

Drought and Animal Health Status Impacts on Cattle Rangeland Management in North Patagonia, Argentina

C. Leuret¹, A. Ortega², M.G. Klich², G. Yaful^{2,*} and A. Costera¹

¹ ISTOM Ecole Supérieure D'agro-Développement International, Cergy. FRANCE

² Escuela de Veterinaria. Universidad Nacional de Rio Negro. Choele Choel. ARGENTINA

*Corresponding author email: gyaful@unrn.edu.ar

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Introduction

In Argentina, two phenomena appear to have had an impact on livestock. Firstly, the expansion of agriculture (particularly soya) has pushed breeding activity from the humid Pampa to semi-arid areas like northern Patagonia. Secondly, a severe drought in North Patagonia between 2007 and 2012 required cattle breeders to seek new strategies to save animals from starving. Due to the decreased offer of forage, the number of cattle North Patagonia was reduced by half. In 2013, a change in the sanitary status of the area between the *Río Negro* and the *Río Colorado* absolved this livestock region from vaccinating their animals against foot and mouth disease (FMD). This area acts as a *buffer zone* against the transmission of the FMD virus to the rest of Patagonia that is free from FMD and, at present, has particular restrictions on the movement of animals from vaccinating regions.

However, this restrained entrance of animals and meat with bone created meat supply problems in this *buffer zone*. The aims are to become self-sufficient in beef but there is a lack of calves due to drought and the breeders are not accustomed to complete the growth cycle in the region. Prices of beef rose and this incentivized the search for new practices to increase efficiency. Calf producers in the plateau not only have to rebuild their livestock after the drought but they also have to supply sufficient calves for the calf feeding systems that arise in the area to provide meat for consumers.

Cattle grazing in North Patagonia is based almost entirely on natural vegetation. Continuous grazing and the periodic occurrence of severe droughts appear to modify the vegetation and induce the degradation of the spontaneous forage resources. It is normal to find very large paddocks continuously grazed by more animals than the feed capacity. However recently, some cattle ranchers are introducing some reproductive management changes and rotational grazing methods that are improving production standards.

Objective of the study

To analyze the adaptations implemented in cattle management in response to the drought and changes in the animal health status and to evaluate the results of the different strategies in a system approach.

Materials and Methods

Study site

The study area is located between the towns of Choele Choel and Rio Colorado and includes the plateau territory and the Rio Negro valley. The climate is cold temperate semi-arid to arid. The average temperature ranges from 6°C in July to 23°C in January. The average annual precipitation is 303 mm, falling mostly during spring (September) and autumn (March), but in 2002 and 2011, the rain deficit was 33% (INTA, 2000). Vegetation on the plateau is a xeric *Monte* characterized by a shrubby steppe with tussock grasses (Fernández *et al.*, 1989).

Methodology

The farming system diagnosis was complemented by a zootechnical and economic analysis to evaluate performances (Landais *et al.*, 1987). Interviews were realized with 29 cattle farmers, using open inquests to collect qualitative and quantitative data, which represented 30% of the farmers in the plateau and about 50% of the surface area.

Results and Discussion

In the plateau area, there are two types of cattle breeding management, one “traditional” and one “technified”. The “traditional” management consists of leaving the animals in a large field with a permanent stocking rate and only removing weaned calves for sale or for fattening in the valley zone. On the other hand, the “technified” management consists of seasonal breeding, with pregnancy diagnosis and venereal disease control, and divided grazing with animal rotation and a better water point distribution. In the “technified” management, early weaning was used during the drought, to liberate the cows earlier and thus try to save more of them.

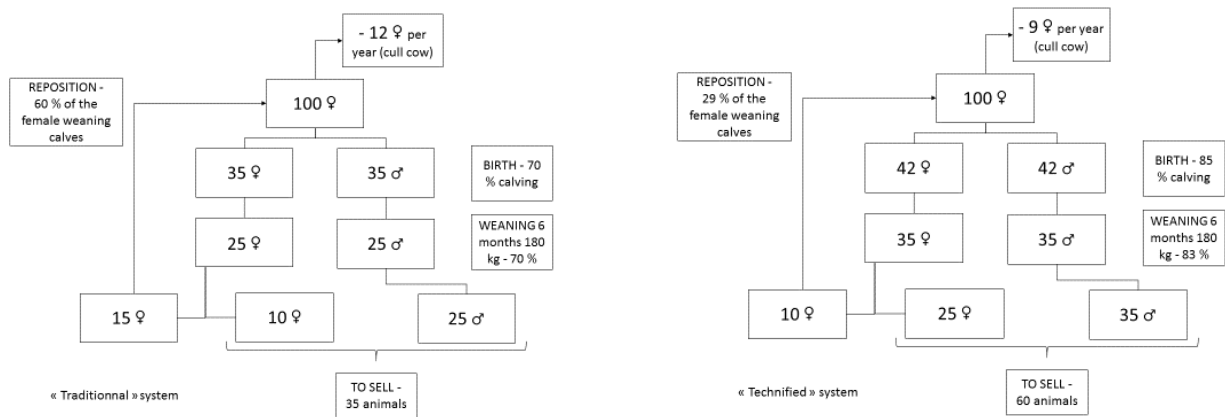


Figure 1. Productive performances of the “traditional” and “technified” managements (Leuret, 2015).

At the productive level (figure 1), the “technified” management, that lost less animals with the drought, allowed the farmer to achieve better production levels, and thus to sell a higher percentage of animals. Using the farmer equation (Le Masson A., 2003), we found that the “traditional” type has a herd increase of a 3% per year, whereas the “technified” type is about 1%. This is because the “traditional” type is still recovering from the drought and trying to reach the former number of animals, using a higher percentage of reposicion. A large number of the farmers continue their system with a feed-lot in the valley area to complete the production chain.

Conclusions and Implications

More intensive management implies better production levels, and increased prices after the change in the animal health status allowing better incomes for the “technified” farmers.

The drought is a cyclic phenomenon in North Patagonia. Cattle rangeland management improvement, such as that being implemented by an increasing number of breeders, will surely enable them to face the next one better.

A rise in prices of animals in the region also resulted in expansion of the “technified” system and a tendency to complete the production cycle by the same farmers who produced weaned calves.

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