

## **Livestock and local development: Going to a new human-animal relationship**

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### **Introduction**

Along the last ten years, the French National Agency for Research (ANR) has financed several projects regarding livestock at local and global scale. Five of these projects decided to gather their results in order to better understand the long-term livestock dynamics and the scenarios for the future. Research actions have been developed in fifteen sites in diverse biomes located in seven countries of Europe, Africa, America and Asia. Review of literature and preliminary data collected in the sites showed the high complexity of the livestock dynamics. For example, in some cases, intensification of the livestock farming systems regards land. In other cases, intensification regards labor. In other cases, breeders are adopting more extensive practices. Similar process had been noticed for the farm size which increases or decreases according to the site and the type of farms. Diverse strategies have been mentioned regarding marketing, collective actions and environment impacts. To face this complexity, the analysis has been developed site by site and project by project, before a comparative approach.

### **Materials and Methods**

The five projects simultaneously considered the economic, social, environmental and policy implications of transformations underway both at farm and local scale, to address the multiple dimensions of sustainable development of livestock sector in the different research sites and at global scale. The five projects are: AVITER: Intensive Poultry Production and Local Development. French-Brazilian Comparative Analysis (2006/09); ECOTERA: Eco-efficiencies and territorial development in the Brazilian Amazon (2014-17); MOUVE: Interactions Livestock – Local Development and Dynamics of Ecological intensification (2011-14); REVALTER - Multi-scale assessment of livestock development pathways in Vietnam (2013-16); TRANS: Livestock Transformations and Local Dynamics (2006-09).

Interdisciplinary approaches, participative methods and integrated partnership have been applied in the five projects in the objective to focused on the diverse factors of change and effects of these changes at farm and local scale. According to the project, data collection has been done through on-farm surveys and monitoring, interviews with key-informants and stakeholders, and analysis of public and private databases, cases of of remote-sensing data animal disease controls

### **Results and Discussion**

*Territory as a socio-ecosystem where policy meets production chain, initiative and innovation:* Based on the concept of socio-ecosystem, we have tried to modeling in simple schema diverse transformations regarding the livestock farming systems, the supply chains and the policies (Fig. 4). The first slide (S1) represents the Lhoste's tripod with a horizontal axis for the animal, a vertical axis regarding the feed resources, and a third perpendicular axis shows the gradient of livestock practices from the diversity to the model. Based on the different study cases on the research sites, the second slide (S2) represents the two opposite trends of livestock systems, both at farm et local scale, one going towards globalization and another going towards localization. Also based on the different and contrasted research sites, the third slide (S3) shows the environmental policies relatively independent of the two trends. In contrast, other policies affected

differently the livestock farming systems, especially those regarding the market, the labor, the quality, etc, as mentioned in the fourth slide (S4).

*Territory as a complex set of expectations and representations regarding livestock:* In each research site, different and contrasted expectations about livestock have been registered. First at all, a major result is livestock has not only a role in production of goods. Livestock has also diverse functions in use of resources, local development, land use and landscape, environment, social and cultural issues, etc. A second major result is there is no shared representation of livestock among the local stakeholders, including breeders, traders, inputs providers, development and financial agencies, rural planners and policymakers, consultants, experts and researchers, etc. This lack of common representation leads to debates, sometimes to conflicts. The territory is the scale where are these debates and conflicts because the opposing views meet at this scale. Nevertheless, there is usually consensus, at least regulation to avoid the clashes. Territory is also the relevant scale for these consensus and regulations.

**What about the future of livestock? What Livestock Farming Systems:** The five projects have a specific task about the scenarios for the future. During the interviews, the workshops and the informal talks, the stakeholders have talked about their own visions of the future for livestock. Many of them have doubts, interrogations and questions about: livestock farming systems in the future, dominant models and alternatives; future of livestock sector, especially faced the new environmental norms and other norms regarding other topics, for example animal welfare; evolution of demand in animal products and impact on the prices; governance of livestock at local, national and global scale.

The first point of discussion is the relevancy of policies in the future of livestock. It is clear that, more than in the past and nowadays, the animal production and the livestock sector will depend a lot on the policy measures and norms defined at local, national and global scale.

The second point of discussion is linked to the territory as the right place for this new policymaking. Due to the advance of the democracy and stronger participation of local population to policymaking process, intermediate scales are necessary for debate, explain, assessment the public action and emergences of new ideas.

The third point of discussion is the next step in term of norms. Before the middle of the nineties, just a few people thought that the livestock sector could be shocked, less ten years ahead, by environmental measures. As explained, the change was certainly due to the strong environmental impact of livestock activity linked to the first effects of climate change. But it is also due to the new rules of governance involving more levels of policymaking, as noticed by all the five projects. May be the new human-animal relationship will be defined the future livestock farming systems and livestock sector.

## **Conclusion**

In conclusion, local scale or territory has recently emerged as a relevant level to analyze and understand the changes in the livestock farming systems and their sector of activity. These changes are referring to different factors, from food safety to climate change effects. New concepts and mechanisms appeared at local scale, especially the collective action, local policymaking, participative assessment, etc. Methods are not clearly defined and have to be better studied. In addition, maybe the change due to environmental issue is little compared to the future change linked to the new human-animal relationship.

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