

The Fences of Chuschi: The Complex Impacts of Land Enclosure in an Andean Indigenous Community

Abstract

In this study of the Andean town of Chuschi and its surrounding district of the same name, we consider the impacts of the proliferation of fencing on once open land. The paper contributes to a growing body of literature on the practice and impact of land fragmentation through fencing around the world where positive and negative impacts have been noted. The analysis is based secondary literature (including much in Spanish) and 23 semi-structured interviews with community members and community leaders of Chuschi and the surrounding towns of Yanacocha, Huaracco, Chaquiccocha, Pucruhuasi, Wacraccocha, Lerqona and Yupana. Some of the interviewees felt that the fencing of the communal land was beneficial for land management. However, others felt it caused grassland degradation and reported increasing tensions in the community. In particular some interviewees noted resentment towards those perceived to be 'ambitious' in terms of acquiring exclusive use of additional land. In conclusion, it appears that fencing, as practiced in Chuschi, may be a calculated approach to land management that has overall collective benefits but, if not well governed, also has the potential to be invasive and disruptive for communal Andean life. There are also as yet unassessed conservation impacts. The paper addresses a gap in the literature on the motivations for, and impacts of, fencing in rural communities in Peru and contributes to wider debates on the social justice implications of enclosures.

Keywords: Peru; land management; enclosure, common pool resources; tragedy of the commons, neoliberalism, land rights

1. Introduction

In his 1970 novel, *Drums for Rancas*, Peruvian author Manuel Scorza describes the struggles of an Andean indigenous community to retain control and ownership of their communal lands. Scorza describes a confrontation between the comuneros of the agricultural community of Rancas and the multinational Cerro de Pasco Corporation, an American company that dominated mining in Peru for decades until nationalized under the left-wing leadership of General Juan Velasco Alvarado (1968-75). In magical realist style, Scorza presents 'The Fence' as an active character, invading and disrupting communal Andean life. Built by the corporation, it grows daily, devouring whatever is in its path, including lakes and mountains. As Scorza (1970:181) puts it: 'Now the land, all the land, was growing old as a spinster behind a fence that no man's feet could follow. The closest villages were

days away'. While a fictional story (though based on actual events), it illustrates the problems that occurred during widespread fence construction for the purposes of resource extraction in Peru during this period. Yet it is not the only context within which the fencing in of land (quite literally) takes place.

In this study we consider the impacts of the much more recent proliferation of fencing on once open land in a single Peruvian district, Chuschi, located in the high Andes of southern Peru (Figure 1). The Chuschi district is one of six comprising Cangallo province which is itself part of Ayacucho Region (Figure 1). The district covers 432 square kilometres (166.78 square miles) is at an average elevation of 3,141 metres (10,305 feet) ASL and has a district population of 8,321 (INE, 2017). The inhabitants of the district are mainly indigenous, of Quechua descent. Within the district, there are currently 742 registered community members (comuneros) belonging to the officially recognised Chuschi indigenous community. In the higher zone, on the Andean mountain named Chicllarazo in Spanish, about 313 of the 742 inhabitants are living in the 7 settlements that exist in this area (Ministry of Housing, Construction and Sanitation, 2018). Bearing many similarities to Scorza's fictional Rancas, Chuschi is facing numerous challenges related to climate, social, political and demographic change, many of which involve rethinking the role of land and land resources in sustainable development. And fences have begun to again appear in some parts of Chuschi, though not in support of a multinational mining company. Although seemingly less violent and potentially harmful than fencing imposed for the purposes of corporate extraction, the choice by private actors to erect fences on communal land might both reflect and contribute to the individualisation of work and life, the undermining of collective culture, and the potential commodification of land and nature. Fencing could be seen as material evidence of a change in user rights and even as a form of de facto 'privatisation' of land in Chuschi and places like Chuschi elsewhere in Andean Peru.

'Privatisation', here refers to a change of access for use and management, rather than the conferral of fee simple ownership through sale. This reflects the definition of the term offered by Partelow et al. (2019) as '... the transfer of the control over social processes related to the governance, use or distribution of resources from either open access or common property to private organizations, selected groups, or individual(s)' (Partelow et al., 2019: 750). It is important not to overstate this, however, as the situation we describe is not one of fencing for the immediate purposes of individual ownership, but rather for private use by a specific family to the exclusion of others, without conferral of formal ownership rights. The community refers to this as 'family use', rather than 'privatisation' as the latter term is perceived to be part of a formal process leading to individual ownership which most do not believe will be the result of the fencing. But such fencing nonetheless

partitions previously open accessland into land that some can access and some cannot. Here we consider whether such fences can be considered a signal of irrevocably diminishing collective user rights in Chuschi, or whether it has had neutral or possibly even positive impacts. The latter possibility is based on the notion that there may be ecological benefits from fencing and that common use areas still exist alongside areas that are for 'family use' as has been the case for many generations.

Our primary objective is to better understand the contested meaning of fencing in an exemplar Andean community. The processes leading to fencing in Chuschi are happening throughout Andean Peru and well beyond. Focus on this one small community in one region of one Andean country offers the opportunity to better understand underlying generative dynamics of fencing and where fencing may pose a real threat to community cohesion, or where they may be part of benign of positive changes to rural Andean political economy. In the next section we discuss some of the rich literature on the meaning of fencing in rural communities, noting in section three particular challenges fencing may pose for social justice. Section four offers an extensive discussion of rural and indigenous land rights in Peru. Section five offers further details about Chuschi and its region based on empirical research undertaken over the last five years and Section six presents results from a series of interviews as they relate to fencing in the community. The final section develops some preliminary conclusions based on a political economy approach to the problem of fencing in Chuschi.

2. The benefits and costs of land fragmentation and fencing

There is a growing body of literature on the practice and impact of land fragmentation through enclosure and fencing around the world (e.g. Archambault, 2016; Cellarius, 2004; Hart 2017; Løvschal et al., 2019; Said et al., 2016; Staddon, 2000; Weldemichel and Lein, 2019). These studies mostly come from outside Latin America, particularly Africa and East Asia, with very little pertaining specifically to Peru (though see, for example, Albertus, 2020; Ramirez, 2017; Rasmussen, 2016). The 'dilemma of enclosure' – its potential to bring benefits as well as harm -- is now a key debate in relation to grassland management, and the problem of fencing by private actors has become a key issue in discussions of common-pool resource (CPR) and conservation. Neoclassical economists have long argued that the act of fencing by private actors helps to avoid a 'Tragedy of the Commons' from occurring (Hardin, 1968). Hardin's 'Tragedy of the Commons' theory is often used to argue that when property rights are unclear, individuals inevitably overuse shared resources. Sustainable management of common property resources requires collective action to formulate enforceable rules of use and Hardin was not optimistic about the long-term success of such regimes. The empirical evidence regarding the impacts of enclosure is more complex, as will be discussed in the next section.

Both positive and negative effects of enclosing land with fencing have been proposed. Those empirical studies that are mainly positive about enclosure argue that it often helps pastoral

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communities to better cope with both livelihood and climate change challenges (e.g. Wairore et al., 2015); that it allows land to be closed off from grazing for an extended period of time, enabling natural vegetation to recover (e.g., Angassa, 2016); that it enables an increase in plant biodiversity (e.g., Hailu, 2016) and soil nutrients (e.g. Bikila et al., 2016); that it contributes to hydrological ecosystem services (e.g. Zapata and Gleeson, 2020); and that it supports an increase in yield (e.g. Baudron et al. 2015), water-holding capacity (e.g. Haregeweyn et al., 2015), agricultural diversification (e.g. Karmebäck et al., 2015), livestock well-being (Nyberg et al., 2019), drought resilience (Kawira, 2016) and, hence, food security. In many cases enclosures have originally been introduced in order to rehabilitate degraded rangelands in an effort to address poverty and food insecurity (Meyerhoff, 1991; Nyssen et al., 2015). A study of the Reserva Paisajística de Nor Yauyos Cochabamba, in Peru, where the Mountain Institute promoted ecosystem services-based adaptation measures, found that the building of fences brought positive results for pastures and cattle raising (Zapata and Gleeson, 2020). Without more secure land tenure, as enclosure is perceived to offer, it is argued, there may be a reluctance to invest time and resources to make the land productive (Nyberg et al., 2019). It is therefore proposed by some that, in both communal and individual land tenure systems, enclosures will bring social and ecological benefits.

Other studies suggest more negative aspects to enclosures and fencing. These indicate that dividing and fencing grasslands for private use has negative impacts on biodiversity and wildlife (e.g. Li, 1993; Thwaites, et al., 1998; Weldemichel and Lein, 2019; You, et al., 2013); that it causes grassland degradation and ecosystem imbalance (e.g. Yan and Wu, 2006; Zeng et al., 2014); that it alters surface hydrology (e.g. Ying and Ruimin, 2011; and changes pastoralists' lifestyles (e.g. Weldemichel and Lein, 2019; Zeng et al., 2014; Zhizhong and Wen, 2008). For example, with regard to impacts on biodiversity and wildlife, in 1980s Botswana, the use of fencing which blocked wildlife migration routes reportedly triggered an ecological disaster (Williamson and Williamson, 1984). Recent research in Kenya also indicates that fencing is changing ecosystems as it affects possibilities for the seasonal migration of wildlife and livestock (Ogutu et al., 2011; Weldemichel, 2017). According to Sheridan (2008), the loss of mobility resulting from fencing makes traditionally flexible and dynamic socio-ecological systems more rigid. Pastoralism depends on there being adequate open space and the ability to shift specific uses between alternative land parcels. In addition, as Weldemichel (2017) notes, fencing has in some locations also been linked to deforestation through a demand for fencing materials, which includes wooden posts. This demand creates a market for wood, encouraging locals to cut trees as well as markets for fencing wire, stone and other materials. Demarcation and fencing of land often encourages ever more permanent fencing structures. As fencing 'hardens', so too can rivalries over the precise location of fences and boundaries.

Some studies also report worsened ecological sustainability in the face of climate change as a result of fencing (e.g. Li and Huntsinger, 2011). The mobility of grazing animals enables pastoral livelihoods to continue in the face of climatic variations (Groom and Western, 2013). The inflexible boundaries created by fencing leads to irregular grazing with consequent grassland damage, especially when the land is already under pressure through disaster or drought (Ying and Ruimin, 2011). For example, in a study of the Eastern Tibetan Plateau, Yan and Wu (2006) demonstrated that privatized land tenure with uneven water resource distribution lowered the water table and changed the landscape, accelerating grassland degradation. While, here, we are looking at the establishment of family plots, rather than private property, this process can still create many of these social and ecological problems. Overall, it has been argued that, with regard to land management 'There are more costs than benefits both ecologically and socio-environmentally in the long term when physical fences are applied' (Mensuro and Vu, 2009: 2).

3. Social justice implications

The social justice impacts of fencing depends to some extent on their scale, location and the process of bringing them into use. Globally, it has been noted that, in recent decades, enclosures have increased in frequency, scale, and permanence and are beginning to dominate access rights (e.g. Beyene, 2009; Nyberg et al., 2015). They are becoming a self-generating phenomenon, with more households establishing enclosures as others do so (Benkhe, 1986; Greiner, 2016; Lovschal et al., 2017; Woodhouse, 2003). In Xu et al.'s (2012) study of grassland tenure reforms in Inner Mongolia where, as in the Chuschi case, fencing initially gave herders family user rights, while ownership still resided at the village level, herders supported pastureland reforms which carved up formerly communal pasture for private household use. In many cases such practices are aspirational as was found by Lesorogol (2008) in Kenya who found that many pastoralists were keen to privatize their land as '...they associated land ownership with membership of modern Kenyan society in which owning land was one marker of success, along with formal education, Western style clothes and housing, and white-collar employment' (Lesorogol, 2008: 313). In addition, those who wanted to make a claim to individual ownership also often saw land as a valuable commodity and therefore as an investment opportunity. Attempts in post-communist countries to suppress financial assetisation of land resources thus enclosed proved mostly futile (Staddon, 2000).

However, even when local people support the enclosure of common land, it is important to explore the impacts in terms of social justice. Political ecology in particular recognises that changes to land management regimes often have implications for distributional equity. There is inevitably an uneven

distribution of costs and benefits which can either reinforce or reduce existing social and economic inequalities and produce altered power relations (Meilasari-Sugiana, 2018). Together with other processes, such as urbanization and commercialization of land rights (creating land as a financial asset), there is '....a push towards individualization ...which may erode the customary traditions and institutions of land governance [and] as the expansion of enclosure systems evolve, there is often elite capture, meaning that the rich and well-connected in the local society are the first to claim land' (Nyberg, 2019: 7).

Costs and benefits are distributed unevenly when land is enclosed, even if only for the purpose of user, or 'family', rights, rather than legal 'ownership' (Meilasari-Sugiana, 2018). It is considered that fencing by private actors even where there is community acquiescence of approval lowers the equity of access to pasture (Yangzong, 2006) and alters power relations. Researchers also note that fencing can impact on herders' traditional lifestyle (Weldemichel and Lein, 2019; Zeng et al., 2014; Zhizhong and Wen, 2008). It has also been argued that fencing greatly reduces men's participation in pastoralism, involving more women and children, which could reduce schooling (Richard et al., 2006).

The concept of 'territorialization' (Corson, 2011) is relevant as it includes the creation of land boundaries, allocating rights to 'private actors' and designating specific resource use within these bounds. It has been asserted that territorialization is 'no less than power relations written on the land' (Peluso and Lund, 2011: 673). It both demarcates physical space and transforms social practices (Corson, 2011; Kelly and Peluso, 2015; Robbins and Luginbuhl 2005). This echoes Polanyi (1944) who discussed enclosures in relation to commodification, colonisation and the disintegration of cultures. Revisiting this, Müller et al. (2015) highlight how enclosures have had a tendency to deepen inequalities in Latin America and undermine local cultures. Furthermore, they argue, enclosures are one method by which there has been socio-cultural harm for indigenous populations through colonial conquest. They are strongly associated with neoliberalism, where the market is proposed to be the most efficient way to allocate resources and meet needs (Brockington and Scholfield, 2010; Castree, 2008; Corson, 2011; Galaty, 2013; Holmes and Cavanagh, 2016). Some of these wider processes may be less relevant in relation to family use plots, rather than the establishment of private property. However, with these processes threatening to undermine social justice, clearly, mechanisms for ensuring distributional equity of enclosed land will be critical to safeguarding community well-being where fencing does occur.

4. Indigenous communities and land in Peru

Political ecologists (e.g. Igoe and Brockington, 2007; Shanee, 2013) have argued that that mainstream conservation discourse often presents local people as a threat to biodiversity and nature conservation, ignoring existing local environmental knowledge and practice. National and international institutions often employ neoliberal methods to prepare these populations for entry into the global neoliberal economy, including supporting access to individual or family property rights (Igoe and Brockington, 2007). However, more recent literature indicates a change in approach, now recognising the crucial role of indigenous knowledge for environmental conservation (e.g. Ochoa-Tocachi et al., 2019). This has even now shifted to something of a global policy consensus regarding indigenous peoples' critical role in mitigating climate change and ecosystem degradation (e.g. Brondizio and Le Tourneau, 2016). However, it is noted that indigenous peoples can be portrayed as 'victim-heroes' who are vulnerable to environmental change but also having knowledge that could help to address the problems (Merino and Gustafsson, 2021).

While, legally, the concept of "indigenous peoples" is broad and inclusive and, in practice, extends to rural and peasant minorities, actually determining who is protected under international and domestic instruments is complex (DPLF, nd). In Peru, coastal and Andean peasant communities have not always been recognised as indigenous which gives them the right to prior consultation under ILO Convention 169 or Peruvian law¹. However, even if they are not recognized, they have the right to petition, established as a fundamental right in the Political Constitution of Peru, which also requires prior consultation processes (Camero and Gonzales, 2018).

The indigenous communities of Peru can be conceived of as groups of families sharing a common territory, representing the interests of their members (comuneros), regulating access to resources and defending their territory (Diez 2012). 'Indigenous communities' were created in the sixteenth century (Ramirez, 2017; Remy 2013) when indigenous groups of families were assigned demarcated territories. This situation was relatively stable until the Republic was formed in 1821 when protection for indigenous community lands was progressively eroded leading to their final elimination in 1854 (Remy, 2013). The indigenous communal lands were then appropriated by local officials and wealthier families using various spoliation mechanisms, leading to the establishment of enormous tracts of land organised as haciendas – semi-autarkic economic and social units centred on a single 'patron' and (inevitably) his family (Burga and Manrique, 1990; Remy, 2013). From the

¹ Passed in 1989 International Labour Organisation Convention #169 recognises and protects, in those countries where it has been ratified, including Peru, tribal peoples' land ownership rights, and sets a series of minimum UN standards regarding consultation and consent.

beginning of the 20th century, there were successive uprisings against these appropriations and the abuses committed by the patronos. In 1920, a new Constitution formally recognized indigenous communities and established the first official register of them (Art. 58, Peruvian Constitution, 1920). The 1933 Constitution also reaffirmed the protection of community lands (Castillo, 2009; Del Castillo, 1997), formalising indigenous communities as legal entities with property rights.

The analysis developed in this paper is most relevant to the indigenous communities of the coast of Peru and of the Peruvian Andes, where Chuschi is located. The indigenous communities of the Amazon were involved in different historical processes and were not recognized in any way by the state until 1920, though later designated as 'native communities' (1974). Peruvian indigenous communities of the coast and the Andes, now called 'peasant communities' by the Peruvian state, have institutions which were set up in the colonial period or during later periods of land reform (e.g. in 1920, 1933 and 1969) and land restructuring (e.g. in the 1980s). According to the most recent Peruvian National Agriculture Census (2012), there are now 6,277 such peasant communities owning more than 40% of the national agricultural area. In the 1969 land reforms, the government of Velasco Alvarado changed the name of the 'indigenous communities' to 'peasant communities', supposedly to reduce the discrimination associated with being designated 'indigenous' (Burneo 2016). Under Convention 169 of the ILO, if these communities were recognized as indigenous peoples, they would have the right to be consulted on any mining and hydrocarbon projects that encroached on their territories. Though, for the purposes of legal rights, the concept of 'indigenous' can also apply to peasant communities, there is greater scope for exclusion from the prior consultation established if designated a 'peasant' community (DPLF, nd). Burneo (2016) argues that the Peruvian state categorizes peasant communities (as indigenous or nonindigenous) according to the interests of large scale agricultural and mining businesses.

Nevertheless, the 1969 land reforms challenged the traditional hacienda system where the ownership of extensive swathes of land was accompanied by considerable economic, political and social power, leading to a powerful land oligarchy in the country (Eguren, 2009; Montoya, 1989). During the reforms, land was expropriated from these wealthy landowners and put under the control of the permanent workers of the haciendas as members of production cooperatives and social interest companies (Melmed-Sanjak and Carter, 1991) and some lands were incorporated into the land designated for the 'peasant communities'. In order to continue to recover their land, indigenous families grouped together for legal recognition and protection of their land leading to many new 'peasant communities' being registered during the 1970s and 1980s. Therefore, the

formation of the indigenous communities and their relationship to the land is complex resulting from various phases of state reforms and territorial appropriation.

Hence, the community territories developed through interactive processes between national policies and the struggles of the peasant families who occupied them. Spatial appropriation processes have occurred throughout the country for decades, with land being distributed in the 1970s to landless indigenous community members; collectivization into Communal Production Units (UCP) (Castillo, 2005; Revesz, 1992) and ongoing internal mobility processes, most recently to the cities. There are now diverse land tenure systems, combining communal and family use. Postigo et al.'s (2008: 554) study of Andean pastoralists in Peru noted the dynamic nature of the communal grazing areas with 'changing borders within the fixed borders of the community' and with flexible boundaries within this community area that are part of the living history of the community. Referring to the complexities of community land in Peru, Urrutia and Simatovic (2019: 88) state that, 'In the interior of communities, different forms of land tenure coexist, with differentiated states of appropriation by community families - who manage their plots under an individual tenure regime - and different levels of control / regulation of land'. Successive land reforms have included rules governing access to and use of these lands, as well as political and recognition rights of these communities. For example, in 1994, with financial support from the Inter-American Development Bank (IADB), the Peruvian government embarked on the 'Special Land Titling Project' (PETT), intended to grant land titles to rural landowners and peasant communities. Unfortunately, the PETT was mainly concerned with issuing individual land titles, at the expense of the collective registration of community land (Del Castillo, 1997). However, until the early 2000s, neither the state nor everyday practice allowed the sale of the community lands to parties outside the community (Burneo, 2013). According to Burneo (2016: 60) 'Such sales were considered an act of treason to the community'.

According to national law, decisions with regard to the sale of land within peasant communities must be validated by the General Assembly of the Comuneros and approved by at least half of its members. However, in practice, the implementation of PETT is not always considered by the General Assembly (Burneo, 2016). Individual titles are often issued to the members of the indigenous communities and they are sometimes not able to obtain collective titles. This prevents communities from challenging private investment projects interested in their land, since they cannot produce legal evidence of their property rights over these resources. PETT, therefore, can create problems regarding property rights within communities and it has generated tensions as a result of the consequent decisions about the future of the land. For example, Burneo (2016) has found that in the 'bosque seco' communities of northern Peru, the issue of collective property titles covering all of the

land (including common and comuneros lands) has increased conflicts. The communities are not homogenous and there may be conflicts within and between communities about the land use. Contracts with extractive industries can be vague, and, as a result, the negotiation and compensation processes create conflicts between the communal families. Changes to practices occur, for example, when comuneros, no longer farm because of new income from extraction. Land access can be more limited when there is new infrastructure such as oil pipelines and roads watched by security guards who limit the free movement of comuneros.

Development projects in Peru have often aimed to modernize livestock husbandry through excluding some pastures from the public domain (Postigo et al., 2008). NGOs can use such mechanisms as payments for ecosystem services (PES) schemes and investments in watershed services (IWS) as elements of conservation projects (de Lima et al., 2017). These PES schemes have sometimes encouraged farmers to participate in enclosure projects as part of conservation techniques (Guzmana et al., (2019).

Ongoing and new social and environmental processes in Peru create challenges for indigenous communities in terms of food security, environmental justice, extractivism (e.g. see Rondoni, 2022), livelihoods and environmental change (e.g. see Lastra Landa and Bueno, 2022).

Andean pastoralists have adapted a range of practices and institutions that enable them to best achieve a livelihood in the prevailing conditions (see, for example, Postigo et al., 2008; Postigo, 2013; López-i-Gelats et al., 2015). This includes rotational grazing; accessing pasture at different altitudes; temporary migration; communal land tenure and management; and community regulations regarding herd size and land access (ibid.). López-i-Gelats et al. (2015: 276) argue that '[u]neven distribution of livestock and land is clearly one of the reasons for the trend towards overgrazing in the Central Andes'. There is land fragmentation as a result of inheritance practices (McDowell and Hess, 2012) but equal access to communal land seems to buffer inequalities in the wealth and income of the pastoral households (López-i-Gelats et al., 2015). The uneven and fragmented distribution of land has increased social tensions over grazing land and access to water, increasing over grazing and food insecurity and pushing some Andean pastoralist households beyond their adaptive capacities (López-i-Gelats et al., 2015). Reducing land fragmentation would help to reduce overgrazing in Andean pastoralist communities (López-i-Gelats et al., 2015). Yet, like some other collective communities, in Chuschi, some members have, themselves, begun to fence off land as a pasture management practice.

There are no studies, as far as we are aware, that systematically document the prevalence of fencing overall in Peru, though some refer to local practices. For example, Pizarro et al. (2020) discuss an increased use of electric fencing in the Peruvian Amazon, instead of the more traditional rotational staking with a rope. This consists of using a rope to tie the livestock to a grounded stake, so as to limit the grazable area to a few square meters. Once this forage has been consumed, the rope and stake are moved to a different location. Rationale for enclosing land would likely vary according to specific land use. According to Isbell (2005), the Chuschi community recognizes three ecological-economic zones: (1) *sallqa* or *puna*, divided into two areas: one which supports livestock, including alpacas, llamas, sheep and cows at a height of between 3300 and 4000 meters above sea level; and another where tubers and grain are grown at between 3300 and 3600 meters above sea level; (2) the *qichwa*, where corn is grown at below 3300 meters and where the village itself is located; and (3) the riverbank area where fruit and corn are grown down to 2,300 metres. Figure 2 shows a typical field pattern of a mid-altitude Chuscheno farm.

Some regional governments in Peru have promoted the creation of 'Vicuña conservation areas', where this species is introduced in a fenced area (RDE N°060-2015-SERFOR-DE), often on community land. This might be considered positive for a community if they can then sell the vicuña fibre. Also, the Mountain Institute in Peru has developed long term work with communities to try to avoid the scenario where some benefit to the cost of others (Zapata and Gleeson, 2020). Their work indicates that, when fences are applied with the appropriate mechanisms and agreements, there should not be negative effects, such as social tensions. These mechanisms include a participatory process of design. There is also a practice of community fencing for collective benefit of activities – sometimes called *faena communal* (Figure 3). The promotion of enclosure or installation of fences have been and are promoted by public and private institutions in Peru. A systematic review of projects conducted in 3 high Andean regions of Peru, including Ayacucho, that implemented nature-based solutions with traditional knowledge (Cárdenas et al., in progress) is finding that 8 of a total of 124 projects implemented enclosure practices for the recovery of pasture or the protection of forest plantations.

5. Methodology

The research project upon which this paper is based, 'Strengthening local capacities for the sustainable management of Andean headwater wetlands facing global change', ran from November

2018 to November 2019. It included a number of stages, with early exploratory work to define the case study area and to develop the data collection tools. The initial fieldwork took place in April and May 2019 with follow-ups in August of the same year. Mixed methods were used for the project overall, including secondary data analysis, household surveys and interviews. This paper focuses on the qualitative element, the interviews, as this is the data that addresses the particular research questions focussed on here. Other data from the project is used for interpretive context. Chuschi is a useful case study to explore the issue of fencing and related social tensions, as the area exemplifies the challenges of collective land management in a situation of modern day social and ecological precarity. It also has a history of collective ownership uninterrupted even during the worst of the colonial period. Unlike other Highland communities, Chuschi did not experience the imposition of the hacienda model. Hence, the grazing and cultivated lands have always been managed by either the community members or, for a short period, the local church. Chuschi is vulnerable in terms of there being a high percentage of poverty in the area - 68.3% in the Ayacucho region, where Chuschi is located (SOS Children's Village Ayacucho, 2020), compared to 20.5% of the Peruvian population overall (World Bank, 2020). There have also been decades of migration from rural areas to the cities and particularly from Ayacucho to Lima, although this has begun to reverse with the onset of COVID-19 (Dupraz-Dobias, 2020). Furthermore, in the Peruvian Andes, climate change is resulting in glacial retreat impacting on land and water security for the mountain communities (Postigo et al., 2008; Postigo, 2013). Average annual temperature has increased by 0.2° C per decade over the last 40 years in most of the country, and, in recent years, climate variability has intensified (López-i-Gelats et al., 2015; Postigo, 2013). National climate projections for 2030 indicate further warming trends. With regards to annual precipitation, reductions of 10 to 20% are projected for the Andes. There has also been deglaciation which is changing the vegetation that can grow on the slopes and, in some areas, increasing the extent of barren soil (Postigo et al., 2008). Over time, more crops will struggle as a result of a lack of optimal growth conditions in terms of temperatures and water availability. There has also been an increase in non-climate stressors to Andean pastoralism from mining, migration and the expansion of wild predators (López-i-Gelats et al., 2015). Community regulation of land access is one way of addressing these trends giving the practise of fencing additional importance (Versijl and Guerrero Quispe, 2013).

We carried out 23 semi-structured interviews with community members and community leaders of Chuschi and the surrounding towns of Yanacocha, Huaracco, Chaquiccocha, Pucruhuasi, Wacraccocha, Lerqona and Yupana (Figure 1). We selected the interviewees using 'purposive sampling' (Mason, 2002; Patton, 1990;), using participants who had particularly relevant knowledge and experience; and 'opportunistic sampling' (Miles and Huberman, 1994), making the most of

opportunities to meld the sample around the unfolding context. Since, as noted earlier, Highland communities are not socially homogenous, we ensured we obtained a diverse range of views, by seeking participants from diverse locations, backgrounds, ages and gender. We also sought the views of those with different levels of responsibility in the communities and with different views on the particular issue of fencing. The interviews were carried out by Quechua speaking members of the project. The interviews were approximately 40 minutes long and took place in local community buildings.

Among a number of other questions, those included in the semi-structured interviews that related to fencing were:

- How did you agree to build the fences?
- Why was the decision made?
- How was the decision made? (who participated?)
- Were there difficulties in reaching this agreement?
- What has been the impact of the fencing?

For analysis we used the technique of 'framework analysis', a variant of thematic analysis, for the resulting data, as described by Ritchie and Lewis (2003). At its simplest, thematic analysis is a means of identifying, analysing and reporting patterns within data (Braun and Clarke, 2006) The distinctive aspect of framework analysis is that, although it uses a thematic approach, it allows themes to develop, both from the prior research on the topic and from the narratives of research participants. The process of coding followed a mostly inductive approach in which codes and themes are generated from the data, rather than being applied to the data. The process involved a number of distinct, though interconnected, stages: familiarisation with the data, identifying themes, indexing, charting and interpreting and validity checking. This latter stage involved triangulating with other data sources.

6. Analysis of Interviews

The potential benefits of fencing for the comuneros, as detailed in the extant literature, are primarily with regard to potential ecological enhancement and food security. The potential costs of fencing discussed in the literature include possible ecological deterioration and negative social justice impacts, including increased inequalities and the erosion of customary institutions. Our analysis looked at the extent to which these patterns prevailed in the Chuschi case and the likely explanations for their particular expression in these communities.

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As a number of analysts have noted (e.g. Hasan, 2018), the 'Tragedy of the Commons' is unlikely to occur where there are strong local institutions managing the common property. In Peru, far from Andean indigenous pastoral land being a free-for-all, there are a number of institutions overseeing its management. The governing bodies of the Andean communities in Peru include: the Communal Assembly, the Communal Directive and the Specialized Committees by Activity and Annex (Law No. 24656). The interviewees confirmed that, in the case of the rural community of Chuschi, local or neighborhood Administrative Boards are also recognized. In all these cases there is normative-legal support for the representatives in that their functions are also recognized by the State (according to national law) and the indigenous community (according to their own statutes through a form of devolution).

The interviewees also described how, while all land is ultimately communal with one land title for the entire Chuschi indigenous community, there are complex use allocations. Families have some of this land allocated to them for their own use and the rest of the land remains for communal shared use. There is also communal livestock which grazes on this shared land. The land cannot currently be sold but the communal cattle can be sold to raise money for the purposes of funding communal projects. Families can also transfer some of their 'family land' to other community members for use, but they absolutely cannot sell it. Such transfers must be approved by the community organisations and especially the neighbourhood Administrative Board. Transfer can be done in exchange for money or goods but this does not mean the recipient ever owns the land, only that s/he has made an agreement involving exchange for use of the land. Of course, families can also use communal land to graze cattle.

The household survey that we carried out revealed that, of the families that dedicate themselves to livestock raising in Chicllarazo, 83% (50 cases) have exclusive 'family lands' for grazing their own livestock, which are mainly alpaca. These cattle can also graze in the 'free areas', which are the areas where communal cattle are not found. The free areas are in the communal territory, but it is possible for them also to be used by the families' own cattle. Also, there are communal areas where the cattle that belong to the whole community are kept.

7. Conflicts over the erection of fences

In recent years, in almost all the neighbourhoods of Chuschi, some comunero families have installed fences on communal pasture areas. These fenced off areas prevent other families from using the pastures for their own, or for communal, livestock grazing. Because the communal land is supporting

the shared livestock as well as the privately owned livestock, some of the pastoralists fear that the land will be over-grazed, particularly when there is a prolonged dry period, more likely now as a result of climate change. Therefore, some wish to have family user rights to some of this communal land so as to protect it and fences are a physical way of ensuring this. However, the construction of perimeter fences for grazing is a controversial activity in the community. While some community members are in favour of fences, others consider them unnecessary or unfair. If it is agreed that they can have sole use of the land, many prefer to fence it off so as to ensure only their cattle can graze on it. Hence, some of the common land comes to be managed as de facto private property. Most of the community do not want to actually own the land individually, though a few would like to. The motivation for fencing off the community land is described in terms of two factors. Firstly, to expand their usufruct and, secondly, to improve the pastures, as noted in this interview:

The advantage would be the improvement of pastures, so the family would improve its economy. The other would be the environment issue, when it is fenced, the flora increases, but not in all, only in those who are working, but those who simply left it, no. There is that advantage, but it is also creating conflict between neighbours. Also, the issue of number of animals is a problem, because there are people who have too many, and well, when you want to graze, there are no more areas, because of those people. Another advantage would be that we would be reducing the number of animals [on the communal land] ...Each person has their ambition, to have more areas, apart from that they also look powerful. But when we see in the background, those lands that you have seen with a fence, it is not even worth fencing. They are rocks, rock, and that is of almost no use for the production of pastures ... (President, Community Board, Chuschi, 17/08/20)

Since 2013, there has been a formal process to allow land to be fenced off. This was brought in to prevent excessive fencing of land in an ad hoc and disorganised way (President, Community Board, Chuschi, 17/08/20).

In order to obtain sole access to pasturelands and to surround the area with fencing, a family must firstly communicate their intention at their Local Assembly, as described here:

Well, first, the first step is to file an application stating that you don't have an area for personal and family use. After submitting, this application is shared with the members of the Board of Directors, then passed to the Communal Assembly for approval. Once approved by the Communal Assembly, the land is awarded, after verification and evaluation....[If the award is rejected], it would be because the person who has applied, already has a lot of fences...[or] because he is not a comunero (President, Community Board, Chuschi, 17/08/20).

Most applications for fencing are accepted: 95%, according to the President of the Community Board (Interview, Chuschi, 17/08/20).

The final decision is made at the Communal Assembly and is almost always positive. In the past, a few people had disobeyed the decision of the Assembly, but not recently. On one occasion, when the assembly denied a fencing request, the applicant became annoyed, no longer attended the assembly and began a legal appeal (President, Community Board, Chuschi, 17/08/20).

Hence, the decision to fence, is a communal one, rather than purely individual. It could be argued that, since most applications go through, perhaps the community feel pressure to agree with the request. Fencing implies access to resources as it is costly and so, perhaps, the community do not feel they want to be in conflict with wealthy or powerful families. However, there was evidence, that the community do feel able to reject applications, even from those with more resources. A criterion that some neighbourhood presidents consider in deciding whether to agree to the request is whether the family already has sole use of an area of communal land i.e. a fenced off area of pasture for the use of their own cattle. If this is the case, it is very difficult for the application to find favour, since the other community members will not agree with the apparent accumulation or, what they perceive of as, 'ambition'. In recent years this seems to be happening more and more with the result that the Chuschi community is considering ending further fencing. The President of the Community Board said:

But you know what, right now, we are thinking of permanently suspending requests for fences, it is creating more problems than solutions. For the people who want to develop [fences], they [those who oppose the practice] no longer allow it, and there comes the disagreement... Between them there is a conflict that has been generated... (President, Community Board, Chuschi, 17/08/20).

Some members were happy with the current system where they shared the grazing land and found ways to ensure the land could recuperate adequately without the need to have sole control and to fence off. For example, in Wacraccocha, a locality in which all the surveyed families carry out at least one activity related to the management of soils or pastures, such as the rotation of livestock and cultivation of oats, a community member said:

If encircled, it [the communal grassland] belongs to us no more. Now there is a space for everyone there, we can graze, mixing the animals. In the afternoon we separate them [...] We do not plant [grass seeds], but rotate our animals to give rest to the ground and it can sprout again. We leave it for half a year, three months, four months, like this ... We also sow oats, and we dry it, and when there is no grass we use it for sustenance (Wacraccocha community leader, Chuschi, 05/25/19).

Some of the comuneros felt that some areas set aside for communal cattle were no longer being respected as communal land. In the interviews there were frequent comments about the perception

of change in the community since the private ownership of cattle and fencing had started. For one of the Chuschinos, the current rules, where the family that own cattle are allowed to graze on the communal land, caused some resentment:

Before, everything was free. This was respected and that [pasture] was only for the communally owned cattle. But, lately, people no longer leave [that pasture] for the animals of Cofradía [the area of communal land where the communal cattle are grazed]. So, the community says that they make everything mixed [communal and privately owned cattle], but those pastures are only [meant to be] for the animals of the community (Wacraccocha community member, Chuschi, 05/25/19).

This situation evidently advantages those with more cattle since they can let them graze on their own land, as well as the communal land. However, the communal cattle can only graze on the communal land and not the privately managed land, particularly if it has been fenced off. The disparity in livestock ownership among community members, therefore, influences opinions in favour and against the fences. The range of number of alpacas is from 10 to 280 per family, and of sheep, from 2 to 150. Fencing off of previously communal land means that communal cattle have less land to graze on which some consider could lead to over grazing. Although, there may be other reasons for variability of the quality and distance to the land they can use, resentment also results when some pastoralists must use poorer quality or more remote pasture when the most desirable and closer grassland has been fenced off for individual use. Although this fencing has only occurred around the so-called 'family land', it still has an impact on the free roaming of cattle, as discussed here:

We [now] have little space because they have fenced it off, which is why my husband has a hard time grazing [the cattle]. Those who know how to make fences do it everywhere and no longer leave room [...] We graze in more remote places, in corners, [in] Suytulliwa, Carcapallana, Ayapata, Rocapuñuna, Chiptipina, Qarwajru (Wacraccocha community member, Chuschi, 25/05/19).

One community member from Chaquiccocha said that the amount of livestock is a function of the owner's calculation of pasture availability:

[The area] is dependent [on what is allowed]. Let's say, if I have 1 hectare, but if my neighbours no longer allow me [to use more], where to now? So I have to decrease my alpacas (Chaquiccocha community member, Chuschi, 05/25/19).

Some family farms are able to level up by using a combination of family land and communal land whilst others, without easy access, must level down.

If more land is being fenced off for family use, then other comuneros may have to reduce the size of their herds. This is another source of potential conflict. There was some evidence of this conflict in our interviews. It was reported that the installation of grass fences at the family level has generated tensions and conflicts between some families, especially when some enclose a larger area than they formally requested or where the resulting parcels of land are unequally distributed. Although, we were not in a position to verify the allegations, in particular the land measurements, there were perceptions of unfairness. For example, comuneros said:

Some are ambitious. There are some that have 30 hectares, some 7 hectares, others 10, some 5. All different... Some consciously have encircled more ... It is a serious problem, but some of them have ambition (Yupana community leader, Chuschi, 05/25/2019).

He who lives with respect, his neighborhood, his cattle graze in his neighborhood. In that case there is no problem, but there is no lack of ambitious people who make their fences, up to the top of the hill. ... They make their fences with wires, spikes. So without permission (Wacraccocha community member, Chuschi, 05/25/2019).

...they fight each other [i.e argue] and one will come forward to the Board so that we can intervene... We all want a place, but one that is more ambitious... well, that's when the problem comes... There are, the people who already have too much... It [results in] conflict between families, between neighbors...some people want more than others (President, Community Board, Chuschi, 17/08/20).

Although, at the moment, the community members are claiming only user rights over the fenced off areas there is growing desire to obtain individual land titles for this land, enabling it to be privately owned, bought and sold. For example, the community president of Chuschi said that some community members want to divide up the parcels of land in the community for individual use and ownership. On this, he said that about 5% of the comuneros are interested in having individual ownership and expressed the following opinion, regarding who these people are:

Those gentlemen who grabbed extensions of territory, they want to be titled, but they will never be able to because we already have a [communal] title. If we want to allow that, we would have to approve in the Assembly and the Assembly will never approve it. Many people disagree with these large territories being seized...the Assembly simply says that the law of peasant communities should be applied. There are no independent areas according to the law of peasant communities; they can't become independent (President, Community Board, Chuschi, 17/08/20).

The President of the community board also said that there have been no recent requests to legally privatise any area of the community land. He said that there had been requests for individual titling in the past and that about 80% of the comuneros disagree with private ownership and 20% support

it. It tends to be older males that are interested in the private ownership of the land that they use as well as '...community members who seized, before the agreements, they seized 50 hectares, 100 hectares' (President, Community Board, Chuschi, 17/08/20). It seems that the accumulation of grazing areas for individual family use has sparked an interest in achieving recognition of these areas as private property. However, this objective, according to the communal president, is unlikely to be realised because it requires acceptance by the Communal Assembly.

In keeping with experience elsewhere, some Peruvian NGOs have supported fencing as a land management practice so that the enclosed land could be improved even to the extent of providing funding for fences. However, while, some claim that they want to fence off the land so that they can better manage the pasture,

...they're not making the improvements they should. They simply made a fence, and with that nothing else they do not improve the pastures. It does not end there, soil conservation is a whole package (President, Community Board, Chuschi, 17/08/20).

In summary, the experience of fence construction has generated both positive and negative perceptions. The installation of these fences is promoted in productive projects related to resource management, either by NGOs or the State, especially because they seem to address the concern of pasture degeneration and prevent foreign cattle from invading and consuming cultivated pastures. On the other hand, some community members opposed fencing off the land because they see it as a diminution of collective rights; or contributing to land degradation or a reduction in social cohesion. These communities live in a state of extreme livelihood insecurity, due to low and precarious incomes and lack of food and water security. This insecurity may be driving the desire for more fencing. It has also been noted that, in Peru, resilience to climate change depends in part on the ability to prioritize certain features of collective life (Hirsch, 2017).

8. Conclusion

Lefèbvre (1974: 43-48) has described how social space is the product of an historical and dynamic process, including customs, subjectivities and interests. The complex patterns of inheritance, land reform, family use, common use and cooperative use can be seen clearly in the Peruvian case (Diez, 2012; Revesz, 1992). This paper has looked at recent changes to community social spaces in a Peruvian community, and links this to a general long term process of privatization of community resources in Latin America. The choices that individuals are increasingly making to erect fences on communal land seems to both reflect and extend the individualisation of work and life; the erosion

of collective life; and the commodification of land. However, it is also apparent that, for the moment at least, individualisation is coexisting with collective life, rather than diminishing it and that fencing can serve different purposes and actors. The coexistence between communal and family property seems to be understood and accepted within the communities as optimal. Fences may be just a 'material' way of evidencing a practice that has existed for many years.

The potential benefits of fencing detailed in the literature in relation to ecological enhancement were also mentioned by the interviewees. Most interviewees had not noticed the problems associated with fencing off communal land that are outlined in the literature i.e. negative impacts on biodiversity and ecosystems; limitations on the possibility for seasonal migration of wildlife; a reduction in men's participation in pastoralism; and increased demand for fencing materials resulting in deforestation. The scale of the fencing is not yet great in Chuschi so this could account for some of these factors not yet coming into play. A comparative analysis of fencing and enclosure in other Peruvian regions is warranted.

It has frequently been argued that legal privatization of land resources solves the so-called 'tragedy of the commons' (Hardin, 1968). Assumptions that open access will lead to overexploitation underpin the argument that enclosure is preferable. Hence, privatization has proliferated with regard to common-pool resource management worldwide (Partelow et al., 2019). However, there is much evidence that open access commons can be well managed and necessary for some pastoralists (Moritz et al., 2013). Chuschi seems to be such a case: though sometimes contested there is general acceptance that a mixed tenure model is optimal for community goals and aspirations. The Chuschi experience of land enclosure suggests that the communal land is well managed by the community institutions. This supports what many critics of Hardin's theory have pointed out: that it is based on a highly unlikely behavioural model, assuming that the herders' or farmers' sole motivation is individual interest and financial gain and that they do not organise to regulate the use of the pasture. Though not the focus of the study, the findings also add to the evidence base of hundreds of cases of communities past and present that sustainably manage their resources as communal property, as Elinor Ostrom emphasised (1990). Although the Chuschi case illustrates the tensions that can arise in common pool management, as Hardin predicted, these tensions are primarily described by the research participants in terms of conflicts regarding fencing off of common land for private family use, rather than in relation to perceptions of overuse. There is a need for more research on this topic in Peru, examining areas where fencing is more advanced. Chuschi, through its collective governance mechanisms, has practices in place for reducing the possible tensions and for preventing further individualisation of the land.

The issue of fencing, with its implications for social connectivity, food and water security, and local democracy links to other social and ecological challenges that Peru currently faces such as internal migration (Dupraz-Dobias, 2020), extractivism (Kishen Gamu and Dauvergne, 2018), climate change (Motschmann et al., 2020) and market immiseration (World Bank, 2020), especially since the COVID-19 pandemic. Fencing can be viewed as a means of individuals attempting to establish security in an otherwise extremely insecure situation. However, this may or may not be an inappropriate strategy given the evident social and ecological degradation that has been outlined earlier in this article. It may be a well calculated approach to land management that has overall collective benefits. On the other hand, like Scorza's Fence in a new incarnation, this physical enclosure of land may ultimately still be invading and disrupting communal Andean life.

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Figure 1: Map of Chuschi District and constituent villages (Source: Martin Leyva Molina)



Figure 2: Typical field patterns with fencing, Chuschi District, Peru (Source: Rossi Taboada Hermoza, 4/5/2019)

Figure 3: Photo of Chuschenos preparing to enclose pasture for community purposes (Source: Rossi Taboada Hermoza, 4/5/2019)