

RSC PP 2022/02
Robert Schuman Centre for Advanced Studies
The Global Governance Programme

POLICY PAPER

**Assessing the policy frame in pastoral areas
of West Asia and North Africa (WANA)**

Michele Nori

European University Institute
Robert Schuman Centre for Advanced Studies
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RSC Policy Paper 2022/02

ISSN 1830-1541

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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

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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.

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Abstract

The rangelands of West Asia and North Africa (WANA) region - which includes the Maghreb and Mashreq, Turkey and other countries of the Arabian Peninsula - are conducive to different patterns of pastoral resource management, due to the prevailing arid and mountainous conditions. Environmental change in the region is quite intense, resulting from population growth, shifts in land use and climate dynamics, and is one of the main drivers of socio-economic and political transformation in the region. In most WANA countries livestock rearing is a primary source of livelihood for a large segment of the population, and the governance of rangeland management and livestock trade are high priority issues for the national and regional political economy.

Despite a fragmented and conflicting political setup that affects regional economic integration and the establishment of a common institutional framework, development trajectories regarding agriculture and food security have converged over time. Throughout the region, there have been repeated attempts to convert herding communities into stable and controllable producers through their incorporation into state and market mechanisms. Patterns of herd management and livestock mobility have been profoundly reconfigured, and while the movement of animals is increasingly restricted as feed and water are brought to them, the mobility of rural dwellers has intensified, through intense migration flows that are contributing to major transformations in local societies.

Over time, development approaches, institutional arrangements and market dynamics have proven inconsistent in addressing the long-term needs of rural producers and ecosystems. Particularly in the arid and remote pastoral regions, local livelihoods have significantly deteriorated in recent decades, and are now increasingly shaped by processes that take place outside the realm of livestock production and very often beyond regional boundaries. The reconfiguration of land, livestock and labour regimes has generated tensions and risks that have weakened the capacity of pastoralist communities to deal with evolving uncertainties. The recent history of WANA drylands is one of strained economic development, stressed community networks and degraded ecosystems; the broader implications of the political and economic marginalisation of drylands have significant impacts for the entire WANA region and society.

Keywords

Pastoralism; uncertainty; agriculture; food security; policy; Mediterranean; drylands

Acknowledgments

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.



Breeding sheep in the West Bank, Palestine. Credit: Nori, PASTRES

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The relevance of sheep and goat farming in WANA¹

The West Asia and North Africa region (WANA) – encompassing the Maghreb and Mashreq, Turkey and further countries in the Arabian Peninsula – has vast areas of steppe and desert favourable to pastoralism due to prevalent arid and mountainous conditions. The climate is typically very hot and dry, characterised by low annual precipitation and high evaporation rates. Pastoral areas in this region are comprised of high-altitude mountains, the Mediterranean coast, and the Sahara Desert; accordingly, also WANA pastoral systems exhibit a large range of diversity, from cattle herds in semi-arid areas to sheep and goat flocks in arid ones (by large the most popular animals in the region) and camels in nomadic ranges (IFAD, 2003; FAO, 2021).

In these regions, livestock rearing is a primary source of livelihood for a large segment of the population, for whom it provides employment and income. Livestock economies are strategic for ensuring national food security, and also for alleviating poverty for significant portions of the rural population. In Yemen, for example, livestock farming is the main income source for over three million people despite constituting only about 2.5 per cent of the country's GDP. As the predominant form of rural savings, livestock help reduce vulnerability to external shocks and increase the resilience of smallholders (Ates and Louhaichi, 2012). Livestock products and their marketing are an important source of income for rural women, whose role in local socio-economics has increased as a result of migration processes (Zuccotti et al., 2018).

Animal production and rangeland management are therefore high priority issues for national and regional politics. Livestock trade and marketing are also important economic drivers, as the demand for animal protein consumption has grown steadily since the 1960s, spurred by a fast-growing, wealthier, and increasingly urban population, and is projected to double in the next decade (WB et al., 2009; Ates and Louhaichi, 2012; Mohamed et al., 2019). Understanding the political economy underlying livestock management, production and trade is therefore critical to understanding the broader policy framework in most WANA countries.

WANA is the most water-scarce areas in the world, and amongst the most exposed to climate change impacts; across the region only five per cent of land is suitable for farming. While no simple causal relationships exist, there is evidence that drought events have been an important driver of both livelihood transformations and policy changes in WANA drylands, due to their direct implications on local food security, migratory flows, and political stability. WANA is in fact also a region with one of the highest fertility rates (average 2.35 per cent annual growth for the last four decades), with 70 per cent of the population under the age of 30 in most countries. Much of this population growth has been absorbed by urbanisation, so that in rural areas population figures have remained roughly the same, although proportions and distribution have changed as people increasingly concentrate in better-served areas with higher production potential (Fargues and Salinari, 2011; IFPRI, 2011; CIHEAM, 2012; ENPARD, 2012; IPCC, 2014; Hsiang and Burke, 2014).

In most WANA countries herding communities hold a strong identity that often crosses national boundaries and border frontiers, as pastoralists represent important regional constituencies, such as the Berbers or the Bedouins, but are often minorities in national politics. Some groups are primary actors in longstanding conflicts, such as the Sahrawi and Kurds fighting for political independence, Sinai Bedouins struggling against central State control or the Palestinian Bedouins resisting the military occupation. Pastoral communities display a strong attachment to their territory and an important reliance on customary social networks and governance systems. These domains have proven problematic for central States, as these provide flaws to their legitimacy in and control on peripheral areas, including border regions. Main policies have therefore focused on disarticulating and reducing the power of local customary institutional structures, while also seeking to incorporate

¹ Acknowledgments: We would like to thank for their contributions Ian Scoones, Abolfazl Sharifian, Mohamed Souissi, Mohamed Elloumi, Céline Dutilly-Diane, Mohamed El Mourid, Veronique Alary, Alain Abi Rizk, Linda Pappagallo, Hassen Boubakri, Mohamed Tarhouni, Mounir Louhaichi, Ali Nefzaoui, Riccardo Bocco.

pastoral communities into national economies, with the dual intention of enhancing the availability of animal products for the burgeoning urban population and providing opportunities to sustain rural income and livelihoods.

The regional political frame is characterised by significant tensions and disputes amongst most neighbouring countries. These frictions have long affected pastoral mobilities and trade networks. The recent conflicts that have ravaged the region – the wars in Iraq, Syria and Libya - and the longstanding political tensions, affect pastoral communities in their production and exchange capacities. On the other hand, the administrative, economic, and political differentials that characterise different State governance accrue local economic, social and political uncertainties to transnational communities, making border crossing a ‘value-adding’ activity, as it provides opportunities for trade and networking (Sinjilawi and Nori, 2005; Lazarev, 2008; Meddeb, 2012; Daoud et al., 2016).

An un-harmonised but coherent framework

Such a fragmented and conflictive policy framework has hindered the establishment of a coherent regional economic integration, as well as the definition of a common regional policy frame for agricultural and rural development. However, differences between national policies have been ironed out as development trajectories have converged over time, despite different ideological and institutional approaches. The main differences between the policy frameworks of WANA countries relate mainly to the legacy of the colonial experience, their positioning during the Cold War (i.e. socialist versus more market-oriented ideologies), and the importance of mineral revenues (from oil, gas or phosphates) for each national economy, as this directly reflects on their respective purchasing power in world food markets, and the need to rely on international cooperation. While a comprehensive, common regional policy for agriculture and food production (ARD) has not developed, policy trajectories in this domain have recently been very much aligned among WANA countries.

Following decolonisation in the 1960s, most WANA countries promoted domestic self-sufficiency through support for producers’ prices and inputs, as well as with measures aimed at organising and controlling producers and value chain agents. This policy setting was dramatically reconfigured by the severe drought events that have struck the region as from the 1970s, highlighting both the vulnerability of local rural livelihoods and the fragility of national food security systems. Rural populations in most countries underwent dramatic losses and an intense reshaping of livelihood patterns, particularly in arid and semi-arid areas, including through an important resettling of herding households (Karrou et al., 2007). State support during those times aimed at ensuring populations’ access to basic items, including production inputs for rural communities. Eventually, as it will be assessed, such emergency measures have been converted into structural production strategies through systems of subsidies and loans, with relevant implications for the evolution of local farming systems.

Since the late 1980s, agricultural policies in most countries have started converging under the auspices of the Structural Adjustment Program (SAP) regime, which importantly contributed to reshaping State engagement and the institutional setting throughout the rural world, and specifically in remote and inner rangelands. Through major cuts and reorientations of the State budget, the SAP measures have contributed to undermining the already inefficient public infrastructure and service provision in rural areas, thus further weakening the social contract between the State and pastoralist communities.

Subsequent waves of economic restructuring in the 1990s included market deregulation and economic integration into global trade; agreements with the World Trade Organisation (WTO) and the EU increased most countries’ reliance on food imports with a view to serving the needs of a growing and diversified urban population (INRA, 2015; Nori, 2019). The new policy framework established

by SAP paradigms hinged on market liberalisation, resource privatization, and diverse forms of rangeland encroachment. Public expenditure from either State budget or international organisations was allocated to large, intensive farming systems (i.e., large irrigation schemes, poultry intensive plants, dairy cattle), while support to rural smallholders and drylands communities was curtailed (Alary, 2006; Dutilly-Diane, 2006; Dukhan, 2017).

Land policies and institutional reforms opened rangeland to the encroachment of farming or forest schemes, either through private or public funding, whose interests often converged. In Tunisia, the establishment of individual ownership titles has been accelerated to allow better-off farmers to access agricultural credit and expand agriculture production (Elloumi et al., 2006; CIHEAM, 2014; Nori, 2019a). In Egypt the central government allocated large land swathes to army officers and wealthy traders despite the protests of local Bedouin communities (Daoud et al., 2016). In Syria, State investments in the eastern steppes have taken the form of forest plantations, following similar experiences in neighbouring countries in previous decades (WB, 1995). Needless to say, in most cases the needs and rights of local communities have been given little consideration in development planning.

BOX – The *Plan Vert* in Morocco

In Morocco, the State's disengagement from pastoral regions is evident in the Plan Vert (PMV). Since its adoption in 2008, the Plan aims to make agriculture the engine of economic growth; its implementation rests on: a) an economic pillar focusing on high value-added activities and strong export performance; and, b) a complementary social pillar oriented towards smallholder farmers and more marginal settings (Belghazi, 2013). The widespread Association Nationale des éleveurs Ovins et Caprins contributes the field infrastructure connecting State services to breeders.

The economic pillar is taken care of by the State, through the Agricultural Development Agency which finances a series of projects designed to improve agricultural productivity by modernising the sector and supporting new investments. Legislative measures have removed barriers so as to allow the leasing of State and collective lands through individual registration and farm privatisation. Crop production and marketing are stabilised and intensified through irrigation and water management schemes, and the reorganisation of domestic value chains and distribution systems (USAid, 2010).

Not surprisingly, while the Moroccan government allocates funding to support agricultural modernisation and economic performance in higher-potential settings, it is mainly international organisations that are called upon to address the social pillar, '*Agriculture Solidaire*', by funding inclusive agriculture programmes targeting small farmers and rural communities living in remote areas.

Table 1 – Main steps in evolving policy frameworks in the Maghreb and Mashreq regions

Period	Process	Impacts
Post-colonial development patterns 1960s	related to the heritage of the colonial experience, their positioning during the Cold War, and the relevance of mineral revenue	Most countries promoted domestic self-sufficiency through support of producers' prices and inputs and the organisation of production to stimulate and control supply and favour value chain integration.
Severe drought events 1970s	highlighting the vulnerability of rural livelihoods as well as the fragility of food security systems	State support aimed at ensuring populations' access to basic consumption and production items, including animal feed and vet services for livestock producers and the resettling of herding households. Emergency measures to support herd survival – these eventually converted to structural production strategies.
Structural Adjustment Program (SAP) 1980s	forms of market liberalisation, resources privatisation and, eventually, growing State disengagement	Public expenditure in support of rural livelihoods was curtailed, particularly for pastoral areas, leading from self-sufficiency to market dependency.
Subsequent waves of economic restructuring 1990s	market deregulation and economic integration into global trade; international trade agreements (WTO, EU) increased most countries' reliance on market dynamics	State support, subsidy and credit schemes, and huge investments in water infrastructure and irrigation development in higher potential areas.
More recently	More systemic and comprehensive approaches, taking into account social and ecosystem dynamics; Forms of community development planning; Local knowledge and participation; Resource access through pastoral codes (i.e., Tunisia).	

WANA countries today remain largely and increasingly deficient in food products. The livestock sector is no exception, and in order to meet a growing consumption demand from a limited and volatile production setting, State policies pursue, on the one hand, the intensification of livestock production and, on the other hand, an increasing reliance on import trade in food and agricultural inputs, including livestock feed. The increasing reliance on market exchanges to meet countries' basic needs is an important concern for national policy, as these are the pillars of the country's food security and thus of State legitimacy.

This explains why, under a general regime of market liberalisation, value chains involving livestock (as much as those involving cereals) remain firmly under State control. In most countries, policies to sustain food self-sufficiency and protect domestic markets are considered essential to ensure social stability; price support measures, food subsidies to consumers, quota systems and trade barriers are implemented accordingly (IFAD, 2003; Alary and El Mourid, 2005; Dutilly-Diane, 2006). While producers received subsidised inputs for credit, seed, fertiliser and fuel, they were also obliged to sell their output to State monopolies at fixed prices, which, depending on the country, were either below or above market prices (IFAD, 2003:99). Overall, the systems established to control domestic food production and its market supply have proven unviable for most national treasuries, especially those of countries without direct mineral revenues, and risky for all, as they expose national food security to the volatility of the international trade arena. On the other hand, these measures contribute to making informal cross-border transactions significantly valuable, as conditions and opportunities change from one side to the other of the frontier (Meddeb, 2012; Nori and Baldaro, 2017).

In this same perspective, public investments in WANA countries to support agriculture typically target irrigated farming wherever possible (the cereal totem), while intensive livestock production is often the preferred 'modern' option for providing enhancing the domestic supply of animal proteins (the cattle totem) (and more recently also intense poultry schemes). These development endeavours were supported by policies that supported the sedentarisation of rural communities and more exclusive land rights. Intensive bovines cannot, however, be sustained by local grazing alone and are therefore often associated with irrigation schemes, which often draw from wetter areas in pastoral areas and compete with crop cultivation. Overall, the intensification of farming systems has led to increasing competition over scarce water resources, with extensive pastoralists often losing out (Glenck, 2014; Deleule, 2016). The more extensive production of sheep, goat, and camels that used to characterise the region, have thus been confined to more peripheral settings, not only geographically, but also in terms of policy concern and public investment.

As the consumption of sheep and goat products remains popular and largely associated with religious events (i.e., about half of the entire annual consumption of sheep and goats occurs during Eïd rituals), their trade is the backbone of wider regional transactions and an important driver of the local political economy. The livestock trade operates through extensive value chains, from input supply to fattening to market placement, which constitute a significant source of labour and income for various agents, and an important source of international income for certain countries (Elloumi et al., 2006; Srairi, 2016). Informal cross-border moves and transnational trade are equally critical in supporting pastoral economies because they provide a strategic domain to navigate the market volatility by exploiting the asymmetric economic conditions amongst countries (i.e., high disparities in consumers' purchasing power). Today a significant share of livestock consumed in wealthy Gulf countries originates from the Mashreq or countries even further such as Somalia, Sudan, and Australia.

These are though sensitive matters, for both political and technical (i.e. epidemiological) reasons, as a large number of these transactions takes place in informal and unchecked ways (Jaber et al., 2016). While this trade has traditionally been tolerated by central State authorities as a way to accommodate the interests and needs of local elites and leaders, it has recently become a source of concern in parts of the region, as the same routes and networks that transact livestock have been upscaled to support smuggling, illegal trafficking activities, and even insurgent militia (Meddeb, 2012; Nori and Baldaro, 2017).

BOX – Heating and healing in the Sinai Peninsula

The Sinai region is a peninsula bordering Israel and Gaza in the East and the Suez Canal in the West, which separates it from the rest of Egypt. The largest group of the region approximately 550,000 inhabitants are the Bedouin, a historically nomadic community, though today only a minority of Bedouin families continues to practice in pastoralism. Recent reports link the shifts in Bedouin livelihoods with patterns of exclusion and conflict in the region.

Apart from ecological factors, the impact of Israeli occupation and then Egyptian control have contributed to a major dismantling of traditional agro-pastoral livelihoods and the move to increasing dependence on precarious paid work and, illegal trade and illicit activities. Since the Egyptian State took control of the region in the early 1980s, economic investment programmes in Sinai have largely promoted the settlement of migrants from the Nile Valley. Few benefits have accrued to the Bedouin population, who have instead been the target of resettlement and food assistance programmes, while their discrimination in terms of land rights, natural resources and access to services has increased (GSD, 2012).

Marginalisation in socio-economic terms is reflected in higher-than-average poverty rates. In terms of political marginalisation, Bedouins did not have the right to vote until 2007, and their local institutions were appointed by the state rather than elected. According to several scholars, the problems of exclusion, poverty and lack of income alternatives among the Bedouin have contributed driving local youth to engage in cross-border smuggling and trafficking of drugs, arms and migrants, and since the early 2000s also in insurgency, with the rise of terrorist and Islamist groups in the region (Yaari and St. Pierre, 2011; GSD, 2012).

The war in Gaza in 2008 and the Israeli blockade created a new demand for smuggled goods and increased regional migration flows. In this environment, the smuggling business flourished, and Bedouin criminal groups became more sophisticated and evolved into mafia-like networks and corporations. Partly as a result of rising tensions, the Sinai Development Agency (SDA) has recently been revived, but its activities appear to be more focused on control rather than community development.

An in-depth reconfiguration of pastoral farming

The uncertainties faced by pastoralists in WANA today are therefore very different from those of a few decades ago. Herding communities in the region have undergone intense incorporation into State-led and market-driven mechanisms that have significantly reconfigured their operational perimeter, and contributed to a sharp reduction in their economic and political autonomy. Livestock rearing now responds to subsidies, loan schemes and input supply systems, and State-assisted commodification of livestock products has become a primary production objective for most pastoralists, who are fundamentally conceived as mere livestock producers who must meet the demands of an increasingly demanding population (Bourbouze, 2000; Gertel and Breuer, 2007; Daoud et al., 2016). The economic squeeze and the degree of dependence resulting from State schemes and market dynamics are so dramatic (also refer to Figure 2) that under normal circumstances, ewes are described as «*mangent avec l'argent*» (feeding on money) or «*à se manger l'une l'autre*» (eating each other) (Rachik, 2009:82) or «*la brebis mange sa soeur*» (an ewe feeds on her sister) (Chattou, 2016:141). Figure 2 shows the degree of volatility that characterises the economy of pastoral producers, in terms of input and output pricing.

At different paces depending on the political trajectory of each country, the reconfiguration of pastoralist communities within the evolving institutional dimension has taken place across the WANA

region through three intertwined and complementary dimensions, whereby a) pastoralists have been (re)organised, b) their resources have been transferred, and c) their livelihoods have been increasingly integrated into the broader economic and political arena.

To ensure their social and territorial grip in remote and inner drylands, following independence, most States have engaged pastoral communities in formal organisations. Aimed at supporting national identity and State legitimacy, this has been a strategy pursued to scale down customary institutional structures, often by co-opting local elites and leaders, and through forms of petty remuneration, public employment schemes or tolerance for informal economic arrangements. In the example of Syria, Assad's patronage networks have allowed the State to become the major source of employment amongst rural communities (Dukhan, 2017).

From the pastoralists' end, these evolutions have been used as forms of collective action for lobbying and influencing political decision-making. Pastoral communities have made instrumental use of formal organisational arrangements to better respond to ever-changing policy and economic conditions, specifically to facilitate access to public services and support, including to receive relief in times of drought. Forms of patronage and State support in terms of subsidies, loans, and provision of production inputs have eventually become the main drivers of agricultural modernisation, and of pastoral institutional incorporation. With producers increasingly relying on external inputs, financial schemes and technical assistance for both their production and marketing strategies, pastoral organisations have often been a main prerequisite for enjoying these forms of public support (Nori, 2019b).

Organisational arrays followed countries' different political and ideological trajectories. In Tunisia and Algeria, the cooperative systems boomed, then busted, whereas in Syria and Iran it remained for longer. Morocco, Egypt and most Gulf countries set in place other, more liberal structures for pastoral communities. These institutional arrangements aimed at dismantling pre-capitalist forms of organisation (tribes, clans, local elites) by replacing them with modern institutions, while also extending the outreach of State agencies and services amongst producers. With their extended and embedded articulations, the Sheep and Goat Breeders' Union (SGBAT) in Turkey and the Association Nationale des éleveurs Ovins et Caprins (ANOC) in Morocco provide the strategic social infrastructure to facilitate government outreach in terms of resource provision (Giray et al., 2015; Pastinnova, 2021).

Over time, however, mere administrative features have been superimposed by customary and social affiliations through organisations defined as *ethno-lignagers*, whereby the State recognises degrees of local identity and autonomy (Belhedi, 1989; El Alaoui, 1997; Lazarev, 2008; Nori, 2019b). These evolutions have also been perceived as a strategy to allow and justify State disengagement in dryland territories, in line with SAP dictates (Rae et al., 2001; Bessaoud, 2005; Elloumi et al., 2006; Chattou, 2016; Nori, 2021).

BOX – Pastoral cooperatives in Syria

In Syria, the customary organisation that constituted the backbone of Bedouin society and the traditional system of resource management, the *hima*, was resumed in the formal institutional set-up and rearranged into a cooperative form by the State, as a functional unit of herders. Between 1969 and 1973, 8 cooperatives were formed: 6 in the governorate of Hama, and one each in the grasslands of Damascus and Homs. The concept was further developed with the creation of more specialised cooperatives. By the end of 1972, 14 such cooperatives were operational, each with pens and feed stores. By the 1980s, there were more than a hundred such cooperatives, overseeing the management of millions of hectares of land and handling significant quantities of feed. These arrangements and the associated streams of public funding to support them were an important pillar of the social contract that the State had established with the Bedouin communities.

However, these commitments have been seriously undermined since the 1990s by structural adjustment measures that have reconfigured national policy agendas, by devolving responsibilities while at the same time decreasing funding to cooperatives. The 'rediscovery' of the traditional *'hima'* institutional set-up and the use of concepts such as local participation and self-sustained development became instrumental to the policy of economic liberalisation aimed at promoting private enterprise and disengaging the State from its peripheries.

In the same years the General Commission was established with the mandate to 'manage and develop' the Badia rangelands that stretch across 10 million hectares in the central and north-eastern part of the country, and provide grazing to about 12 million sheep, goats and camels. Focusing mainly on environmental conservation, the Commission failed to address the problems the Bedouins were experiencing with the economic liberalisation and reinforced their sense of marginalisation and discontent against the State and its policies. The drought of 2008 further dramatised the situation; the institutional response to sustain dryland livelihoods was limited and forced many herding communities to abandon the inner Badia for the suburbs of major coastal cities, thus contributing to unravelling State legitimacy in rural areas and exacerbating political tensions across the country (Bocco, 2006; ACSAD, 2011; Gleick, 2014; Dukhan, 2017).

Along with the reorganisation of pastoral communities and their herding systems, control over rangelands became a contested arena where local communitarian and central State agendas collided. Rangelands are, in fact, the asset around which pastoral livelihoods and economies were structured and socially organised. Central States with the support of international organizations have in most cases pursued the control of dryland steppes and communities, through programs of sedentarisation and individualisation of land rights (Abaab et al., 1995; Bourbouze, 1995; Mourid, 2007; Pactores, 2020).

BOX – Re-educating nomads or UN agencies?

In the early 1950s, the League of Arab States in collaboration with the United Nations organised a series of seminars on the subject of 'Social welfare in the Arab States of the Middle East'. The measures adopted started from the assumption that *'perpetuating nomadism would in the best of cases represent a waste of potential agricultural land'* (ILO, 1962:15 - quoted in Bocco, 2006). *'We should proceed towards sedentarisation by giving a piece of land to each individual capable of engaging in agriculture, the surface area to be determined by each state and calculated in such a way as to ensure a rise on the standard of living, and to allow him to support himself and all his dependants'* (ibid.:80). *'It is necessary to make a serious effort to re-educate the nomads in order to explain the real nature of these projects to them, as well as the benefits and privileges inherent in a less nomadic lifestyle'* (ibid.:79).

It took several decades for the UNs to reverse the perspective and learning themselves more adequate principles concerning dryland ecosystem dynamics, mobility management and pastoral production systems. Nomadic pastoralism represents the most efficient use of marginal drylands because it allows nomads to maintain their herds for certain periods in different locations, thus optimising use of those areas. Seasonal migration is the norm, given the inadequacy of local ecosystems to support herds in one fixed place the year through (IFAD, 2006:7).

Institutional arrangements often placed rangelands under the responsibility and control of Forestry Ministers, departments and officers, whose main agenda was typically to curtail access to grazing pastoralists, and to ensure institutional arrangements that favoured more exclusive land rights.

BOX – Yoruk goats vs State forestry in Turkey

The conflict between forest administration and small ruminant breeders has been particularly fierce in Turkey, where 99 per cent of the forest and rangelands are owned by the State and its agencies. Whereas forestlands are managed by State enterprises, rangelands are allocated for common use to local communities. State policies to protect forests by excluding local users is the primary reason behind the intense emigration characterising inland and mountainous communities since the 1980s. Autochthonous goats have been the specific targets of strict policy measures than banned their access to forests (Article 19 of the Forest Law #6831), with important consequences on their feeding capacities, especially in times of drought. The primary casualties of this strategy have been Yoruk pastoralists whose socio-economics degraded after access to forest resources for grazing was prohibited. This dramatically affected their traditional sylvo-pastoral resource management and livelihood patterns (Giray et al., 2015).

The rise in the number of fires due to the uncontrolled growth of the forest biomass eventually inspired new reflections of forest management practices. Recent regulations have introduced some changes in practice through a grazing plan by the area forest administration. Although the situation has become more flexible and grazing has been made possible on forestlands, producers and shepherds fear that any infringement by any one of them may lead to a general ban being reinstated (Geray and Özden, 2003; Giray et al., 2015).

Driven by the changing institutional environment, legislative measures, direct investment and local political economy, privatisation of land rights and conversion to crop farming have also been pursued by local elites, who secured their land rights at the expense of local communities. Over time, the individualisation of exclusive rights over fragmented rangeland plots has become a practice widely undertaken across the region by different social groups as a means of safeguarding local interests by securing land rights (Lazarev, 2008; Ben Saad and Bourbouze, 2010; Kreuer, 2011; Nori, 2019a). This has contributed to weakening the community social networks, and stimulating inequality and insecurity, which are now recognised by most WANA scholars as significant deficiencies in the policy frameworks at the regional and national levels (Alary et al., 2005; Ates and Louhaichi, 2012; Mohamed et al., 2019; Nori, 2019a; Scoones, 2021).

BOX – Rangeland management in Iran: from fuzzy to fixed

Iran is home to a large variety of pastoral groups whose conditions and fate have been dramatically influenced by top-down policies. Transhumant communities used transhumance patterns to make use of hundreds of thousands of squared kilometres for grazing to maintain stock numbers in equilibrium with pasture productivity. Most rangelands were controlled by *khans*, the local elite, from whom pastoralists rented rangelands for grazing their herds. Overgrazing was considered a sacrilege and the *khans* were in charge of monitoring land conditions and stocking rates.

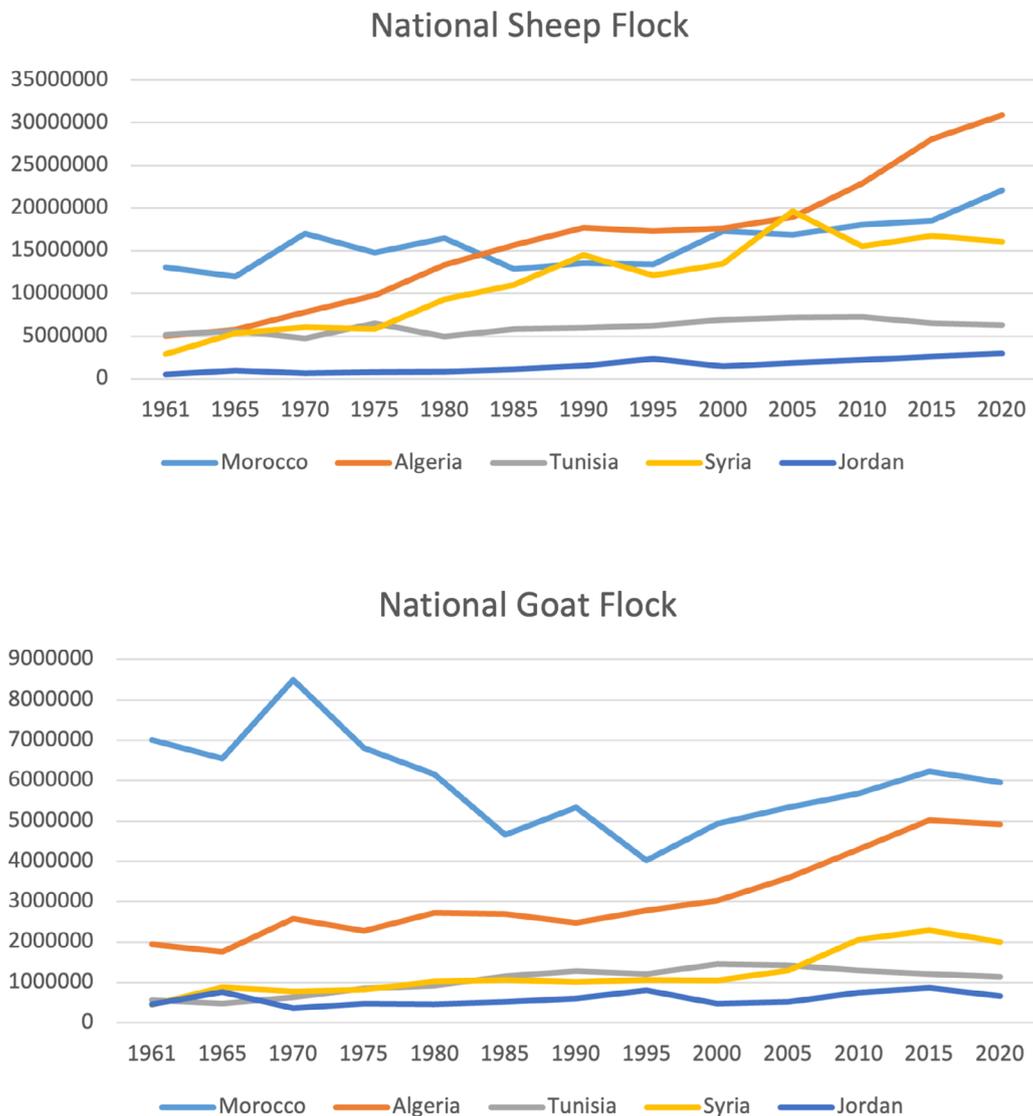
Since the 1930s, most transhumant communities were settled in plains with unproductive soils and insufficient water and converted to agricultural crops of which they had no knowledge. Production levels were poor, with the degradation of natural resources an inevitable outcome.

The land reform in 1960s further complicated matters; rangelands became common lands owned by the State and pastoralists were allowed to use them under legal grazing license granted by the government. Rangeland conditions degraded rapidly, as monitoring and control mechanisms were ineffective. The reform eventually spurred land-grabbing and privatisation, particularly of sites that showed some potential for cropping. This fragmented the pastoral landscape and curtailed its overall productivity. The use of heavy machinery in such ecosystems further contributed to their degradation. Since then, the policy framework has not changed much, thus remaining a major challenge for sustainable production and natural resource management in Iran (Adeel et al., 2008; Ghorbani et al., 2015).

Mobility patterns followed accordingly, as the free movement of livestock over time was severely restricted by the hardening of international and administrative boundaries that cut across pastoral routes and by policy initiatives aimed at herders sedentarisation and conversion to more intense farming. Support from international organizations and technological advancements have been instrumental in reshaping territories and resource use in patterns defined as 'inverted mobility' or 'mobile sedentarisation' (Bourbouze, 2000; Bocco, 2006; Rachik, 2009). Mechanised transport and water pumps have extended the ability of pastoralists to access and manage distant resources and market opportunities while staying in rural villages. Roadways, trucks, cars and motorbikes, mobile phones and the internet have contributed shortening the distances between herding households, range resources, and market opportunities (Gertel and Breuer, 2007; Bourbouze, 2017; Vidal-González and Nahhass, 2018).

In production terms, the relevance of local rangelands grazing potential lost its prominence in animal management patterns. From an exceptional measure to sustain herds in times of drought, supplementing feed and water has become the de facto main animal production strategy. Policy efforts basically focused on stabilising and ensuring a steady and constant flow of inputs to the livestock system in order to control and intensify its production and ensure a more stable and growing output level (see Roe, 2019). No wonder this was accompanied and complemented by huge investments in water infrastructure and irrigation development in higher-potential areas – both key drivers of agricultural encroachment on rangelands' grazing potentials (Abaab and Genin, 2004; Elloumi et al., 2006; Azimi et al., 2020).

Complementary to this, most WANA States engaged as well in establishing the physical and political infrastructure tasked with the supply of animal feed (forage, barley, and agricultural by-products), often imported from other countries or regions. Lubricated by subsidies and loans, and organised through political connections and socio-economic relationships, the supply infrastructure is usually organised through arrangements involving diverse institutional levels that play on both public and private grounds, where State agencies intertwine with private operators and market agents (Nori, 2021). While the provision of external inputs was justified to decrease producers' exposure during years of scarcity, this strategy provided significant incentives to retain greater numbers of animals, reduce their mobility and integrate agro-pastoral economies into changing institutional and market frameworks (Darghouth and Gharbi, 2011; Jemaa, 2016).

Figure 1. Sheep and goat population trend in selected WANA countries region (1962-2005)

Source: FAOStat dataset

The modernisation that materialised by institutionalising the emergency and relief paradigm as the mainstream production system resolved the short-term objective of increasing production to serve the growing consumer demand. However, the long-term implications of such a development paradigm soon came to light. Feeding animals with imported and subsidised feed and selling their products in controlled markets made sense in short-sighted political terms, but it generated as well new forms of uncertainty and risks. Boosted by externally acquired production inputs, animal density grew continuously over decades (Figure 1) and detached significantly from local grazing potentials, as their size, structure and mobility stopped adjusting to inter-annual climatic variations. As a consequence rangelands underwent unbearable pressures, accompanied by the collapse of the institutional arrangements that traditionally regulated their access and use (IFAD, 2003; Alary et al., 2005; Alary and El Mourid, 2005; Bourbouze, 2017; Mohamed et al., 2019).

BOX – Herd reconfiguration in exotic terms

The intensification of livestock production in WANA drylands implies a more specialised herd composition, whereby a mix of animals (ovine, caprine, camel) has often given way to a single species. The breed factor is also being reconfigured, through genetic crossing. As the impacts of drought events have consistently lessened because feed and water are now supplied by State agencies, several pastoralists have cross-mated their flocks with imported breeds in order to enhance their ability to compete in the evolving urban consumption demand. The newly bred animals may be more productive, but they are also more demanding in feeding terms and less resistant to drought conditions (Chiche, 2002; Abdelguerfi and Marrakchi, 2000; Alary et El Mourid, 2005). Due to their replacement or cross-breeding with exotic species, in the Maghreb drylands seven out of sixteen local sheep breeds are under severe risk of extinction. For example, in Algeria, between 1990 and 2000, the Barbarine population shrank by 60 per cent and the D'man population by 50 per cent (Laaziz, 2005).

Eventually, rangeland ecosystem degradation became the new policy horizon of national and international agencies. With a shift from '*mise en valeur*' to '*mise en defense*', specific policy concerns were reoriented towards range conditions, with actions aimed at enhancing their protection and rehabilitation. The strategic links between dryland ecosystems, climatic patterns, and livestock production became the core mandate of specific programmes and agencies established over time (IFAD, 1995; Azimi et al., 2020). These include the Arab Centre for the Studies of Arid Lands and Dryland (ACSAD), the Observatoire du Sahara et du Sahel (OSS), the International Centre for Agriculture Research in Dry Areas (ICARDA), as well as specialised agencies at the national level. Most interventions, however, merely addressed the bio-physical aspects, with important investments in plantations, green barriers, dune fixation, and water harvesting schemes. The option to restore range ecosystem management in a more integrated perspective was missed, as local communities were often involved only in executing tasks, in the form of a cheap, locally-available workforce.

BOX – Complementary agendas on Algerian rangelands

The 1985-1990 five-year plan for drylands was essentially based on two pillars. One concerned rangelands (*dossier steppe*), with the aim of reorganising their management to protect and rehabilitate the natural resource base, while investing in irrigation systems to support agricultural intensification, also linked to the livestock sector. The other investment pillar specifically targeted sheep farming (*dossier viande*) with the objective of intensifying livestock production through strategic integration with agricultural schemes and improving the performance of related value chains (Mekhloufi, 2020).

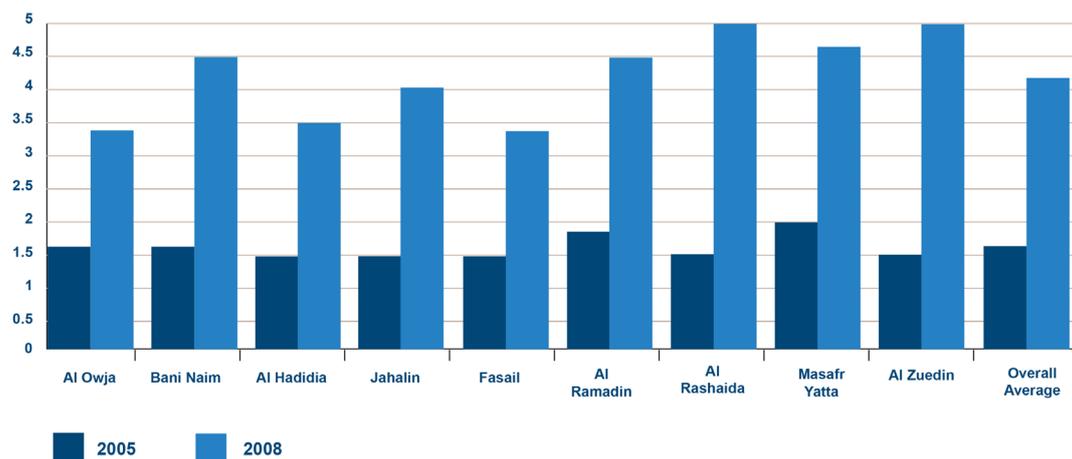
These two supposedly complementary agendas obviously clashed; rising herd size and intensification of their management put enormous pressure on an exhausted range resource base, further contributing to its degradation.

Acknowledging such ecosystem crises went as far as inducing some countries to scale down the expansion of farming schemes, with a view to protecting natural resources and enhancing their sustainable management. In Saudi Arabia this has meant the end of large cereal cultivation and eventually became a trigger for externalising agricultural investments in other countries, such as the King Abdullah's Initiative for Agricultural Investment Abroad (Jaber et al., 2016).

As the financing of policy strategies aimed to intensify, stabilise and control the supply and marketing of livestock products has become increasingly costly to public budgets, these costs have gradually been shifted onto the shoulders of local producers, through income generated elsewhere, including through remittances (Rachik, 2009; Schilling et al., 2012b; Boubakri and Kadija, 2014; Chattou, 2016; Sadiki, 2016). In compliance with SAP dictates, State-induced market integration of livestock producers reached its climax when it had become directly financed through private resources.

In a broader perspective, the decoupling of livestock feeding from rangeland potential and the increasing reliance on external resources have contributed to growing uncertainties affecting the local production and reproduction systems. These evolutions have on the one hand heightened the fragilisation of dryland ecosystems, and on the other have generated a dramatic dependence on State support and market-driven mechanisms. The ability of communities and households to control and manage the fundamental pillars of their livelihoods has eroded. Increasingly high production costs and growing indebtedness, coupled with the volatility of subsidy schemes and market prices, have led to the degradation of socio-economic conditions in most dryland settings (Dhia, 1995). Figure 2 shows the degree of volatility that characterises the economy of pastoral producers in Palestine, in terms of input and output pricing. Barley is normally purchased to feed flocks, and sell lambs; the viability of such strategy varies intensively from a period to another, due to several factors whose control is out of herders' reach.

Figure 2 – Volatile terms of trade between lamb and barley prices in the West Bank, Palestine



Source: ICRC, 2008

Pastoralists have reorganised accordingly to tackle evolving uncertainties; shifting livelihood patterns have been marked by a more sedentary living of local populations and diversification of the household economy (Nefzaoui et al., 2012; Nori, 2019b). In most peripheral rural communities, migration has become ordinary. While initially this implied mostly seasonal patterns to expanding urban areas, migration flows have progressively intensified and extended to European or Arab countries in search of economic alternatives (Mahdi, 2014; Chattou, 2016; Zuccotti et al., 2018). The income generated and remitted by migrant members is now a relevant financial asset for most pastoral households, specifically to cope with crises (e.g. a drought event or an abrupt spike in the market), or either to take advantage of local opportunities (e.g. expanding the herd or acquiring land) (Elloumi et al., 2006; Nori, 2019b; Pappagallo, 2021). The distant migration of the young rural labour force has significant implications for local development in terms of family configuration, farm structure and labour regimes, including in gender and generational terms.

These processes have contributed to a profound reconfiguration of resource access, capital accumulation and social mobility in dryland communities (Boubakri, 2005; Scoones, 2021; Pappagallo, 2021). Social inequalities have widened as wealthier actors are better able to capitalise on State support, improved land investments and evolving opportunities; better positioned groups expand their herds and hire herders from impoverished families to capture lucrative market opportunities. On the other hand, individuals in lower economic strata and more difficult territories tend to lose out from these transformations (Bourbouze, 2000; Boubakri, 2002; Dutilly-Diane, 2006; Mourid, 2007). The mix of growing inequality, insecurity and dependency - together with a gradual detachment of State engagement in remote drylands - have likely contributed to the sense of precariousness and frustration that has triggered social and political tensions in parts of the region (FAFO, 2016; Daher, 2018).

Since the 1990s, the agricultural sector in WANA has gone from being heavily State-controlled to being largely influenced by market forces. However, the results have been rather disappointing; while the 1980s showed the inadequacies of interventionist economics, the following decades marked the failure of liberal policies (Alary, 2006). The growing ecological and socio-economic vulnerabilities affecting drylands prompted most countries to acknowledge their inadequate understanding and management of local dynamics, and to admit the shortcomings of limited community involvement in the design and implementation of development strategies (Mekhloufi, 2020:21). These findings have led to the recognition that development in the drylands requires a more comprehensive and integrated perspective, with due priority given to the livelihoods and socio-economic conditions of local populations.

In the 2000s, a new policy framework began to evolve in which local communities are not just engaged in executing tasks or as passive recipients, but participate as active agents of change - although not everywhere at the same level. Promoted by international agencies such as ICARDA and IFAD, forms of community development planning have become mainstream in political discourse as well as in investment programmes.

BOX – Rediscovering local agencies

ICARDA policy objective has been reformulated with a view to providing “*technical, policy and institutional options to facilitate the role of rural communities in improving and sustaining their livelihoods and agro-pastoral resources*” (Nasri et al., 2007:36).

“*If natural resource management is to be effective in the long term, communities need to take part in decision-making and assume full ownership of rehabilitation and management of the land*”. Through a rigorously participatory approach, the project involved Bedouin herders and their considerable local knowledge of soil conditions, vegetation and water availability in drawing up viable management plans. The plans identified boundaries according to accepted grazing rights established over many generations, outlined where, when and how many animals could graze according to seasonal conditions (IFAD, 2011).

The effort has therefore been to promote the decentralisation of responsibility and authority for natural resource management, with a clear emphasis on the community level. In addition to more traditional infrastructure schemes, specific investments have been made to support livelihoods, including through the provision of basic services and a focus on diversifying local economies. Throughout the region, specific concern in this regard has been devoted to gender and generational aspects and the wider inclusion of youth and women, particularly in the development of income diversification activities, including through the marketing of local products (Nefzaoui et al., 2007).

BOX – Shifting paradigms in Tunisia

Tunisian land policy is quite indicative of the swinging institutional framework impinging on the governance of pastoral resources, in the shift from a socialist to a market-driven ideology. Initially collectivised, the control of common rangelands was subsequently converted through land fragmentation and privatisation, starting with wetter, more fertile and better-connected areas.

As of 2018, there is an ongoing discussion in the country on a pastoral code towards a more equitable and decentralised governance, currently centralised at the Ministry of Forestry, taking into better account the needs of pastoralists and involving their institutional systems (Dutilly-Diane and El Mourid, 2005; Ben Saad and Bourbouze, 2010; Werner et al., 2018; Jaouad et al., 2018). The arrangement includes the National Commission for Rangelands and Pastoralism (NCRP), which is mandated to make recommendations for the development of pastoralism and advise on all issues relevant to pastoralism, rangeland conservation, and the effects of climate change on natural resources. NCRP activities are supplemented by pastoral development groups (PDGs), a platform for facilitating dialogues between professionals and different stakeholder groups and further supported by regional rangeland commissions. Such institutional coordination, involving government agencies, municipal authorities, and pastoralist associations shall oversee rangeland management with measures that include resting periods to rehabilitate range conditions, regulating herd mobility, monitoring overall range and animal health, and controlling rangeland privatisation attempts.

A critical perspective on WANA policy framework

Agro-pastoral farming is a major source of food, employment and income for a large part of the WANA population; demand for sheep, goat and camel produce is on the rise, and most countries in the region are constantly resorting to importing large portions of the animal products they consume – and often also of the inputs required for their production systems, which are increasingly detached from local rangelands. Institutional and market dynamics in support of stabilising and intensifying livestock production have fuelled policies that prove inconsistent in addressing the long-term needs of rural producers and ecosystems.

Pastoralists in WANA are mostly regarded as basic suppliers of animal products, and receive public support accordingly. Repeated attempts have been made to convert herding communities into stable and controllable producers through their incorporation into State and market mechanisms. This explains to a good degree the rationale behind most public funding that supports capital- rather than labour-intensive farming systems. The retrenchment of public engagement and the consequent polarisation of development dynamics have carried significant implications for the ecological, economic, as well as socio-political spheres. Particularly in the arid and remote pastoral regions, the longstanding degradation of local livelihood dynamics holds substantial risk potential in terms of natural hazards and social insecurity, especially under volatile climatic and political conditions.

Herd management and livestock mobility patterns have profoundly reconfigured, and while livestock moves are increasingly limited as feed and water are brought to them, the mobility of family members has escalated, through migratory flows that are expanding and intensifying. The economies of most pastoral communities in WANA countries are diversified and often sustained by non-agricultural incomes and remittances, and their livelihoods are increasingly shaped by processes unfolding outside the realm of animal production and very often also outside regional boundaries. The transformation of the institutional, social and territorial landscapes generates new opportunities as well as tensions along ethnic, gender, and generational cleavages, and contribute differently to how pastoralists face uncertainties in the region.

As in other parts of the world, development approaches aimed at peripheral communities and marginal territories are adaptations of mainstream visions designed for intensive production in high-potential areas, rather than being tailored to mountainous or dryland settings, and negotiated with the involvement of local communities. More broadly, the policy framework that informs governance of rangeland and pastoral systems in the region has mostly evolved to serve others' interests - the State, consumers, international agendas, rather than arise from and support the well-being of local communities.

Accordingly, institutional and economic arrangements have not necessarily been aligned with the interests of pastoralists, for whom the reconfiguration of land, livestock and labour regimes has generated challenging uncertainties and weakened their ability to steer the transformations in their livelihoods. As a result, the recent history of policy making, investments and interventions in WANA drylands is one of strained economic development, stressed community networks and degraded ecosystems. The erosion of pastoral knowledge and skills, the loss of landscape biodiversity, the diminished capacity to cope with climate change dynamics, and the broader social and environmental implications of the political and economic marginalisation of drylands could have significant implications for the entire WANA region and societies.

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Appendix



Grazing dryland terraces in southern Tunisia. Credit: Nori, 2019 PASTRES

Table 2 – Reconfiguration of pastoral resource management in WANA regions

LAND	LIVESTOCK	PEOPLE
Inverse mobility	Pastoralists as livestock producers	Sedentarize and control
Detaching livestock from lands	External inputs supply infrastructure Market integration and State dependence	Incorporation and co-opting Support farmers' income – subsidies, loans
Territorial polarization	Cereal and cattle totems + chicken & import	Cooperatives ethno-lignageres
Range degradation	From public to private financial support	Emigration

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