Rethinking the Role of Sheep in Local Development of Patagonia, Argentina.

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Abstract

Patagonian rangelands are the world’s southernmost ones, and were among the last in being devoted to farming. Commercial sheep herding in the area started only 100-120 years ago and boomed until the 1930 world crash, triggering the hasty colonization of grasslands of diverse productivity. Besides this geographic diversity, natural hazards as droughts or heavy snowfalls coupled to the vagaries of economic policies have always made sheep farming in Patagonia a very uncertain activity. Consequently, sheep gradually lost ground as the leading socio-economic activity as compared with oil and gas production, fishing, and lately, tourism. Things worsened during the last quarter of the 20th century to the point that, at present, the farm contribution to regional GDP is less than 5%. However, no other activity can ensure the (sparse) occupation of the whole region, and owing to its pioneer character, sheep farming still plays an important part in Patagonian identity. Thus, we believe that mutton and wool production still have a role to play in the future of the region, although we argue that this issue could adopt 3 different scenarios that we termed "laissez faire", "park" and "sheep" according to the intensity of the decision involved (and funding required). The 3 scenarios could eventually coexist, but long-term sustainability would have the last word.

Key words: land use, desertification, colonization, scenario.

Introduction

Patagonia is located between 40° and 55° S, in the westerlies belt, which originates two sharply contrasted faces on either side of the Andes. On the windward side, Chilean Patagonia is a narrow strip of snow-capped mountains, lakes and fjords, with a windy, rainy, and cool climate; on the leeward side, Argentinean Patagonia consists of vast plateaux interspersed with fluvio-glacial valleys; climate is also windy and cool, yet dry because of the rain-shadow effect of the Andean range: annual rainfall exceeds 200mm only in some favorable locations.

Until the 19th century, due to its austere environment, Patagonia stayed clear of the colonial ambitions of the Spanish and British empires, although imperial attention was paid to the Falklands and the Straits of Magellan in order to control the transoceanic trade. Once the South American colonies gained independence, the world powers focused on the Argentine Pampas and central Chile because of their agro-pastoral potential. From 1879, the "Conquest of the Desert" by the Argentine army appears to be due as much to the will of the young Republic to control its national territory as to the British interest to expand sheep farming for the benefit of wool companies already well established in the Falklands and Buenos Aires. A similar process took place in Chilean Patagonia,
in the Magellan area. The expansion of sheep was done at the expense of several thousands of Native American victims, which were killed, reduced to servitude, or scattered on the margins of the “new order”. In this way Patagonia was “freed,” ready for its occupation by settlers of European ancestry, coming from the Falklands, Buenos Aires, or central Chile, for the greater benefit of British, Flemish or German wool companies.

Sheep numbers peaked in the 1950’s when about 22 million animals were recorded. From then on overgrazing became evident, reducing the productive capacity of these rangelands. This, together with difficulties in wool and meat commercialization, forced the adoption of non-sustainable ecological and economic dynamics during the recent decades (Ares, 2006) as evidenced by a national stock as low as 10 million sheep in the 1990’s.

Depending on the time and region, sheep farming was performed on a very extensive basis in plots ranging from 10,000 to 30,000 hectares, which would support flocks of 2,000 to 15,000 sheep. These figures were much larger in company-owned ranches. Only differing in the larger size of the fields, this model was mostly based on the ones that had built the wealth of the Pampas and the Falklands. However, less than a century after the beginning of pastoral colonization, it has transformed much of the vast steppes of Patagonia in desert-like areas, especially in its central and eastern parts (i.e. the regions less favored by rainfall), to the point that sheep grazing has ceased in many ranches, (between 1/3 and 2/3 of them, depending on the area). Some farms manage to survive with a carrying capacity as low as one sheep for each 8-12 hectares.

Among other authors, Defossé & Robberecht (1987) and Cibils & Borrelli, (2005), argue that the combination of overgrazing and firewood gathering from the shrub land (even if the latter was necessary because of the harsh climate) dramatically reduced shrub and grass cover leaving the soil unprotected against weather exposure and thus triggering the negative effect of desertification. However, sheep farming continues doing well in ranches located along the Andean piedmont and in the far south around the Straits, since these wetter regions are more productive; additionally, some farms crossed by a watercourse can irrigate forage crops to supplement their flocks and cope with drought.

Desertification in Patagonia would then be a direct consequence of the unwise application in arid rangelands of a productive model designed and proven in wetter ecosystems such as the Pampas or the Falklands. The original overestimation of the carrying capacity of these rangelands led to their overstocking during a century and is considered as the main cause of its current desertification (Golluscio et al, 1998). Since the years 1950-60, this compelling environmental context was aggravated by the weakening of the sheep industry in Patagonia, comprising both wool and meat production, and negatively influenced by the vagaries of Argentine politics and by globalization, especially through the great variations in the international market for agricultural products. This resulted in a high vulnerability of surviving family farms, especially the
smaller ones, who had somehow found ways of adapting their management to mitigate a declining productivity. The fragile sustainability of these farms led to an unbalanced regional development, with the countryside depopulating and a growing number of rural people being gradually evicted to the suburbs of regional cities, and becoming an acculturated proletariat.

Fortunately for the Patagonian economy the collapse of sheep ranching was offset by alternatives such as oil, gas, and coal production, and tourism development. Although spatially very concentrated, these activities today support the territorial development along with increasing metallic mining and fishing. Urban centers are now interconnected by networks of roads, cables, pipelines, and airports. That is to say, Patagonian economy can very well dispense with the rural sector (which currently only provides 5% of the regional GDP). These changes concern the whole society, including traditional landowner families who have repositioned themselves in the reorganized social networks.

Rethinking the future of Patagonian sheep ranching led to construct several scenarios, among them three of the most contrasting that engaged our attention. The first one can be termed “Laissez faire”, that is to let the present situation go on, which would entail the development of land speculation on the rural areas and the accretion of bankrupted units into larger ranches, possibly only partly productive and owned by a few major national and international groups. The second scenario, that we called “Park”, is based on a decidedly scenic valorization of the rural landscape with the transformation in Parks of vast portions of Patagonian ecosystems, once degraded by sheep. Current agro tourism in landscape-favored ranches might indicate an intermediate step in this direction. Thirdly, the “Sheep” scenario is based on the revival of the sheep-breeding vocation in Patagonia with the restarting of family businesses based on sustainable socio-technological systems that require human and financial resources through public policies (possibly derived from the wealth of the subsoil). The current devolution of large spans of land to Native American communities could contribute to this pastoral perspective but a general zoning system based on land use alternatives would be strongly needed.

Discussion

As above stated, the collapse of the sheep farming industry in Patagonia allows us to consider what it could be termed as a « restarting » of the system from 2000 on. Nevertheless, according to current tendencies the most likely future to Patagonian sheep farming might derive from the stressing of presents scenarios, briefly described as follows:

Laissez-Faire: The very name of this scenario suggests that it would mean a kind of “agrarian inertia”, i.e. the continuation of the general declining trend of wool and mutton production with the laws of the market acting freely in a weakened economy. In this scenario it is possible to imagine a greater concentration of land tenure with the creation of vast ranches of several tens or
even hundreds of thousands of hectares. Needless to say, not always the “winners” would be people with sheep breeding tradition or knowledge, but mere investors, frequently not even from the same region.

Mining, from the very simple stone quarry to the sophisticated uranium extraction or polymetallic mega exploitations, will always be a real threat to unsustainable ranches located in exposed-bedrock areas, whereas those in sedimentary tablelands are threatened by oil exploration and exploitation. Whatever the mining involved, some ranches located next to the deposits are already finding a new source of income by providing services to miners.

No alternative activities as above are needed to quit sheep farming: many ranches that became unsustainable were simply abandoned by their owners, the sheep sold and gate padlocked. Along with social issues, this generates ecological problems such as proliferation of predators like pumas or foxes that attack the remaining flocks next door.

There may be conflicts to manage on land ownership between large companies, small farmers, and Native American communities that could claim their so-called ancestral lands. There will necessarily be a deep urban-rural imbalance as can already be seen today.

**Park:** This would boost the tourism economy, in line with the adventurous and ecological side of Patagonia as a trade mark and would build on a cultural, environmental, and sustainable development foundation. Agrotourism is already a financial input to an ever growing number of ranches located in scenic areas. The website [www.estanciasdesantacruz.com](http://www.estanciasdesantacruz.com) is just an example of the vitality of this initiative. Of course, sheep farming and the traditions related to it are carefully preserved tourist attractions, especially in ranches less favored by scenic beauty or history.

In this scenario, sheep adopt the role of “ecosystem gardeners” in largely understocked paddocks, where they can eventually coexist with guanacoes and rheas. These non domestic species are no longer seen as competitors of sheep but as a natural attraction in the “park”.

About 95 % of Argentine Patagonian land is private property, that’s why the park scenario has already started in private ranches, even if in some cases public reserves have been created too. Pushing this scenario to the extreme, one could imagine an active government commitment in creating national parks (if the area is scenic or worthy of preservation from a scientific point of view) or just “national reserves” in less favored areas. However, the cost will be high because of the expropriations needed. Arguably the funds arising from the mining in other areas, from the fishing industry or from the tourist trade itself could be used to these ends. “National reserves” in currently useless areas occupy vast areas in Chilean Patagonia, but are void lands, never occupied before. In Argentina, national reserves in previously grazed rangelands would mean the utter recognition of the failure of sheep farming in colonizing Patagonia.
Without going so far, mining or great infrastructure works are not welcome in this conception of regional land use, even at current public opinion level. “No dams in Patagonia” and “No to mining” are frequent graffiti on Patagonian walls.

**Sheep:** To recover Patagonia’s sheep-breeding vocation might be the lesser risk from a political, economical and social point of view. Needless to say, considering the depth of the current depression, “the sheep revival” is a huge task which would require a joint involvement from ranchers and government. In fact, some interesting initiatives have been recently taken by both; they seem to point towards considering wool and mutton as a “speciality” instead of a “commodity” as was the case until quite recently. Even though diverse official and private efforts to raise production quality start to bear fruit, much remains to be done. Public institutions and private organizations promote shifting to “Eco”, “Bio” or “organic” labeled sheep products that pay much better in the market; this simple fact is fostering some convergence between the sheep and park scenarios.

Agronomical constraints however seem to restrict these encouraging views to favorable areas while condemning others to greater efforts to overcome their geographic limitations. The aqueduct Trelew-Uzcudun, organized by ranch owners in eastern Chubut, is a good example of a private associative will to get over production difficulties. On the government side, selective releasing of production credits to specific geographical areas should be preferred to widespread subsidies and compensations. Besides, official technical agencies, like INTA, have active responsibility in improving the production chain both upstream and downstream from the breeding level, with the establishment of sustainable management of rangelands. However, it is suggested that measures to restore and protect Patagonian ecosystems would gain greater acceptance if local producers were seen as equals in the conservation and development process. This could be achieved by replacing the traditional top-down models of policy design and implementation with measures based on genuine consultation and participatory, community-based approaches to natural resource management (Aagesen, 2000).

A simplified version of a SWOT matrix allows to summarize what stated above

<table>
<thead>
<tr>
<th></th>
<th>strengths</th>
<th>weaknesses</th>
<th>opportunities</th>
<th>threats</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Laissez faire</strong></td>
<td>currently in force, free initiative, ubiquity</td>
<td>individualism imbalances generated (economy, demography); labor scarcity</td>
<td>wide reaching technical support services provided</td>
<td>mining, land hoarding, depopulation, land use conflicts</td>
</tr>
<tr>
<td><strong>Park</strong></td>
<td>ecological trademark, international support</td>
<td>some expropriation needed; restricted diffusion; Predator overpopulation</td>
<td>reevaluate native culture; history rescue; “for export” stereotyping; excessive openness to the outside world;</td>
<td></td>
</tr>
<tr>
<td><strong>Sheep</strong></td>
<td>International market assured; regional identity preserved</td>
<td>some areas excluded; restricted diffusion; big investments.</td>
<td>new regional productions; widen participation.</td>
<td>separatism; native claims;</td>
</tr>
</tbody>
</table>
Conclusion

Sheep farming in Patagonia was at its lowest around the turn of last century, closing a cycle started one hundred years earlier and whose heyday (in stock) was reached about 1950. The depth of the fall was enough to trigger some healthy reactions about how the future of the activity was to be; that is to say how the future of the region would be, since sheep farming is the most widespread land use in Patagonia and deeply anchored in the regional identity (Coronato, 2010).

In recent years Patagonia’s sheep stock has been increasing due to higher international wool prices, favorable domestic currency policies and the adoption of improved production technologies. Even so, this trend is expected to have reached its peak (Villagra et al, 2010) and a generalized recovery of the sheep-breeding industry seems unlikely.

Therefore, no future trend appears clearly on the horizon and we believe that any of the three scenarios described above could eventually become in force in the next decades. Normally, the more probable future to Patagonian sheep industry will be a mixed scenario, not only in the involvement of the concerned actors but especially from a geographic point of view. We believe that a regional land use plan is strongly needed, and that as a result a zoning should be achieved so as to define (on paper and in government policies) areas in which one of the three scenarios should prevail, or at least, areas in which sheep ranching is no longer sustainable, since as Noy-Meir (2005, p 204) clearly states: Livestock production from rangeland is now feasible and sustainable only in certain parts of Patagonia; while in other parts there are no feasible solutions or opportunities for either maintaining it, or for re-establishing sustainable production.

We think that Patagonia is big enough as to encompass: 1) areas where no changes to the present situation should be introduced; 2) areas in which scenery or historical facts would justify their transformation in parks, or in reserves if too degraded (to be eventually sacrificed to mining); and 3) areas whose agronomic conditions are good enough to secure a sustainable (and improved) sheep farming system, producing high-quality mutton and wool.

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References


