

Livestock



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Sheep policy in the colonization of Argentine Patagonia

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INTRODUCTION

In the second half of the 19th century, Europe imported raw materials to support the growth of its industry, which in turn produced a demographic surplus. The countries of the Southern Cone were part of this globalized system as suppliers of commodities and receivers of migrants and capital. In the midst of the process of building its territory, Argentina led from 1879 to 1884 a military campaign that evicted the Amerindians from Patagonia, according to the classic process of border expansion.

After the indigenous population was decimated, Patagonia was colonized by sheep moving southward from the plains of the pampas, and northward from the Falkland Islands. The national division of labor allocated the fertile pampas to cereals and cattle, and Patagonia to sheep rearing. Thus, on the vast arid plateaus, where a few Native American tribes remained, sheep eventually thrived despite predators such as pumas and foxes. Above and beyond, it was necessary to occupy rapidly the territory to counter the Chilean expansionist vision.

Patagonian rangelands had a low-carrying capacity of at most one sheep per hectare. These figures were largely overestimated, both by the legislators and the first breeders, whose references were those of the pampas and the Falklands, where rainfall levels were three to four times higher. A century later, the result of colonization by sheep is a serious degradation of the rangelands on almost two thirds of the territory, with many abandoned farms. The number of sheep reached a peak of 22 million around 1950 and declined regularly since then. As a result, the Patagonian ecosystem is a large demographic void with less than one inhabitant per square kilometer; the population is concentrated in very few urban centers.

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Diachronic analysis

At the beginning of colonization, Patagonia was more a colony than a national territory. The settlers had few political rights and were somehow second-class citizens. They did not elect their representatives, who were appointed by the central government located thousands of kilometers away. Land speculation started even before colonization, since in 1878 Law 947, called Ley del Empréstito (Borrowing Act), allowed financing the military campaign of the following years by selling the lands which they were going to conquer from Native Americans. Although check-plotting 2500 hectares could be applied to the homogeneous Pampa, it could not be applied to the heterogeneous Patagonia. However, the absence of fences at that time made it possible to overcome partially the problem.

Danckwerts et al. (1993) described well the Patagonian case: “The interaction of spatial heterogeneity with temporal rainfall fluctuations increases the complexity of pastoral systems. In arid rangelands, this results in pulses of productivity varying in space, time and magnitude. In these conditions, the traditional response has been transhumance in order to take advantage of such pulses. Typically, nomadic systems can withstand higher stocking rates than settled pastoralism due to better use of space. Permanent or settled grazing systems would be unsuited to manage these rangelands.”

Unfortunately, for Patagonian ecosystems neither legislation nor regional customs have considered sheep keeping. The shepherd as a manager of livestock/rangeland interactions has never existed in Patagonia, except in the far northwest (a region with a strong indigenous base), where goat and sheep transhumance still exists today. Far from the pastoral system, sheep farming in Patagonia has been developed for and by the capitalist market economy with public policies oscillating between liberalism and state discretion.

UNBRIDLED SHEEP COLONIZATION AT THE TURN OF THE 19TH CENTURY

The occupation of Patagonia under liberal legislation began with the formation of latifundia on the best rangelands, often in British or German hands, but also French and Spanish. Although Bandieri (2005) points out the many failures of the process, Alberdi's motto (1852) “To govern is to settle people” was in full force. Even before the military conquest, the Argentinian government relied on sheep to settle people in the area and gave 600 sheep to the Welsh colony established in Central Patagonia in 1865, with the instruction to increase the number of ewes whose consumption was prohibited (Dumrauf, 2008). This was a failure as were other tries promoted by the government in the 1880s. A few years later, when sheep began to thrive under private impetus, the government insisted on the allocation of sheep and supplied every relay along the telegraph line of the Atlantic coast with two hundred ewes and four Merino rams. The employees

of the telegraph were in charge of shearing, monitoring lambing and managing the consumption of these small flocks (Rodríguez, 2003).

Starting in 1903, in an attempt to curb real estate speculation and mend agronomic mistakes, Law 4167, called Ley de Tierras (Land Act), required a prior survey of the lands to be granted, and favored a differentiated distribution according to their potential. Three granting levels of public lands were introduced: 1. The lease-grant, a lease of five years, renewable, which gave the right to request the purchase of the land; 2. The simple lease with annual payment of a grazing tax per sheep; 3. Free occupation. Only the first level gave the right to purchase and inherit. This law succeeded in regularizing the sale of public lands, favoring emphyteutic leases, at the end of which the tenant, who had invested in buildings, wells, tanks, fences, etc., could buy up to half of the plot, in a limit of 20,000 hectares.

The sheep stock increased six fold between 1885 and 1914. Patagonia was a huge free zone; the international border between Argentina and Chile did not hinder the traffic of sheep flocks, even less that of assets. There were not many people; the Patagonian society was built from the sheep industry. At the top of the scale were the landowners and the stockbreeders organized in *sociedades rurales* (rural societies), and at the bottom were shearers, ranch workers, and workers of the wool or the meat freezing plants, regrouped in *federaciones obreras* (labor federations). Between the two groups, or rather indifferent to both, the government practiced *laissez-faire*.

CLOUDS OVER THE SHEEP

Driving thousands of cull sheep to the slaughter plants on the Atlantic coast raised clouds of dust. Besides World War I that fostered sheep husbandry to feed and clothe soldiers and make explosives from lanolin, other clouds were piling up over the Patagonian horizon. The opening of Panama Canal in 1914 cut Patagonia from the interoceanic navigation route. The city of Punta Arenas on Magellan Strait (Figure 1), until then the real economic core of Patagonia, began to decline. The war also stopped the building of railways, which rendered obsolete the 1908 law for the development of national territories. At the same time, the payment of a fee for the simple occupation of public lands was introduced in 1913, and the end of the free zone was acted.

The interventionist trend intensified in 1916 when a new grassroots government suspended the sale of public lands once the leases expired. Despite the latifundium system in place since 25 years of colonization, public lands accounted for more than three quarters of the territory at the end of the 1920s (Fisch, 1932). It was the end of the dream of becoming the owner of the land on which one had worked and invested for years,

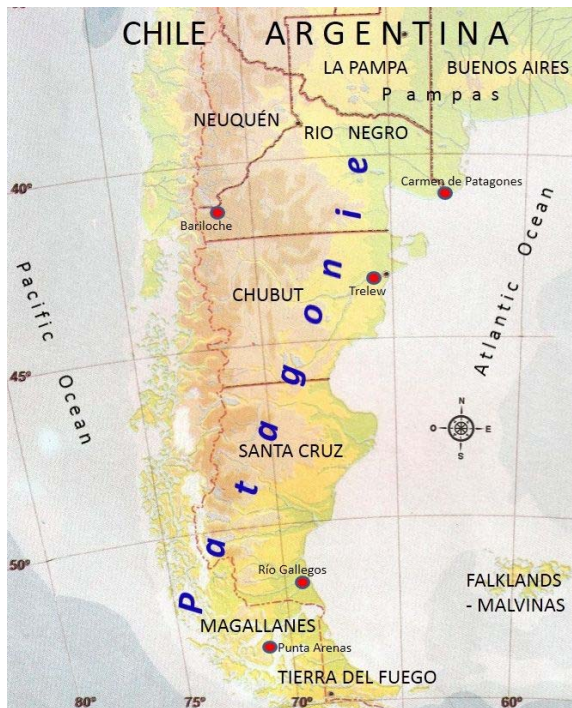


Figure 1: Map of Patagonia

and passed on to one's children. To the distress of tenant settlers, leaseholders and occupants, appeared the inspector of the Office of Lands and Colonies (Oficina de Tierras y Colonias), whose reports were a valuable source of information on the social and land tenure situation in those years. In addition, the postwar crisis led to the collapse of the price of wool and meat, while the costs of production remained high, especially as customs duties were reinstated for imported inputs and exported wool and mutton, and because the grazing tax quintupled in a few years.

The gap between the sale price and the production cost had soared and was the cause of the 1921 rural workers' strikes. The revolt was repressed in a bloodbath by the army, causing 500 to 1000 victims. Moreover, the precarious land tenure of many settlers discouraged any durable investment on their part, and fostered instead the search for immediate profit. This shortsighted range management overstocked plots which caused their degradation. At the same time, the sheep was losing ground as the main economic driver, to the benefit of oil discovered in 1907, whose exploitation since 1922 has been in Patagonia the spearhead of the country. The Great Depression of the 1930s worsened the situation as the center of gravity of wool and mutton production gradually shifted to the north of the region and its ports. It also marked the first irruption of the military into the government of the country.

In 1933, the introduction of import quotas for Argentinian meat by the United Kingdom weakened the mutton sector. Two organizations were supposed to improve the performance of the sector: Corporación Argentina de Productores de Carne (CAP, private origin), and Junta Nacional de Carnes (created by the State). However, they have never been able to solve conflicts of interest between mutton producers and meat-packing plants, caught in turns between English and North American capitals (Gorla, 1998). For its part, the wool sector kept its momentum, causing further sheep overstocking in the already degraded rangelands.

THE MILITARY SET THE PACE OF SHEEP

Despite the turmoil in the sheep industry in Patagonia, the flock continued to grow and eventually occupied the entire territory in the late 1930s. The last rangelands put into production were obviously the least suited, i.e. the highest or the driest or the remotest, and they were those where the indigenous population was also the most present. Sheep had spread over the whole of Patagonia, coexisting with the oil in the center, the cattle in the north and west, the goats in the northwest, and guanacos, pumas and foxes everywhere. All these competitors hardly slowed down the expansion of sheep, which reached more than 17 million head.

During World War II, the presence of Argentina was strengthened after the coup d'état in 1943. The military who seized the power considered Patagonia too exposed to foreign influences, especially English capitals as well as Chilean farm workers or Jewish emigrants. A military jurisdiction was established around San Jorge oil basin in Central Patagonia. Social and labor laws were enforced, such as the status of the rural worker, which satisfied the demands that had led to the fiercely repressed strikes of 1921. The custom taxes were abolished south of parallel 42 and the status of free zone revived the economy. However, with regard to sheep, the nationalization of foreign trade via the Instituto Argentino de Promoción del Intercambio (IAPI) and requisition of livestock (up to 8% of the herd) (Coronato, 2010) did not favor production.

With the decline of the meat sector already mentioned, the predominance of the Corriedale breed faded in favor of the Merino, a better wool producer. Overall, the regional sheep flock peaked in 1952, with 20.4 million head whereas the rural population was just a few tens of thousands of people. This reflected the very extensive character of the production, since a single worker could handle 1500–2000 sheep. On the other hand, even though sheep occupied the entire territory, their relative weight decreased in the regional economy because of new production activities, such as fishing, coal, in addition to oil. Besides, sheep farming became limited by the emergence of synthetic fibers which competed with wool.

In 1958, four (out of five) of the old national territories of Patagonia became as many provinces within the Federal Republic. This constituted a major change in terms of governance with an administration that thus became closer to the territories. The new administrations resumed the sale of public lands, suspended for forty years, allowing settlers and long-term tenants to become owners of the plots they occupied. At the same time, the opening up of oil extraction to private companies has resulted in Argentina's energy independence and in an economic boom, particularly in urban areas close to oil fields, intensifying the very secondary role of sheep at regional level.

FROM THE 1960S ON: SHEEP ON TIPTOE

The change of governance stemmed from the creation of the provinces came along with an increasing involvement of small and medium sheep breeders who had become owners. They rejuvenated the *sociedades rurales*, believed and invested in technology, especially in genetics, all of which led to the creation of the Instituto Nacional de Tecnología Agropecuaria (INTA) in 1956, with the aim to "encourage, stimulate and coordinate the development of technical agricultural research to improve agricultural enterprise and rural life."

However, it soon became obvious that the most challenging problem lied in the severe degradation of most of the rangelands, especially in the driest areas, a degradation that seemed irreversible. Patagonia paid a high price to the exaggerated optimism of the beginning of colonization, which overstocked with sheep these fragile rangelands. The checkered paddocks restricting the mobility of sheep in heterogeneous rangelands have only exacerbated the problem. Although sheep were the first driver of colonization of Patagonia, they were largely mishandled and eventually led to a serious degradation of their own support base, the rangelands.

There is thus a beginning of the awareness of the decline of sheep farming in Patagonia, quite paradoxically when the provincial governments start to act through a series of rural management organizations (e.g. Consejos Agrarios, Institutos de Colonización) along with INTA. In addition, the decline of the mutton sector linked to the world market continues. The slaughterhouses and freezing plants that had been vital to the ports of the Atlantic coast for decades have been closing one after the other: Puerto Santa Cruz in 1962, Puerto San Julian in 1967, Rio Gallegos in 1970, Puerto Deseado, etc.

The colonization of Patagonia by the means of sheep, which started at the turn of the 19th century, thrived until the 1920s, was progressively challenged by new activities later on, peaked in the mid-20th century, eventually began to decline in spite of well-intentioned public policies implemented yet too late. As evidence of the decline, early

companies had been selling their *estancias* (large estates) to Argentinian investors, especially since these companies (often of British origin) feared expropriation. They were only a few, about a dozen, but they covered several hundreds of thousands of hectares. The high rate (94%) of the deficit farms in the province of Chubut provided another sign of the decline in 1980. As a result, the percentage of small- and medium-sized farms receiving subsidies increased from 21% in 1947 to 42% in 1960, and up to 70% in 2002 (Baeza and Borquez, 2006).

Public policy measures have gradually been implemented to address the issue of rangeland degradation. For example in 1980 Law 22,154 (Reactivación Económica para el Sector Agropecuario de la Patagonia) aimed at revitalizing the sheep sector in Patagonia, and was followed the year after by Law 22,428 (Fomento a la Conservación de los Suelos) to finance soil conservation (Castro, 1983). Argentina has also appealed to the international community for technical collaboration, including in 1977 during the first United Nations Conference on Desertification (UNCOD) in Nairobi, Kenya. A few years later, the German Gesellschaft für Technische Zusammenarbeit (GTZ) teamed up with INTA to set up the Lucha contra la Desertificación en Patagonia (LUDEPA) project to combat desertification, as well as the Prevención y Control de Desertificación en Patagonia (PRECODEPA) project, which brought together INTA, regional universities and provinces. Remote sensing greatly benefited these initiatives by allowing a better socialization of socio-environmental issues in Patagonia.

SHEEP IN EXTREMIS: GIVING-UP AND LEAVING

Despite technical advances and institutional mobilization, the situation did not improve as the decline of sheep farming continued, with the added risk of the still struggling national economy. Thus, starting in the 1980s many smallholders abandoned their lands that no longer allowed them to survive, despite government subsidies. Isolation in rural areas, which is a serious problem particularly for education and health, was aggravated by these abandonments. Community life dwindled, pumas and foxes proliferated putting more pressure on the few flocks still in production. Moreover, urban centers were faced with the arrival of a rural exodus, with newcomers looking to integrate other activities than those they had been used to.

Apart from the economic issues, abandoning a settlement started from scratch three or four generations ago was a sad socio-environmental circumstance. Admittedly, it concerned the most disadvantaged areas from a climatic viewpoint. In any case, it marked the epilogue of the ovine cycle for a sheep breeder forced to make the decision of abandoning his land, as well as for the society which endured it. In Santa Cruz – the most affected province by land abandonment – there were 300 deserted farms (out of 1260) in 1991, and more than 500 in 1997 (Andrade, 2002). The trend continued at

a slower pace as they were 600 in 2014. According to Andrade, the ranchers did not feel at all responsible for the degradation of their rangelands because of their inadequate management or that of their predecessors, instead they blamed a low rainfall.

Del Valle et al. (1997) estimated that a quarter of Patagonian rangelands had a severe level of desertification and that 10% more faced very severe desertification. In other words, a century after the beginning of colonization, a third of the steppes of the region had become unsuitable for sheep farming, which corresponds roughly to the abandonment zone. Conversely, according to Noy Meir (2005), wetter rangelands, located further west on the foothills of the Andes or southward near the Strait of Magellan, make it possible to produce in a sustainable way. The condition to this is adopting precautionary management methods of the pastoral resource, i.e. to stock the paddocks below their carrying capacity, to rotate grazing to allow the regeneration of forage, and to control predators. This requires human and financial investments that the latifundia of these areas seldom have. In other areas, small and large ranches tried to carry on, hoping that rainfall would improve in the future. Argentina's crisis at the turn of the millennium did not help, as the price of wool did not cover the cost of shearing!

SHEEP, GET UP AND WALK

Despite the situation resembling a flight in some areas, it does not spell the end of sheep in Patagonia. A regional flock of ten million head and a production of 30,000 tons of wool are not negligible and could become the basis for a much hoped-for renewal. The size of the flock is the same as it was a century ago. The used area is four times larger, taking into account the degraded and abandoned lands. Yields have increased significantly thanks to genetics. In addition, the latest public policies especially seem to have limited the aggravation of the situation. In 2001, concomitantly with Argentina hitting rock bottom during the economic crisis, the Ovine Act (Law 25,422) for the revival of sheep farming marked the beginning of the recovery of Patagonia's rural world.

A national program to improve public action in rural areas was implemented in Patagonia in 1993. It aimed to diversify productive activities in ranches through alternative production in addition to sheep farming. Although limited to farms with a minimum agronomic capacity, these alternatives were pork rearing, ovine cheese production, of guanaco shearing (the wool price was 20 times higher than that of sheep), fruit and floriculture. All these activities had been almost nonexistent in Patagonia until then, but any of them could succeed in retaining people on the land and thus rebuild communities.

Particularly in the sheep sector, a significant effort has been made to manage rangelands in the long run, in the absence of recovering them. INTA offered various management methods depending on the topography and the water resource of the rangelands.

Various non-governmental organizations integrated in international networks – e.g. International Federation of Organic Agriculture Movements (IFOAM), The Nature Conservancy (TNC) – have proposed original initiatives, such as the Organización Internacional Agropecuaria (OIA) and OVIS 21 (www.ovis21.com). In a rather conservative environment such as that of sheep breeders, OVIS 21 offered a holistic rangeland management that attracted some of the most daring breeders. The method relied on the detailed monitoring of herds and rangelands in order to adapt production to the resource. One of OVIS 21 goals has been the regeneration and sustainable management of six million hectares. In 2013, the threshold of 1.6 million hectares was reached, which caught the interest of local actors, especially policymakers.

At the same time, a major action has been carried out in the wool sector with the PROLANA program (www.prolana.gov.ar), designed to improve shearing, the quality of the classification and the packaging of wool, in order to optimize sale conditions. Although it was established in 1994, PROLANA became effective only in 2001. Since then a quarter of the farms had already joined the program. New hope has risen in the meat sector, in which recovery has also begun with the rapid increase in lamb and mutton exports. These sales quadrupled between 2000 and 2005, exceeding 8000 tons and stabilizing since then; Seventy percent of them came from Patagonia, which has benefited from its status of foot-and-mouth disease-free zone. As the European Union import quota (23,000 tons) is still far from being reached, it is hoped that the trend will continue.

Southern Patagonia regained its vocation to export sheep products because of the favorable conditions of the international market for meat, and above all the improved sanitary and organic conditions of regional production. However, these do not compare with the gigantic slaughterhouses and freezing plants that regulated the life of Patagonian ports in the early 20th century. Instead, current settlements are much less massive and polluting, and bury themselves among other modern industrial units on the edge of cities. It even looks like they have become a light, portable industry that can respond more flexibly to the volatility of the global market. To respond to this market, the traceability of products and controlled designation of origin (CDO) was applied both to meat (Carne Ovina Patagónica) and wool (Lana Camarones), specialties that are making headway to replace the commodities of the past.

SHEEP BLEAT IN MAPUCHE

Public action to rescue sheep farming, shared by many institutions at all political levels, has a particular flavor when it concerns Native-American-owned minifundia, as they have remained for too long on the fringes of the productive sector. Heading in this direction, the program PROLIJO, an offshoot of PROLANA, has been applied exclusively in the central-north area of Chubut, where Native American breeders prevail (Albaladéjo,

1990). The minifundists of Southwest Rio Negro have also organized themselves, even on an ethnic basis, such as the Federación de Cooperativas Ganaderas, or the Cooperativa Ganadera Indígena. The indigenous question is highly sensitive in Patagonia, and public action to resolve the land tenure issue of Amerindian communities has been on the agenda. The National Constitution and those of the provinces recognize their community rights on their ancestral lands, even if it does not necessarily mean the common property of the land. About one million hectares so far have been granted to Native American communities in the province of Chubut.

Thus, the official support for sheep breeding to the less fortunate in a region where economic alternatives are limited, along a modest infrastructure development have improved the living conditions of people and therefore the permanence of the inhabitants in the countryside, as well as conditions to continue an activity strongly anchored in the local and regional identity. Proyecto de Desarrollo Rural para la Patagonia (PRODERPA), launched by the Ministry of Agriculture with funding from the International Fund for Agricultural Development (IFAD), intends to improve the productive infrastructure but, as other programs, it is not limited to the sheep sector alone, as previously mentioned it aims at diversification at farm and community levels.

CONCLUSION

Public policies related to sheep husbandry in Patagonia are inseparable from those concerning land tenure, on the one hand, and Argentina and world geopolitics since the end of the 19th century, on the other. Together, they have shaped the organization of the territory and agrarian history of Patagonia.

Firstly, there were the Argentinian and Chilean government policies supported by the British to dislodge Native Patagonians, which is considered as a genocide by some scholars. Secondly, the liberal legislation at the beginning of colonization led to the formation of immense properties on the best rangelands. These ranches of tens of thousands of hectares were stocked with tens of thousands of sheep, often beyond their carrying capacity, which progressively caused the degradation of a large part of the territory. The opening of Panama Canal in 1914 was a major geopolitical alteration, which cut off Patagonia from the major navigation routes, to the detriment of the regional economic development.

During the early times of the colonization process at the end of the 19th century, Argentina, rather passively, allowed local actors to work in sectors, meat and wool industries, and to form rural societies and labor unions. The visibility of the state increased throughout the 1930s, then was reinforced during World War II, especially during the national populism period (1943–1955), perhaps because of the particular sensitivity

of the military to the concept of territory. Social and interventionist policies were implemented, but the land issue was not addressed, much less the Amerindian issue, even though Chilean Patagonia experienced its agrarian reform in the 1960s and 1970s.

Once the territories became autonomous provinces, ownership of the land was granted to many settlers and a series of sheep farming policies were introduced. But it was too late; despite this rather positive public action, the sheep sector continued to decline, mainly because of the degradation of rangelands. As a region, Patagonia avoids the complete fall because of its other resources such as oil, coal, fishing, later tourism, which are also targeted by public policies.

It is only with Argentina's economic crisis at the turn of the millennium that new more promising alternatives have been explored involving institutions, local governance, civil society, and international cooperation. They put the issue of range management and Native American land on the agenda and open up new perspectives. According to Oliva (2002), from punctual solutions in the 1970s and 1980s, public action shifted to wider strategies taking the environmental issue as a whole. The same can be applied to the social and Native American issues. The new context provides a chance for sheep to continue to graze in Patagonia, if all goes well, for a long time.

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