Green energy and grazing in the rangelands: a just transition?

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Abstract

Growing global awareness of the climate crisis and the need to switch from fossil to renewable energy (RE) has led to growing interest in acquiring land to generate it. Tropical and subtropical rangelands are prime targets for producing RE. Investors, governments and project planners often regard rangelands as "empty", yet pastoralists, hunter-gatherers and cultivators have long used these areas as a common pool resource, through multipurpose use of the land, for their livelihoods.

Globally, large-scale land acquisition for RE projects often displaces local people from their land, contrary to their traditional rights, disadvantaging especially pastoralists by blocking access to and fragmenting pastures. This reduces pastoralists' ability to use herd mobility to deal with climatic variability and change and to support their livelihoods. Moreover, project planners rarely manage to obtain locally meaningful free, prior and informed consent (FPIC) for using pastureland to produce renewable energy. Even where communities have a chance to negotiate placement of energy installations, they typically enjoy little bargaining power or subsequent benefits, not least because governments and developers may greatly underestimate the value of pastoralism in terms of food production, economic value and ecosystem services and therefore afford low value to rangelands.

We analyse the impact of land acquisition in rangelands for RE in Kenya and Mongolia, especially in relation to considerations of climate and energy justice. We explore possibilities of multifunctional land use as part of a 'just transition' that combines pastoralism with generating RE. We identify the type of research needed to help local people gain evidence about the value of their production systems and their contribution to ecosystem services, putting them in a better position to negotiate sharing of land for and benefits from RE generation.

Introduction

Confronted by the climate crisis, countries are striving to meet the Sustainable Development Goals (SDGs) and to deliver on their zero-carbon pledges at the UN Climate Change Conferences by transitioning from fossil to renewable energy for their industries and citizens. This has led to rapid expansion of large-scale renewable energy (RE) projects, particularly in sparsely populated regions or on land regarded by governments as "unproductive". Investors from more industrialised countries are making agreements especially with governments of less industrialised countries to use their land to produce solar, wind or hydropower. They frequently draw on discourses

of "empty", "underutilised" or "degraded" wastelands – discourses that have historically underpinned injustices to local land users, particularly pastoralists, in the name of development since colonial times (Lind et al. 2020).

In many of these areas now coveted for generating RE, pastoralists have been grazing their herds in mobile systems of production on land used in common with other herders, smallholder farmers and hunter-gatherers. The large-scale RE projects could have adverse impacts on pastoral production systems, which rely on flexible and highly mobile use of large expanses of diverse types of land at different times of the year in order to produce food (milk and meat) for themselves and other consumers. These production systems typically use few or no fossil-fuel-based inputs.

We therefore conducted research into the impact of large-scale RE projects on pastoralists in the drylands with a view to i) helping policymakers and civil society shape the expansion of producing RE so that, at minimum, it does no harm, and ii) helping pastoralists become better prepared to deal with the expansion of RE projects and possibly even benefit from them.

Methods

We made a desk-based study of literature on pastoralists' experiences with RE projects worldwide, searching in SCOPUS and Web of Science on terms around pertinent livelihood strategies and environments (e.g. pastoralism, agropastoralism, rangelands, drylands); RE; just transition; and consultation and consent. We delved deeper into cases in Kenya and Mongolia, countries in which we had prior experience, by seeking "grey literature" (policy documents, reports and media sources), conducting interviews with affected community members, RE developers and government staff, and visiting some wind and solar power sites in the two countries.

On the basis of these information sources, we analysed how land acquisition processes in the name of the energy transition affected mobile pastoralists, the role of Free, Prior and Informed Consent (FPIC), whether the land was used for both RE and pastoralism rather than as mutually exclusive alternatives, pastoralists' responses to displacement and the extent to which energy justice was achieved. Sovacool et al. (2017) define "energy justice" as an "energy system that fairly distributes both the benefits and burdens of energy services, and … contributes to more representative and inclusive energy decision-making". It forms part of the concept of "just transition", connecting social justice with environmental, climate, resource and energy reasons for the transition (Upham et al. 2022).

Results

The desk study revealed that, globally, governments and investors largely ignored or downplayed the impact of their RE projects on pastoralist communities. Large-scale land acquisition for RE in the drylands has been dispossessing pastoralists of their traditional grazing areas, reducing the mobility of herds over diverse landscapes that is essential for sustainable use of the drylands, and blocking access to key seasonal resources for pastoralism. This is making the pastoral production systems less viable.

Furthermore, pastoralists were usually excluded from access to the power generated by large-scale RE on their land and also lost access to natural sources of energy (e.g. firewood) on that land. Pastoralists thus became victims of not only "land grabbing" but also "energy grabbing".

Most governments and investors showed little understanding of pastoral production systems and their value, and – even if, on paper, governments legally recognised the communal land systems needed for flexible and mobile pastoral systems to function effectively – did not respect these when implementing their RE projects. Expansion of RE generation was typically justified by "climate emergency narratives" (Borras et al. 2022). Project implementers often saw no need to seek FPIC, which would require that the current land users be fully informed about possible impacts of the project on their lives. Key international agreements such as the African Commission's Africa Charter for Human and Peoples' Rights and the United Nations Declaration on the Rights of Indigenous

Peoples (UNDRIP) uphold the principle of FPIC and do not limit it to indigenous peoples. However, most governments, although having formally endorsed these agreements, did not adhere to them when dealing with local communities in areas foreseen for RE projects. These communities were often unaware of their rights and of ways in which they could legally oppose RE projects or negotiate benefits for local people.

In the less industrialised countries, governments and investors rarely considered possibilities of shared use of the land for pastoralism and RE – and shared benefits from the energy generated. Most pastoralist communities in these countries did not consider these possibilities themselves and were, in any case, in a weak position to negotiate a fair deal.

Kenya case study

In Kenya, investments in geothermal, solar and wind energy have been mainly in the drylands (Hughes & Rogei 2020). They have given little or no attention to impacts on traditional dryland production systems and reflect a continuation of the historical lack of recognition of mobile pastoralism as a meaningful form of livelihood that generates economic value (Lind et al. 2020).

North Kenya hosts the largest wind-power plant in Africa: Lake Turkana Wind Power (LTWP) near Marsabit, completed in 2019. This generates over 300MW of electricity on 60,700 ha of rangeland leased from the Government in 2009. According to Achiba (2019), because developers regarded the land as uninhabited, they did not consult the Turkana, Samburu, Rendille and El Molo herders who used the land seasonally. The Government of Kenya's refusal to endorse UNDRIP was a factor in investors' disregard for FPIC principles (Cormack & Kurewa 2018). The developers allegedly exploited pre-existing ethnic conflicts over natural resources to de-emphasise some "indigenous" claims over others (Renkens 2019). These intercommunity tensions constrained emergence of a united grassroots resistance (Achiba 2019). Instead, LTWP presence and actions created greater divisions among the local land users, as stated by a Turkana elder in our 2022 interviews: *"this has affected the social relations, intercommunity dialogue, peace and social cohesion between these communities"*.

Construction of the turbines began in 2014. LTWP (2011) stated that herders could continue grazing animals between the turbines but the process of land acquisition without consultation or compensation nonetheless made the herders feel robbed. As a Rendille elder said in 2022: *"even if the communities are allowed to graze the animals, they are not happy to settle or move freely within the project area because the land does not belong to them anymore"*. Moreover, herders stated that noise and frequent vehicle movements made the land unusable for grazing. Thus, the capture of resources and authority by LTWP disrupted traditional patterns of land use and decreased the resilience of pastoralists to adapt their land-management and grazing systems in the face of climate change.

The benefits for local people have thus far been very limited: they have no direct access to the power produced by LTWP on their land; jobs on the project are few and LTWP does not share the RE revenues with the local communities, which therefore feel excluded and unfairly treated.

In 2014, the pastoralist groups managed to overcome intercommunity tensions and organise themselves to resist this energy injustice. They formed the Sarima Indigenous Peoples' Land Forum and took the case to district court, which ruled in 2021 that the process of transferring communal land to investors had been illegal. The Kenyan High Court upheld this ruling in 2023. However, the wind park was by then in full operation. The LTWP will either have to return land to the pastoralist communities or find some way to compensate them.

Mongolia case study

Mongolia aims to meet all its energy demands by domestic production and become an energy exporter by 2040 (State Great Khural 2020). As of 2023, its RE energy is derived from seven small hydropower plants (HPPs), three wind farms (WFs) and nine solar-power plants (SPPs) (Dimovska 2024).

Pastoralists have *de facto* customary rights to pasture, which is officially state property; they thus have little defence against land alienation. Thus far, RE projects claim to have no negative impacts on pastoralism, and the few accessible publications on RE largely concur. All RE projects in Mongolia are officially classified as having no impact on indigenous peoples; the herders do not self-identify in this way and the associated safeguards are therefore deemed inapplicable (Waters-Bayer & Wario 2022). However, Environmental and Social Impact Assessment reports indicate that herders' consent was obtained. Those we interviewed reported that their initial reactions were negative, but their views changed after they received more information and saw that the impacts on grazing were minimal. The herder families' perceptions of energy justice were also influenced by their own access to household solar energy through Mongolia's 100,000 Solar Ger Electrification Programme and the fact that their extended families in nearby settlements had access to the energy generated through the RE projects.

Very few herders at case-study sites reported significant loss of pasture access: *"We are not adversely affected. The pasture, water and salt are all in good condition. We got used to living with this solar station. … The station does not affect grazing and migration"* (herder, Khushig Khundii SPP, 2022).

To date, the RE projects in Mongolia have been on a smaller scale than in Kenya. However, larger projects are now planned, e.g. the 28,000 ha Chinese-backed Erdeneburen HPP project in western Mongolia will impact some 270 herding households. Some affected herders protested publicly in the capital, Ulaanbaatar, against this project, mobilising resistance around potential impacts on herders' livelihoods and land rights and on biodiversity, e.g. in the nearby wetlands (Dugersuren 2022).

Discussion and conclusion

Large-scale RE projects as responses to governments' net-zero commitments and the "climate emergency" intersect with land issues and livelihoods. Specificities of the pastoral mode of production and rangelands, e.g. herd mobility and use of common land, render them especially vulnerable to acquisition for large-scale RE. Exclusion from meaningful participation in decision-making and from opportunities to give informed consent have often led to energy injustice – rooted primarily in lack of due process and transparency. Especially where the pastoralist communities do not have access to the RE being generated on their land, they experience a sense of land alienation and encroachment on their rights because of restrictions on access to resources essential for their livelihoods. However, availability of sufficient information and accessibility to household energy can moderate herders' perception of (in)justice when rangeland is taken to generate RE.

What are the prospects for energy justice for pastoralists faced with large-scale RE projects in the future? Inclusive participatory design of energy projects together with pastoralist communities could lead to forms of multipurpose land use for energy and pastoralism, as well as for biodiversity and equitable economic benefits. This has clear implications for developers' approaches to impact assessments and FPIC and requires, above all, considerable time to develop relationships with and to adequately inform all the pastoralist groups in the project area.

RE investors would be well advised to provide the resources and time for researchers to engage with affected pastoralist communities in transdisciplinary research to co-develop a place-based understanding of the heterogeneous local communities and opportunities for sharing the land and the benefits from RE production. This type of research would reveal the local people's values around land and the way that they use it, strengthen pastoralists' capacities to know and defend their land rights, and strengthen their ability to negotiate for fairer treatment in the energy transition.

A just transition to RE can be made only if governments manage the transition in open and inclusive discussion with well-informed pastoralists and seek synergies between producing energy and producing food to sustain local livelihoods.

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