

Livestock policy: Progressive globalization currently focused on environmental issue, food quality and safety in the past and new human-animal relationship in the future

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Introduction

Facing critics regarding the environmental impacts of livestock activities during the past decades, the MOUVE project and the LIFLOD network have developed a specific research to better understand the consequences of livestock policy at both the local and global scales.

In 2006, the FAO book “*Livestock Long Shadow*” (Steinfeld *et al.*, 2006) drew attention on the environmental impacts of the livestock activities. Facing the incredible awareness, the FAO team tried to mitigate the critics by highlighting the positive functions of livestock (Steinfeld *et al.*, 2010; Gerber *et al.*, 2010; Gerber *et al.*, 2013). Some decades before, in the 70s and 80s, scientists have mentioned the role of livestock in the desertification (Leeuw & Reid, 1995; USGS, 1997, FAO, 1995) and deforestation in the Amazon (Wood & Porro, 2002; Veiga *et al.* 2004; Kaimowitz *et al.*, 2004, Sayago *et al.*, 2010). In the same time, policymakers of OCDE countries started to face the challenge of nitrogen pollution (Carpenter *et al.*, 1998). Moreover, along the forty last years, the animal production sector has been involved in several public health crises and food safety scandals. So after strongly marking the history of rural societies, livestock has become a global challenge (Delgado *et al.*, 1999; Hann *et al.*, 2001; Gerber *et al.*, 2010).

One of our research questions is why the livestock sector, which has resisted several crises cannot overcome this current environmental crisis. What are the links between the policies, the trajectories and dynamics of livestock at the local and global scale? What are the main steps, the major ruptures, and the factors of change...?

Materials and Methods

Twelve case studies have been selected from the research sites of the MOUVE project and the LIFLOD network: Special Areas, Alberta, Western Canada; Para State, Eastern Amazon, Brazil; Pampa biome, North Uruguay; South Patagonia, Argentina; Sahel, North Senegal; Gharb Plain, Morocco; North West Coast Zone, Egypt; Mountain Areas, France; Qilian Mountains, Tibetan Plateau, China; North Vietnam; New Zealand and Australia. The first method is the diachronic analysis of livestock policies during a long term period in the objective to define the successive phases in livestock history, at both local and national scale, its main steps and its major reasons and factors of change. The comparative analysis was developed using a grid where the diachronic descriptions were reported.

Results and Discussion

Only preliminary results are presented in this paper due to the novelty of the comparative analysis.

Importance of public policies on the trajectories and dynamics of livestock: The importance of public policies in livestock sector is the major finding shared among stakeholders; hence the local livestock history can be described using the succession of the public policies.

The four successive phases of livestock policies: The comparison of the diachronic analysis in the different research sites shows four main successive phases of livestock policies, that we were identified as Settlement, Local and National Development, Market, Environment.

Settlement (<50s):This phase corresponded to the “old time”, the situation before the World War II, before the development of mechanization and the use of chemical fertilizers in agriculture. It was the settlement period of the agricultural frontier for the colonized research sites, like the Special Areas in Western Canada, Southern Patagonia in Argentina, North and South Island in New Zealand and the Eastern Brazilian Amazon.

The main feature of this phase is the importance of the local governance and the public and private local actors in policymaking, decision making, and management of supply and market chains.

Local and National Development (60-80s):This phase was characterized by the commitment of local and national levels to develop rural areas, and consequently improve livelihoods of the rural population. During this phase, public policies usually aimed at, increasing the productivity of the farming systems, the equipment and infrastructures at the community scale. It was the time of collective structures, cooperatives and associations of producers, considered as an intermediate level between households and governance, especially in Europe, Africa and South America. Processing and marketing also profited from specific policies; however the main guideline was to increase production to meet the growing demand, in order to reduce importation or to increase exportation, according to the zone.

Market (from 80-90s ...):Gradually along the end of the eighties and the nineties, the market became the main driver of food production, including the livestock sector. Progressively it produced norms of quality and production processes, officially based on the demand of the consumers, and on the interest of the significant actors to invest in quality and to absorb the smaller actors. For social reasons, public policies have been constrained to follow and support this dynamic. That led to double objective supporting in one hand the globalization strategy and in the other hand the development of niche markets. This double objective justifies the two pillars of the European Agricultural Policy and Green Plan of Morocco. The same double objective justifiers also the two Brazilian ministries, one for agribusiness focus on exportation and another for sustainable rural development.

Environment (00s):Environmental policies early appeared in the zones that faced a real environmental challenge. Progressively, from the Summit of Rio in 1992 to the edition of FAO book in 2006, global policy radically changed in regards to livestock production. Nowadays, all assessments of system efficiency focus on the environmental impact of livestock. Greenhouse gas emission is a huge burden for the livestock sector. The multi functionality of livestock cannot balance this charge on a long-term perspective. The national and local policies are copying the global governance aiming at the reduction of the livestock impact, through restrictive norms.

Increasing number of stakeholders, policymakers and levels of governance: Decades ago, and during the phases of “Settlement” and “Local and Regional Development”, the governance was concentrated in few instances, usually directly linked to the government, at the local, regional and national scales, such as few representatives of public institutions and managers of private companies or cooperatives. In the third and fourth phases, “Market” and “Environment”, more stakeholders participated in local governance. For example, in North Senegal, representatives of rural communities, politicians, local councilors of rural and urban areas, leaders of associations, small agribusiness managers, groups of women and young people are involved in the local governance with the tribe leaders and the governmental representatives. Above all, the decisions are usually debated in the different instances of the societies with eventual consequences in the next elections. The increasing of stakeholders, policymakers and levels of governance is similar at the regional, national and global scale.

Conclusion

Globalization is going ahead: A major result of the diachronic analysis is the gradually emergence of the market as a key-factor of livestock production at the end of the eighties, especially through the setting of norms in terms of quality, and more recently environmental issues. Indeed, at the local scale, the market strongly interacted with livestock production in defining the level of demand, the type and price of products, and the opportunity to sell to the neighboring markets. For example, in all the case studies, the development of urban centers created a new local demand for livestock products of which the surrounding rural areas benefited by selling their production.

Globalization appears as the most significant factor of change because it affects mainly the market at the global, national and local scale, but also the information and technologies, the behavior of consumers, the social and cultural bases of the societies. Through national policies, the import countries tried to control the importations, at least the time to adapt their production to the global norms and be able to face the concurrence, or to find alternatives, such as the niche markets in Europe for example.

New human-animal relationship based on animal welfare: Due to the several and successive food safety crises since the nineties, a part of consumers either stopped eating meat, or at least reduced their meat consumption and were more careful about the quality of their meat. Several lobbies act against meat consumption. They rely on formal and informal networks which usually act in environmental domains. In addition, research institutes are currently working on new forms of animal proteins in order to substitute the meat of animals. In this new context, some stakeholders suggest to change the human-animal relationship based on old mental models founded on animal slaughter. Hence, the future would be animal welfare.

In summary, the environmental impact of livestock has completely changed the perspective for animal breeding. Policies followed the process of change, and nowadays, livestock challenge has become global. Could the excess in intensive livestock farming systems

possibly be responsible of the new context? However, the several crises along the past decades showed the incoherence of the system. Nevertheless, livestock has very important functions at the farm and local scale and plays a strategic role in the livelihoods improvement of rural populations. Maybe the policies could help making difference between the coherence to be strengthened and the one to be changed?

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