



RSC PP 2022/04
Robert Schuman Centre for Advanced Studies
Global Governance Programme

POLICY PAPER

**Assessing the policy framework
in pastoral areas of Asia**

Michele Nori

European University Institute
Robert Schuman Centre for Advanced Studies
Global Governance Programme

Assessing the policy framework in pastoral areas of Asia

Michele Nori

RSC Policy Paper 2022/04

This work is licensed under the [Creative Commons Attribution 4.0 \(CC-BY 4.0\) International license](https://creativecommons.org/licenses/by/4.0/) which governs the terms of access and reuse for this work.

If cited or quoted, reference should be made to the full name of the author(s), editor(s), the title, the series and number, the year and the publisher.

ISSN 1830-1541

© Michele Nori, 2022

This work is licensed under the [Creative Commons Attribution 4.0 \(CC-BY 4.0\) International license](https://creativecommons.org/licenses/by/4.0/) which governs the terms of access and reuse for this work.

Published in March 2022 by the European University Institute.

Badia Fiesolana, via dei Roccettini 9

I – 50014 San Domenico di Fiesole (FI)

Italy

www.eui.eu

Views expressed in this publication reflect the opinion of individual author(s) and not those of the European University Institute.

This publication is available in Open Access in [Cadmus](https://cadmus.eui.eu/), the EUI Research Repository



With the support of the
Erasmus+ Programme
of the European Union

The European Commission supports the EUI through the European Union budget. This publication reflects the views only of the author(s), and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Robert Schuman Centre for Advanced Studies

The Robert Schuman Centre for Advanced Studies, created in 1992 and currently directed by Professor Erik Jones, aims to develop inter-disciplinary and comparative research on the major issues facing the process of European integration, European societies and Europe's place in 21st century global politics.

The Centre is home to a large post-doctoral programme and hosts major research programmes, projects and data sets, in addition to a range of working groups and ad hoc initiatives. The research agenda is organised around a set of core themes and is continuously evolving, reflecting the changing agenda of European integration, the expanding membership of the European Union, developments in Europe's neighbourhood and the wider world.

For more information: <http://eui.eu/rscas>

The **Policy Paper** Series of the Robert Schuman Centre for Advanced Studies complements its Working Papers Series. This series aims to disseminate the views of a person or a group on a particular policy matter, specifically in the field of European integration.

The European University Institute and the Robert Schuman Centre for Advanced Studies are not responsible for the proposals and opinions expressed by the author(s).

The aim of the Robert Schuman Centre for Advanced Studies is to contribute to the public debate by offering views and opinions on matters of general interest.

The EUI and the RSC are not responsible for the opinion expressed by the author(s).

The Global Governance Programme

The Global Governance Programme is one of the flagship programmes of the Robert Schuman Centre. It is a community of outstanding professors and scholars, that produces high quality research and engages with the world of practice through policy dialogue. Established and early-career scholars work on issues of global governance within and beyond academia, focusing on four broad and interdisciplinary areas: Global Economics, Europe in the World, Cultural Pluralism and Global Citizenship.

The Programme also aims to contribute to the fostering of present and future generations of policy and decision makers through its executive training programme: the Academy of Global Governance, where theory and 'real world' experience meet and where leading academics, top-level officials, heads of international organisations and senior executives discuss on topical issues relating to global governance.

For more information: <http://globalgovernanceprogramme.eui.eu>



Abstract

Pastoralism in Asia features a variety of agro-ecological and socio-cultural settings. From Russian Siberia to Indian drylands, the continent is home to large and diverse pastoral territories and communities. Policies and legislation regulating rangeland governance and livestock production are of great concern in the region, as they affect the livelihoods of significant parts of the population. Herding communities across the continent are also highly heterogeneous in their historical trajectories, and socio-political institutions; during the twentieth century, Asian rangelands underwent important political reconfigurations that brought specific consequences for the territories and lives of pastoralists. The Socialist and the capital-intensive Green revolutions that have characterised the recent history of different portions of the region with the goal of modernising agricultural systems have generated significant and differentiated forms of uncertainty for most rural communities.

Agrarian reforms, large-scale infrastructure, subsidy and loan schemes, along with integration into market dynamics, have been instrumental in supporting the stabilization of livestock production and the sedentarisation of herding communities, as part of their broader incorporation into the global economic and political arena. The overall impact has been one of widespread dispossession, dislocation, and marginalization, forcing pastoralists to reconfigure herd management and mobility strategies, and to constantly negotiate their access to grazing resources, market options, and income opportunities, including through land use conversion and migration.

This review of past and evolving policy frameworks in different parts of Asia shows that, despite contrasting differences in ideological perspectives and development trajectories, the dismantling of pastoral resource management has always been purported as a prerequisite for modernisation, through the multiple and divergent agendas of increasing livestock production, preserving rangeland ecosystems and improving local welfare. However, the engagement with State- and market-driven dynamics has rarely been favourable to pastoralists. The political and institutional uncertainty resulting from these approaches has contributed substantially to altering patterns of resource governance for local communities, who have been seldom invited to participate in policy planning and societal debates, even though their livelihoods, land and livestock are often the primary focus of development programmes and modernisation strategies.

Keywords

Pastoralism; uncertainty; agriculture; food security; rangelands; Asia.

This paper is part of a series of the Robert Schuman Centre, Global Governance Programme looking at the framing of policy around pastoralism in different regions of the world.

The writing of this paper was funded through a European Research Council Advanced Grant to [PASTRES \(Pastoralism, Uncertainty, Resilience: Global Lessons from the Margins\)](#), Grant number 740342.



Herding on the Tibetan plateau. Credit: M. Nori, PASTRES 2019

Contents

Rangelands and revolutions	2
The Soviet experience.....	4
From collapse to transition	7
Chinese endeavours	10
Social and environmental engineering	11
Green revolutions in southern Asia.....	14
Sneaking through the interstices	16
Navigating difficult institutional landscapes	18
Bibliography.....	19

Rangelands and revolutions*

Stretching from the borders of eastern Europe to the Indian and Pacific Oceans, Asia features a variety of agro-ecological and socio-cultural settings. The continent includes Russian Siberia with the largest rangelands, China with the highest number of pastoral people, and India with the largest livestock population (Kerven and Behnke, 2011; Jenet *et al.*, 2016). From the Hindu Kush Himalayas and the Altay and Pamir ranges to the Tibetan and Deccan plateaux, the Siberian steppes, and the Gobi and Thar deserts, Asia hosts large and diverse pastoral populations. These communities are highly heterogeneous in terms of ethnic identity, cultural heritage, religious beliefs, historical trajectories, and socio-political institutions, while their livelihoods feature a mix of extensive livestock-keeping with seasonal migrations to pastures and expanding agricultural farmlands.

During the twentieth century Asian rangelands have undergone political revolutions that brought specific consequences for pastoralists' lives and territories. Most pastoral populations in central Asia were incorporated into the socialist economies of the Soviet Union and Communist China. The foundations of pastoralists' institutional frameworks have been deeply challenged; land, labour, and livestock have been collectivised and their management largely centralised. Far from stabilising and standardising agricultural systems, these institutional arrangements to modernise production have generated significant and differentiated forms of uncertainty for rural communities across Asia. These patterns became more divergent as the two systems ventured disparately into a market economy. Community networks and traditional arrangements have mostly operated to survive State rigidity changes or collapse and deal with the emergence of new interests and actors.

In South Asia, policy efforts have almost never directly addressed the livelihoods of pastoral communities, except for grabbing their land for nature reserves, forest plantations, and, most importantly, their conversion into irrigated farmlands. Large-scale infrastructure schemes and input-based forms of development have supported the Green Revolution, which long aimed at increasing and stabilising productivity and settling people in southern Asia drylands. The overall impact on herding communities has been one of dispossession, dislocation, and widespread marginalisation, forcing pastoralists to reconfigure herd management and mobility strategies and continuously negotiate their access to grazing resources (Agrawal and Saberwal, 2004; Kavoori, 2007; Maru, 2020; Scoones, 2021).

Whereas the State presence has consistently weakened in central Asian rangelands following the collapse of the Soviet experience, it remains evident in pastoral area of China and India, although with different dynamics and through diverse patterns. In most countries previously part of the Soviet systems, the State today plays a minor role in regulating or assisting agriculture and rural development, and pastoralists are engaging in domestic and regional trade in a quite liberalised market environment. By contrast, herding communities in China still face the uncertainties generated by a centralised institutional setting that aims to manage land, people and livestock through evolving legislative measures, public subsidies, and investment schemes. The evolving policy framework in South Asia is different: India and Pakistan are moving away from a post-colonial perspective and legislation, where pastures are managed by foresters and pastoralists are classified among tribal groups. While policy approaches and legislation have changed, pastoralists remain largely neglected in the institutional set-up in all regions.

* Acknowledgments: We would like to thank for their contributions Ian Scoones, Gongbuzeren, Tsering Palden, Aniruddh Sheth, Natasha Maru, Rashmi Singh, Ilse Köhler-Rollefson, Michaël Thevenin.

The ongoing **integration of pastoral economies into national and global markets** is very dynamic in most countries, as new opportunities emerge from local demographic changes, as well as from shifting socio-economic and cultural patterns, with the picture differing from one context to another. Demand for pastoral products is growing; relatively good domestic prices for meat and dairy products allow rangeland dwellers to generate income while continuing to subsist on the food provided by their animals (Kerven, 2006; Bruun and Narangoa, 2011). Animal fibres in the form of sheep wool, goat cashmere and pashmina, and camel hair often also provide significant income to pastoralists.

BOX – Cash from cashmere

Livestock products are by far the main item of agricultural exports for Mongolia, with cashmere playing a major role. Over the past decade, sales of cashmere have become the single largest source of income for a large portion of Mongolian livestock farmers and a principal source of livelihood for Mongolia's poor herding communities. Since the transition to a market economy, goat numbers more than tripled from 5.1 million in 1990 to 18.3 million heads in 2007 due to the attractive price of cashmere, leading to unsustainable grazing pressures on the Mongolian rangelands.

China is also establishing itself as a major exporter of cashmere, mostly produced from goats raised in the northern and western rangelands. A main contributor to the economy of Tibetan herding communities, cashmere has altered the balance between sheep and goats in the region. Together with pashmina, cashmere is also a relevant source of income for herders in northern India (Kerven, 2006; Singh *et al.*, 2013; Mitra *et al.*, 2013).

Major political reconfigurations, institutional evolutions, and increased market pressures challenge the customary mechanisms governing the management of natural resources, with consequences on rangeland conditions (Nori, 2008; Yu and Farrell, 2016; Li *et al.*, 2018). Moreover, the central Asian and Hindu Kush mountains, the Tibetan plateaux and Mongolia are indicated amongst the regions most affected by climate change dynamics, with foreseeable impacts on rangelands. As arid ecosystems are broadly more sensitive to marginal climatic variations, the implications for pasture potentials – and thus on livestock performances – can be significant even in the short term (IPCC, 2014; ICIMOD, 2014). As discussed below, the implications of local institutional arrangements on rangeland conditions are a major area of concern in the region (Nori and Davies, 2007; Kreutzmann, 2012; Zhang *et al.*, 2018).

BOX – Institutions and environmental dynamics

Sneath (1998) provides an interesting comparison of how the different political settings influenced herders' capacities to implement pastoral resource management under diverse political environments in Asia – and the effects of each on rangeland conditions and pastoralists' livelihoods. The study area crosses northern China, Mongolia, and southern Siberia. Satellite imagery assessments of grassland degradation under the respective property regimes revealed large differences in degradation processes. Grazing resources in Mongolia – which has allowed pastoralists to continue community land control and customary institutional arrangements, involving large-scale movements between seasonal pastures – were much less degraded than those administered through Russian and Chinese policies shaped by State-owned agricultural collectives, large-scale fencing, and permanent settlements.

In the sections that follow, we analyse the evolving socio-political processes and institutional structures characterising resource access and use in different Asian contexts. We also examine the implications for the socio-economic circumstances and livelihood conditions of pastoralist communities and the rangelands they inhabit.

The Soviet experience

Central Asian (CA) populations have faced specific uncertainties from the impact of geopolitical and economic transformations triggered by the dissolution of the Soviet system. Livelihood transformations in the aftermath of the Soviet experience have been particularly dramatic for the heterogeneous community relying on extensive livestock breeding as a main economic asset. This pattern differs from those of other pastoralists in Asia dealing with a shifting policy framework which, despite its inconsistencies, maintained a degree of State support and market control (Steinmann, 2012; Kerven *et al.*, 2016; Robinson *et al.*, 2017).

The vast and diverse grasslands covering most of CA are characterised by high temporal and spatial variability and important inter-annual variations. Under such conditions, extended patterns of mobility and flexibility are relevant in making pastoral resource management feasible and sustainable, supporting the most effective use of vegetation productivity and avoiding harsh winter extremes (Fernández-Giménez, 2002; Turner, 2011; Robinson *et al.*, 2017). During the Soviet period, policies and legislation governing pastoral resources were fairly homogeneous as land and livestock were under State control and managed collectively, while cross-border movement of animals, products, and people was not problematic.

After an initial period when collectivisation in State livestock farms was also associated with sedentarisation – basically until the onset of the second world war – herds movement to graze natural pastures when and where possible was tolerated, as herders' knowledge and skills proved more effective than those of hard scientists (Kerven *et al.*, 2021). State technology and investments were at times put at the service of local pastoral mobility and herd management in forms of 'industrialised nomadism' – highly subsidised but quite productive (*ibid.*). Though relatively effective, the State livestock farms were complex and costly infrastructure.

BOX – Herd collectivisation and land conversion in Kazakhstan

Kazakhstan provides interesting insights on the transformations of rural societies during the Soviet period, when institutional changes had direct and intense consequences on economic and ecological conditions. After 1924, collective farms were established around semi-settled villages to favour joint livestock management and herd movements. This was followed by reforms that pushed for enforced sedentarisation of nomadic communities and expropriation of their livestock. The outcomes of such strategy did not take long to manifest: the loss of pastoral mobility and the collapse of the supporting social infrastructure had huge consequences on herd management; winter feeding was in shortage as animals were not taken on transhumance. Livestock numbers plummeted and a period of famine set in, inflicting heavy human losses and triggering an immense exodus of Kazakh nomads. The number of sheep declined from its peak in 1928 to less than one-fifth by the mid-1930s when collectivisation reached full swing. It took until 1958 to offset this loss and reach the same animal levels as thirty years earlier (Kreutzmann, 2013a; Kerven *et al.*, 2021).

Eventually the social and economic costs of managing herds in collective and sedentarised ways were acknowledged as being too high; decades later pastoral mobility was reinstated and even assisted with developing technologies to recover the national herd (Kerven *et al.*, 2021). Subsequently vast swathes of the Kazakh steppe lands were converted into agricultural fields, triggering large-scale processes of land degradation. From 1954 onwards, the area of agricultural lands used for grain and fodder production in Kazakhstan increased five-fold within less than five years. Most of the land became irreversibly degraded, complementing and intensifying the effects of the disastrous planning and implementation of a multifaceted modernisation strategy (Kreutzmann 2013a).

After the Soviet Union's dissolution, the principles and strategies informing resource access in pastoral areas have followed quite divergent patterns and paces. Almost everywhere livestock have been de-collectivised and transferred to family ownership and control. However, the reconfiguration of institutional arrangements concerning rangelands evolved in more diverse and sophisticated ways in each country's transition to a market economy. Alongside the varied agro-ecological settings, the respective policy agendas account for specific concerns for food production, social justice, or environmental discourses, as well as the degree of the country's economic autonomy and engagement with international agendas. The degree of democracy and the decentralisation of the evolving political landscape have also helped shape land reforms. More recently, climate change dynamics and concerns have also been brought into the picture.

Accordingly, the range of policy trajectories and institutional arrays changes consistently from one country to another, spanning from the persistent presence of the State and central planning principles in regulating resource access to more individualised and exclusive regimes to forms of local devolution (Kerven *et al.*, 2011; Robinson *et al.*, 2012; Robinson *et al.*, 2017). These patterns often blur and intermingle, and formal rules can be overridden by informal arrangements, social networking, and contractual relationships. The degree of consideration of customary structures and consultation with local communities or the inclusion of their claims

in the reconfiguration of the institutional architecture has also been quite diverse (Steinmann, 2012; Robinson *et al.*, 2017).

Table 1 – Legislation regarding access to rangelands in central Asian countries

Country	First wave of legislation		Rangeland-related legislation	
	Law	Provisions	Law	Provisions
Kazakhstan	Land Code in 2003	Leasing for 49 years of privatisation by purchase	Law on Pastures in 2017	Unclear whilst by-laws remain undeveloped
Kyrgyzstan	Resolution 360 in 2003	Leasing for up to 49 years by public auction	Law on Pastures in 2009	Common property regime
Tajikistan	Land Code in 1996 & Law on Dekhan farms in 2009	Leasing of permanent heritable use	Law on Pastures in 2013	Common management, individual leasing and privatisation all possible
Turkmenistan	Presidential decree 1995 Land Code in 2004	Pasture managed by state enterprises, often unregulated in practise for private owners	Law on Pastures in 2015	Regulated leasing by individuals or groups
Mongolia	Land Law in 1994	Camps sites leased, pasture open access	Draft Law on Pastures (not yet)	Long term lease by herding groups

Source: own elaboration from Robinson *et al.*, 2017.

The pace of the transition of post-Soviet countries to a market economy and the associated de-collectivisation and decentralisation processes were hastened under pressure from international organisations and financial agencies (Spoor and Visser, 2001 – quoted in Kerven *et al.*, 2021). The speed of change affected the ability of institutional structures and actors to adapt to the rapidly changing context. In the policy guidance set during the Soviet period socio-economic considerations were embedded in the Socialist discourse and managed through rigid centralised governance. The evolving political environment in post-Soviet Asia is influenced by the experiences of other pastoral regions in advocating for more open and flexible institutional arrangements. Specific concerns have been raised about the implications of rangeland governance on the poor and marginal groups, who are paying the social and ecological costs of privatised and exclusionary resource access and ranching systems. The tensions generated by the push and pull dynamics between different approaches have fostered legal and political uncertainty for pastoralists in the region (Steinmann, 2012; Robinson *et al.*, 2017).

BOX - Hardening borders in Ferghana

Ferghana is an ethnically diverse valley extending across eastern Uzbekistan, southern Kyrgyzstan, and northern Tajikistan. It plays a crucial role in Central Asia as it represents a strategic hub in the use of natural resources and for communication and trade flows amongst different communities. During the Soviet period this border between Socialist Republics was considered internal and played a relevant role for local livelihoods as inhabitants could cross easily and share infrastructure (Murzakulova and Mestre, 2018).

After 1991, as the Soviet states became independent, the nature of the boundary changed, with different border regimes implemented. All three countries raised claims to the area. Political negotiations were initiated to define its delimitations amid growing uncertainty as the conditions to cross borders transformed dramatically. As tensions mounted, the borders hardened; movement and exchanges were restricted and conflictive relationships escalated, with several incidents reported. Procedures to cross borders were reinforced, increasing friction between communities with the establishment of multiple local enclaves, border patrols, and laying of land mines in some areas. Pastoralists are among those most impacted by these evolutions as transhumance in the region implies seasonal movements of the different communities across the valley. The traditional pattern of sharing pastures is further complicated by the different institutional and legal arrangements on land use implemented by each of the three countries (Murzakulova and Mestre, 2018).

From collapse to transition

Apart from the reconfiguration of rangeland governance, the dissolution of the Soviet regime entailed several other implications for pastoralists in Central Asia. National boundaries have been reinstalled, while public infrastructure was abandoned, with consequences for transnational mobility, supply systems, and trade patterns. The Soviet system had engaged in continuous efforts to stabilise and intensify livestock production through a regional perspective in which countries were interconnected not only in terms of meeting consumer demand, but also in the supply of production inputs, including feed, and marketing livestock products. The breakdown of such an institutional and economic setting, therefore, had dramatic consequences on the region's pastoral economies.

The sudden privatisation of the means of production carried significant impacts on public infrastructure. Large irrigated systems broke down, affecting animal feeding systems. Transport networks fell into disrepair, curtailing access to remote pastures, especially in inner mountainous areas (Kerven *et al.*, 2012). Transnational trade in the region has remained vibrant as it serves to link the economic potentials of different countries while maintaining degrees of regional integration. However regional and national marketing systems that were previously centrally managed by State agencies, collapsed, giving rise to unregulated private enterprises, particularly in the livestock trade, whose control has been taken over by powerful market agents and commercial networks (Kerven, 2006).

BOX – Transnational trade flows

Kerven 2006(:6) reports many examples of trade in livestock and animal products on a regional scale: yaks and cattle driven across from Tajikistan to the urban markets of southern Kyrgyzstan; sheep leaving western Kyrgyzstan to supply the populous Ferghana valley of Uzbekistan; horses taken across the mountains of northern Kyrgyzstan for sale in the richer communities of south Kazakhstan; cashmere goat fibre trucked over the borders of eastern Kazakhstan and Kyrgyzstan to China; meat taken from northern Kazakhstan to Russia; karakul lamb pelts from Turkmenistan sold to Russia. Given the highly informal nature of this trade, the true value of livestock exports to each of the Central Asian countries and their populations cannot be calculated.

The transition to a market economy has also had relevant effects in terms of social reproduction and capital accumulation as the State withdrawal from country peripheries as well as agrarian production and marketing contributed to **widening social and territorial polarisation and generated new forms of inequality and vulnerability** (Kerven *et al.*, 2011; Steinmann, 2012). Long-distance mobility and extensive seasonal transhumance have scaled down to become an option available only to large livestock owners who can dispose of, or afford to mobilise, labour accordingly, either through the family or, increasingly, through salaried shepherds. Instead, the new socio-economic arrangements have often led to reduced economies of scale and higher transaction costs for poorer pastoral households keeping animals for their subsistence, forcing them to reduce their herd sizes and grazing perimeters (Robinson *et al.*, 2017; Kerven *et al.*, 2021).

In response to the evolving conditions, pastoralists in CA have adapted to various changes and challenges over time. In the immediate aftermath of the Soviet dissolution, most herding communities were able to expand their operations by regaining access to and control over pastures and livestock resources by taking advantage of institutional uncertainties and power vacuums. Over time community responses have diversified through the interplay of adaptations in herd dynamics, negotiating access to land and differentiating patterns of use, and reorganising labour regimes (Fernández-Giménez, 2002; Kerven *et al.*, 2016; Robinson *et al.*, 2017; Nori, 2019). In some areas, pooling community labour based on kinship or residence has provided a strategic option for reinstating livestock mobility, as collective herding systems enable covering the costs of shepherding and transport. Elsewhere, joint working schemes have been instrumental for maintaining public infrastructure and providing production inputs, including water and forage (Kerven *et al.*, 2016; Robinson *et al.*, 2017; Kerven *et al.*, 2021).

Central Asian herding communities have also sought to diversify livelihood sources, including through other agricultural practices or working in local towns or mines or migrating far away. These processes contribute to the reconfiguration of local pastoral systems as male emigration increases the agricultural burden on women, reducing opportunities for herd mobility. Revenues from alternative activities and migrants' remittances are often reinvested in financing livestock and labour for the family herd. These shifts contribute to ongoing processes that lead to growing livestock pressures on limited settings, exacerbating the abandonment of remote pastures and the concentration of livestock around settlements (Nori and Sadaqat, 2006; Agarwal, 2010; Kerven *et al.*, 2011; Steinmann, 2012).

BOX – Herds in transition

Although official figures can be questionable, there is overall agreement that livestock consistency and herd composition have changed consistently in the transition from a centrally-controlled to a market economy. As in parts of SEAsia (Sharma *et al.*, 2003; Mitra *et al.*, 2013), a rise in the overall number of goats has been recorded in most countries as an indicator of the socio-economic polarisation of pastoral communities and the need of poorer strata to lean on animals that are more prolific, less costly, more marketable, and cheaper to herd. Together with socio-economic transformations, the growing presence of goats could also be linked to environmental changes, as these hardier animals perform better under shifting ecological and climatic conditions, including in forest areas (Nori and Sadaqat, 2006; Kerven *et al.*, 2012).

Overall, **the consistency of national herds** collapsed following de-collectivisation in Kazakhstan, Tajikistan, and Kyrgyzstan due to the fast pace of change and the institutional breakdown. In Turkmenistan and Uzbekistan, where institutional reforms were more gradual, the variation in livestock figures has been less dramatic. Today, stock numbers are generally rising in all countries across the region, with the vast majority of animals owned privately. Livestock distribution is highly polarised, characterised by a small number of households with commercial herds and a huge number of small farms owning fewer animals, often for subsistence (Robinson *et al.*, 2012; Robinson *et al.*, 2017; Kerven *et al.*, 2021).

With the recovery and increase of livestock consistency after years of transition, environmental discourses centred on the degradation of rangelands also resumed, taking over from those that had characterised the late period of the Soviet regime. As in other parts of the world, the main challenge is to establish systems that support a dynamic and effective matching between livestock consistency and the grazing resources; mobility is necessary to strike the balance necessary to avoid the uneven mosaic configuration of under- and over-grazed areas resulting from land abandonment or heavy grazing. This carries otherwise implications for the functioning of the grassland ecosystem and broader environmental dynamics as well as for the socio-economic vulnerability of herding communities (Kerven *et al.*, 2011; 2012).

BOX – Boom and burst in Mongolia

When the policy setting changes, livestock got rapidly privatised in Mongolia whilst pastureland, owned by the State, was used informally. Traditional forms of social organisation have also been resumed, such as the unit of herding camp known as the *khot ail*. In the 1990s, as economic conditions in urban areas deteriorated, many former rural citizens claimed a share of privatised livestock and returned to herding. Far from dropping, livestock numbers rose from 24 million head in 1989 to over 33 million animals in 1999 (Fernández-Giménez and Allen-Díaz, 1999). After episodes of drought and severe winter (*dzud*) between 1999 and 2002, the national herd declined by 30 per cent and many less experienced herders who had migrated from urban to rural areas lost most of their livestock and went back to towns. During the next crash in the 2009-2010 winter, about 20 per cent of the national herd perished and many more herders returned to urban areas. The national herd then recovered quickly, and by the end of 2016, total livestock stood at 56 million heads. Overall, in Mongolia livestock numbers have almost tripled since the 1990s, but the number of herders is declining (Robinson *et al.*, 2017:222).

Recent developments in Central Asian republics have seen a diversification of political agendas and financial appetites for rangelands, which often exclude pastoral communities from developing their economies while contributing to the degradation of their resource base. Interest and investments in mineral resources and farming schemes are changing landscapes across the region. In Kazakhstan and Turkmenistan, the recent exploitation of oil and gas reserves is reconfiguring national economies and institutional agendas, but also expanding market opportunities for pastoral products. In Tajikistan, Kyrgyzstan, and Uzbekistan, large-scale cotton, wheat, and horticultural projects have attracted the attention of government agencies and international organisations, with related investments in irrigation and rural settlement.

Although not a typically marginalised group in the region, pastoralists have been largely ignored by the newly independent national governments, international agencies, and investors, who have rather prioritised mineral exploration or crop production wherever possible. Extensive livestock rearing remains the main source of livelihood for large communities inhabiting the arid and mountainous areas of the region. Policy debates and institutional frameworks regulating access and use of grazing land have been lively and controversial, but proved limited in controlling, containing, and limiting encroachment and conversion of rangeland to non-pastoral interests and agendas.

Chinese endeavours

China's case differs from most of its neighbours in that its authoritarian and centralised decision-making is often associated with significant levels of public investment allocated by the State to peripheral regions, including Inner Mongolia, Xinjiang, and Tibet (Kreutzmann, 2013a). This may be in part explained by the strategic role pastoral areas holds for regional watershed management; due to their implications for agricultural production in mainland river plains, the environmental conditions of these rangelands have always been a priority for the Chinese State.

The strategies to protect, maintain, and restore upland ranges have gained importance on the policy agenda since the late 1990s following a series of natural disasters (Gongbuzeren *et al.*, 2018). Pastoral livestock grazing was unsurprisingly identified as the main driver of range degradation processes; the consequent policies basically aimed at reducing the overall grazing pressure by expelling pastoralists from parts of their traditional territories (Harris, 2010). This has been especially the case on the Tibetan plateau, as this represents a strategic environmental asset for China’s primary rivers and the entire regional ecology and economy. Accordingly, the plateau has become the focus of important government policies aimed at forms of ecological re-engineering that carry significant implications on the living and working conditions of local communities (Ptackova, 2011; Li *et al.*, 2014; Chies, 2018; Palden, 2018). In broad terms, the institutional framework governing rangeland territories in China hinges on three contrasting rather than complementary pillars: production intensification, poverty reduction and environmental concerns

In this setting, western China has experienced successive waves of centralised State policies that have led to major reconfigurations of pastoral resource management. Following the establishment of the People’s Republic of China in 1949, land management and agricultural production were organised in collective forms in which property rights, duties, and benefits were shared and managed through centralised control systems. Subsequent changes have implied the shift from a collective to an individual responsibility system, from a rigid and centralised State economy to more flexible forms of private ownership and entrepreneurship, and from pasture laws to the regulation of grazing management. These policy reconfigurations have reshaped the playing field for pastoralists, carrying significant implications for their institutional arrangements and livelihood patterns (Kreutzmann, 2011; Gongbuzeren *et al.*, 2018).

Table 2 – Shifting property rights regimes in China

Flexibility in household use of pastoral resources					
			De-Collectivisation		
	Collective farming				
				Grazing ban	
year	1970	1980	1990	2000	2010

Note: The specific period of these reforms varied widely amongst different communities

Source: own elaboration from Yu and Farrell, 2016.

Social and environmental engineering

As environmental conditions degraded, while socio-economics were not improving as envisioned, in the 1980s a set of policy reforms was elaborated, with the aim to increase stewardship and responsibilities over grassland protection, on the one hand, while improving local and national welfare, on the other. The three major policies that have importantly impinged on the governance of land, livestock, and people in China’s pastoral regions are the Herder Settlement Policy (HSP), the Rangeland Household Contract System (RHCS), and the Ecological Construction Projects (ECP) (Li *et al.*, 2014).

The **Herder Settlement Policy (HSP) established** in 1986 provided the overarching paradigm whereby pastoral households were induced to settle through government schemes that, on the one hand, expanded housing facilities and basic social services, while on the other allocated significant investments to intensify and stabilise animal production through forage and fodder management, livestock sheds and pans, enclosing rangelands with fences, water facilities, animal health services, and market networks for livestock products.

As results were disappointing, the rationale of the subsequent **Rangeland Household Contract System (RHCS)** was that herders were ideally provided with incentives to balance the number of animals to rangeland potentials through contracts that basically associated households with the land. This type of rangeland individualisation – implemented primarily in Inner Mongolia – aimed to secure land rights to users, with the view to setting economic and social development in pastoral communities, while effectively binding the responsibility of rangeland management to pastoral users. After the period of collectivisation, these were important elements that profoundly reconfigured pastoralists' institutional and economic perimeters.

The fragmentation and parcellation of rangelands and the reduced herd mobility proved a poor fit for the dynamic, heterogeneous, and variable features of local ecosystems. Rangeland degradation was not halted, nor did herders' livelihoods improve; indeed, their ability to cope with natural disasters was weakened as livestock production costs rose and community social networks were undermined (Li *et al.*, 2014). The disappointing outcomes of the RHCS were attributed to poor implementation and management rather than to its design. A more adequately organised herding community was seen as the solution towards improved social as well as ecological management of rangelands (*ibid.*).

The next **Ecological Construction Projects (ECP)** was conceived under the same rationale, whereby stewardship and responsibilities over grassland protection was to be achieved in parallel with the intensification of animal production. Informed by the overarching motto '*retiring livestock to restore grassland*', the policy strategy promoted the detachment of livestock from rangelands so to achieve the multiple aims of promoting sustainable development of local ecosystems, society, and economy (MOA, 2012). The same MOA report nonetheless acknowledged that despite the program advancements, rangelands degradation remained severe, and the overall socio-economic conditions of herding communities were not improving, not even for resettled herders who faced difficulties in joining the urban labour market and whose poverty deepened (Li *et al.*, 2014).

The problem in this case was linked to the supply system and eligibility requirements of the subsidy and loan schemes, which proved inaccessible to poor communities located in remote areas. Again, the problem was perceived to be in the technical implementation rather than in the strategic design. The ECP programme was finally recognised as prioritising grassland ecological protection while failing to improve the production capacities and livelihood conditions of herding communities (*ibid.*). Overall, what grew was the level of pastoral households' incorporation and dependence on systems of subsidy and supply orchestrated by the State and its agencies, together with the related degrees of impoverishment and indebtedness.

Table 3 – The design and outcomes of the different rangeland policies in China

Policy	Policy focus	Impacts
Herder Settlement Policy (HSP)	Sedentarise households through incentives such as housing facilities and basic service provision.	The fragmentation and parcellation of rangelands and reduced herd mobility.
Rangeland Household Contract System (RHCS)	Livestock production by allocating more secure rights of fragmented rangeland plots.	Rangelands' degradation was not halted and herders' livelihoods were not improving.
Ecological Construction Projects (ECP)	Retiring livestock to restore grassland and intensify animal production.	The degradation of pastures remained severe, while the socio-economic conditions of pastoral communities did not improve, not even for resettled pastoralists.

These dynamics are cast in the broader transformation of rangeland territories through investment schemes that largely expand the region economic infrastructure, further integrating pastoral communities in evolving transport networks, urban settlements, trade arrangements, power grids, and new economic environments (Shanatibieke, 2016; Zhang *et al.*, 2018; Palden, 2018). These are part of a wider re-engineering of the Chinese economy and territory, which includes the Rust and Belt Initiative as well as State-sponsored immigrations of farming communities into the pastoral regions of Inner Mongolia, Xinjiang, and Tibet (Banks, 2003; Kerven, 2006; Kreutzmann, 2013a).

Since 2013, China has further strengthened its rural development initiatives under the '*Targeted Measures for Poverty Alleviation in Rural Regions*' policy. Through settlement programs, large-scale fencing, subsidy and loan schemes, and input supply systems, the Chinese State invests in technological and financial solutions to pursue its policy design of controlling pastoral populations and regulating livestock-rangeland interactions. Market-based economic reforms and evolving land management institutions affect pastoralists' ability to respond to uncertainty. Caught between modernisation efforts and environmental agendas, pastoralists in China are induced to either reconfigure or abandon their livestock production and seek alternative livelihoods (Kreutzmann, 2013b; Zhang *et al.*, 2018; Gongbuzeren *et al.*, 2020).

However, the pace, trajectory, and rigidity of State policies and programmes have varied widely across the pastoral regions of China. Centralised policies have undergone diverse implementation and divergent experiences, with very different empirical outcomes and impacts at community and household levels. Local responses suggest a wide range of adaptation strategies, which at times capitalise on State-proposed options with a view to expanding and exploiting herding communities' 'room for manoeuvre' (Yu and Farrell, 2016; Gongbuzeren *et al.*, 2018). Pastoralists, as well as local authorities and officers, have responded innovatively to centrally-designed policies, in ways that exhibit considerable resilience, maintaining forms of community governance, combining hybrid mix of land tenure arrangements, and preserving rangeland conditions while also accounting for economic and climatic changes (Takayoshi, 2011; Fernández-Giménez *et al.*, 2012; Bauer and Gyal, 2015; Palden, 2018). Despite a seemingly homogeneous and centralised strategy, local implementation has shown relevant nuances and diversity.

Green revolutions in southern Asia

In South Asia the situation differs from the rest of Asia in terms of historical path and political paradigms. Long transhumance and cross-border mobility in South Asia have been limited by the political turmoil affecting the region, such as the tensions between India, Pakistan, and China and the longstanding conflict in Afghanistan. Transnational trade of livestock and animal products, including fibres, has instead been growing in recent times (Kreutzmann, 2013c; Mitra *et al.*, 2013). However, a main driver of institutional and territorial reconfiguration in the region has been the expansion of intensive agricultural cropping that took place under the Green Revolution, propelled by significant political, financial and technological investments.

Pakistan and India are still reworking their colonial legacies and trying to adapt evolving legislations to the evolving demands of rangeland management and nature protection in an institutional context where pastoralists have long been grossly neglected as stakeholders and agents (Kreutzmann, 2013a). In the high mountain pastoral societies of Afghanistan and north-west Pakistan policy evolutions and legislative implementation have been poorly effective due to the protracted conflict; yet processes of re-nomadisation are observed despite, or maybe due to, the continuing and even growing insecurity and poor formal governance (Kreutzmann, 2004; Kreutzmann and Schütte, 2011). Bhutan provides a notable exception in policy terms; within the framework of the 2007 'New Land Act', the country has nationalised its rangelands and recognised pastoralists as landscape managers.

The case of India is indicative of the processes and dynamics characterising the evolution of policy narratives and institutional discourses in southern Asia. India hosts one of the world's largest animal populations, and livestock is embedded in the Indian society in a range of economic and socio-cultural factors. Pastoral systems in India are quite diverse and contribute significantly to the economy in terms of food security, either directly or by providing services and inputs for agriculture. In 2015, extensive livestock-keeping where animals feed on natural grass accounted for roughly 50 per cent of the country's milk production and met 75 per cent of national meat consumption. Smallholders' animal-keeping contributes importantly to GDP, generating foreign exchange through meat and fibre exports (Goodall, 2004; Singh *et al.*, 2013; Köhler-Rollefson, 2017). Caste and class intersect, making the dynamics of social differentiation among Indian pastoralists highly complex and very site-specific. While per capita livestock may be decreasing over time, the national herd is growing along with the human population, and livestock remains a primary livelihood asset for many communities (Sharma *et al.*, 2003).

Within the evolving policy and institutional frameworks, pastoralists have often been ignored and neglected, as well as perceived as problematic agents in the Indian State's developmental or environmental agendas. Colonial and post-colonial forestry policies have progressively reduced the rights traditionally held by local communities, disrupting historical institutional arrangements for the management of common resources. These policy evolutions have significantly contributed to dismantling livelihood systems based on the symbiotic balance between community and land that had evolved over centuries and replaced them with unsustainable, market-driven management models (Guha, 1983; Singh *et al.*, 2013).

BOX – Unsocial forestry

Orans are community forests, which are particularly relevant to Rajasthan pastoral communities, in economic as well as identerian terms. The socio-cultural structures and arrangements underpinning their management have preserved *Oran* biodiversity over time, while maintaining their strategic role in enabling critical resource access even in times of political or climatic instability (Singh, 2017).

It is quite surprising that, despite the critical importance of orans for local livelihoods and biodiversity conservation, there remains considerable ambiguity regarding their legal status and ownership. When the Forest Department wishes to take an oran over for its own purposes, it does so without hesitation; likewise when local administrations want to distribute oran lands they do so without a thought; when local farmers choose to encroach upon orans they do so legally. Local entrepreneurs have also disturbed oran lands for mining purposes. As a result, the fate of these community forests has been decided by everyone other than the local community (...) who has been increasingly excluded from management of their resources. (...) This has led to two consequences, one being the alienation of local people and the second being the deterioration of natural resources due to mismanagement (ibid.:196).

Possibly as a result of the colonial legacy, pastoral lands – including grasslands – have been classified and governed mostly through the perspective of the Forest Department, while pastoral communities have traditionally been classified amongst tribal and indigenous groups – a categorisation that reflects their perception as being backward. During British colonial rule, pastoral ‘wandering’ communities were seen as less civilised, lazy, and implicitly dangerous because they were hard to control and tax, but also often inhabited border areas and could pose a military threat. The proposed development strategy has since been conversion into intensified crop cultivation and settled animal husbandry (Saberwal, 1995; Sheth, 2021). The demarcation of territories was equated with the demarcation of people, and cultivation was a way of claiming and reclaiming humanity (ibid.). This unfavourable bias has not changed much in the post-colonial setting, as ‘the Ministry of Environment and Forest is openly against pastoralists, attempting to exclude them from their traditional grazing’ (Sharma *et al.*, 2003:4).

The most far-reaching reconfiguration of pastoral territories and livelihoods in India stemmed principally from the Green Revolution, where public investments in large infrastructure schemes and development programmes, often with support from international agencies, have fostered the conversion of extended rangelands into irrigated farming areas. Physical and financial investments in dams and mechanisation schemes have been complemented and supported by institutional reforms. These dramatically impinge on herding communities, who were not officially entitled to the lands they survived on. The direct impacts of these processes on pastoralists have been the dispossession of large territories, the fracturing of community institutions, and processes of sedentarisation (Agrawal and Saberwal, 2004; Gooch, 2004; Kavoori, 2007; Nori, 2019).

While natural grazing has been severely limited by crop encroachment, the evolving interactions and synergies with the expanding farming sector have offered pastoralists alternative resources to feed their animals. This, in turn, has allowed some groups to benefit from the economic opportunities provided by the expanding milk markets and the dairy industry that were actively supported by the State and its agencies to serve the growing consumer

demand for animal protein. The governance of these value chains, however, has often favoured the economic interests of traders, consumers, and commercial livestock-keepers rather than pastoral producers' interests (Agrawal and Saberwal, 2004; Singh *et al.*, 2013; Gentle and Thwaites, 2016). Parallel to the expansion of farmlands onto previous pastures, the Indian State also started campaigns to convert grazing lands into forestry plantations, national parks, and protected areas or natural reserves, often implying the displacement and dispossession of the local pastoral communities (Agrawal and Saberwal, 2004; Gooch, 2004).

BOX – The forbidden mountains

Indian Himalayan regions host about 13 national parks and 59 wildlife sanctuaries, covering about 10 per cent of the total Himalayan zone. According to national park policy, all stakeholders dependent on park resources are displaced and pastoralists' rights to access pastures have been denied for the purpose of biodiversity conservation. Since the establishment of the Great Himalayan National Park in Himachal Pradesh in 1984, all the pastoralists who occupied its vast alpine pastures in the summer months have been deprived of access to large swathes of traditional pasturelands without being allotted grazing rights in other regions. In neighbouring Himalayan states the situation is similar, in that the expansion of protected areas proceeds with the decreasing accessibility of pasture resources for local communities (Sharma *et al.*, 2003).

Sneaking through the interstices

The reconfiguration of the socio-political institutional set-up in rural areas, together with State-led economic investments and agricultural transformations, have perpetuated and extended processes of territorial and social polarisation and influenced patterns of inequality and vulnerability and class-based differentiation. Forms of land dispossession, unfavourable marketing conditions, and very limited support for pursuing and developing their production systems have severely limited the beneficial outcomes of these processes for pastoral livelihoods (Agrawal and Saberwal, 2004; Singh *et al.*, 2013).

Uneven redistribution of natural, economic, and political resources through State development interventions have often left pastoralists with none (Sheth, 2021). Whatever the policy narrative and institutional perspective addressing pastoral territories, either through a 'developmental' or an 'environmentalist' discourse, the presence of pastoralists was negatively affecting the State agenda. As a consequence, their needs and rights were neglected. While 'there is no official development policy for pastoral areas, nevertheless both the Ministry of Agriculture and the Ministry of Environment and Forest are remarkable for their stances against pastoralists' (Sharma *et al.*, 2003:iii).

In such context, pastoralists have had to find means of incorporation into other economic domains and production landscapes, adapting mobility, pastoral practices and livelihood patterns (Axelby, 2016; Mehta and Srivastava, 2019; Scoones, 2021). The best-connected groups and market-integrated areas have benefited most from the integration with expanding farming and marketing options, evolving into forms of sedentarisation and intensification. Small ruminants grazing mostly on common lands in remote and difficult areas is often the main livelihood strategy among landless households and lower social strata. Overall, pastoral

communities have shown considerable resilience, adapting to the evolving circumstances by reconfiguring their mobility through shrinking and increasingly fragmented landscapes with a view to accessing natural grazing and farming residues but also marketing opportunities to diversify their economy (Sharma *et al.*, 2003; Mitra *et al.*, 2013). They have also proven skilled in using policy inconsistencies and legislative incoherence to successfully negotiate access to critical resources by reshaping social networks and institutional arrangements (Agrawal and Saberwal, 2004, Nori, 2019; Maru, 2020).

More recently there have been changes – at least on paper. In 1991, the Ministry for Tribal Affairs was established with a specific mandate to address the needs of social groups that lag in welfare and development terms due to their social and economic backwardness and relative isolation – including pastoral communities. The 2006 ‘Scheduled Tribes and Other Traditional Forest Dwellers Act’ introduced by the Ministry of Law and Justice is another important piece of legislation that for the first time recognises the rights of local communities to the lands they inhabited for generations. The Act admits that the rights of customary dwellers had not been ‘adequately recognised in the consolidation of State forests during the colonial period as well as in independent India resulting in historical injustice (...) to the traditional forest dwellers, who are integral to the very survival and sustainability of the forest ecosystem’ (ibid.). Apart from the forest use by local villagers, ‘seasonal use of landscape in the case of pastoral communities’ is specifically mentioned, such as protected areas and national parks to which the community traditionally had access (Gol, 2007). While aiming at protecting the livelihood and food security of local communities, the Act allocates them as well the authority and responsibility for the land’s sustainable use and the maintenance of ecological balance (ibid.).

In 2013, the Ministry of Agriculture introduced the National Livestock Policy, which evolved from the 2007 National Policy for Farmers. The policy aims at stabilising and intensifying livestock production to meet growing market demands through mostly interventions in genetic breeding schemes, animal feed, and health improvement programmes. Within this broad framework, a specific concern is raised over rangeland management and pastoral production systems. On the one hand it is indicated that *‘common property resources available for grazing in rural areas have not only shrunk in size but have become less productive because of neglect and overgrazing. Physical availability and production potential of pastures and grazing community lands will be assessed, and steps will be taken to rejuvenate such lands by planting fodder trees and grasses. Integrated land use planning with livestock as a component will be encouraged through (specific) institutions’* (Gol, 2013:20). On the other, it is proposed that *‘pastoral communities, particularly those managing migratory animals like buffaloes, sheep, goats, yaks etc. shall be supported through creation of facilities along their migratory routes for feeding, breeding, healthcare, housing, and market channels for their produce and animals. Indigenous knowledge of pastoral communities about animal maintenance and breeding would be documented with active involvement of communities, breeders’ associations, and NGOs’* (ibid.:16).

The evolving policy environment and institutional framework thus seem to provide better recognition of pastoralists as stakeholders, agents and citizens, although whether and when this will materialise remains an open question. Meanwhile, the unfavourable political environment, the social and cultural marginalisation of pastoralists, with few rights granted and limited access to services are discouraging the younger generation from pursuing a pastoral livelihood and triggering their emigration. This, in turn, is contributing to the gender and generational reconfiguration of India’s drylands and to their socio-ecological transformation, including through patterns of absentee ownership and salaried shepherding (Sharma *et al.*, 2003; Agarwal, 2010; Maru, 2020).

Navigating difficult institutional landscapes

Asian rangelands are becoming the focus of diverse policy agendas, where controversial elements of economic growth, financial investment, land encroachment, poverty alleviation, and ecological concerns combine in contrasting ways. Remote and isolated mountain regions, desert areas, and highlands have become parts of the global economic and political arena. Incorporation into State- and market-driven dynamics has rarely been favourable to pastoral communities struggling to adapt to the shifting uncertainties across the continent.

The relative political, territorial, and socio-economic transformations that have reconfigured Asian rangelands over recent decades have profoundly altered the prospects for making a living from extensive livestock-keeping. The socialist experiences in central Asia and China and the Green Revolution paradigm in southern Asia have all contributed to dispossessing and dislocating pastoral communities from their traditional territories and challenged their customary structures, including through land use conversion and resettlement schemes.

The review of past and evolving policy frameworks shows that, despite contrasting differences in ideological perspectives and development trajectories, the dismantling of pastoral resource management has always been purported as a prerequisite for modernisation. Under socialist planning, market-centred approaches or State-led investments, experts, planners, and officials shared the same principles on rangeland development.

What is even more surprising is that despite different underlying ideologies, the same strategies have been naively conceived and implemented across the continent with the multiple and divergent intentions of increasing livestock production levels, while preserving rangeland ecosystems and improving pastoralists' welfare. The agenda was thus rich in objectives, but the main ingredient was always the same – regardless of decade, country, or ideology. More recent environmental discourses, whereby priority is given to fighting climate change and protecting biodiversity, evolve along the same lines.

The political and institutional uncertainty resulting from these approaches has contributed substantially to altering patterns of resource management and governance for local communities, which have rarely been invited to participate in policy planning and societal debates, even though their lives, land, and livestock are often the primary focus of development programmes and modernisation strategies. Their involvement, concern for their rights and needs, and consideration of their agency have in fact been negligible across the continent, leading to significant forms of socio-economic impoverishment and political marginalisation.

Bibliography

- Agarwal B., 2010. Rethinking Agricultural Production Collectivities. *Economic and Political Weekly* 45/9:64-78.
- Agrawal A. and Saberwal Vasant K., 2004. Whither south Asian pastoralism ? An Introduction. *Nomadic Peoples* 8/2.
- Axelby R., 2016. Who has the Stick has the Buffalo: Processes of Inclusion and Exclusion on a Pasture in the Indian Himalayas. *South Asia Multidisciplinary Academic Journal* 13.
- Banks T., 2003. Community-based natural resource management among Kazaks in the Tian Shan and Altay Shan mountains of Xinjiang. Strategic innovations for improving pastoral livelihoods in the Hindu Kush-Himalayan Highlands. Volume 2: Technical Papers. Proceedings of an International Workshop in Lhasa, Tibet Autonomous Region, People's Republic of China, 12-19 May 2002.
- Bauer K. and Gyal H., 2015. Preface to Nomadic People on Tibetan resettlement. *Nomadic Peoples* 19/2.
- Bedunah D. et al. (eds.), 2006. *Rangelands of Central Asia: Proceedings of the Conference on Transformations, Issues, and Future Challenges*. Fort Collins, U.S. Department of Agriculture, Forest Service.
- Bruun O. and L. Narangoa. 2011. *Mongols From Country to City: Floating Boundaries, Pastoralism And City Life In The Mongol Lands*. Nias Press. Copenhagen.
- Chies M., 2018. Post-disaster development among Yushu periurban nomads: local agency, risk perception and legal framework (Qinghai Province, PRC). *Nomadic Peoples* 22/2.
- Fernández-Giménez M.E., Wang X.Y., Batkhishig B., Julia A.K., Reid R.S., 2012. Restoring community connections to the land: building resilience through community-based rangeland management in China and Mongolia. CAB International, Oxfordshire.
- Fernández-Giménez M.E., 2002. Spatial and Social Boundaries and the Paradox of Pastoral Land Tenure: A Case Study from Post-socialist Mongolia. *Human Ecology* 30 (1): 49-78.
- Fernández-Giménez ME. and Allen-Diaz B., 1999. Testing a Non-equilibrium Model of Rangeland Vegetation Dynamics in Mongolia. *Journal of Applied Ecology* 36: 871-885.
- Gentle P. and Thwaites R., 2016. Transhumant Pastoralism in the Context of Socioeconomic and Climate Change in the Mountains of Nepal. *Mountain Research and Development* 36/2: 173-182.
- Gol, 2013. National Livestock Policy. Government of India, Ministry of Agriculture. Department of Animal Husbandry, Dairying & Fisheries. New Delhi.
- Gol, 2007. Scheduled Tribes and Other Traditional Forest Dwellers Act. Government of India, Ministry of Law and Justice. New Delhi <https://tribal.nic.in/FRA.aspx>
- Gongbuzeren, Zhongya Zhang, Junqian Wu, 2020. How do market-based rangeland institutional reforms affect herders engagement with credit loans within the pastoral regions of the Tibetan Plateau? *Journal of Rural Studies* 73:1-9 [DOI: 10.1016/j.jrurstud.2019.11.015](https://doi.org/10.1016/j.jrurstud.2019.11.015)

- Gongbuzeren, Huntsinger L., and Li W., 2018. Rebuilding pastoral social-ecological resilience on the Qinghai-Tibetan Plateau in response to changes in policy, economics, and climate. *Ecology and Society* 23(2). DOI: [10.5751/ES-10096-230221](https://doi.org/10.5751/ES-10096-230221)
- Gooch Pernille, 2004. Van Gujjar: the persistent forest pastoralists. *Nomadic Peoples* 8/2.
- Kerven C., Robinson S. and Behnke R., 2021. Pastoralism at Scale on the Kazakh Rangelands: From Clans to Workers to Ranchers. *Front. Sustain. Food Syst.* 4: 590-401. DOI: [10.3389/fsufs.2020.590401](https://doi.org/10.3389/fsufs.2020.590401).
- Guha R., 1983. Forestry in British and post-British India: A historical analysis. *Economic and Political Weekly* 18/44:1882-1896.
- Harris R.B., 2010. Rangeland degradation on the Qinghai-Tibetan plateau: A review of the evidence of its magnitude and causes. *Journal of Arid Environments* 74: 1–12.
- ICIMOD, 2014. Hindu Kush Himalaya Region, Regional Information. www.icimzod.org/?q=1137
- IPCC, 2014. The Fifth Assessment Report (AR5). UN-Intergovernmental Panel on Climate Change. Geneva. <https://www.ipcc.ch/report/ar5/>
- Kavoori Purnendu S., 2007. Reservation for Gujars: A Pastoral Perspective. *Economic and Political Weekly*, September 22.
- Kerven C., Robinson S., Behnke R., Kushenov K., and Milner-Gulland, E. J., 2016. A pastoral frontier: from chaos to capitalism and the recolonisation of the Kazakh rangelands. *J. Arid Environ.* 12: 106–119. DOI: [10.1016/j.jaridenv.2015.11.003](https://doi.org/10.1016/j.jaridenv.2015.11.003)
- Kerven C. *et al.*, 2012. Researching the Future of Pastoralism in Central Asia's Mountains: Examining Development Orthodoxies. *Mountain Research and Development* 32 (3): 368-377.
- Kerven C., Steimann B., Ashley L., Dear C., Rahim I., 2011. Pastoralism and Farming in Central Asia's Mountains: A Research Review. Mountain Societies Research Centre.
- Kerven C, 2006. Review of the literature on Pastoral Economics and Marketing: Central Asia, China, Mongolia and Siberia. WISP, Nairobi.
- Kerven C., 2004. The influence of cold temperatures Kerven C., Channon J., and Behnke R., 1996. *Planning and Policies on Extensive Livestock Development in Central Asia*. Working Paper No. 91.
- Kreutzmann H., 2013a. The tragedy of responsibility in high Asia: modernizing traditional pastoral practices and preserving modernist worldviews. *Pastoralism: Research, Policy and Practice* 3:7.
- Kreutzmann H., 2013b. Transformation of high altitude livestock keeping in China's mountainous western periphery. *Études mongoles et sibériennes, centrasiatiques et tibétaines* DOI:[10.4000/emscat.2141](https://doi.org/10.4000/emscat.2141) <http://emscat.revues.org/index2141.html>
- Kreutzmann H., 2013c. Recent results from pastoralism research and development practice. In: *Études mongoles et sibériennes, centrasiatiques et tibétaines* DOI:[10.4000/emscat.2017](https://doi.org/10.4000/emscat.2017) <http://emscat.revues.org/index2017.html>
- Kreutzmann H. (ed.), 2012. Pastoral practices in High Asia, *Advances in Asian Human-Environmental Research*, Springer Science. DOI:[10.1007/978-94-007-3846-1_18](https://doi.org/10.1007/978-94-007-3846-1_18)

- Kreutzmann H., 2011. Pastoral practices on the move. Recent transformations in mountain pastoralism on the Tibetan Plateau. In Kreutzmann H., Yong Y. and Richter J., (eds.) Regional Workshop in Lhasa 2010. Pastoralism and rangeland management on the Tibetan Plateau in the context of climate and global change. GIZ. Bonn.
- Kreutzmann H. and Schütte S., 2011. Contested commons. Multiple insecurities of pastoralists in north-eastern Afghanistan. *Erdkunde* 65/2:99-119.
- Kreutzmann H., 2004. Pastoral practices and their transformation in the north-western Karakoram. *Nomadic Peoples* 8/2: 54-88.
- Jenet A., Buono N., Di Lello S., Gomarasca M., Heine C., Mason S., Nori M., Saavedra R., 2016. *The path to greener pastures. Pastoralism, the backbone of the world's drylands.* Vétérinaires sans Frontières Intl. Bruxelles <http://vsf-international.org/project/pastoralism-report/>
- Li Yanbo, Gongbuzeren, and Li Wenjun, 2014. A review of China's rangeland management policies. IIED Country Report. IIED, London. <http://pubs.iied.org/10079IIED>
- Maru N., 2020. A relational view of pastoral (im)mobilities. *Nomadic Peoples* 24/2: 209-228.
- Mehta L., and Srivastava S., 2019. Pastoralists without pasture: water Scarcity, marketisation and resource enclosures in Kutch, India. *Nomadic Peoples* 23/2: 195–217.
- Mitra Monideepa *et al.*, 2013. A note on transhumant pastoralism in Niti valley, Western Himalaya, India. *Pastoralism: Research, Policy and Practice* 3/29.
- MoA, 2012. China National Grassland Monitoring Report of 2011. http://www.agri.gov.cn/V20/SC/jjps/201204/t20120409_2598547.htm - quoted in Li *et al.*, 2014.
- Murzakulova A., Mestre I., 2018. Border change and conflict: case of agropastoral communities in cross-border areas of Central Asia. In: Woertz E. and Zurayk R. (eds.), *Crisis and Conflict in the Agrarian World: An Evolving Dialectic*, CABI Publishing, Wallingford.
- Nori M., 2019. Herding through Uncertainties – Regional Perspectives. Exploring the Interfaces of Pastoralists and Uncertainty. PASTRES and Robert Schuman Centre for Advanced Studies. Working Paper 2019/68. Global Governance Programme, European University Institute, Florence. <https://cadmus.eui.eu/handle/1814/64165>
- Nori M., 2008. Pastoral livelihoods on the Tibetan plateau. *Journal of Agriculture and Environment for International Development* 102/1-2.
- Nori M. and Davies J., 2007. Change of wind or wind of change? Climate change, adaptation and pastoralism. Report form an electronic conference. World Initiative for Sustainable Pastoralism, Nairobi <https://www.iucn.org/content/change-wind-or-wind-change-report-e-conference-climate-change-adapation-and-pastoralism>
- Nori M., Sadaqat H. Hanjira, 2006. Buffalo hills. Rehabilitating livestock-based livelihoods in EQ-affected areas of Pakistan. Internal project report, FAO, Islamabad.
- Palden Tsering, 2018. The Role of Tibetan Buddhist Monasteries in Conservation and Development: The Case study of Shar Vod Monastery in Golok, Amdo Tibet, China. *Tibetology Study (Journal)*, Sichuan University.

- Ptackova J., 2011. Sedentarisation of Tibetan nomads in China: Implementation of the Nomadic settlement project in the Tibetan Amdo area; Qinghai and Sichuan Provinces. *Pastoralism: Research, Policy and Practice* 1/4.
- Robinson S. *et al.*, 2017. *Building* Robinson S., Jamsranjav C. and Gillin K., 2017. Pastoral property rights in Central Asia. Factors and actors driving the reform agenda. *Études rurales* 200: 221-245. DOI: [10.4000/etudes_rurales.11774](https://doi.org/10.4000/etudes_rurales.11774)
- Robinson S. *et al.*, 2012. Pastoral tenure in Central Asia: theme and variation in the five former Soviet republics. In Squires V., (ed.) *Rangeland Stewardship in Central Asia. Balancing Improved Livelihoods, Biodiversity Conservation and Land Protection*. Heidelberg, Springer: 329-274.
- Scoones I., 2021. Pastoralists and peasants: perspectives on agrarian change. *The Journal of Peasant Studies* 48/1: 1-47 DOI: [10.1080/03066150.2020.1802249](https://doi.org/10.1080/03066150.2020.1802249)
- Sharma V. P., Köhler-Rollefson I. and Morton J., 2003. Pastoralism in India. A scoping study. DFID, New Delhi. <https://assets.publishing.service.gov.uk/media/57a08ce2e5274a31e00014fa/ZC0181b.pdf>
- Singh Navinder J. *et al.*, 2013. No longer tracking greenery in high altitudes: Pastoral practices of Rupshu nomads and their implications for biodiversity conservation. *Pastoralism: Research, Policy and Practice* 3/16. DOI: [10.1186/2041-7136-3-16](https://doi.org/10.1186/2041-7136-3-16)
- Sheth A., 2021. The Maldhari, the State, the Market. A Study of Pastoralism in Transition. MA thesis in Environment and Development School of Human Ecology. Ambedkar University, Delhi.
- Singh A., 2017. From stewards to trespassers: pastoralist management of forest resources. In: Ahearn A., Sternberg T. with Hahn A (eds.). *Pastoralist Livelihoods in Asian Drylands: Environment, Governance and Risk*. The White Horse Press. Cambridgeshire.
- Sneath D., 1998. State policy and pasture degradation in Inner Asia. *Science* 281(5380):1147-48.
- Spoor M. and O. Visser, 2001. The state of agrarian reform in the FSU. *Europe-Asia Studies (former Soviet Studies)* 5/6:885–901.
- Steinmann B., 2012. Conflicting Strategies for Contested Resources: Pastoralists' Responses to Uncertainty in Post-socialist Rural Kyrgyzstan. In: Kreutzmann H. (ed.), *Pastoral practices in High Asia, Advances in Asian Human-Environmental Research*. Springer Science. DOI: [10.1007/978-94-007-3846-1_8](https://doi.org/10.1007/978-94-007-3846-1_8).
- Takayoshi Yamaguchi, 2011. Transition of mountain pastoralism: an agrodiversity analysis of the livestock population and herding strategies in Southeast Tibet, China. *Human Ecology* 39(2):141-154
- Turner Matthew D., 2011. The New Pastoral Development Paradigm: Engaging the Realities of Property Institutions and Livestock Mobility in Dryland Africa. *Society & Natural Resources. An International Journal* 24/5: 469-484.
- World Bank, 2003. Impact of Institutional and Trade Policy Reforms: Analysis of Mongolia's cashmere sector. World Bank. Washington DC. <http://web.worldbank.org/archive/website00519/WEB/OTHER/TRAIN-23.HTM>

Yu L. and Farrell K. N., 2016. The Chinese perspective on pastoral resource economics: a vision of the future in a context of socio-ecological vulnerability. *Rev. Sci. Tech. Off. Int. Epiz.* 35/2:523-531.

Zhang J., Huntsinger L., Li Yanbo and Li Wenju, 2018. Is Microcredit a form of risk for pastoral households of Inner Mongolia's semiarid rangelands? *Rangeland Ecology and Management* 71/3:382-388.



Moving with the camp in Gujarat – Credit: Maru, PASTRES 2019

Author contacts

Michele Nori

PASTRES,
Robert Schuman Centre for Advanced Studies,
European University Institute
Villa Schifanoia
Via Boccaccio 121
I-50133 Florence

Email: Michele.Nori@eui.eu