



## **Evolution of the multiple functions of livestock in tropical landscapes: comparison of trends in different observatories of livestock in Africa, Asia and Latin America**

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# Evolution of the multiple functions of livestock in tropical landscapes: comparison of trends in different observatories of livestock in Africa, Asia and Latin America

(Abstract of the poster presented)

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**BACKGROUND/INTRODUCTION:** The multifunctionality of livestock in developing world is widely recognized. Most countries are actually witnessing several changes (population growth, development of animal product markets, climate change, etc.) affecting breeding systems and their functions.

**DESCRIPTION/PURPOSE/OBJECTIVES:** The compared approach of the evolution of livestock multiple functions is a challenge for research. It helps anticipate changes and future sustainable development of agricultural landscapes. It is based on field knowledge of researchers of the Joint Research nit Selmet observing ongoing developments of livestock in 14 highly contrasted landscapes (9 in West Africa savannah zone :Mali, Burkina Faso, Senegal); 1 in Madagascar (Vakinankaratra), 1 in Egypt (North West coast), 2 in Brazil (Amazon), and 1 in Vietnam (North mountain). The multivariate approach (PCA, HAC) of the "scoring" of changes awarded by the experts allowed to propose evolutionary trends over the last 50 years (1960-2010).

**LESSONS LEARNED/RESULTS:** Four main trends appear (Fig 1). The first trend (T1 Fig1a; Paragominas Fazendas in Brazil) is characterised by a huge development of economical functions (exports), balanced by a strong environmental degradation and large increases in GHG emissions. The 2nd trend (T2 Fig1b; Fatick in Senegal, Dentiola and Diou in Mali, Marsa Mathrut in Egypt, and Paragominas traditional systems in Brazil), by the emergence of commercial livestock farming activities associated with a degradation of the living environment, erosion of biodiversity, and a rise in competition over natural resources. The 3rd trend (T3 Fig1c: Koumbia in Burkina, orontiéna in Mali, Widou and Kolda in Senegal, Highlands in Madagascar and Son La in Vietnam) by a more moderate evolution with an improvement in economic and social areas and a slight deterioration on environmental functions. The 4th trend (T4 Fig1d: Kanoula in Mali) is more dramatic with a regression of livestock functions in almost all areas.



Fig1a



Fig1b



Fig1c

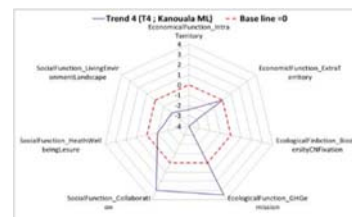


Fig1d

**Conclusions/Next steps:** This comparative approach of changes in livestock functions on a range of situations distributed in developing countries and over a long period (50 years), highlights a trend of overall improvement of the economic functions of livestock, accompanied by a degradation of functions in environmental and social areas, especially in the landscapes with high level of population density. For the future, the challenge would be to avoid a T3 - T2 - T1 pathway, where economic development prospers at the expense of the environment. The study will undergo detailed quantitative and diachronic analyzes. Such analyzes stress the need for long term livestock observatories to evaluate scenarios for the future of landscapes.