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Transformations of Nomadic Indigenous Lifeways in Iran, in a Changing Climate

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Abstract

Nomadic and semi-nomadic Indigenous Peoples in Iran, such as the Qashqai, Lor, Bakhtiari, Shahsavan, and Turkmen, have historically sustained livelihoods and identities through seasonal mobility, collective tenure, and customary governance over extensive dryland territories. These socio-ecological systems, finely attuned to climatic variability, have long underpinned rangeland resilience. Today, however, they are being reshaped by converging pressures: state centralisation and the dismantling of tribal autonomy; land reforms and the nationalisation of forests and rangelands; accelerating climate change and water scarcity; market-driven commodification; and shifting intergenerational aspirations. Drawing on historical and political ecology, this paper examines how these forces transform mobility, herd management, gender relations, and social organisation, and with what implications for livelihoods, cultural continuity, and ecological stewardship. It shows that the responses of nomadic Indigenous Peoples, diversified economies, women's cooperatives, eco-tourism, renewable energy, and community-based rangeland governance are best understood as efforts to defend and reconfigure their "Territories of Life," rather than as isolated adaptation projects. The argument advanced is that resilience in Iran's nomadic systems is fundamentally biocultural and territorial: it depends on the vitality of Indigenous governance and collective custodianship over territories, resources, and water. Technocratic adaptation measures, in the absence of rights-based recognition of Indigenous territorial governance and legal protection of pastoral commons and corridors, remain partial and fragile. Recognising and supporting nomadic pastoral territories as Territories of Life is therefore central not only to the viability of nomadic lifeways, but also to credible climate adaptation, land restoration, and biodiversity conservation strategies in Iran's drylands.

1. Introduction

Nomadic and semi-nomadic Indigenous Peoples in Iran maintain a historically grounded relationship with land, climate, and movement in which seasonal mobility is both an ecological strategy and a mode of governance. Transhumance between summer place (yaylaq) and winter place (qishlaq) has enabled communities to navigate spatially and temporally variable water and forage regimes, turning nomadism into an institution that organises access to resources, manages conflict, and anchors collective identity in and through the landscape. In this sense, nomadism is not merely a logistical reaction to scarcity, but a culturally embedded form of rule-making and belonging that has underpinned resilience in drylands that pastoralists themselves have long understood as shifting, non-equilibrium systems — knowledge that scientific ecology has only recently begun to formalise (Farvar, 2003, Naghizadeh et al., 2012).

The modern state-building project in Iran, particularly from the Pahlavi period onward, disrupted this relational order. Sedentarisation policies, nationalisation of rangelands, and the redefinition of pastoralism as "backward" reconfigured nomadic territories from self-governed commons into administratively fragmented "national" lands. These trajectories echo what (Farvar et. al, 2004), in Sharing Power, conceptualise as the clash between centralised, sectoral control and plural systems of indigenous custodianship and co-governance. In the Iranian case, the marginalisation of customary institutions and the erosion of mobility as a legitimate form of governance have produced a double exposure: communities now face overlapping ecological, economic, and political vulnerabilities.

At the same time, the persistence and transformation of nomadic lifeways reveal that resilience is neither static nor purely technical. Iran's nomadic Indigenous Peoples are actively reworking their socio-ecological systems through mobility, diversified livelihoods, gendered forms of leadership, and emergent co-governance arrangements that increasingly resonate with the global discourse on Territories of Life. This paper situates these dynamics within a broader analytical frame that links historical state formation, climate and land-use change, and socio-cultural transformation to questions of power, rights, and territorial recognition. It argues that understanding nomadism as a form of governance, and recognising Indigenous territories as living, self-determined systems of stewardship, is essential for any serious attempt to support biocultural resilience, climate justice, and biodiversity conservation in Iran's drylands.

2. Historical and Political Context

For centuries, nomadic Indigenous Peoples in Iran, including the Qashqai, Lor, Bakhtiari, Shahsavan, and Turkmen, maintained autonomous and sophisticated systems of territorial governance rooted in collective rights, customary law, and seasonal mobility. Their transhumance regimes organized access to rangelands and natural and water sources, regulated relations between tribes, and ensured conflict resolution through customary institutions grounded in reciprocity, cooperation, and ecological interdependence (Tapper 1997; Barth 1961; Beiranvand 2024). These systems represented coherent socio-ecological governance frameworks long before the emergence of centralized state administration, and they enabled sustainable stewardship of some of the world's most variable dryland ecosystems. Such pastoral governance structures were highly adapted to climatic uncertainty and essential to the long-term resilience of rangelands (Naghizadeh et al., 2021).

The rise of the modern Iranian state, especially during the Pahlavi period (1925–1941), marked a turning point in the relationship between Indigenous pastoralists and state authority. Mobility began to be framed as a challenge to territorial sovereignty and national integration. Sedentarization policies, most notably takhteh-qapu, forcibly dismantled tribal confederations, curtailed interregional migration, and criminalized seasonal movement. Nomadism was redefined as "backward" and incompatible with modernization, echoing broader colonial-modernist ideologies that equated mobility with disorder and governance with immobility (Beck 1986; Scott 1998). These policies disrupted not only livelihood systems but also the cultural and institutional foundations of Indigenous territoriality.

Following the mid-twentieth century, land reforms and the nationalization of forests and rangelands further undermined collective tenure arrangements. State ownership replaced communal governance, converting customary pastures into "national" lands managed through permits and bureaucratic procedures that largely excluded Indigenous decision-making (Bromley 1992; Tahmasebi 2013). Similar processes across the region eroded Indigenous authority over pastoral commons, restricted mobility corridors, and enabled competing claims from agricultural expansion, industrial development, and conservation enclosures (Naghizadeh et al, 2021).

These transformations produced fragmented pastoral territories, loss of migratory routes, and administrative borders that cut across ancestral territories. The resulting spatial and institutional marginalization has constrained mobility, the foundation of pastoral adaptation, and reshaped pastoral socio-ecological systems. Yet, despite these pressures, nomadic Indigenous Peoples have

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demonstrated remarkable adaptive capacity. They continue to innovate through hybrid mobility practices, new land-use strategies, and evolving governance mechanisms that integrate traditional knowledge with modern tools and shifting policy landscapes. Their resilience reflects not the persistence of a static tradition but an ongoing capacity for transformation grounded in deep ecological knowledge and a collective ethic of stewardship.

3. Transformations of the Nomadic Ecological Niche

The ecological niche of nomadic and semi-nomadic Indigenous Peoples in Iran, and across the drylands of West and Central Asia, has historically depended on a finely calibrated relationship with climatic variability and rangeland dynamics. Through vertical transhumance, communities have long moved between highland yaylaq and lowland qishlaq pastures to balance forage and water availability, sustaining productivity in ecosystems characterized by erratic rainfall and pronounced ecological heterogeneity (Beiranvand, 2024; Krätli & Schareika, 2010). This mobile pastoral system is not merely an economic practice but an ecological logic that has shaped biodiversity mosaics, soil regeneration cycles, and the long-term stability of dryland landscapes.

Today, this equilibrium is being rapidly destabilized by accelerating climatic change. Rising temperatures, prolonged droughts, declining aquifers, and shifting precipitation regimes across Iran's 85% dryland territory (IPCC, 2021; Alizadeh et al., 2022) are undermining the temporal and spatial reliability of mobility. Seasonal calendars that once followed recognizable ecological cues, for instance, the timing of Shahsavan migrations from Moghan plain to Sabalan foothills, have become unpredictable. In many regions, including Yazd, Kerman, and Lorestan, pastoral families now shorten transhumance cycles, rely on truck-assisted migration, or partially settle near perennial springs and qanats whose flow has drastically diminished (Drynet, 2015). Such shifts fragment the ecological continuity of rangelands and reinforce a feedback loop between climatic stress, vegetation loss, and reduced adaptive capacity, producing a "resilience squeeze" that narrows both ecological and social options (Reid et al., 2014).

Climatic pressures interact with equally significant land-use transformations. The expansion of irrigated agriculture (notably pistachio plantations in Kerman and Rafsanjan), infrastructure projects such as highways and gas pipelines through Bakhtiari and Qashqai corridors, dam construction in regions like Khuzestan and Fars, and state-led reclassification of territories, especially after the nationalization of rangelands, have restricted access to ancestral grazing territories and blocked Migratory root (il-rah) (Tahmasebi, 2013; Chatty, 2006). Conservation initiatives, while framed as environmental protection, have often established national parks and protected areas within customary territories, such as Tandoureh, Khojir, and Bamu, while excluding pastoral access, thereby reproducing "fortress conservation" models that contradict Indigenous rotational grazing systems (ICCA Consortium, 2023; FAO, 2022). The result is a fragmented landscape characterized by overgrazed accessible pastures near settlements and abandoned upper pastures, increasing susceptibility to erosion, invasive species, and desertification (UNEP, 2023).

In response, nomadic Indigenous Peoples are reorganizing their livelihoods through emerging hybrid systems that integrate traditional knowledge with contemporary tools. Mixed mobility, combining walking herds with seasonal trucking, has become common among Bakhtiari and Qashqai households. Herd composition is shifting toward drought-tolerant species, including goats

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in Fars and camels among Turkmen groups in Golestan (Beiranvand, 2024). Small-scale agriculture in wintering grounds, artisanal production, and growing engagement in eco-tourism, such as Shahsavan weaving cooperatives in Ardabil, have diversified income sources. At the governance level, collective agreements for rotational grazing are re-emerging in provinces such as Chaharmahal-Bakhtiari and Kohgiluyeh-Boyerahmad, supported by community-based rangeland management initiatives (ICCA Consortium, 2023). Technological adaptation, including widespread adoption of solar panels, community-managed water-harvesting structures, and the use of GPS and weather applications, further illustrates how Indigenous pastoralists expand their adaptive space while operating within customary moral economies (Drynet, 2015; Alizadeh et al., 2022).

Ultimately, these transformations cannot be understood simply as technical responses to climatic or land-use pressures. They represent a deeper biocultural reconfiguration in which mobility, knowledge systems, social networks, and ecological ethics are continuously recalibrated. Resilience among nomadic Indigenous Peoples is therefore dynamic, relational, and grounded in adaptive governance that draws simultaneously on ancestral knowledge and contemporary innovation, functioning within the tightening constraints of climatic uncertainty and state regulation (Tugjamba et al., 2023; Krätli & Schareika, 2010).

4. Socio-Economic Transformations of Nomadic Indigenous Peoples

Over the past century, nomadic and semi-nomadic Indigenous Peoples have experienced far-reaching socio-economic transformations that have reconfigured pastoral livelihoods, social relations, and governance systems. Traditionally, their economies were grounded in a pastoral moral order shaped by reciprocity, collective responsibility, and the cyclical rhythm of seasonal mobility. Wealth was measured not only in livestock but also in kinship networks, trust, and mutual support, forming a social fabric that ensured resilience in highly variable ecosystems.

However, state-led modernization, the expansion of monetized markets, declining access to rangelands, and ecological degradation have progressively shifted pastoralism from a way of life toward a market-dependent livelihood strategy. The spread of commercial livestock trade, rising input costs (fodder, fuel, veterinary services), and constrained mobility have intensified wealth disparities: larger herd owners benefit from market integration, while smaller herders face debt, herd loss, or migration to urban margins. These dynamics have also altered youth aspirations, weakening the transmission of ecological knowledge and changing perceptions of success and dignity.

Socio-economic change has further transformed gender relations. While women have always been central to pastoral production, managing herds, dairy processing, and handicrafts, new opportunities in education, cooperatives, and micro-enterprises have expanded their economic agency. Yet this empowerment is ambivalent: increased responsibilities coexist with persistent cultural expectations. Still, women's leadership in pastoral unions and Indigenous cooperatives demonstrates how gendered adaptation is reshaping community resilience.

Education and mobility have become key drivers in these transformations. The expansion of rural schools and distance learning has enabled professional diversification among nomadic youth but has also encouraged partial sedentarization, creating hybrid settlements along migratory routes.

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Urban migration, especially seasonal wage labor, has become a major adaptation strategy, contributing essential cash income while also weakening collective pastoral structures. Nevertheless, kinship networks continue to mediate resource exchange and social cohesion between mobile and urbanized members.

These changes unfold within a fragmented institutional environment. Multiple government agencies, often with conflicting mandates, regulate pastoral affairs, while development programs, focused on "livelihood diversification" or "poverty reduction", frequently overlook customary law and Indigenous governance systems. This misalignment produces dependency and erodes collective decision-making. Yet bottom-up innovations are emerging: pastoral federations, cooperatives, and community-based organizations increasingly articulate rights-based approaches that link economic security with territorial stewardship. These initiatives reflect a growing shift toward co-governance models aligned with the "Territories of Life" framework, where Indigenous knowledge and state policy collaborate through negotiated arrangements.

In sum, the socio-economic transformations affecting nomadic Indigenous Peoples represent not a linear decline but a complex reconfiguration of livelihoods, identities, and institutions, driven by a combination of market pressures, ecological constraints, and evolving aspirations. Their responses highlight adaptive capacity rooted in both tradition and innovation, pointing toward new hybrid forms of resilience under rapidly changing social and environmental conditions.

5. Cultural Continuity and Ecological Stewardship

For nomadic and semi-nomadic Indigenous Peoples, culture, knowledge, and ecology form an inseparable whole. Their lifeways are sustained not only by material practices but by a moral and cosmological system, what Berkes calls "sacred ecology", that binds spiritual values, social relations, and environmental ethics. Traditional ecological knowledge, transmitted through oral traditions, poetry, songs, and intergenerational storytelling, guides practices such as rotational grazing, seasonal pasture resting, and collective water management. These practices, upheld by elders and women, form the backbone of customary governance systems that regulate migration, resource use, and conflict resolution through principles of reciprocity, consensus, and stewardship.

Mobility itself is a cultural act: seasonal migration reaffirms ancestral belonging, revitalizes il-rah routes, and preserves communal identity. Rituals tied to departure, arrival, milking, lambing, and camp-setting embody values of care and gratitude toward nature. While sedentarization and market pressures have reshaped these expressions, cultural continuity persists through transformation, rituals, and identities adapt, blending pastoral traditions with education, urban engagement, and digital connectivity.

Ecological stewardship for nomadic Indigenous Peoples is grounded in ethical responsibility rather than managerial control. Their territories function as de facto "Territories of Life," collectively governed and ecologically productive despite lacking formal legal recognition. Rotational grazing, careful water use, and community-based biodiversity monitoring demonstrate that Indigenous conservation is empirical, adaptive, and political, resisting both ecological degradation and cultural erasure.

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Contemporary policy challenges lie in recognizing these systems as legitimate governance models. Bridging Indigenous knowledge with state environmental frameworks requires acknowledging epistemic plurality and moving toward partnership-based co-governance rooted in respect and reciprocity. At the same time, younger generations are actively renewing cultural identity through cooperatives, arts, advocacy, and community festivals, illustrating “continuity through transformation.” The endurance of nomadic lifeways, therefore, is not a relic of the past but an ongoing expression of biocultural resilience, where identity and ecological stewardship evolve together to meet new environmental and political realities.

6. Territories of Life as the Core of Adaptation

Nomadic and semi-nomadic Indigenous Peoples in Iran and across the region are not simply “adapting” in a technical sense to climate and policy shocks; they are defending and re-configuring their territories of life, lands, waters, and ecosystems collectively governed and conserved as the foundation of their livelihoods, identities, and futures. Territories of life are living socio-ecological systems in which governance vitality, customary rules, and collective custodianship are central to resilience and to any meaningful response to today’s intertwined climate and biodiversity crises (Borrini-Feyerabend and Jaeger, 2024). Many of the rangeland management principles now formalized in scientific literature—such as adaptive mobility, carrying-capacity assessment, and rotational use—have long been practiced through Indigenous nomadic pastoralists’ customary governance systems and their ecological knowledge (Sharifian & Naghizadeh, 2022).

In Iran, such territories of life are visible in the customary pastoral landscapes of the Qashqai in the Zagros, the Bakhtiari transhumance routes between Khuzestan and Chaharmahal-Bakhtiari, the Shahsavan yaylaq–qishlaq system around Sabalan, and Turkmen rangelands in Golestan. These are not merely “production areas”; they are biocultural territories where mobility, collective decision-making, sacred sites, and grazing regimes co-evolve with dryland ecosystems. When nomadic groups experiment with new strategies, whether hybrid mobility, diversified livelihoods, or local agreements for rotational grazing, these should be understood as efforts to self-strengthen their territories of life, not as isolated “projects” (Borrini-Feyerabend & Jaeger, 2024; ICCA Consortium, 2021).

Hybrid mobility practices are a clear example. As il-rah migration corridors are cut by highways, dams, and fenced private lands, Qashqai and Bakhtiari families increasingly combine walking routes with truck-assisted transhumance, selectively transporting herds across the most fragmented or dangerous segments. Among Shahsavan groups, the timing of ascent to summer pastures is now coordinated not only through ecological cues and elders’ knowledge, but also through weather forecasts and mobile communications. These adjustments—while costly—are deployed to keep the territorial cycle of movement alive and to avoid full sedentarisation that would sever their link with ancestral rangelands.

Livelihood diversification likewise functions as a strategy to hold the territory together. In many wintering grounds in Fars and Khuzestan, families combine pastoralism with small-scale rainfed farming, medicinal plant collection, and handicrafts; Shahsavan and Turkmen women’s cooperatives connect traditional weaving or felt-making to fair-trade markets and digital platforms. In Ardabil and Golestan, eco-tourism initiatives and hosted stays in nomadic camps are emerging as complementary incomes, allowing families to remain in or regularly return to their territories

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rather than migrate permanently to urban peripheries. These are not merely "income-generation" schemes; they are social innovations that keep young people engaged with their homelands and sustain the cultural and governance fabric of the territory.

At the governance level, a range of Iran-specific examples illustrate how territories of life are being strengthened through co-management and negotiated recognition. Participatory rangeland management initiatives in parts of Chaharmahal-Bakhtiari, Kohgiluyeh-Boyerahmad, and South Khorasan, often facilitated by civil society actors such as CENESTA and in dialogue with the Organization for Nomadic Affairs, have supported tribes to map customary seasonal pastures, re-establish rotational grazing rules, and create written local agreements with state agencies. Similar processes are emerging where ICCA/Territories of Life approaches have been introduced, enabling communities to articulate their own governance systems and demand that state plans, such as forest–rangeland projects, protected areas, or watershed schemes, respect those systems (ICCA Consortium, 2021).

Such processes are expressions of governance vitality: communities clarify who the custodians are, reaffirm their customary norms, and engage with external actors on their own terms (Borrini-Feyerabend & Jaeger, 2024). This resonates strongly with experiences in Iranian nomadic territories where, for instance, clan councils renegotiate access to water points affected by drought, or pastoral unions collectively contest land conversions that would fragment key migration corridors. Rather than being "beneficiaries" of top-down climate projects, these communities act as self-determining custodians, seeking recognition of their territories of life in policy and law.

Technological innovations, solar panels, portable energy systems, GPS mapping, and communication tools are being selectively integrated into these governance and livelihood strategies. Solar energy in Qashqai and Bakhtiari camps reduces dependence on fuelwood, improves safety and refrigeration for dairy products, and enhances communication, thus expanding the autonomy and security of life in the territory. When such technologies are embedded in Indigenous institutions rather than imposed from outside, they strengthen the capacity of custodians to monitor, manage, and defend their territories.

Taken together, these adaptive strategies reveal that the most powerful form of climate and livelihood adaptation for nomadic Indigenous Peoples is not a new technical package, but the formal and practical recognition of their territories of life. Evidence synthesised in the Territories of Life: 2021 Report shows that Indigenous territories and ICCAs likely cover around one-fifth of the world's land area and are indispensable for confronting the climate and biodiversity crises (ICCA Consortium, 2021). When such territories are recognised and supported, through tenure security, respect for customary governance, and supportive policies, their governance vitality becomes a critical driver of resilience at the landscape scale (Borrini-Feyerabend & Jaeger, 2024).

For Iran, this implies that recognising and supporting nomadic pastoral territories as Territories of Life is not peripheral but central to any serious strategy on climate adaptation, land restoration, and biodiversity conservation. Hybrid mobility, diversified livelihoods, women's cooperatives, and renewable energy will remain fragile if the underlying territories are not legally and politically secured. Resilience among nomadic Indigenous Peoples is thus best understood as a biocultural and territorial process: the ongoing, creative re-assertion of collective custodianship over lands, waters, and life-webs, under conditions of profound uncertainty. Recognition of territories of life

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is therefore not only a matter of justice, but a necessary condition for the long-term viability of nomadic lifeways and for meeting national and global environmental commitments.

7. Conclusion

The evidence presented across historical, ecological, socio-economic, and cultural dimensions demonstrates that the future of nomadic and semi-nomadic Indigenous Peoples in Iran cannot be secured through technical interventions alone. Their resilience is rooted in dynamic systems of mobility, customary governance, and biocultural knowledge that have evolved over centuries in close interaction with dryland ecosystems. The pressures they face, climate change, land-use transformation, sedentarization policies, and market integration, are not isolated challenges but mutually reinforcing drivers that narrow both ecological and social space. Yet the adaptive capacity shown across Iran's pastoral societies reveals that transformative resilience is possible when Indigenous custodianship is recognized rather than undermined.

A central insight emerging from this analysis is that Territories of Life are not merely descriptive frameworks but the foundational condition for sustaining nomadic livelihoods, ecological stewardship, and cultural continuity. Where pastoral territories remain intact and customary governance retains legitimacy, communities are able to innovate: nomadism, diversified livelihoods, women's cooperatives, eco-tourism, and renewable energy integration all become viable forms of adaptation. Conversely, where territories are fragmented or juridically insecure, even the most promising innovations become fragile, dependent on external projects, and disconnected from the broader socio-ecological system that gives them meaning.

Implications for policy are therefore clear: recognizing and legally securing nomadic pastoral territories as Territories of Life must be the cornerstone of climate adaptation, land restoration, and biodiversity conservation strategies in Iran. This requires shifting from sectoral, technocratic governance toward approaches that respect Indigenous tenure systems, restore migration corridors, harmonize conservation frameworks with customary practices, and institutionalize co-governance between state authorities and Indigenous custodians. Only under conditions of territorial security can community-led stewardship, rotational grazing, water governance, biodiversity monitoring, and adaptive mobility function as effective and equitable responses to environmental change.

Supporting self-determined custodianship is not simply an act of justice; it is a strategic investment in Iran's environmental future. Dryland resilience, ecological restoration, and national climate goals depend on the vitality of pastoral territories and the governance systems that sustain them. Upholding Territories of Life therefore offers a coherent, rights-based, and ecologically grounded pathway for ensuring that nomadic lifeways not only survive but continue to enrich Iran's landscapes and contribute meaningfully to global efforts on climate and biodiversity.

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