, at least, variable temperature. In summer, mountain highlands host high-quality grasses where wild and domestic ruminants calve. Through migration, livestock avoids competition with crop agriculture in mountain valleys and surrounding plateaux, while being able to profit from fallow land and stubble in those areas in winter. In that season, livestock avoids the low temperatures of the highlands (with or without snow) by moving to the valleys, where preserved hay or stubble may be an additional resource for surviving the winter. Such pastoralist systems show resilience to economic change in developed countries (Bunce *et al.*, 2004).

Alleged “inverse transhumance” patterns in Languedoc, France and the Burren, Ireland (Biber, 2010) are to be understood as horizontal rather than vertical dryland mobility because they involve very little change in altitude and pastoral movement is instead oriented by water availability. Furthermore, while vertical transhumance on common land is well known, there are many cases in which such a practice occurs on private or state land (see Box 2.1).

Flood areas are of high relevance in major Latin American and African wetlands and are important resource areas elsewhere. They are found where large rivers cross flat areas that are, to some degree, arid. River floodplains are seasonally flooded, forcing livestock to move

<sup>3</sup> *Dzud* is a Mongolian term for harsh winters that result in large livestock losses. There are different types of *dzud*: *tsagaan* (white) when particularly abundant snowfall prevents livestock from reaching grass; *khar* (black) when lack of snow causes water scarcity; *tumer* (iron) when a short window of warmth melts the snow that later turns into ice, preventing livestock from reaching the grass; *khuiten* (cold) when very cold temperatures increase the energy demand of animals while preventing them from grazing; and *khavsarsan* (combined) when two or more types of *dzud* occur at the same time.

**BOX 2.1****Vertical transhumance networks through private land in the south of France**

*Drailles* or *carraires* are the grazing networks found in the south of France. They are utilized by transhumant shepherds during their migrations between wintering and summering pastures. While similar in their organization to other demarcated routes, their defining feature resides in the ownership of the land being private but subject to the right of passage. Although many shepherds still utilize the *drailles*, the decline of transhumance in France means that most of this network has disappeared owing to disuse and appropriation, particularly for agricultural cultivation.

Shepherds have enjoyed easy passage, secured by customary law, on these routes, regardless of who owns the land. In 1996,

the Aix-en-Provence court of appeal made a decision that recognizes *carraire* as a public utility easement that obliges landowners to respect the right of passage of mobile shepherds. According to this decision, when the route has not been used but a justified reason for utilizing arises, the municipality's responsibility is to restore the route.

These itineraries were drawn up in the nineteenth century on cadastral maps showing minimum and maximum widths, but following abandonment of pastoralist use, their preservation is jeopardized as the routes have been appropriated by individuals and municipalities. Their history and the legislation associated with the itineraries provide a useful example of the conservation of customary livestock corridors that traverse private land without incurring costly expropriation procedures.

to higher ground during the wet season, but making valuable pasture resources available during the dry season – sometimes of particularly high quality (López-Hernández, Hernández-Hernández and Brossard, 2005). The cyclic dynamic of natural exclusion in these systems, with times of flooding where no animals can graze, may be a decisive factor in open access systems where no provisions for restricting traditional governance are needed (Moritz *et al.*, 2013).

## 2.2 MOBILITY CONDITIONED BY LAND TENURE

### Livestock corridors or demarcated routes

Some of the most paradigmatic examples of pastoral mobility arise when mobility follows fixed routes. Such routes are acknowledged either legally or customarily by national government, local government or local institutions, thereby facilitating transit and impeding encroachment by other users. The routes allow transit between key resource areas and often consist of a network with primary, secondary and tertiary levels (fractal structure). In Spain, pastoral mobility corridors and areas have been shown to correspond to ancient wildlife migratory corridors (Manzano and Casas, 2010). Hence, the ecological factors that they share include a response to seasonal variability in grass production and optimization of year-round grazing across different climates, vegetation types and topography.

Given the ease of setting up and maintaining the corridors, such arrangements for securing pastoral mobility have been widely applied in several countries, including in the *vias pecuarias* between the southern lowlands and the northern and central mountains of Spain



(Manzano and Casas, 2010), the *callejones de arreo* between the Monte desert and the Andean highlands in Neuquén, Argentina, the cross-border transhumance corridors between Sahelian and coastal countries in West Africa (FAO, 2012a), and the travelling stock routes between the Pacific coast and the outback in New South Wales, Australia (see Box 2.2).

Often secured as resource networks rather than tunnel-type corridors, such corridors help to prevent conflict between farmers and herders by ensuring that transiting pastoralists and their herds have access to fodder resources, water and markets, and hence do not encroach on or trample cropland. Community arrangements between crop farmers and mobile pastoralists aimed at avoiding conflict have therefore facilitated the emergence of such routes (Alidou, 2016).

The corridors need to be protected from encroaching interests. They are found to be useful to veterinary services as they facilitate the monitoring and treatment of animal diseases by funneling migrating herds at times of migration (Cameron and Spooner, 2010), and their demarcation provides an opportunity to offer other adapted services such as social services. Recently, industrial countries have been witnessing calls for the maintenance

#### BOX 2.2

##### **Travelling stock routes in Australia**

Australia has a network of traditional pathways known as travelling stock routes that link important resources for the survival of both humans and animals in arid landscapes. The importance of pastoralism as an economic activity in the Australian outback during European colonization, the employment of indigenous people endowed with extensive traditional knowledge in such activity, and the need to move livestock to distant markets before the introduction of long-distance freight transport facilitated the adoption of such pathways as livestock corridors. Australian pastoral mobility, performed mainly in the arid areas and the mountains surrounding them, is a mixture of opportunistic movements in landscapes of changing productivity, and funnelled movements through established corridors that link important nodes, such as watering areas or vegetation points that are usually 10 to 20 km apart, or markets.

In New South Wales, the network consists of more than 6 500 travelling stock reserves and 2 million ha of land. In Queensland, the network includes 72 000 km of routes and up to 2.6 million ha of land. The land occupied by the network is considered crown land and is administered by the government. Permits for using the stock routes are issued by local governments guided by the Stock Route Management Act of 2002. At the time of writing, this legislation is being reviewed and may be replaced.

While mobility remains a fundamental part of the modern livestock management system in Australia's vast arid landscapes, the stock routes, also known as the "long paddock", have experienced a decline following the introduction of motorized transport such as railways and trucks. Their value has however been recognized as cultural heritage, providing multiple ecosystem services (soil fertility, pollination, landscape connectivity) and supporting biodiversity conservation, calling for an alliance between nature conservationists and livestock keepers.



*A Maasai pastoralist taking cattle to a local livestock market, Narok, Kenya.*

of pastoral mobility corridors, despite their reduced use by livestock, as a result of agricultural intensification. Such corridors have important cultural value and facilitate important ecological processes that make their conservation worthwhile from an environmental perspective, such as the maintenance of seed dispersal and pollinators, the provision of landscape heterogeneity and their role as biodiversity corridors.

The stable demarcation of corridors also makes it easier to implement cost-effective monitoring tools, such as Geographic Information Systems (GIS). Although corridors may be too spatially fixed to respond to opportunistic use of resources, both the fractal network of corridors and the mixed character of some pastoral mobility systems, which use both fixed and variable resources, should be taken into account.

### **Commons or public land**

Mobility through commons or public land occurs in areas that are not subject to exclusive uses – users with purposes other than pastoral mobility are not excluded. Tenure arrangements may range from open access for all users (Moritz *et al.*, 2018), community-governed resource access, cooperative-managed access, state-governed access, access by village councils, etc. Such areas may include land classified as open, grazing reserves and seasonal pastures, commons, wastelands, forest resources, etc., and may be used by a community of pastoralists or multiple pastoral communities, or non-exclusively by a range of users including hunter-gatherers and crop farmers.

Use of such resources may vary over time and space and experience overlapping uses governed by a hierarchy of rights among users. Environmental constraints such as aridity or flooding may regulate mobility. The causes of loose spatial constraint of pastoral mobility are diverse and often linked to local ecological characteristics. There is no strong need to funnel the mobility of livestock, even when there is heterogeneity in the distribution of resources (water, shaded areas, rest areas). Community-based management often ensures the sustainability of shared grazing resources (see Box 2.3).

## BOX 2.3

**Agdals in Morocco: Community management of shared grazing resources**

The term “*Agdal*” refers to both communal grazing land and its customary management institution among the Amazigh mobile pastoralist community in Morocco. While herd ownership in the community is almost always private, grazing occurs on collective land. *Agdal* aims to maximize the use of fodder resources while also securing the sustainability of the land. It regulates access to communal resources mainly by fixing the dates during which the pastoralists have access to the *Agdal*. This key feature allows the vegetation to complete its reproductive cycle before grazing is opened to flocks, thus maintaining plant diversity.

When the *Agdal* is closed for grazing, communities appoint guards to ensure that there are no transgressions. The guards have the power to impose sanctions in the event of violation of the grazing ban. *Agdal* also regulates the rights of each household and each group within the community to access the resource, to the placement of tents, to access water points, to mobility to and within the

rangelands, and to transhumance cycles. Such decisions are made by community members, and must be adhered to by all. The customary governance body for the decision-making process is the *Djema'a*, which is an assembly in which all household heads or everyone holding rights to the resource participate in voting and discussions.

In addition to this customary arrangement, seasonal migration is also regulated by statutory law that requires community members to acquire official permission before they migrate each year. They also need to respect and avoid private land on their migration routes. The recent Law 113.13 on Pastoral Migration and the Creation and Management of Pastoral Areas has opened pastures to people other than members of pastoralist communities. This has received criticism because indigenous communities were not fully consulted, risking conflict, and because it undermines the sustainability of the management system. Morocco has a pluralistic legal system, but customary law is considered secondary and can be revoked in favour of religious or statutory law. This has made the *Agdals* vulnerable to expropriation and privatization.

Pastoralists may or may not spend time at a fixed location year after year. In academic literature, such movement is typically referred to as “pastoral nomadism”. Decisions are often made on the move, when pastoralists go opportunistically to where the best resources are available. Such opportunistic mobility is often seen as random or unplanned by authorities, which may not fully understand the its logic. However, pastoralists’ movements have the aim of optimizing livestock productivity and are very carefully planned given the high risks associated with mobility (Table 1). Most of the nomadic systems described in the literature are examples of the opportunistic pastoral mobilities described in this section. Such sustainable mobility practices can resemble rotational, holistic or Voisin “rational grazing” practices, in which rangelands are divided into paddocks, grazed for a season and then left fallow to be replenished before the pastoralists return, and that are often perceived to be more modern (Menestrey Schwieger and Mbidzo, 2020).

TABLE 1  
Indigenous typologies of and reasons for pastoral mobility in east Africa

| Typology and reason   | Local name              |                   |                  |                           |
|---|-------------------------|-------------------|------------------|---------------------------|
|   | Borana                  | Afar              | Somali           | Hamer                     |
| Resource management: search for pasture and water                 | <i>Dheedumsa</i>        | <i>Leda-guran</i> | <i>Hayan</i>     | <i>Beriqe (bona weda)</i> |
| Movement to new pasture to preserve dry season grazing            | <i>Godaansa dheeda</i>  | <i>Budda</i>      | <i>Naqraadis</i> | <i>Darensa</i>            |
| Movement to avoid insecurity                                      | <i>Baqa</i>             | <i>Dabo</i>       | <i>Baqa</i>      | <i>Shaookee</i>           |
| Movement for social ceremonies                                    | <i>Godaansa jila</i>    | ----              |                  | <i>Misha weda</i>         |
| Movement to prevent disease and find clean location for livestock |                         | <i>Gabagurro</i>  |                  | <i>Shaookee</i>           |
| Movement to salt and mineral resources                            |                         | <i>Beda</i>       |                  | <i>Kooti weda</i>         |
| Movement at the start of the rainy season for fresh pasture       | <i>Dheeda badheesaa</i> |                   |                  | <i>Bargi weda</i>         |

Source: Compiled by Ced Hesse from various editions of the pastoral training programme of the International Institute for Environment and Development (IIED). Available at <https://www.iied.org/pastoralism-policy-training-addressing-misconceptions-improving-knowledge>.

In east Africa, pastoralism on land under common usage is widespread, and privatized land used for crop agriculture traditionally occupies far less land. Pastoralists have customary usufruct rights that allow them access to the land and utilization of the resources. Pastoral mobility in such settings is also influenced by factors such as the environment and markets. For mobile pastoralism, milk economies provide an economic advantage over crop agriculture: the bimodal rainfall pattern in a mainly arid landscape extends the lactating season throughout the year (Marshall, 1990).

In India, some pastoralists graze their animals in areas that are administratively considered as forest land and that fall under state management. Through locally agreed arrangements, in some cases statutory and in others informal, the pastoralists are able to manage their mobility, although they are also often subject to displacement by state authorities.

### Privately owned land

Pastoral mobility on private land is often seen in crop–livestock systems in which livestock are herded through privately owned farmland. In some cases, a single area of land is cultivated by crop farmers and grazed by pastoralists at different times of the year. There is great scope for interdependence and mutual benefit between crop agriculture and pastoralism.

In west Africa, the drier rangelands bordering the Sahara desert offer resilient, nutrient-rich pastures where livestock herds calve in the rainy season (Breman and de Wit, 1983). Further south, in areas of higher rainfall, farmers plant and grow their crops in the rainy season. In the dry season, pastoralists need to migrate south because of lack of water and reduction of pasture, while crop farmers have traditionally depended on manure from the pastoralists' herds to replenish the fertility of soils (Powell *et al.*, 1996). Crop residues may then offer the best fodder sources and may be chosen by pastoralists, with timing being



*A shepherd grazing his sheep in the fog in Ain Draham, Tunisia.*

a key factor around which pastoralists adjust their mobility. Pastoralists often make oral arrangements with individual crop farmers or local traditional community leaders for permission to graze crop residues and build temporary shelters in the fields.

Such systems can collapse under the intensification of agricultural production (the use of mineral fertilizers, pesticides, herbicides, etc.), the privatization of grazing resources and the suppression of mobility. The systems can also collapse when crop farmers invest in livestock and require the crop residues from their fields for their own livestock. The collapse of Sahelian pastoral mobility will have dire consequences for social, economic and environmental sustainability. Manure is generally of major importance in smallholder crop farming systems in developing countries, while in countries where the crop and livestock sectors have been industrialized, livestock excreta has become problematic waste that needs costly treatment. Other aspects of agricultural intensification that will cause disruption to the system include the introduction of agricultural infrastructure such as irrigation fields, dams or canals, or government-driven land schemes such as compensation for farmers.

Traditional relationships between crop farmers and mobile pastoralists are therefore mutualistic in nature, so rather than competition for resources, they are based on mutual benefit. Box 2.4 presents a case of such a relationship in western India, in which legal or customary regulation of mobility has not been required or has been weak. Increasing conflict and instability in the Sahel region (Manzano and Sloomweg, 2017), increased marginalization of agropastoralists in India (Sharma, Koller-Rollefson and Morton, 2003; Mehta and Srivastava, 2019), and other cases elsewhere may reflect the consequences of intensifying crop production systems and disrupting the previous benefits. Other types of benefit, such as market access and maintenance of social ties, are also lost when these mobility systems are lost (Fernández-Giménez and Le Febre, 2006). These systems are therefore in urgent need of legislation that can protect them from disruptive forces while allowing flexibility and self-organization.

**BOX 2.4****Farmer–herder relations in western India**

The Rabari are a prominent pastoral community in western India. Semi-nomadic Rabari shepherds from Kachchh, a border district in Gujarat State of western India, move with their sheep and goats throughout the year, while retaining bricks and mortar houses in their villages. They use opportunistic mobility to take advantage of agricultural “hotspots”, grazing their herds on cotton and wheat crop residues in the winter and summer months. During the monsoon, when fields are sown, the shepherds graze their herds mainly on fresh grasses in Kachchh.

While the arid region of Kachchh is largely rainfed, farms in the Saurashtra region and central Gujarat have canal or borewell irrigation. While the overall pattern of mobility at the community level is known, each migrating group may follow diverse routes based on climate conditions and their own goals. They time their movements based on harvest times, and manage flock sizes to match fodder availability. In this way, pastoral mobility allows pastoralists not only

to overcome scarcity of resources in their home regions, but also to procure fresh and nutritious fodder for their animals.

The Rabari pastoralists arrange access through direct negotiation with farm owners, and make migration decisions on the move. Through a mutually beneficial arrangement, the shepherds obtain access to grazing while the farmers receive manure. The shepherds may even receive money or grain in exchange for their manure, greatly supplementing their incomes from animal sales. This gives them access to complex “mosaic property regimes” (Robinson, 2019), from mediated access to private property, to commons, state forest land, state grazing land and wasteland.

Rabari pastoral mobility is self-organized and accepted by state agents and other communities. However, Rabari pastoralists face land appropriation, industrial expansion, changing climate and new aspirations. The state must therefore seek to secure mobility without altering the inherent flexibility of the system or delimiting resources. Instead it should seek to foster peaceful and meaningful farmer–herder–state relations and provide adapted social services.

This chapter elaborates on pastoral mobility in order to develop an understanding of its drivers and determinants, highlighting the various factors that legislators must understand when developing legal frameworks for supporting pastoral mobility. Such understanding is key to comprehending the following chapters which draw on international, regional and national conventions, agreements and frameworks to define the central thematic and process considerations that support the development of national level legislation in favour of pastoral mobility, and the key substance and process elements that should be covered in national legislation on pastoral mobility.



**PART II**

**Developing policy and legal  
frameworks for pastoral mobility**





## Chapter 3

# Conventions supporting pastoral mobility

Countries need to enact appropriate legislation to secure the benefits discussed in the previous section. This chapter presents laws, conventions and policies at various scales for directing and inspiring legislation on pastoral mobility. Some of the frameworks discussed oblige states to develop appropriate legislation on pastoralism and mobility.

At the international level, the United Nations (UN) and its many agencies provide frameworks and platforms to guide discussion of pastoralist issues. They establish principles that states must adhere to and may incorporate into their national frameworks. In addition, regional and bilateral agreements may provide contextual guidance, and may be the appropriate scale for processes that govern cross-border mobility. Country examples illustrate the practical application of the different policy instruments and approaches available in legislating for mobility.

### 3.1 INTERNATIONAL INSTRUMENTS

A number of international instruments negotiated within the framework of the UN are relevant to the promotion of pastoralism and pastoral mobility. The main ones are summarized in the following paragraphs.

*The Universal Declaration of Human Rights* was proclaimed by the UN as a common standard for the promotion of respect for the human rights and freedoms of all peoples and nations and for securing universal and effective recognition and observance of those rights. Of direct relevance to pastoralists are the right to freedom of movement and residence within borders, and the right to leave and return to one's country (Article 13); and the right to social security and the realization of economic, social and cultural rights (Article 22) (see Box 3.1.). For pastoralist communities, it is through the practice of pastoralism and pastoral mobility that those rights and freedoms are enjoyed, and any curtailment of pastoralist practices violates them.

*The Indigenous and Tribal Peoples Convention (ILO Convention 169)* adopted in 1989 by the International Labour Organization (ILO) commits states to taking appropriate measures to safeguard the right of indigenous peoples to use lands that are not exclusively occupied by them, but to which they have traditionally had access for subsistence and traditional activities, paying particular attention to the situation of nomadic peoples (Article 14). The convention enjoins governments to "take appropriate measures, including by means of international agreements, to facilitate contacts and cooperation between indigenous and tribal peoples across borders, including activities in the economic, social, cultural, spiritual and environmental fields" (Article 32). States are required to propose legislative and other measures that give effect to the provisions of the convention (Article 33). The Indian Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act of 2006, under the Ministry of Tribal Affairs of India, applies the convention and recognizes the right

## BOX 3.1

**Relevant provisions of the Universal Declaration of Human Rights****Article 13**

1. Everyone has the right to freedom of movement and residence within the borders of each State.
2. Everyone has the right to leave any country, including his own, and to return to his country.

**Article 22**

Everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality.

of forest dwelling communities, including mobile pastoralists, to land and other resources.

*The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)* of 2007 recognizes and reaffirms the existence of collective rights that are indispensable for the existence, well-being and integral development of indigenous peoples and asserts their right to be secure in the enjoyment of their own means of subsistence and development, and to engage freely in all their traditional and other economic activities (Article 20).

*The United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP)*, adopted in 2018, mandates states to take legislative, administrative and other appropriate steps to ensure respect, protection and fulfilment of the rights set out in the declaration.

*UNESCO's Intergovernmental Committee for the Safeguarding of the Intangible Cultural Heritage* included the seasonal droving of livestock along migratory routes in the Mediterranean and the Alps on its Representative List of the Intangible Cultural Heritage of Humanity in 2019 on the application of Austria, Greece and Italy. The committee noted that the practice of transhumance contributes to the maintenance of biodiversity and the sustainable use of natural resources; shapes relations among people, animals and ecosystems; enhances the ties between families and communities; shapes landscapes; and promotes cooperation towards social inclusion and food safety. Through such recognition states commit to investing in such heritage and ensuring that it is maintained. Such recognition may have a catalytic effect: in Spain, for example, the state is obliged to safeguard the intangible cultural heritage under Act 10/2015, to which transhumance was added by Royal Decree 385/2017.

*The Voluntary Guidelines on Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*, adopted in 2012, constitute a commitment by the international community to improving land governance on the basis of respect for principles of human rights, equity, gender equality, rule of law, transparency and accountability. Technical guide number 6 on Improving governance of pastoral lands provides



*A farmer herding sheep in Dushanbe, Tajikistan.*

insights into how the voluntary guidelines may be implemented in pastoral settings, with relevant action areas for mainstreaming the guidelines into national tenure governance frameworks and giving effect to their provisions.

Alongside these instruments, pastoralists have also sought representation in UN agencies and forums such as the United Nations Environment Programme (UNEP), the United Nations Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD) and the United Nations regional Framework Convention on Climate Change (UNFCCC). They have had some success; for example, the second *UN Environment Assembly* (UNEA-2) held in 2016 adopted a resolution calling on UNEP to contribute to raising global awareness of sustainable pastoralism and rangelands in collaboration with other UN agencies, relevant conventions and partners. In 2016, the *13th Conference of the Parties (COP 13)* of the CBD endorsed statements expressing the need to support pastoralism for the conservation of biodiversity, enhanced food security, drought and disaster risk management and the restoration of rangelands. With increasing recognition of rangelands as rich and productive landscapes, and the role of local communities in preserving them, new avenues for advocacy have opened up (see Box 3.2).

### **3.2 REGIONAL AND BILATERAL CONVENTIONS**

Regional and bilateral conventions often provide practical guidance on how to legislate for pastoral mobility at the national level. A detailed review of regional and bilateral agreements and frameworks in support of mobility can be found in the 2018 FAO and IUCN publication *Crossing Boundaries: Legal and Policy Arrangements for Cross-Border Pastoralism*. This section provides only a brief overview of regional and bilateral instruments.

*The Policy Framework for Pastoralism in Africa*, approved in 2011, provides guidance on, and promotes the development and implementation of, pro-pastoral policies by African Union Member States. Among the eight principles articulated in the framework is the importance of strategic mobility for efficient use and protection of rangelands and

## BOX 3.2

**Other effective area-based conservation measures as an international framework**

**Aichi Target 11 states that “By 2020, at least 17 percent of terrestrial and inland water, and 10 percent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes” (CBD, 2010).**

This target of the CBD presents a new opportunity to acknowledge the important contribution of mobile pastoralists and the rangelands and migration routes that they manage.

In the voluntary guidance document drafted by the World Commission on Protected Areas task force, an “other effective area-based conservation measures (OECM)” is described as “a geographically defined area, other than a Protected Area, which is governed and managed in ways that achieve positive and sustained outcomes for the *in-situ* conservation of biodiversity, with associated ecosystem services and cultural and spiritual values” (CBD, 2018; Jonas *et al.*, 2018).

Mobile pastoralists and the lands that they manage are consistent with the core elements

of the OECM definition. The most significant elements that combine to constitute an OECM are:

- a geographically defined space;
- an area that is not protected;
- an area that is governed and managed (including through customary governance and management structures);
- positive biodiversity outcomes and effective *in-situ* conservation;
- a long-term timeframe (conservation outcomes are expected to continue).

As described in this handbook, the land and migration routes that mobile pastoralists have managed over millennia are strong candidates for consideration as OECMs in protecting threatened species and habitats; ensuring the ecological integrity of landscapes and supporting ecological processes; maintaining areas of importance for ecological connectivity; and providing critical ecosystem services such as carbon storage, etc.

As governments, conservation and other implementing agencies are often underresourced and understaffed (Jonas *et al.*, 2018), the recognition and engagement of mobile pastoralists within the OECM framework could contribute to improved management and restoration of areas that may usefully support the long-term *in-situ* conservation of biodiversity (Yılmaz *et al.*, 2019).

adaptation to climate change, making the development of supportive land tenure policies and legislation and regional policies that facilitate cross-border movements and livestock trade essential. The framework calls for policy support for mobility within and among countries through processes that ensure dialogue and the effective engagement of both pastoralists and non-pastoralists.

*ECOWAS decision on the regulation of transhumance between Member States* of 1998 provides for the free passage of all animals across the borders of all Member States. Transhumance is conditional on issuance of an ECOWAS International Transhumance Certificate,

which contains details on “the composition of the herd, the vaccinations given, the itinerary of the herds, the border posts to be crossed, and the final destination” (Article 5). The certificate enables authorities to monitor herds before they leave the country of origin, protect the health of local herds, and inform host communities of the arrival of transhumance animals.

While in the host country, herders are protected and their fundamental rights are guaranteed, while they must comply with specific conditions (see Box 3.3). The decision establishes an arbitration commission composed of representatives of the herders, farmers, livestock and agricultural officers, officials from the ministries of forest and water resources and local political and administrative authorities, and serves as a framework for the resolution of disputes between herders and farmers.

While the decision was innovative in its provisions and effect, its implementation has experienced challenges for regional agreements that depend on national policies and laws for their implementation. Regulations recently enacted in a number of ECOWAS Member States have tended to depart from the spirit of the decision and to undermine its effective implementation (Kratli and Toulmin, 2020).

*The Intergovernmental Authority on Development (IGAD) Transhumance Protocol* was approved in early 2020 by IGAD for its eight Member States in eastern Africa along the lines of the ECOWAS International Transhumance Certificate. It commits Member States to harmonizing legislation and policies on livestock and pastoral practices, animal health and land use in order to facilitate its implementation. Ministers responsible for livestock and/or pastoral development in Member States coordinate and monitor implementation of the protocol, with technical support from the IGAD Centre for Pastoral Areas and Livestock Development. Disputes arising from implementation of the protocol are settled by local institutions, the IGAD Conflict Early Warning and Response Mechanism and bilateral mechanisms.

### BOX 3.3

#### **Conditions and guidelines for mobility in the ECOWAS decision**

1. Herds to cross through specified entry and exit points according to an approved itinerary.
2. Herds to follow the transhumance route approved and specified in the transhumance certificate.
3. Herds not to cross borders during the night.
4. Herds to be under constant guard from a sufficient number of herders, while on the move or grazing.
5. Herders to be at least 18 years of age and to hold valid identity papers issued by competent authorities in the country of origin.

(Articles 5, 7, 8, 10, 11 and 12)

The IGAD protocol is a positive development in regions where the seasonal movement of pastoralists across national borders is a major issue with significant challenges for communities and governments. However, the aim of creating transhumance corridors (Article 4) does not seem to take into account the specificities of east African pastoral mobility, which shows an opportunistic pattern (see subsection on Commons or public land in section 2.2 of this document), unlike west Africa (FAO, 2012a, Alidou, 2016), for example, where corridors may be more appropriate.

*The European Union's Common Agricultural Policy (CAP)* articulates guidelines for supporting and improving agriculture. The CAP's detailed implementation framework is set at the country level in line with the principle of subsidiarity. Regulation number 1307/2013 of the European Parliament and the Council establishes rules for direct payments made to farmers and pastoralists under support schemes within the framework of the CAP. Commission Decision number 2010/300/EU amended Decision number 2001/672/EC as regards time periods for the movement of bovine animals to summer grazing areas.

There are also many bilateral agreements on pastoral mobility that have been signed between countries. While the level of detail varies from one agreement to another, bilateral agreements generally make provisions on eligibility (who and what are covered), spatial coverage (geographical areas to which the agreement applies), documentation needed, timing of transhumance (when and for how long), control and enforcement measures, the institutional framework (including laws and regulations as appropriate) for coordinating implementation, and dispute resolution mechanisms.

### 3.3 NATIONAL AND SUBNATIONAL LEGISLATION AND POLICIES

Several countries have legislated on pastoral mobility using various approaches that provide important examples for legislation in other countries. The following are some examples.

*Spain's law on cattle trails* (1995) emphasizes the social and environmental importance of seasonal livestock migration. It notes that the cattle trail network plays a critical role in the extensive livestock production system, making possible the productive use of "underused grazable resources". The law stipulates that cattle trails are used primarily to facilitate the movement of livestock and restricts other uses to those that are compatible or complementary to such movement. As well as commitments implied by the recognition of transhumance as intangible cultural heritage (see section 3.1), some regional governments support transhumance on the hoof for herds of limited size, and at an expenditure of EUR 4/day/livestock unit (Government of Extremadura, 2019) or EUR 9/head/livestock unit for the whole route (Comunidad Foral de Navarra, 2019).

*The Stock Route Management Act of Queensland, Australia* (2002) is the legal framework for managing the network of stock routes and reserves for travelling stock in the State. It articulates principles of network management, provides for planning of the management of routes and the monitoring of livestock movements, and allocates responsibilities for management. It mandates the development of a stock route network management strategy at the State level, but with management devolved to the local government level according to a stock route network management plan. The plan elaborated in Box 3.4 is valid for four years and developed through a process that involves public participation.

## BOX 3.4

**Outline of a stock route network management plan**

The plan may include provision for:

- (a) identification of the section of the stock route network that is in the local government's area;
- (b) achievable objectives under the plan;
- (c) strategies, activities and responsibilities for achieving the objectives;
- (d) strategies for informing the local community about the content of the plan and the achievement of the plan's objectives;
- (e) monitoring of implementation of the plan and evaluation of its effectiveness;
- (f) other matters that the local government considers appropriate for management of the stock route network in its area.

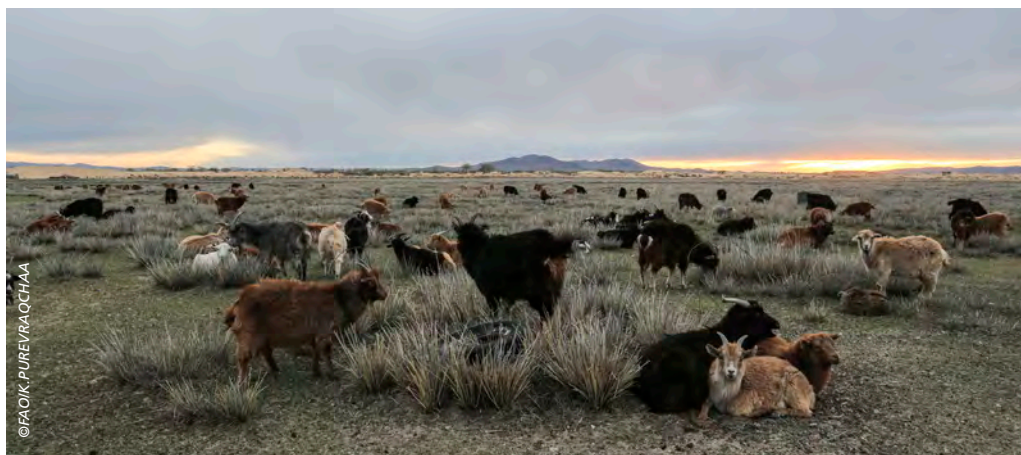
(Section 105(2))

The act stipulates that a local government "must, as far as practicable, implement its stock route network management plan" (Section 112).

*Morocco's law on transhumance and rangeland management* (2016) articulates the principles and establishes the institutional framework for management of rangelands and pastoral mobility, guarantees pastoralists' rights of access to and use of rangelands and their resources, and provides for the settlement of disputes that may arise in the course of transhumance. The law establishes a national commission mandated with the planning, establishment and management of transhumance corridors. The commission works closely with regional committees established in each pastoral region of Morocco. The law also provides for the establishment of pastoral associations at the local level and an umbrella association, which serve as the framework for consultations and dialogue among different actors and stakeholders and for dispute resolution. Mobility is conditional on herders obtaining authorization (*autorisation de transhumance pastorale*) from the competent authority. The authorization contains details on the identity of the owner of the herd, the herd's composition by number and species, its place of origin, the route to be followed, the destination, and the duration and the period for which the authorization is issued (Article 24).

*The Pastoral Code of the Niger* (2010) states that mobility is a fundamental right of pastoralists that is recognized and guaranteed by the state and local government authorities, noting that it constitutes a rational and sustainable mode of exploitation of pastoral resources. The code stipulates that pastoral mobility can be hindered only temporarily and for reasons related to the security of people, animals, forests and crops under the conditions defined by law. Developing policies at the local scale is often effective owing to the diversity of pastoral systems within each country. Such policies offer great possibility to develop contextually appropriate instruments for safeguarding mobility and can complement national legislation.





Goats resting in a field at sundown in Bourd Soum, Mongolia.

The report of the Grazing Advisory Committee on the grazing policy of Himachal Pradesh (1952) provides an example of a case where the subnational is the appropriate scale for developing policy and legal frameworks because of the nature of the local pastoral system. Himachal Pradesh is a province in northern India in the lesser Himalayas where a Grazing Advisory Committee regulates mountain transhumance through a licensing system. The committee's report recognizes that, owing to the steep slopes and small farm sizes, the population cannot live on crop farming alone. Grazing rights established in the 1960s provide pastoralist families with licences to use specific grazing grounds called *dhars*. The licence is passed from generation to generation, with the grazing ground being split among siblings or consolidated when one sibling withdraws from pastoralism. The policy is limited, as it does not take into account new pastoralists or changes in practices and management institutions, but the pastoralists manage by making local alliances and sharing grazing grounds.

Law number 3016 of the Province of Neuquén in Argentina (2016) guarantees mobility between summer and winter grazing areas for pastoralist families and their livestock, recognizing this as integral to environmental conservation and respecting the natural and cultural heritage of the region. The law affirms that livestock migration corridors be used primarily for pastoral mobility, and prohibits their use for non-complementary or incompatible purposes. Complementary uses may be authorized, on application, by the Undersecretary for Lands. The law establishes a commission that manages the network of corridors and oversees implementation of the law.

The examples presented in this section provide examples of legislation for the facilitation of pastoral mobility at both the national and subnational levels and in various political and legal systems. The next chapter identifies issues that need to be taken into account when legislating for pastoral mobility in order to ensure that the resulting legislation has a realistic chance of being implemented successfully. Experience with existing legislation on pastoral mobility has shown that unless the issues identified in the chapter are adequately taken into account, a piece of legislation that looks good on paper may have little impact on the ground, resulting in frustration on the part of pastoralists.

## Chapter 4

# Preliminary considerations for legislating for pastoral mobility

Among the fundamental considerations to be taken into account when formulating legislation in support of pastoral mobility are the nature of the pastoral system in the country; the policy, legal and institutional environment in the country; and the process of legislating and reviewing that will ensure fair representation and buy-in of key stakeholders. Understanding these aspects and bearing them in mind facilitates the development of robust legislation and its full implementation.

The following are some process considerations in legislating for pastoral mobility.

### 4.1 ANALYSING THE LEGAL AND POLICY CONTEXT

*Assess existing policies, laws and institutions that have a bearing on pastoral mobility.* This entails carrying out an assessment of the national political, legal and institutional environment within which any legislation must operate. It involves a review of the policies, laws and institutions related to pastoral mobility in order to understand the opportunities and challenges. Where policies and laws on pastoralism and pastoral mobility already exist, they should be analysed in terms of their strengths and weaknesses in order to determine whether facilitating pastoral mobility calls for the amendment of existing laws or the introduction of new ones. The assessment should also pay attention to the interaction of various sectors and the hierarchies of laws governing those sectors. These include policies, laws and institutions relating to governance, decentralization and development planning; livelihood, agriculture and rural development; social services provision; land, environment and natural resources management; animal husbandry and health; livestock trade and markets; and climate change and resilience, as all these sectors have a direct bearing on the prospects for successful implementation of a law on pastoral mobility. Where there are competing interests, laws must clarify the relationships between, for example, community use of resources versus enclosure for conservation or appropriation for infrastructure development. Relationships among various governance bodies and the management of those aspects must also be understood. Box 4.1 outlines conflicting laws relating to pastoralism in Sweden, which were instituted through various approaches and mechanisms that need to be harmonized.

Such an assessment of the setting should be mindful of the legal tradition of the country. For example, in some countries, laws are highly codified and seek to regulate for every eventuality. They may not be able to accommodate the flexibility displayed by pastoral mobility. A similar challenge exists in countries where the legal system and tradition privilege private property and exclusion. The extent to which such a legal system can effectively support rights to the commons should be considered.

## BOX 4.1

**Overlaps and contradictions in Swedish laws affecting the Sámi**

Following a vote in favour for the UNDRIP in 2007, the Swedish Constitution explicitly recognized the Sámi as a “people” on 1 January 2011 (UN Human Rights Council, 2011), stating that “opportunities of the Sámi people and ethnic, linguistic and religious minorities to preserve and develop a cultural and social life of their own shall be promoted”. Mobile reindeer pastoralism is central to the Sámi community’s social and cultural life, but land rights and the mobile use of land were considered as being exhaustively regulated under the prevailing reindeer herding legislation (Mörkenstam, 2019). The 1971 Reindeer Grazing Act recognizes the Sámi’s right to use land and water for

themselves and their reindeer within certain geographic areas defined by the law. Reindeer herding rights in Sweden are exclusive to Sámi and are limited to those Sámi who live within designated communities within Sweden. They exclude Sámi from neighbouring countries such as Norway and Finland whose traditional routes may pass through Swedish territory (Anders Utsi, personal communication, October 2021). Thus, the law controls Sámi mobility through its control of access to resources despite the need for more flexibility in resource use.

While in line with the UNDRIP, Swedish law recognizes in principle that Sámi land use can result in ownership rights to land, and there are still significant difficulties in realizing such rights (UN Human Rights Council, 2011), indicating the need for better integration of laws across departments, scales and modes.

It is also important to be mindful of the plurality of legal systems and institutions in settings where customary, community-based or religious law and institutions impinge on pastoral practices and mobility.

*Evaluate pastoralist representation in the country’s political and legislative structures.* The analysis should assess the nature of pastoral representation in the governance structures and legislative organs of a country, including the effectiveness of pastoralist civil society mobilization in the country and its capacity to influence policy and legislative processes. The assessment should cover the skill and understanding of civil society advocates and the tools that are available to them.

It is also important to recognize that pastoralist civil society is not uniform and that members of that society may have diverse viewpoints and interests, reflecting the heterogeneity of pastoral society. The composition of civil society organizations, their particular forms and environments may lead to certain patterns of power and politics.

It is also important to consider the opportunities for alliance building among pastoral civil society and other like-minded interest groups as this is crucial for creating the critical mass needed to leverage legislative processes to the advantage of pastoralists. Creating alliances with other interest groups enables pastoralists to appreciate and address conflicting needs and demands that would otherwise derail enactment or implementation of the legislation.

*Undertake analysis of institutions and stakeholders.* Such an analysis identifies the institutions and stakeholders that are critical for the successful development and implementation of the legislation. The analysis should identify the government ministry or

department that will lead the development process and oversee implementation of the law. It should also identify other government departments that will have a role or can influence the development and implementation of the law. Relevant non-state actors, including pastoralist associations, non-governmental organizations, other civil society organizations, researchers, customary institutions and private sector players in dairy and meat value chains, should also be identified and engaged. All such actors should be mobilized effectively to contribute to and support enactment of the legislation, and ultimately to monitor its implementation.

## 4.2 ENGAGING KEY STAKEHOLDERS

The extent and quality of stakeholder engagement are critical to the development and implementation of legislation on pastoral mobility. The following are some key considerations for the engagement process.

*Ensure full representation of pastoralists.* The process for developing any legal or policy framework should involve direct consultation with pastoralists, who should not only be represented, but be at the centre of the consultation process and lead discussions. It is therefore critical to ensure engagement with mobile pastoralists who may not be present in the location or may use certain resources or routes only seasonally.

It is important to recognize that pastoralists are not a homogenous group in terms of either their interests or their capacity to engage in legislative processes. They are differentiated by factors such as ethnicity, gender, age, wealth and education, and have diverse life outcomes. Pastoralist civil society may entrench those social differences, so efforts must be made to include representatives from different sections of the pastoralist community.

Gender equality and women's empowerment is one of the Sustainable Development Goals and one of the principles of implementation articulated in the Voluntary Guidelines on the Responsible Tenure of Land, Fisheries and Forests<sup>4</sup> (see Box 4.2) as promoting and securing responsible governance of tenure. Women have specific challenges and needs with respect to security and sanitation that require specific attention during mobility. As men increasingly migrate, additional burdens are imposed on women in relation to child care and engagement in local markets. In some regions of Africa where conflicts among pastoralists and between pastoralists and farmers escalate during mobility, women are exposed to grave risks. Addressing gender issues in pastoralism and pastoral mobility therefore requires strong commitment and cooperation among the state, traditional institutions, pastoral leaders, and men and women pastoralists. The process of developing a law on pastoral mobility provides an opportunity to introduce the issue of gender equality. The law should integrate gender equality as both a principle of implementation and a substantive provision. Such provisions should start by enabling equal participation of women in the decision-making process itself.

---

<sup>4</sup> The *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* (FAO, 2012b) emphasizes that responsible governance of the tenure of land, fisheries and forests is inextricably linked to access to and management of other natural resources, such as water and mineral resources, and interactions among land users.

## BOX 4.2

**Participation in governance in the voluntary guidelines on responsible tenure****Article 4.10**

States should welcome and facilitate the participation of users of land, fisheries and forests in order to be fully involved in a participatory process of tenure governance, *inter alia*, formulation and implementation of policy and law and decisions on territorial development, as appropriate to the roles of state and non-state actors, and in line with national law and legislation.

In some settings, young pastoralists are neglected because decision-making is vested in community elders. Young pastoralists' voices must be heard in order to satisfy their expectations and aspirations.

While pastoralists are the primary stakeholders, it is also essential to engage other resource users such as crop farmers, hunter-gatherers and conservationists who interact directly with pastoral mobility, and whose interests must be considered in the enactment and implementation of legislation. Engagement with these resource users during development of the legislation, ensuring that their concerns are considered and appropriate provisions are made in the law, results in a sense of ownership within broad sectors of society. Comprehensive mapping of stakeholders, their interests and interactions is critical for ensuring effective stakeholder engagement and participation.

Due regard should be given to existing power imbalances among the different stakeholders in order to ensure that even marginalized and oppressed voices are heard. All affected parties should be involved in the process, which should integrate gender-sensitive approaches and use language that the participants understand. To this end, space should be provided for civil society, the private sector and academia to contribute to and mobilize relevant sectors for effective participation in the process. Such stakeholder engagement is critical in establishing the ownership needed to ensure implementation of the legislation once enacted.

*Ensure full, meaningful and effective participation.* While representation is important, its importance lies beyond the mere presence of stakeholders and it is important to enable meaningful participation by all stakeholders. This can be achieved by providing access to information of sufficient quantity and quality to enable stakeholders to understand the need and justification for the legislation and its potential benefits. The provisions of UNDRIP on free, prior and informed consent, and the principles articulated in the voluntary guidelines on responsible tenure are useful in this regard (see Box 4.3). In addition, many countries have provisions in their constitutions and other statutes aimed at ensuring public participation in law-making processes.

Several international conventions speak of the need for full participation and informed consent. The informed participation of all population groups in the decisions that affect them is essential, particularly where such groups face some form of disadvantage relative to other

## BOX 4.3

**UNDRIP on free, prior and informed consent****Article 19**

States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.

## BOX 4.4

**Informed participation and consent in international law****Article 8 Convention on Biological Diversity**

Each Contracting Party shall, as far as possible and as appropriate:

(j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

groups in society. The idea of informed participation as a precondition for decision-making that affects group interests is reflected in international and regional instruments (see Box 4.4.).

The voluntary guidelines on responsible tenure technical guide on improving governance of pastoral lands (FAO, 2016a) draws attention to the challenges facing the effective participation of pastoralists in policy- and law-making processes, especially those associated with the tenure claims of pastoralists, which extend over large landscapes and cover large areas that are subject to multiple political governance frameworks, and with mobility, which means that pastoralists are not always present in a specific area for long enough to have sufficient influence on policy processes and decisions. Owing to mobility, pastoralists often have limited leverage as a political constituency in specific locations. In many places, they are seen as temporary inhabitants rather than resident right holders who are able to make claims on duty bearers in the development of legislation. In several countries, mobile pastoralists are not adequately integrated into policy processes, as their representation in elected governance frameworks is weak. These factors have to be taken into account in designing the process for developing legislation on pastoralism in order to ensure effective, equitable, inclusive and transparent participation by pastoralists.

*Recognize the role of local knowledges and customary institutions.* It is also important to integrate customary institutions into the process of developing legislation on pastoral





*A shepherd herding goats in Kafr Schuba, Lebanon.*

mobility, not only to benefit from the capacity of such institutions to mobilize pastoralists, but also to ensure that customary rules and practices are taken into account in the legislation. Due regard should be given to the role of women in pastoral society through their value addition services and contribution to intergenerational knowledge exchange.

The technical guide on improving governance of pastoral lands (FAO, 2016a) emphasizes the importance of indigenous knowledge systems for the sustainability of pastoralism as a system. It proposes actions for enhancing recognition of local and indigenous knowledge in order to ensure cultural and ecological diversity for resilience.

Experiences from countries that have enacted legislation on pastoral mobility demonstrate that legislating appropriately and obtaining the buy-in of major stakeholders requires vast investments in time and resources in order to facilitate the effective participation of pastoralists and other stakeholders in the process of developing the legislation. The Pastoral Law of the Niger, which is ranked among the most comprehensive and supportive of pastoral land rights and pastoral mobility, was developed over three years through “a participatory and iterative process...involving representatives of the majority of stakeholders from rural communities to line ministries” (COMESA, 2010: 3).

Where pastoral mobility extends across national borders, it is not enough for one country to enact supportive legislation. Pastoral mobility will be adequately secured only when all the contiguous countries enact legislation to the same effect. Furthermore, as experience from East and West Africa has shown, where pastoral mobility is a regional phenomenon that extends across multiple national borders, if national legislation is to be useful, it has to be nested within “a comprehensive policy, legal and institutional framework that harmonizes national and regional legislation to secure livestock mobility from the local to the regional level” (COMESA, 2010).

## Chapter 5

# Key elements of legislation for pastoral mobility

Following the preliminary considerations presented in the previous chapter, this chapter elaborates on key elements that should be provided for in legislation on pastoral mobility. The elements described here serve as examples and are not exhaustive. They must be adapted to local conditions and formulated in line with the legislative process of the country concerned.

The following are key elements to bear in mind when legislating for pastoral mobility.

### 5.1 LEGAL RECOGNITION OF PASTORALISM AND PASTORAL MOBILITY

Legal recognition of pastoralism as a legitimate land use and animal production system establishes the legal foundation for pastoralists to secure rights of access to the resources necessary for the practice of their livelihood, including through mobility. The law should acknowledge that pastoralism makes appropriate, productive and sustainable use of rangelands, contributing to national and regional economic growth and to the building of resilience to drought and other shocks. Such recognition places pastoralism on a par with competing land and natural resource uses such as crop agriculture, forestry and wildlife conservation, so that its spatial and other operational needs are taken into account in the planning of development, land use and natural resource management at the local, regional and national levels. It ensures that in the process of zoning and planning the use of rangelands, due consideration is given to the needs of pastoral use of land and natural resources, including through mobility.

Legal recognition of pastoralism and provisions that address its specific needs may be articulated in constitutions or laws at the national or decentralized level. A key provision of such legislation is affirmation of the right of pastoralists to move with their livestock within and across national borders, without let or hindrance, for purposes of obtaining access to pastures, water and other strategic livestock husbandry resources. Legislation should secure the right to mobility against limitations other than those that are necessary for purposes of accommodating and coexisting with other users of the rangelands. For example, Ethiopian pastoralists have the right to free land for grazing and cultivation and the right not to be displaced from their own land. Legislation should also stipulate processes of decision-making that ensure the effective participation of pastoralists and consideration of the requirements for mobility whenever developments that may restrict mobility are considered (see Box 5.1).



**BOX 5.1****Participatory rangeland management in Ethiopia**

Participatory rangeland management (PRM) is an approach to securing rights to resources for pastoralists and improving rangeland management in pastoral areas.

Through an inclusive, participatory and sequential process involving investigation, negotiation and implementation, PRM enables pastoralists and other land users to develop and implement a land use plan that ensures the sustainability of the resource and avoids conflict. Community members define an appropriate unit for rangeland management (such as a traditional grazing area) and map the resource areas and their status on that unit. The mapping exercise aims to capture details of seasonal livestock movements, seasonal use of rangeland resources, preferred trekking routes, dates, seasons and frequency of movements, routes, distances and destinations, primary and secondary purposes, and gender-disaggregated movements. The community members also strengthen or set up a governing institution to implement the rangeland management plan.

From two experiences of PRM in the Oromia and Afar regions of Ethiopia, involving 30,000 pastoralists and agropastoralists, a

number of challenges were identified. Two of the main ones were the scale at which PRM is implemented, and the embedding of PRM into wider development processes.

While working at a small scale allows greater and more direct involvement of community members, thereby improving the opportunities for stakeholder ownership and sustainability, it is likely to exclude some claimants when the area affected is part of wider rangelands and ecosystems. On the other hand, working at a large scale may be more inclusive, but it increases the transaction costs and raises the possibility of many people not being directly engaged. To address this challenge, the review recommended that PRM should be implemented “at multiple scales taking a more holistic and multi-level approach as appropriate and ensuring both horizontal and vertical linkages among them” (Flintan *et al.*, 2019: 52).

There is a need to embed PRM into wider development processes and to foster an enabling policy environment. The absence of such integration has undermined the impact of PRM interventions that have been implemented by non-governmental organizations with support from donor-funded projects. A policy and legal framework for pastoral mobility is a clear opportunity for ensuring the integration of PRM into government planning and programmes.

**5.2 SECURING PASTORAL MOBILITY**

Once pastoralism and pastoralists’ right to mobility have been recognized in law, the state and its structures have the obligation to facilitate and secure pastoral mobility. Following on from Chapters 1 and 2, the first step in securing pastoral mobility is to understand the pastoral system, the nature and dynamics of mobility and the context in which it operates. Supporting pastoral mobility calls for the entrenchment in law of the right of pastoralists to unhindered access to land areas and resources and to the maintenance of the social relations that sustain their livestock production system. Where the land and

resources, including livestock corridors, are situated in areas where there are competing land uses such as crop farming, particular attention must be paid to the spatial and temporal dynamics of mobility that facilitate the organization of such movement in mutually beneficial ways (as described in Box 5.2.). In general, the various actors associated with pastoral mobility must be included in the decision-making process in order to ensure their buy-in. In this connection, participatory processes should be privileged, and advantage should be taken of GIS and other relevant technologies.

Through participatory processes, it may be possible to understand the resource areas, resource networks and corridors to which pastoralists have access, paying due regard to spatial and temporal variability and flexibility. Box 5.1. shows how participatory approaches have been applied in Ethiopia. It is necessary to prepare for and plan legal recognition and security of access for pastoralists with respect to the areas and resources used exclusively by pastoralists, those that they share with other resource users, and those that they use only periodically or seasonally, such as livestock corridors. The law should recognize the local resource sharing and use arrangements and permit negotiation for access rights rather than prescribing and specifying those rights. It should reflect an understanding of the various pressures facing pastoralists in the region and, to the extent possible, protect against forceful alienation or conversion of land to uses that are incompatible with pastoralism.

#### BOX 5.2

#### **Transhumance in northern Neuquén Province, Argentina**

The Andean mountains provide enabling conditions for the practice of transhumance in their southernmost area in Argentina. That area is outside the tropics and has contrasting winters and summers. The transhumance system of Neuquén Province in northern Argentina is the most characteristic of the systems used, with its well-developed network of corridors called *callejones de arreo*. These corridors link the arid winter grazing pastures with the more humid summer pastures, which remain covered in snow for half of the year. For centuries, sustainable grazing and transit were arranged under customary practices. Such customs associated with the local landscape have become an integral part of the

Neuquén identity and pride. Specific commercialization channels have been developed for both fibers and meat, mainly from goats, which can help achieve economic sustainability for the system.

While Provincial Act 2809 of 2012 recognized the right of local transhumant pastoralists, known as *crianceros*, to move their herds, Provincial Act 3016 advanced the recognition of transhumance by protecting the whole network of corridors, *red de huellas de arreo*. The act included the creation of a specific commission that would help to resolve conflict and promote the practice of transhumance in the area. It also includes provisions for more modern forms of conflict, for example, when vehicles have accidents involving migrating livestock, granting preference for use of the corridors by livestock.

For example, the pastoral code of Mauritania declares illegal “any form of exclusive appropriation of pastoral space” (Article 14) and prohibits any development that may harm the interests of pastoralists or limit their access to pastoral resources. It stipulates that economic, ecological and social aspects will be taken into account in assessing the value of pastoral land use relative to competing land uses before a decision is made to replace or limit pastoral land use (Article 12). The laws of Mali and the Niger require that an environmental impact study be carried out before a development or concession that is likely to hamper pastoral mobility or restrict access to pastoral resources is approved (Articles 12 and 5 respectively).

Where grazing resources are delineated, it is important that provision is made for periodic reassessment of the delineation in order to accommodate variability and change. It is particularly important that delineation is not used to limit the opportunities for negotiated access to additional resources when circumstances warrant. Adequate provision should be made for buffer zones, transit corridors, etc., for both livestock and wild animals.

As well as access to strategic pastoral resources, it is also important to consider the social relationships that govern access. In many cases, mobility is self-organized among resource users. It relies on the web of interdependent relations among many actors that lies at the intersection of various socio-economic dimensions. Inappropriate policies, even if well intentioned, may serve to undermine those relations. The extent of social relations, the level of contestation among stakeholder groups, and the place of mobility within the particular setting should therefore be assessed. The law should take into account the important role of local practices and institutions for decision-making and conflict resolution, and integrate them as appropriate.

### **5.3 ESTABLISHING AN INSTITUTIONAL FRAMEWORK AND PROCEDURES FOR MANAGING MOBILITY**

The nature and composition of the institutional framework for managing pastoral mobility, and the procedures and processes it uses for that purpose are critical factors for successful implementation of the law and achievement of its objectives. Although the kind of institution established will vary from country to country, in accordance with the local conditions and practice, it is imperative that either it has strong and effective representation of pastoralists or, where that is not possible, it operates in close consultation and collaboration with representative organizations of pastoralists and other land users. Where necessary, provision should be made for supporting capacity development for pastoral civil society organizations to enable them to play their roles effectively. The institution should receive technical support from the government departments responsible for livestock management, land-use development, and environment and natural resource management. It should also have clear linkages to administrative authorities at the local and national levels.

It is critical that authority for managing pastoral mobility be devolved to the local level and involve the customary institutions of pastoralists where these exist. In the absence of traditional institutions, the law should provide for the formation of associations with adequate representation of pastoralists, and other productive systems and land-user groups where these exist. In this connection, it is important that provisions governing the formation and governance of the associations ensure fair and equitable representation

of all stakeholder groups. In all cases, the institutional framework for managing mobility should have space and scope for application of the indigenous knowledge of pastoralists, and statutory institutions should seek to incorporate customary and community-based management principles.

While responsibility for implementation of the law on pastoral mobility may rest in a single government ministry, department or agency, it is imperative that all sectors of government are involved in addressing the challenges to pastoralism and pastoral mobility. This can be seen through the case presented in Box 5.3, which shows how representatives from all sectors come together to embed legislation on mobility.

The law on pastoral mobility should therefore mainstream support for and facilitation of pastoral mobility across the sectors of governance, economic development, livestock development and animal health, and environment and natural resource management. This can be facilitated by a recognition of the strategic value of mobility with respect to food

#### BOX 5.3

##### **Decree on Implementation of the Pastoral Charter in Mali**

The Decree on Implementation of the Pastoral Charter of Mali ensures that all stakeholders are represented in the implementation process through “the Commission for recognition of pastoral development” (Article 20). It stipulates that both the formal and informal associations of livestock keepers and pastoralists participate in the design, implementation, monitoring and evaluation of national livestock policy, the development of the livestock sector and the management of pastoral resources, the environment and natural resources (Article 5).

The commission consists of more than 20 members including a representative of the state (as president), two representatives from each of the municipalities concerned, the heads of the village(s) or fraction(s) concerned, or their representatives, and one representative each from the Chamber of Agriculture, livestock keeper and pastoralist organizations, farmer organizations, fishers' organizations, hunter organizations, the

technical service in charge of pastoral planning, the service in charge of nature conservation, the department in charge of fishing, the service in charge of animal health, the sanitation department, the service in charge of hydraulics, the service in charge of territories, forest operators and the customary authorities (Article 20).

While the commission provides ample representation across interest groups, it seems to do so in only a nominal sense. The decree does not elaborate on the organizational structure of the commission or its roles and responsibilities.

Moreover, while a representative from a pastoralist organization sits on the commission, this level of representation seems insufficient given the commission's mandate in planning pastoral development, including the establishment and management of pastoral resources, tracks and associated infrastructure. It is imperative that pastoralists are adequately represented in the commission. Consultation processes that engage the wider pastoral constituency, with special attention to women, young and marginalized members, must be established.

TABLE 2  
Examples of institutions mandated by law to manage pastoral mobility

| Country and law   | Implementing institution   |
|---|--|
| <b>Spain</b><br>Law on Cattle Trails, 1995  | Autonomous regions   |
| <b>Kyrgyzstan</b><br>Law on Pastures, 2009  | Local self-government bodies, may delegate powers to pasture user unions   |
| <b>India</b><br>Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 | Village assembly ( <i>Gram Sabha</i> ), subdivisional level committee, district-level committee and state-level monitoring committee |
| <b>Tajikistan</b><br>Law on Pastures, 2019  | Local government authorities   |
| <b>Province of Neuquén, Argentina</b><br>Law number 3016, 2016  | Commission   |
| <b>Afar National Regional State, Ethiopia</b><br>Rural Land Administration and Use Proclamation, 2009           | Competent authority to be established  |
| <b>Mali</b><br>Pastoral Charter, 2001   | Local government authorities in collaboration with the competent technical services of the state                                     |
| <b>Morocco</b><br>Law on Transhumance and Rangelands Management   | National commission  |

security, the conservation of nature, climate change adaptation, and other factors, and the human rights and socio-economic development aspects of pastoralism and pastoral mobility. The implementing institution is responsible for determining the schedule and timing of mobility, in consultation with pastoralists and other stakeholders, taking into account climate variability. The Pastoral Charter of Mali mandates local authorities, in collaboration with the competent traditional authorities, crop farmer organizations and local technical services to establish the transhumance calendar “in a concerted manner, each year if necessary”. The calendar specifies the maximum periods that the livestock will spend in each locality and must be communicated to pastoralists in an appropriate form (Article 22).

Implementation of this holistic approach calls for coordination, both horizontally across different sectors at the local and national government levels, and vertically between those two levels of government. The law on pastoral mobility can ensure this through provisions on the composition of the structure for its implementation.

Table 2 presents examples of national and subnational institutional arrangements for managing livestock routes through legislation on pastoral mobility.

#### 5.4 ELABORATING THE RIGHTS AND DUTIES OF PASTORALISTS DURING MOBILITY

It is important to elaborate the rights and duties of pastoralists during mobility in order to define expectations and allocate responsibilities as a means of minimizing the potential for conflict. This helps develop a shared understanding among stakeholders about the role of mobility and facilitates clear and honest information sharing. The law should draw on traditional practices, which have high legitimacy with pastoralists and other resource users.

**TABLE 3**  
**Rights and duties of pastoralists during mobility**

| Rights   | Duties  |
|--|---|
| 1. Right to move with livestock without let or hindrance   | 1. Duty to comply with laws and regulations, particularly with regard to the environment and safeguarding of the property of others   |
| 2. Right to access to the pasture, water and basic infrastructure needed for the health of the livestock | 2. Duty to respect the rights of other users to shared natural resources  |
| 3. Right to the enjoyment of fundamental human rights and protection of the law                          | 3. Duty to watch over livestock at all times during mobility, ensure good feeding practices and nutrition intake, and ensure that they do not cause any damage or injury to third parties |
| 4. Right to access to basic social services and markets  | 4. Duty to respect the environment and ensure the sustainability and regeneration of pasture resources and rangelands   |
| 5. Right to be consulted on land-use decisions that affect the livestock route                           | 5. Duty to comply with all lawful conditions and requirements that govern mobility  |
|  | 6. In the event of cross-border transhumance, duty to comply with all conditions and requirements of the host country regarding mobility  |

The primary purpose of legislation on pastoral mobility is to protect and secure the right of pastoralists to move with their livestock across the relevant territory. This right comes with the responsibility to respect the rights and property of other land users, to maintain the integrity of the environment and natural resources along the route, and to comply with the stipulations of the specific legislation and all other relevant laws. Other associated rights and duties are listed in Table 3.

The law should allocate responsibility for the enforcement of rights and provide sanctions against breach of duties. In most cases, the institutions responsible for implementation of the law ensure the enforcement of rights, working closely with other governance institutions, including courts and the police where necessary. In general, laws provide for a combination of administrative, criminal and civil sanctions for breaches and infringement. Some laws provide specific penalties, mainly fines and terms of imprisonment for specific breaches, while others leave the determination of penalties to arbitration committees established under the legislation or to the general criminal justice system. As well as fines and terms of imprisonment, laws also provide for the payment of compensation for damage or injury caused to third parties and infrastructure, or for meeting the costs of repairing such damage to infrastructure.

The Spanish law provides for a combination of administrative, civil and criminal sanctions, and specifies the fines to be paid for petty, minor and major infringements (Articles 19–25). The Pastoral Code of Mauritania provides for an arbitration committee – comprised of representatives of local government, pastoralist associations, farmer associations and each of the parties to the dispute – which determines the appropriate compensation payable by the party in default (Articles 34 and 37). Both the Pastoral Charter of Mali (Articles 65 and 66) and the Pastoral Code of Burkina Faso (Title III) provide for imprisonment and fines, without prejudice to the rights of the injured party to pursue compensation for damage. Under the Proclamation of Afar National Regional State, sanctions are enforced under the criminal justice system (Article 24).

## **5.5 PROVIDING FOR INVESTMENT IN SUPPORT FOR PASTORAL PRODUCTION SYSTEMS AND MOBILITY**

In all regions of the world where pastoralists are found, the areas they occupy tend to suffer from lack of government investment in social services and the infrastructure needed to support pastoral production (for example, World Bank, 2020). Governments have historically favoured sedentarization over mobility, and approaches to service provision and development planning have evolved accordingly. The need for political control of citizenship (Ptackova, 2012) and the perception that provision of services such as health care and education is cheaper for sedentarized populations have driven governments' privileging of sedentarization. However, it is now acknowledged that the latter is only true in the short term, and only when the costs to the economy of the collapse of pastoralist systems are ignored (Behnke and Kerven, 2013). A more sustainable and inclusive approach to development planning must include and integrate the interests of mobile pastoralists.

The law on pastoral mobility should provide for investment in supportive infrastructure such as watering points, means of communication and transport facilities, and social services – education and human and animal health – adapted to respond to the needs of pastoralist communities. Investments should also be made in supporting the development of backwards and forwards linkages to develop markets and trade that are favourable to pastoral mobility. Investments in the development of animal health services and the provision of training and skills in animal health and production, the processing of animal products and handicrafts also help.

## **5.6 PROVIDING FOR CONFLICT MANAGEMENT AND DISPUTE RESOLUTION**

A major motivation for enacting legislation for pastoral mobility is the avoidance and management of conflict, and ensuring that policies, programmes and projects with impacts on pastoralism and pastoral mobility are conflict-sensitive and cause no harm. They should seek to enhance collaboration and cooperation between pastoralists and other producers.

The legislation should provide for the management of conflict and the resolution of disputes by establishing the institutional framework and defining the principles and procedures to be followed. Any mechanism for resolving conflicts should be accessible and affordable; it should be structured in terms of location, language and procedures in ways that make it accessible to all pastoralists including women, young people, persons with disability and other vulnerable groups. The mechanism should be decentralized and should integrate the traditional systems of pastoralists and other land users and privilege alternative dispute resolution approaches. The traditional system should provide the first line of action for conflict management and dispute resolution, facilitating conflict avoidance where possible. Alternative dispute resolution approaches may include tribunals and forums established by legislation. The opportunity to use the formal court system should be made available as a last resort where traditional and alternative dispute resolution mechanisms fail to resolve a conflict (see Box 5.4).

Such a mechanism should also be linked to a body that is able to manage conflicts at scale across national boundaries. A variety of strategies and capacities are needed at these different levels. The mechanism should include processes for appeal and the effective enforcement of decisions.

**BOX 5.4****Conflict management in the Kyrgyz Law on Pastures**

Disputes, in case of disagreement of any party involved in this dispute, with the decision of the Jayit Committee, shall be solved by the authorized state body through negotiations. The dispute shall be solved in the legal form if agreement is not reached (Article 17).

**5.7 PROVIDING FOR MONITORING, EVALUATION AND LEARNING**

A monitoring, evaluation and learning (MEL) framework is needed in legislation for pastoral mobility because the conditions in which mobility is practised are constantly changing as a result of social, political, economic and ecological developments. Cross-border mobility is likely to be affected by geopolitical dynamics including developments in regional integration frameworks. The context of constant change is increasingly exacerbated by climate change and its impacts. In these circumstances, the need for feedback and collaborative learning among stakeholders cannot be overstated.

A MEL framework makes it possible for changes to be introduced to the law based on experience gained in its implementation. The legislation should provide for a MEL framework that is inclusive, participatory, gender-sensitive, implementable, cost-effective and sustainable (FAO, 2012b). In this way, the framework is able to facilitate collaboration and learning among major stakeholders and ensure holistic and sustainable management of pastoral mobility.

Successful implementation of the law on pastoral mobility depends on the presence of technical and institutional capacity in relevant government departments, among officials, and in civil society, which is thereby enabled to engage government effectively on an ongoing basis and play its monitoring role. To this end, interventions for developing capacities should be provided for within the MEL framework.

Also critical to the MEL process is a grievance redress mechanism for dealing with complaints against the state with regard to the fulfilment of its duties in implementing the law on pastoral mobility. The mechanism should be designed to be easily accessible and useable by pastoralists and pastoralist civil society and should be linked to accountability mechanisms in government, such as parliamentary oversight of executive action with regard to policies and laws.

**5.8 SUPPORTING SOCIAL AND CULTURAL DEVELOPMENT**

The law on pastoral mobility should be viewed as part of a larger agenda for the recognition, protection and securing of the right of pastoral communities to cultural self-determination. This means acknowledging and providing policy and legal incentives for pastoralists to practise their livelihoods and maintain their traditional practices, if they so wish, consistent with global and regional human rights conventions. The law should recognize that pastoral mobility is an integral part of the social and cultural identity of pastoralists, and that it plays an important role in customary exchanges, rites and rituals, such as northern Niger's *Cure Salée*.





*Pastoralist women singing and dancing to share knowledge about the weather and animal health next to Mount Moroto in Uganda.*

To secure social and cultural aspects of pastoral mobility, the law should create obligations on the part of the state to provide social services and infrastructure that enable the continuation of pastoralism. This calls for viewing mobility networks not just in spatial terms but also as part of a sociocultural system. Such a view should inform the process, design and substantive content of the law on pastoral mobility.

---

## Conclusions

While many examples from around the world, from the local to the global level, showcase positive developments, many states still lack appropriate legislation to support pastoral mobility. In addition, the diversity displayed by mobile pastoral systems is often not accounted for in the mechanisms developed to protect those systems. An important element of any policy is its ability to be adapted to local circumstances, including the natural setting and the cultural and social specifics of local pastoral systems. While certain circumstances may call for spatial delimitation or mediation among actors, other circumstances may limit such interventions. While legislative and political experience can provide the necessary inspiration for new policy developments, there are risks in transposing existing legislation without accounting for local needs.

This handbook presents the various considerations that should be borne in mind when assessing a pastoral system, with a focus on biophysical conditions and land tenure type. The need to embed flexibility in legislation and policies is explained. Drawing on international, regional and national conventions and legislation, the handbook provides key elements to be followed in the development of sound and useful policies and legislation for favouring pastoral mobility. Learning from local settings and involving key stakeholders, especially pastoralists themselves, are essential steps in defining useful and legitimate legal mechanisms for guaranteeing the movement of pastoralists and their animals. The handbook explains the importance of developing infrastructure, adapting social services and ensuring markets that support mobility and pastoralism in general. Frequent review of such mechanisms would allow the incorporation of lessons learned and adaptation to changing circumstances.

Recognizing and securing mobility is the first step in ensuring that the great social, economic and environmental advantages of pastoral mobility are sustained for future generations and contribute to the sustainable food systems of the future.



# Bibliography

- Abdi, K.** 2003. The Early Development of Pastoralism in the Central Zagros Mountains. *Journal of World Prehistory*, 17(4): 395–448.
- ACHPR & IWGIA.** 2005. *Report of the African Commission's Working Group of Experts on Indigenous Populations/Communities*. Banjul and Copenhagen. African Commission on Human and People's Rights (ACHPR) and International Work Group for Indigenous Affairs (IWGIA). (also available at [https://www.iwgia.org/images/publications/African\\_Commission\\_book.pdf](https://www.iwgia.org/images/publications/African_Commission_book.pdf)).
- African Union.** 2010. *Policy Framework for Pastoralism in Africa: Securing, Protecting and Improving the Lives, Livelihoods and Rights of Pastoralist Communities*. Addis Ababa. (also available at [https://au.int/sites/default/files/documents/30240-doc-policy\\_framework\\_for\\_pastoralism.pdf](https://au.int/sites/default/files/documents/30240-doc-policy_framework_for_pastoralism.pdf)).
- Alidou, S.M.** 2016. *Couloirs de transhumance transfrontalière en l'Afrique de l'Ouest*. Bern, Switzerland, Swiss Agency for Development and Cooperation (SDC).
- Baied, C.A.** 1989. Transhumance and Land Use in the Northern Patagonian Andes. *Mountain Research and Development*, 9(4): 365–380.
- Basupi, L.V., Dougill, A.J. & Quinn, C.H.** 2019. Institutional challenges in pastoral landscape management: Towards sustainable land management in Ngamiland, Botswana. *Land Degradation and Development*, 30(7): 839–851.
- Basupi, L.V., Quinn, C.H. & Dougill, A.J.** 2017. Using participatory mapping and a participatory geographic information system in pastoral land use investigation: Impacts of rangeland policy in Botswana. *Land Use Policy*, 64: 363–373.
- Behnke, R. & Kerven, C.** 2013. *Counting the costs: replacing pastoralism with irrigated agriculture in the Awash Valley, north-eastern Ethiopia*. Climate Change Working Paper No. 4. London, International Institute for Environment and Development (IIED). (also available at <https://pubs.iied.org/sites/default/files/pdfs/migrate/10035IIED.pdf>).
- Behnke, R.H. & Mortimore, M., eds.** 2016. *The End of Desertification? Disputing Environmental Change in the Drylands*. Berlin and Heidelberg, Springer-Verlag. 560 pp.
- Bendella, A.** 2019. *Rapport sur l'analyse juridique de l'impact des lois, politiques et institutions sur les aires et territoires du patrimoine communautaire au Maroc*. Global Diversity Foundation, Moroccan Biodiversity and Livelihoods Association and Small Grants Program, UNDP Morocco. 45 pp.
- Bendella, A., Caruso, E. D'Ambrosio, U., Dominguez, P., Martin, G., M'sou, S. & Romera, M.C.** forthcoming. Rights over land among High Atlas communities in Morocco: The case of Agdals. Manuscript in preparation.
- Biber, J.-P.** 2010. Transhumance in France. *Pastoralism*: 1(1): 91–98.
- Breman, H. & de Wit, C.T.** 1983. Rangeland Productivity and Exploitation in the Sahel. *Science*, 221(4618): 1341–1347.

- Bunce, R.G.H., Pérez-Soba, M., Jongman, R.H.G., Gómez Sal, F., Herzog, F. & Austad, I., eds.** 2004. *Transhumance and biodiversity in European mountains*. Report from the European Union Fifth Framework Programme (EU-FP5) project TRANSHUMOUNT (EVK2-CT-2002–80017). International Association for Landscape Ecology (IALE) Publication Series No. 1. Wageningen, Netherlands, ALTErrA, Wageningen University and Research. 321 pp.
- Butt, B.** 2016. Ecology, mobility and labour: dynamic pastoral herd management in an uncertain world. *Rev. Sci. Tech.*, 35(2): 461–472.
- Cameron, J.M.R. & Spooner, P.G.** 2010. Origins of Travelling Stock Routes. 2. Early development, management, and the growing embrace of the law (1830–70s). *The Rangeland Journal*, 32(3): 341–351.
- Causses Aigoual Cevennes – Terres Solidaires.** 2015. Le pacte pastoral intercommunal. <https://www.caussesaignoualcevennes.fr/wp-content/uploads/2017/11/Pacte-pastoral-Vcomplet-2015.pdf>.
- CBD.** 2010. X/2. *Strategic Plan for Biodiversity 2011–2020*. COP 10 Decision X/2 adopted by the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) at its tenth meeting. <https://www.cbd.int/decision/cop/?id=12268>.
- CBD.** 2018. *Protected Areas and Other Effective Area-based Conservation Measures*. CBD/SBSTTA/22/6. CBD, Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA). <https://www.cbd.int/doc/c/36f1/d6e8/90a68e516b0c5e8aa3f5a0eb/sbstta-22-06-en.pdf>.
- CFS & FAO.** 2012. *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*. Rome, Committee on World Food Security (CFS) and FAO. (also available at <https://www.fao.org/3/i2801e/i2801e.pdf>).
- Chaudhry, P., Bohra, N.K. & Choudhary, K.R.** 2011. Conserving biodiversity of community forests and rangelands of a hot arid region of India. *Land Use Policy*, 28(3): 506–513.
- Choksi, A. & Dyer, C.** 1996. *Pastoralism in a Changing World: Patterns of Adaptation among the Rabaris of Kutch, Gujarat*. Drylands Programme Issue Paper No. E69. London, International Institute for Environment and Development (IIED). (also available at <https://pubs.iied.org/sites/default/files/pdfs/migrate/7356IIED.pdf>).
- Cincotta, R.P. & Pangare, G.** 1996. Farmer and pastoral strategies in Sarausthra, Gujarat: An analysis of landless pastoralism and dependence on the manure market. In J.M. Powell, S. Fernández-Rivera, T.O. Williams and C. Renard, eds. *Livestock and Sustainable Nutrient Cycling in Mixed Farming Systems of sub-Saharan Africa. Volume II: Technical Papers*. Proceedings of an International Conference held in Addis Ababa, 22–26 November 1993. Addis Ababa, International Livestock Centre for Africa (ILCA). (also available at <https://cgspace.cgiar.org/bitstream/handle/10568/401/CYCLING2.PDF?sequence=1&isAllowed=y>).
- Cisse, H.** 2016. *Organisation of pastoral civil society in Mali*. CapEx Series on Pastoralism. Swiss Agency for Development and Cooperation (SDC). (also available at [https://www.shareweb.ch/site/Agriculture-and-Food-Security/aboutus/Documents/pastoralism/pastoralism\\_brief\\_societe\\_civile\\_e.pdf](https://www.shareweb.ch/site/Agriculture-and-Food-Security/aboutus/Documents/pastoralism/pastoralism_brief_societe_civile_e.pdf)).
- COMESA.** 2010. *Legislation to Support Cross-border Livestock Mobility*. Policy Brief No. 14. Common Market for Eastern and Southern Africa (COMESA). (also available at <https://fic.tufts.edu/pacaps-project/Pastoralism%20&%20Policy/Mobility%20Policy%20Brief%2014%20v1.pdf>).

- Comunidad Foral de Navarra.** 2019. Resolución 411/2019, de 17 de abril, del Director General de Desarrollo Rural, Agricultura y Ganadería, por la que se establecen las bases reguladoras para la concesión de ayudas a la trashumancia a pie, acogidas al régimen de minimis, y se aprueba la convocatoria de ayudas para el año 2019. *Boletín Oficial de Navarra*, 92: 5901–5904. <https://bon.navarra.es/es/anuncio/-/texto/2019/92/6/>.
- CONANP.** 2013. *Programa de Manejo Parque Nacional Iztaccíhuatl Popocatepetl*. Mexico City, Comisión Nacional de Áreas Naturales Protegidas (CONANP), Secretaría de Medio Ambiente y Recursos Naturales. (also available at [https://simec.conanp.gob.mx/pdf\\_libro\\_pm/87\\_libro\\_pm.pdf](https://simec.conanp.gob.mx/pdf_libro_pm/87_libro_pm.pdf)).
- Cotula, L.** 2016. 'Land Grabbing' and International Investment Law: Toward a Global Reconfiguration of Property? In A.K. Bjorklund, ed. *Yearbook on International Investment Law & Policy 2014–2015*, pp. 177–214. New York, Oxford University Press.
- Davies, J. & Hatfield, R.** 2007. The economics of mobile pastoralism: a global summary. *Nomadic Peoples*, 11(1): 91–116
- de Jode, H.** 2009. *Modern and mobile. The future of livestock production in Africa's drylands*. London, International Institute for Environment and Development (IIED) and SOS Sahel International. (also available at <https://pubs.iied.org/sites/default/files/pdfs/migrate/12565IIED.pdf>).
- de la Cruz, L.M.** 1996. *Río Pilcomayo: ecosistemas naturales e influencia antrópica. Estudios acerca del impacto social y ambiental de las obras de control hídrico proyectadas en el río Pilcomayo medio*. Estudio para la Comisión Trinacional de Desarrollo de la Cuenca del Pilcomayo. Formosa, Argentina. (also available at [https://sombreadearbol.org/documentos/delacruz\\_1996\\_Ecosistemas-naturales.pdf](https://sombreadearbol.org/documentos/delacruz_1996_Ecosistemas-naturales.pdf)).
- de la Cruz, L.M.** 1998. *¿Qué pasó con los pastizales que vio Astrada? Productividad y degradación ambiental en la región del Pilcomayo medio*. Facultad de Arquitectura, Corrientes, Argentina, Universidad Nacional del Nordeste, inédita, Resistencia. (Master of Environmental Management thesis.) (also available at [https://sombreadearbol.org/documentos/delacruz\\_1998\\_pastizales-pilcomayo.pdf](https://sombreadearbol.org/documentos/delacruz_1998_pastizales-pilcomayo.pdf)).
- Diarisso, T., Corbeels, M., Andrieu, N., Djamen, P. & Tiftonell, P.** 2015. Biomass transfers and nutrient budgets of the agro-pastoral systems in a village territory in south-western Burkina Faso. *Nutrient Cycling in Agroecosystems*, 101: 295–315.
- Diego, A., Menestrey S., Mbidzo M.** 2020. Socio-historical and structural factors linked to land degradation and desertification in Namibia's former Herero 'homelands'. *Journal of Arid Environments*. Volume 178. <https://doi.org/10.1016/j.jaridenv.2020.104151>.
- Elam, Y.** 1979. Nomadism in Ankole as a Substitute for Rebellion. *Africa: Journal of the International African Institute*, 49(2): 147–158.
- Elmi, A.A.** 1991. Livestock Production in Somalia with Special Emphasis on Camels. *Nomadic Peoples*, 29: 87–103.
- FAO.** 2011. Status and trends in land and water resources. In *The State of the World's Land and Water Resources for Food and Agriculture: Managing systems at risk*, chapter 1. Rome, FAO and London, Earthscan. (also available at [www.fao.org/3/a-i1688e.pdf](http://www.fao.org/3/a-i1688e.pdf)).
- FAO.** 2012a. *La transhumance transfrontalière en Afrique de l'Ouest Proposition de plan d'action*. Accra.

- FAO.** 2012b. *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*. Rome. (also available at <https://www.fao.org/3/i2801e/i2801e.pdf>).
- FAO.** 2014. *Respecting free, prior and informed consent: Practical guidance for governments, companies, NGOs, indigenous peoples and local communities in relation to land acquisition*. Rome. (also available at <https://www.fao.org/3/i3496e/i3496e.pdf>).
- FAO.** 2016. Case study #12: Improvements of livestock disease management through enhanced beef supply chain hazard analysis procedures around transfrontier conservation areas in southern Africa. In *Principles for the assessment of livestock impacts on biodiversity*, pp. 134–139. Rome.
- FAO.** 2016a. *Improving governance of pastoral lands: Implementing the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*. Governance of Tenure Technical Guide No. 6. Rome. (also available at <https://www.fao.org/3/i5771e/i5771E.pdf>).
- FAO.** 2016b. *Responsible governance of tenure and the law: a guide for lawyers and other legal service providers*. Governance of Tenure Technical Guide No. 5. Rome. (also available at <https://www.fao.org/3/i5449e/i5449e.pdf>).
- FAO.** 2018. *World Livestock: Transforming the livestock sector through the Sustainable Development Goals*. Rome. (also available at <https://www.fao.org/3/CA1201EN/ca1201en.pdf>).
- FAO & IFAD.** 2016. *FAO's and IFAD's Engagement in Pastoral Development Joint Evaluation Synthesis: Overview and FAO and IFAD Management's responses*. Rome. (also available at <https://www.fao.org/3/bd503e/bd503e.pdf>).
- FAO & IUCN.** 2018. *Crossing boundaries. Legal and policy arrangements for cross-border pastoralism*. Rome. (also available at <https://www.fao.org/3/ca2383en/CA2383EN.pdf>).
- Fernández, J.C.** 2019. El nuevo régimen legal neuquino en materia de trashumancia. In: L.F. Pastorino, (ed.). *Actas del V Congreso Nacional de Derecho Agrario Provincial*, pp. 186–198. La Plata, Argentina, Universidad Nacional de La Plata. (also available at [http://sedici.unlp.edu.ar/bitstream/handle/10915/79564/Documento\\_completo.pdf-PDFA%20\(2\).pdf?sequence=7&isAllowed=y](http://sedici.unlp.edu.ar/bitstream/handle/10915/79564/Documento_completo.pdf-PDFA%20(2).pdf?sequence=7&isAllowed=y)).
- Fernandez-Gimenez, M.** 1999. Sustaining the Steppes: A GeoGraphical History of Pastoral Land Use in Mongolia. *Geographical Review*, 89(3): 315–342.
- Fernandez-Gimenez, M.E.** 2000. The role of Mongolian nomadic pastoralists' ecological knowledge in rangeland management. *Ecological Applications*, 10(5): 1318–1326.
- Fernández-Giménez, M.E. & Fillat Estaque, F.** 2012. Pyrenean Pastoralists' Ecological Knowledge: Documentation and Application to Natural Resource Management and Adaptation. *Human Ecology*, 40(2): 287–300.
- Fernandez-Gimenez, M.E. & Le Febre, S.** 2006. Mobility in pastoral systems: Dynamic flux or downward trend? *International Journal of Sustainable Development and World Ecology*, 13(5): 341–362.
- Fernández-Giménez, M.E. & Ritten, J.** 2020. An economic analysis of transhumance in the Central Spanish Pyrenees. *Pastoralism*, 10(10). <https://doi.org/10.1186/s13570-020-00163-4>.
- Fernández-Giménez, M.E., Batkhisig, B., Batbuyan, B. & Ulambayar, T.** 2015. Lessons from the Dzud: Community-Based Rangeland Management Increases the Adaptive Capacity of Mongolian Herders to Winter Disasters. *World Development*, 68: 48–65.

- Fitzgibbon, C.** 2012. Economics of resilience study – Kenya country report. [https://www.gov.uk/government/TEERR\\_Kenya\\_Background\\_Report.pdf/](https://www.gov.uk/government/TEERR_Kenya_Background_Report.pdf/).
- Flintan, F.** 2012. *Participatory rangeland resource mapping as a valuable tool for village land use planning in Tanzania*. Rangelands 2. Rome, International Land Coalition.
- Flintan, F. & Cullis, A.** 2010. *Introductory Guidelines to Participatory Rangeland Management in Pastoral Areas*. Addis Ababa, Save the Children USA
- Flintan, F., Ebro, A., Eba, B., Assefa, A., Getahun, Y., Reytar, K., Irwin, B., Yehualashet, H., Abdulahi, M., Gebreyohannes, Z.T., Awgichew, S. & Gudina, D.** 2019. *Review of participatory rangeland management (PRM) process and implementation*. Rangelands Research Report 2. Nairobi, International Livestock Research Institute (ILRI).
- Frachetti, M.D.** 2012. Multiregional emergence of mobile pastoralism and nonuniform institutional complexity across Eurasia. *Current Anthropology*, 53(1): 2–38.
- Frachetti, M.D., Smith, C.E., Traub, C.M. & Williams, T.** 2017. Nomadic ecology shaped the highland geography of Asia's Silk Roads. *Nature*, 543: 193–198.
- García-Fernández, A., Manzano, P., Seoane, J., Azcárate, F.M., Iriondo, J.M. & Peco, B.** 2019. Herbivore corridors sustain genetic footprint in plant populations: a case for Spanish drove roads. *PeerJ*, 7: e7311. <https://doi.org/10.7717/peerj.7311>.
- Gadd, M.E.** 2012. Barriers, the Beef Industry and Unnatural Selection: A Review of the Impact of Veterinary Fencing on Mammals in Southern Africa. In M.J. Somers and M. Hayward, eds. *Fencing for Conservation: Restriction to Evolutionary Potential or a Riposte to Threatening Processes?* pp. 153–186. New York, Springer.
- Gebremichael, B., Girmay, S. & Gebru, M.** 2019. Camel milk production and marketing: Pastoral areas of Afar, Ethiopia. *Pastoralism*, 9(16). <https://doi.org/10.1186/s13570-019-0147-7>.
- Gerber, P.J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., Falcucci, A. & Tempio, G.** 2013. *Tackling climate change through livestock – a global assessment of emissions and mitigation opportunities*. Rome, FAO. (also available at <http://www.fao.org/3/a-i3437e.pdf>).
- González Pérez, V.** 2011. Uso de las vías pecuarias y rotaciones: una conflictividad histórica entre ganaderos y labradores. *Investigaciones geográficas*, 54: 101–132.
- Gungaa, M.** 2016. *Agroecology in Extensive Rangeland Pastoralism in the Gobi Desert of Mongolia: Below the Eternal Blue Sky*. Profiles on Agroecology No. 52. Rome, FAO. (also available at <https://www.fao.org/3/br096e/br096e.pdf>).
- Government of Extremadura.** 2019. Orden de 12 de abril de 2019 por la que se establece la convocatoria de ayudas para la realización de la trashumancia a pie por vías pecuarias de la Comunidad Autónoma de Extremadura, para el año 2019. Diario Oficial de Extremadura 79, 17980–18001. <http://doe.gobex.es/pdfs/doe/2019/790o/19050222.pdf>.
- Gray, J.** 2014. Hefting onto Place: Intersecting Lives of Humans and Sheep on Scottish Hills Landscape. *Anthrozoös*, 27(2): 219–234.
- Hardin, G.** 1968. The tragedy of the commons. *Science*, 162(3859): 1234–1248.
- Herrera, P.M., Davies, J. & Manzano, P.** 2014. *The Governance of Rangelands: Collective Action for Sustainable Pastoralism*. London, Routledge.
- Herrero, M., Grace, D., Njuki, J., Johnson, N., Enahoro, D., Silvestri, S. & Rufino, M.C.** 2013. The roles of livestock in developing countries. *Animal*, 7(suppl. 1): 3–18.



- Hesse, C. & Thébaud, B.** 2006. Will pastoral legislation disempower pastoralists in the Sahel? *Indigenous Affairs*, 1: (14–23).
- Hoffmann I., From, T. & Boerma, D.** 2014. *Ecosystem services provided by livestock species and breeds, with special consideration to the contributions of small-scale livestock keepers and pastoralists*. Background Study Paper No. 66, Commission on Genetic Resources for Food and Agriculture. Rome, FAO. (also available at <https://www.fao.org/3/at598e/at598e.pdf>).
- Huntsinger, L., Forero, L.C. & Sulak, A.** 2010. Transhumance and pastoralist resilience in the western United States. *Pastoralism: Research, Policy and Practice*, 1: 9–36.
- Huntsinger L., Sayre, N.F. & Wulforst, J.D.** 2012. Birds, beasts and bovines: three cases of pastoralism and wildlife in the USA. *Pastoralism: Research, Policy and Practice*, 2(12). <https://doi.org/10.1186/2041-7136-2-12>.
- IGAD.** 2020. *IGAD Protocol on Transhumance*. Final Version Endorsed by IGAD Committee of Ambassadors in Khartoum, Sudan on 27th February 2020. (also available at <https://icpald.org/wp-content/uploads/2021/06/IGAD-PROTOCOL-ON-TRANSHUMANCE-Final-Endorsed-Version.pdf>).
- IIED.** 2013. *Pastoralism: the custodian of China's grasslands*. London.
- IIED & SOS Sahel.** 2010. *Modern and Mobile: The future of livestock production in Africa's drylands*. London.
- Irons, W.** 1974. Nomadism as a political adaptation: the case of the Yomut Turkmen. *American Ethnologist*, 1(4): 635–658.
- Irwin, B., Cullis, A. & Flintan, F.** 2015. *Practitioners' Guide: Mapping Guidelines for Participatory Rangeland Management in Pastoral and Agro-Pastoral Areas*. Addis Ababa, CARE.
- IUCN.** 2012. *Supporting Sustainable Pastoral Livelihoods: A Global Perspective on Minimum Standards and Good Practices*. Nairobi, IUCN Eastern and Southern African Regional Office. pp. 40.
- Jahel, C., Lenormand, M., Seck, I., Apolloni, A., Toure, I., Faye, C., Sall, B., Lo, M., Diaw, C.S., Lancelot, R. & Coste, C.** 2020. Mapping livestock movements in Sahelian Africa. *Scientific Reports*, 10(8339). <https://doi.org/10.1038/s41598-020-65132-8>.
- Jensen, D.E.** 2003. Geoglyphs and GIS: modeling transhumance in northern Chile. In M. Doerr and A. Sarris, eds. *The Digital Heritage of Archaeology. CAA 2002. Computer Applications and Quantitative Methods in Archaeology*, Proceedings of the 30th Conference, Heraklion, Crete, April 2002, pp. 179–184.
- Johnsen, K.I., Niamir-Fuller, M., Bensada, A. & Waters-Bayer, A.** 2019. *A case of benign neglect: Knowledge gaps about sustainability in pastoralism and rangelands*. Nairobi, UNEP and Oslo, GRID-Arendal.
- Jonas, H.D., MacKinnon, K., Dudley, N., Hockings, M., Jessen, S., Laffoley, D., Mackinnon, D., Matallana-Tobón, C.L., Sandwith, T., Waithaka, J. & Woodley, S.** 2018. Editorial essay: Other Effective Area-Based Conservation Measures: From Aichi Target 11 to the Post-2020 Biodiversity Framework. *PARKS International Journal of Protected Areas and Conservation*, 24 Special Issue on OECMs: 9–16.
- Kaufmann, B.A., Hülsebusch, C.G. & Krätli, S.** 2018. Pastoral Livestock Systems. In P. Ferranti, E.M. Berry and J.R. Anderson, eds. *Encyclopedia of Food Security and Sustainability*, volume 3, pp. 354–360. Rome, Elsevier.

- Kaufmann, B.A., Lelea, M.A. & Hülsebusch, C.G.** 2016. Diversity in livestock resources in pastoral systems in Africa. *Rev. Sci. Tech. Off. Int. Epiz.*, 35: 445–459.
- Kerven, C. & Behnke, R.** 2011. Policies and practices of pastoralism in Europe. *Pastoralism: Research, Policy and Practice*, 1(28). <https://doi.org/10.1186/2041-7136-1-28>.
- Kerven, C., Shanbaev, K., Alimaev, I., Smailov, A. & Smailov, K.** 2008. Livestock mobility and degradation in Kazakhstan's semi-arid rangelands. In R. Behnke, ed. *The Socio-Economic Causes and Consequences of Desertification in Central Asia*, Chapter 6, pp. 113–140. Dordrecht, Germany, Springer.
- Kerven, C., Steimann, B., Dear, C. & Ashley, L.** 2012. Researching the future of pastoralism in Central Asia's mountains: examining development orthodoxies. *Mountain Research and Development*, 32, 368–377.
- Kesch, M.K., Bauer, D.T. & Loveridge, A.J.** 2015. Break on Through to the Other Side: The Effectiveness of Game Fencing to Mitigate Human–Wildlife Conflict. *African Journal of Wildlife Research*, 45: 76–87.
- Krätli, S.** 2015. *Valuing variability: New perspectives on climate resilient drylands development*, edited by H. de Jode. London, IIED.
- Kratli, S. & Toulmin, C.** 2020. Farmer–Herder Conflict in sub-Saharan Africa? A working paper for AFD. London, IIED.
- Kuper, A.** 2005. *The reinvention of primitive society: Transformations of the myth*. London, Routledge.
- Lentini, P.E.** 2012. The conservation value of Australia's Stock Route Network: A multi-taxonomic approach to management and planning. Australian National University. (Ph.D. thesis)
- Lentini, P.E., Fischer, J., Gibbons, P., Lindenmayer, D.B. & Martin, T.G.** 2011. Australia's Stock Route Network: 1. A review of its values and implications for future management. *Ecological Management and Restoration*, 12: 119–127.
- López-Hernández, D., Hernández-Hernández, R.M. & Brossard, M.** 2005. Historia del uso reciente de tierras de las sabanas de América del Sur. Estudios de casos en sabanas del Orinoco. *Interciencia*, 30: 623–630.
- LPP, LIFE Network, IUCN-WISP & FAO.** 2010. *Adding value to livestock diversity – Marketing to promote local breeds and improve livelihoods*. FAO Animal Production and Health Paper No. 168. Rome League for Pastoral Peoples and Indigenous Livestock Development (LPP), LIFE Local Livestock for Empowerment of Rural People, IUCN-WISP and FAO. (also available at <https://www.fao.org/3/i1283e/i1283e.pdf>).
- Ma, Y. X.** 2011. Some suggestion on consummate grassland construct system. *China Animal Husbandry*, 2011(10):40–41.
- Mancilla-Leytón, J.M., Pino-Mejías, R. & Martín Vicente, A.** 2013. Do goats preserve the forest? Evaluating the effects of grazing goats on combustible Mediterranean scrub. *Applied Vegetation Science*, 16: 63–73.
- Manzano, P.** 2015. Pastoralist Ownership of Rural Transformation: The adequate path to change. *Development*, 58: 326–332.
- Manzano, P.** 2017. Development interventions on pastoralist areas: a new decision matrix to identify win-win situations and no-go zones. *The Solutions Journal*, 9(3). <https://tinyurl.com/ycf7xhry>.

- Manzano, P.** 2017. *Pastoralism as a key tool for plant conservation: Creating conditions for adequate practice*. Report of a workshop, Kahramanmaras, Turkey, 9–12 October 2017. Malaga, Spain, IUCN Med. (also available at [http://www.uicnmed.org/projects/documentationplatform/uploads/1540393372737\\_WorkshopReport\\_FINAL.pdf](http://www.uicnmed.org/projects/documentationplatform/uploads/1540393372737_WorkshopReport_FINAL.pdf)).
- Manzano, P. & Casas, R.** 2010. Past, present and future of *Trashumancia* in Spain: nomadism in a developed country. *Pastoralism: Research, Policy and Practice*, 1(1): 72-90.
- Manzano, P., Galvin, K.A. & Cabeza, M.** (forthcoming). A global characterization of pastoral mobility types.
- Manzano, P. & Sloomweg, S.** 2017. Demography, social services and conflict: keys for the future of African pastoralist systems. In A.D. Camara and S. Taugourdeau. *Pastoralism in the current of global changes: stakes, challenges and prospects*, pp. 215–216.
- Manzano, P., Velagić Habul, E., Čaušević, Z. & Hadžiabdić, S.** 2009. *Pastoralism: An opportunity for eco-development in Bosnia and Herzegovina*. Mostar, Bosnia and Herzegovina, BVCF-AECID.
- Manzano, P. & White, S.R.** 2019. Intensifying pastoralism may not reduce greenhouse gas emissions: wildlife-dominated landscape scenarios as a baseline in life cycle analysis. *Climate Research*, 77(2): 91–97.
- Manzano-Baena, P. & Salguero-Herrera, C.** 2018. *Mobile pastoralism in the Mediterranean: Arguments and evidence for policy reform and to combat climate change*, edited by Liza Zogib. Mediterranean Consortium for Nature and Culture.
- Maru, N.** 2020. How Kachchh's Nomadic Pastoralists Are Dealing With COVID-19's Challenges. *The Wire*, <https://science.thewire.in/environment/rabari-kachchh-nomadic-pastoralists-livestock-lockdown-movement-restriction/>.
- Marshall, F.** 1990. Origins of Specialized Pastoral Production in East Africa. *American Anthropologist*, 92(4): 873–894.
- McAllister, R.R.J.** 2012. Livestock mobility in arid and semi-arid Australia: escaping variability in space. *The Rangeland Journal*, 34: 139–147.
- McCarthy, N. & Di Gregorio, M.** 2007. Climate variability and flexibility in resource access: The case of pastoral mobility in Northern Kenya. *Environment and Development Economics*, 12: 403–421.
- McGahey, D.J.** 2011. Livestock mobility and animal health policy in southern Africa: the impact of veterinary cordon fences on pastoralists. *Pastoralism: Research, Policy and Practice*, 1(14). <https://doi.org/10.1186/2041-7136-1-14>.
- McGahey, D., Davies, J., Hagelberg, N. & Ouedraogo, R.** 2014. *Pastoralism and the Green Economy – a natural nexus?* Nairobi, IUCN and UNEP.
- Mehta, L. & Srivastava, S.** 2019. Pastoralists without pasture: water scarcity, marketisation and resource enclosures in Kutch, India. *Nomadic Peoples*, 23(2): 195–217.
- Mena Y., Ruiz-Mirazo J., Ruiz F.A. & Castel J.M.** 2016. Characterization and typification of small ruminant farms providing fuelbreak grazing services for wildfire prevention in Andalusia (Spain). *Science of the Total Environment*, 544: 211–219.
- Merenciano González, A.M., Musálem, K., Laino, R., Rey Benayas, J.M., Cruz-Alonso, V., El Raiss Cordero, Z., Brun Moreno, V., Chaparro Otazu, P., Lubián Valenzuela, A., González, J.D., Amarilla, S., Aranda Espinoza M.L. & Enciso, C.** 2018. Servicios ecosistémicos en el Chaco Húmedo Paraguayo: retos para el manejo basado en los ecosistemas. *Ecosistemas*, 27:115–125.

- Mitchell, S.A.** 2013. The status of wetlands, threats and the predicted effect of global climate change: the situation in Sub-Saharan Africa. *Aquatic Science*, 75: 95–112.
- Molina-Flores, B., Manzano-Baena, P. & Coulibaly, M.** 2020. *The role of livestock in food security, poverty reduction and wealth creation in West Africa*, edited by B. Bedane. Dakar, FAO. (also available at <https://www.fao.org/3/ca8385en/CA8385EN.pdf>).
- Morello, J., Pengue, W. & Rodríguez, A.F.** 2007. Un siglo de cambios de diseño del paisaje: el Chaco Argentino. *Medio Ambiente y Urbanización*, 79: 25–64.
- Moritz, M., Behnke, R., Beitz, C.M., BliegeBird, R., Chiaravalloti, R.M., Clark, J.K., Crabtree, S.A., Downey, S.S., Hamilton, I.M., Phang, S.C., Scholte, P. & Wilson, J.A.** 2018. Emergent sustainability in open property regimes. *PNAS*, 115(51): 12859–12867.
- Moritz, M., Scholte, P., Hamilton, I.M. & Kari, S.** 2013. Open Access, Open Systems: Pastoral Management of Common-Pool Resources in the Chad Basin. *Human Ecology*, 41: 351–365.
- Mörkenstam, U.** 2019. Organised hypocrisy? The implementation of the international indigenous rights regime in Sweden. *International Journal of Human Rights*, 23(10): 1718–1741.
- Morton, J.F.** 2007. The impact of climate change on smallholder and subsistence agriculture. *PNAS*, 104(50): 19680–19685.
- Muhumed, M.M. & Yonis, A.M.** 2018. The Future of Somaliland Livestock Exports: Examining the Sustainability of Livestock Trade. *International Journal of Management, Accounting and Economics*, 5: 678–692.
- Neudert, R., Etzold, J., Münzner, F., Manthey, M. & Busse, S.** 2013. The opportunity costs of conserving pasture resources for mobile pastoralists in the Greater Caucasus. *Landscape Research*, 38, 499–522.
- Niamir-Fuller, M. ed.** 1999. *Managing Mobility in African Rangelands: The Legitimization of Transhumance*. London, Intermediate Technology Publications.
- Niamir-Fuller, M. & Turner, M.D.** 1999. A review of recent literature on pastoralism and transhumance in Africa. In M. Niamir-Fuller, ed. *Managing mobility in African rangelands: the legitimization of transhumance*. pp. 18–46. London, FAO and Beijer Institute for Ecological Economics. Intermediate Technology Publications.
- Nkhata, B.A. & Breen, C.M.** 2010. Performance of community-based natural resource governance for the Kafue Flats (Zambia). *Environmental Conservation*, 37: 296–302.
- Nori, M.** 2019. *Herding through uncertainties – Regional perspectives. Exploring the interfaces of pastoralists and uncertainty. Results from a literature review*. Working Paper, EUI RSCAS, 2019/68. European University Institute (EUI). 83 pp.
- Nori, M., Kenyanjui, M.B., Ahmed Yusuf, M. & Hussein Mohammed, F.** 2006. Milking drylands: the marketing of camel milk in North-East Somalia. *Nomadic Peoples*, 10: 9–28.
- Odhiambo, M.O.** 2014. *The Unrelenting Persistence of Certain Narratives: An Analysis of Changing Policy Narratives about the ASALs in Kenya*. IIED Country Report. London, IIED.
- Padín, N.** 2019. El hombre es tierra que anda. Los crianceros trashumantes del Alto Neuquén en perspectiva histórica, siglos XIX-XX. *Estudios*, 41: 129–153.
- Paine, R.** 1988. Reindeer and caribou *Rangifer tarandus* in the wild and under pastoralism. *Polar Record*, 24(148): 31–42. <https://doi.org/10.1017/S0032247400022324>.
- Pearson, M. & Lennon, J.** 2010. *Pastoral Australia: Fortunes, Failures and Hard Yakka: a Historical Overview 1788–1967*. Clayton, Victoria, Australia, Commonwealth Scientific and Industrial Research Organisation (CSIRO) Publishing.

- Pilling, D. & Hoffmann, I.** 2011. *Climate change and animal genetic resources for food and agriculture: state of knowledge, risks and opportunities*. Background Study Paper No. 53. Rome, Commission on Genetic Resources for Food and Agriculture, FAO. (also available at <https://www.fao.org/3/mb386e/mb386e.pdf>).
- Pinto de Abreu, U.G., McManus, C. & Santos, S.A.** 2010. Cattle ranching, conservation and transhumance in the Brazilian Pantanal. *Pastoralism: Research, Policy and Practice*, 1(1): 99–114.
- Powell, J.M., Fernández-Rivera, S., Williams, T.O. & Renard, C., eds.** 1995. *Livestock and Sustainable Nutrient Cycling in Mixed Farming Systems of sub-Saharan Africa. Volume II: Technical Papers*. Proceedings of an International Conference held in Addis Ababa, Ethiopia, 22–26 November 1993. Addis, Ababa, International Livestock Centre for Africa (ILCA). 568 pp.
- Powell, J.M., Fernández-Rivera, S., Hiernaux, P. & Turner, M.D.** 1996. Nutrient cycling in integrated rangeland/cropland systems of the Sahel. *Agricultural Systems*, 52: 143–170.
- Ptackova, J.** 2012. Implementation of Resettlement Programmes Amongst Pastoralist Communities in Eastern Tibet. In H. Kreuzmann, ed. *Pastoral practices in High Asia. Agency of 'development' effected by modernisation, resettlement and transformation*, pp. 217–234. Dordrecht, Germany, Springer.
- Rhissa, Z.** 2010. *Revue du secteur de l'élevage au Niger*. FAO/SFW. République du Niger, 115 pp.
- Robinson, L.W.** 2019. Open property and complex mosaics: Variants in tenure regimes across pastoralist social-ecological systems. *International Journal of the Commons*, 13(1): 804–826.
- Rodríguez, M.** 2015. *La trashumancia en Neuquén. Hacia una mayor visibilidad*. III Modelo de economía. Congreso Nacional de Derecho Agrario Provincial (La Plata, 2015). <http://hdl.handle.net/10915/50206>.
- Root-Bernstein, M., Guerrero-Gatica, M., Piña, L., Bonacic, C., Svenning, J.-C. & Jaksic, F.M.** 2017. Rewilding-inspired transhumance for the restoration of semiarid silvopastoral systems in Chile. *Regional Environmental Change*, 17(5): 1381–1396.
- Ruiz-Mirazo J. & Robles A.B.** 2012. Impact of targeted sheep grazing on herbage and holm oak saplings in a silvopastoral wildfire prevention system in south-eastern Spain. *Agroforestry Systems*, 86(3): 477–491.
- Ruiz-Mirazo, J., Robles, A.B. & González-Rebollar, J.L.** 2011. Two-year evaluation of fuelbreaks grazed by livestock in the wildfire prevention program in Andalusia (Spain). *Agriculture, Ecosystems and Environment*, 141(1–2): 13–22.
- Salzman, P.C.** 2002. Pastoral Nomads: Some General Observations Based on Research in Iran. *Journal of Anthropological Research*, 58: 245–264.
- Scoones, I.** 1995. New directions in pastoral development in Africa. In I. Scoones, ed. *Living with Uncertainty: New Directions in Pastoral Development in Africa*, pp. 1–36. London, Intermediary Technology Development Group (ITDG).
- Scott, J.C.** 2009. *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. New Haven, Connecticut, USA, Yale University Press.
- Sharma, P.V., Koller-Rollefson, I. & Morton, J.** 2003. *Pastoralism in India: A Scoping Study*. New Delhi, Department for International Development (DFID).
- Spooner, P.G., Firman, M. & Yalmambirra.** 2010. Origins of Travelling Stock Routes. 1. Connections to Indigenous traditional pathways. *Rangeland Journal*, 32(3): 329–339.
- State of Western Australia.** 2013. *Guidelines for the review of legislation*. West Perth, Western Australia, Public Sector Commission.

- Sullivan, S. & Rhode, R.** 2002. On non-equilibrium in arid and semi-arid grazing systems. *Journal of Biogeography*, 29: 1595–1618.
- Too, R., Masake, R., Oyoko, G. & Onyango, D.** 2015. *The Contribution of Livestock to the Somali Economy*. Nairobi, IGAD Centre for Pastoral Areas and Livestock Development (ICPALD).
- Turner, M.D., McPeak, J.G., Gillin, K., Kitchell, E. & Kimambo, N.** 2016. Reconciling Flexibility and Tenure Security for Pastoral Resources: the Geography of Transhumance Networks in Eastern Senegal. *Human Ecology*, 44, 199–215.
- Turner, M.D. & Schlecht, E.** 2019. Livestock mobility in sub-Saharan Africa: A critical review. *Pastoralism: Research, Policy and Practice*, 9(13). <https://doi.org/10.1186/s13570-019-0150-z>.
- UN.** 2007. *United Nations Declaration on the Rights of Indigenous Peoples*. [https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP\\_E\\_web.pdf](https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf).
- UNDP.** 2003. *Pastoralism and Mobility in the Drylands*. Global Drylands Imperative Second Challenge Paper Series. Nairobi, United Nations Development Programme (UNDP) Drylands Development Centre.
- UN Human Rights Council.** 2011. *Report of the Special Rapporteur on the rights of indigenous peoples*. Addendum: The situation of the Sámi people in the Sápmi region of Norway, Sweden and Finland, 6 June 2011, A/HRC/18/35/Add.2.
- Vella, B., Gonzalez, P. & Spooner, P.G.** 2020. The New South Wales Travelling Stock Route and Reserve (TSR) network: historical extent, spatial distribution and drivers of loss 1884–2017. *Australian Geographer*, 51: 87–103.
- Wabnitz, H.-W.** 2006. Le Code Pastoral de la République Islamique de la Mauritanie: Un exemple parfait de législation traditionnelle. In *Les frontières de la question foncière : Enchassement social des droits et politiques publiques*. Montpellier, France, Insitut de recherche pour le développement.
- Wagenaar, K.T., Diallo, A. & Sayers, A.R.** 1986. *Productivity of transhumant Fulani cattle in the inner Niger delta of Mali*. ILCA Research Report No. 13. Addis Ababa, International Livestock Centre for Africa (ILCA).
- World Bank.** 2020. *From Isolation to Integration: The Borderlands of the Horn of Africa*. Washington, DC.
- YanBo Li, Gongbuzeren & WenJun Li.** 2014. *A review of China's rangeland management policies*. London, IIED.
- Yılmaz, E., ed.** 2019. *Mobile Pastoralism in Mediterranean Landscapes: The state of (mobile) pastoralism in five pilot sites*. Ankara, Turkey, Yolda Initiative and Roads less Travelled.
- Yılmaz, E., Zogib, L., Urivelarrea, P. & Çağlayan, S.D.** 2019. Mobile Pastoralism and Protected Areas: Conflict, Collaboration and Connectivity. *PARKS International Journal of Protected Areas and Conservation*, 25(1). <https://parksjournal.com/wp-content/uploads/2019/05/PARKS-25.1-Yilmaz-et-al-10.2305-IUCN.CH.PARKS25-1EY.en.pdf>.
- Zorogastúa-Cruz, P., Quiroz, R. & Garatuza-Payan, J.** 2012. Dinámica de los bofedales en el altiplano peruano-boliviano. *Revista Latinoamericana de Recursos Naturales*, 8: 63–75.



---

# National Policies and Laws

Act 3/1995 of 23 March on Cattle Trails (Spain)

Constitution of the Federal Democratic Republic of Ethiopia, 1994

Decree for Implementation of the Pastoral Charter (Mali)

Decision A/DEC.5/10/98 of ECOWAS relating to the Regulations on Transhumance between ECOWAS Member States (1998)

Law No. 3016 of 30 September 2016 (Neuquén Province, Argentina)

Law on Pastures (Kyrgyz Republic)

Law on Pastures, 2013 (Tajikistan)

Law Relating to Pastoralism, 2002 (Burkina Faso)

Law on Transhumance and Rangeland Management, 2016 (Morocco)

Ordinance Relating to Pastoralism, 2010 (the Niger)

Pastoral Charter, 2001 (Mali)

Pastoral Code, 2000 (Mauritania)

Pastoral Code, 2010 (the Niger)

Rural Land Administration and Use Proclamation, 2009 (Afar National Regional State, Ethiopia)

Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 (India)

Stock Routes Management Act, 2002 (Queensland, Australia)





## FAO ANIMAL PRODUCTION AND HEALTH GUIDELINES

1. Collection of entomological baseline data for tsetse area-wide integrated pest management programmes, 2009 (En)
2. Preparation of national strategies and action plans for animal genetic resources, 2009 (En, Fr, Es, Ru, Zh)
3. Breeding strategies for sustainable management of animal genetic resources, 2010 (En, Fr, Es, Ru, Ar, Zh)
4. A value chain approach to animal diseases risk management – Technical foundations and practical framework for field application, 2011 (En, Zh, Fr<sup>e</sup>)
5. Guidelines for the preparation of livestock sector reviews, 2011 (En)
6. Developing the institutional framework for the management of animal genetic resources, 2011 (En, Fr, Es, Ru)
7. Surveying and monitoring of animal genetic resources, 2011 (En, Fr, Es)
8. Guide to good dairy farming practice, 2011 (En, Fr, Es, Ru, Ar, Zh, Pt<sup>e</sup>)
9. Molecular genetic characterization of animal genetic resources, 2011 (En, Zh<sup>\*\*</sup>)
10. Designing and implementing livestock value chain studies – A practical aid for Highly Pathogenic and Emerging Disease (HPED) control, 2012 (En)
11. Phenotypic characterization of animal genetic resources, 2012 (En, Fr<sup>e</sup>, Zh<sup>e</sup>)
12. Cryoconservation of animal genetic resources, 2012 (En)
13. Handbook on regulatory frameworks for the control and eradication of HPAI and other transboundary animal diseases – A guide to reviewing and developing the necessary policy, institutional and legal frameworks, 2013 (En)
14. *In vivo* conservation of animal genetic resources, 2013 (En, Zh<sup>\*\*</sup>)
15. The feed analysis laboratory: establishment and quality control – Setting up a feed analysis laboratory, and implementing a quality assurance system compliant with ISO/IEC 17025:2005, 2013 (En)
16. Decision tools for family poultry development, 2014 (En)
17. Biosecurity guide for live poultry markets, 2015 (En, Fr<sup>e</sup>, Zh<sup>e</sup>, Vi)
18. Economic analysis of animal diseases, 2016 (En, Zh)
19. Development of integrated multipurpose animal recording systems, 2016 (En, Zh)
20. Farmer field schools for small-scale livestock producers – A guide for decision-makers on improving livelihoods, 2018 (En, Fr<sup>e</sup>)
21. Developing sustainable value chains for small-scale livestock producers, 2019 (En, Zh<sup>\*\*</sup>)
22. Estimation des bilans fourragers dans la région du Sahel d’Afrique de l’Ouest et Centrale, 2020 (Fr)
23. Carcass management guidelines – Effective disposal of animal carcasses and contaminated materials on small to medium-sized farms, 2020 (En, Fr, Es, Ru, Zh, Ar, Sq, Sr, Mk)
24. Technical guidelines on rapid risk assessment (RRA) for animal health threats, 2021 (En)
25. Good beekeeping practices for sustainable apiculture, 2021 (En, Es)
26. Responsible use of antimicrobials in beekeeping, 2021 (En)
27. Developing field epidemiology training for veterinarians – Technical guidelines and core competencies, 2021 (En)

Availability: February 2022

Ar – Arabic  
En – English  
Es – Spanish  
Fr – French  
Mk – Macedonian  
Pt – Portuguese  
Ru – Russian  
Sq – Albanian  
Sr – Serbian  
Vi – Vietnamese  
Zh – Chinese

Multil – Multilingual  
\* Out of print  
\*\* In preparation  
<sup>e</sup> E-publication

The *FAO Animal Production and Health Guidelines* are available through authorized FAO Sales Agents or directly from Sales and Marketing Group, FAO, Viale delle Terme di Caracalla, 00153 Rome, Italy.





Mobility is a vital strategy employed by pastoralists to capitalize on the scarce availability of resources in variable environments, making pastoralism economically feasible and environmentally sustainable. Through mobility, pastoralists can produce animal-sourced products that provide food and income security to populations in the world's rangelands. Such a practice also provides a range of benefits to the environment while fostering the capacity to adapt to changing social and natural environments.

With a few exceptions, policies have largely not kept up with new scholarship and development discourse that acknowledges the importance of mobility to pastoralism. There is a lag in and resistance to legislating in favour of mobility. The overall objective of this handbook is to guide the development of legal and policy frameworks for securing mobility for various pastoral production systems and practices.

This handbook calls for the legal recognition and securing of pastoral mobility as a way of safeguarding and facilitating a continuous stream of economic and social benefits for pastoralists, countries and the environment. It facilitates a deeper understanding of pastoral mobility through examples and case studies drawn from various parts of the world and identifies considerations to be borne in mind when legislating for mobility.

ISBN 978-92-5-135700-2 ISSN 1810-0708



9 789251 357002

CB8461EN/1/02.22