SMALL Savannah : an information system for the integrated analysis of land use change in the Far North of Cameroon

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PROPOSITIONS

with the PhD thesis *"SMALL Savannah : An Information System for the integrated analysis of land use change in the Far North of Cameroon "*
by Eric Fotsing

1.
This thesis is an element in the growth from problem-oriented interdisciplinary frameworks towards a trans-disciplinary science, hinging around the concepts of integrated analysis and environmental sustainability.

2.
Land use patterns are the outcomes of actors' strategies-in-circumstances. In culturally diverse regions such as North Cameroon, the variability of strategies is often larger than that of land use. Therefore, any prediction of land use processes should integrate spatial analysis with a study of socio-cultural diversity.

3.
GIS is often seen as a tool to advance knowledge in more substantive fields like soil science, ecology or economics. It is more fruitful, however, to see GIS as an independent field of enquiry blending geography with computer science, and playing a prominent role in the emergence of a broader science of land use in which agent-based modeling also holds a key position.

4.
Deductive, multi-agent land use models can include such a wide range of factors and constraints that a multitude of explanations is available for any land use change. GIS-based, inductive models are more limited in range of factors and predictions but can be used well to hold the multi-agent models as close as possible to observed data.

5.
Tools such as remote sensing and GIS emerge in ivory towers far removed from the lives of actual land users. Further development of these tools and their underlying computer technologies now allow for democratization and participatory use, however, which is an option that should be actively invested in by governments and universities.

6.
The development of village-level knowledge, including literacy, ingenuity and institutions, can be built on one 100-dollar laptop per village. This does not require much hardware or software development anymore, and represents a more profitable and sustainable investment than providing 100 dollars of grain.

7.
Nomadism is an efficient and sustainable type of land use in the African drylands. New arrangements between nomadic and settled land users need to be designed and institutionalized in highly populated areas such as North Cameroon.

8.
The food balance of North Cameroon was saved during the last two decades by the large-scale appropriation of dry-season sorghum lands by urban producers. If the smallholders do not organize and intensify quickly, they will lose out on the next round of agricultural expansion, too.