## Modelling bovine trypanosomosis spatial distribution by GIS in an agropastoral zone of Burkina Faso

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## Abstract

A Modelling exercise of the spatial distribution of Bovine Trypanosomosis prevalence in Sideradougou district Burkina Faso has been carried out by using spatial and statistical analysis together. Based on a comprehensive and geographically represented census of herds and farms in the area , more than 2000 bovines were randomly chosen and their blood sampled during the two courses of field surveys. Data on livestock farming practices were recorded for each farm. All data were mapped with GIS , which result has lead to generating new information on spatial constraints in the area.

Results from surveys were analysed and results on parasitological and serological prevalence were modelled using logistic regression. The model allows to identify and quantify risk factors. Furthermore the statistical model was reversed and applied back to the comprehensive farm population in the area. This method was useful enough to predict the serological and parasitological prevalence for each individual herd out of the sample , with regards to their livestock farming management patterns and spatial location. These prevalence predicted were new inputs to the GIS . They were represented taking into account daily movements of animals , which were modelled by GIS additionally. Maps of Spatial distribution of prevalence would illustrate specific locations at risk from an epidemiological viewpoint. It gives evidences that there are differences due to the characteristics of diagnostic methods, but it is also obvious that the hydrological network and land occupation patterns in the savannah-typed countryside are playing an important part when structuring a so-called Trypanosomosis Space.