



Living on landslides: land use on unstable slopes in a rural environment of the Rift flank west of Lake Kivu (DR Congo)

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Context of the study

- Landslides: widely studied because of the threat they represent for people, infrastructure, and land degradation
- Landslides may also be a source of opportunities: human settlements, agriculture or mining
- Yet, little is known about factors that influence landslide valorization

The objectives are to assess, based on the characteristics of landslides and risk perception of land users, the extent and modes of valorization and the degree of satisfaction in exploiting landslides



Data collection strategies and analysis

785 landslides
inventoried

Stratified sampling,
based on type of
movement, size and position on the rift flanks

70 landslides
selected

**Survey
questionnaire**

- Motivation regarding landslide valorization
- Differences in valorization inside and outside landslides
- Satisfaction with valorization

**Spatial
analysis**

- Land use classes (Pléiades, 2m)
- Differences in land use on landslides and the surrounding flanks

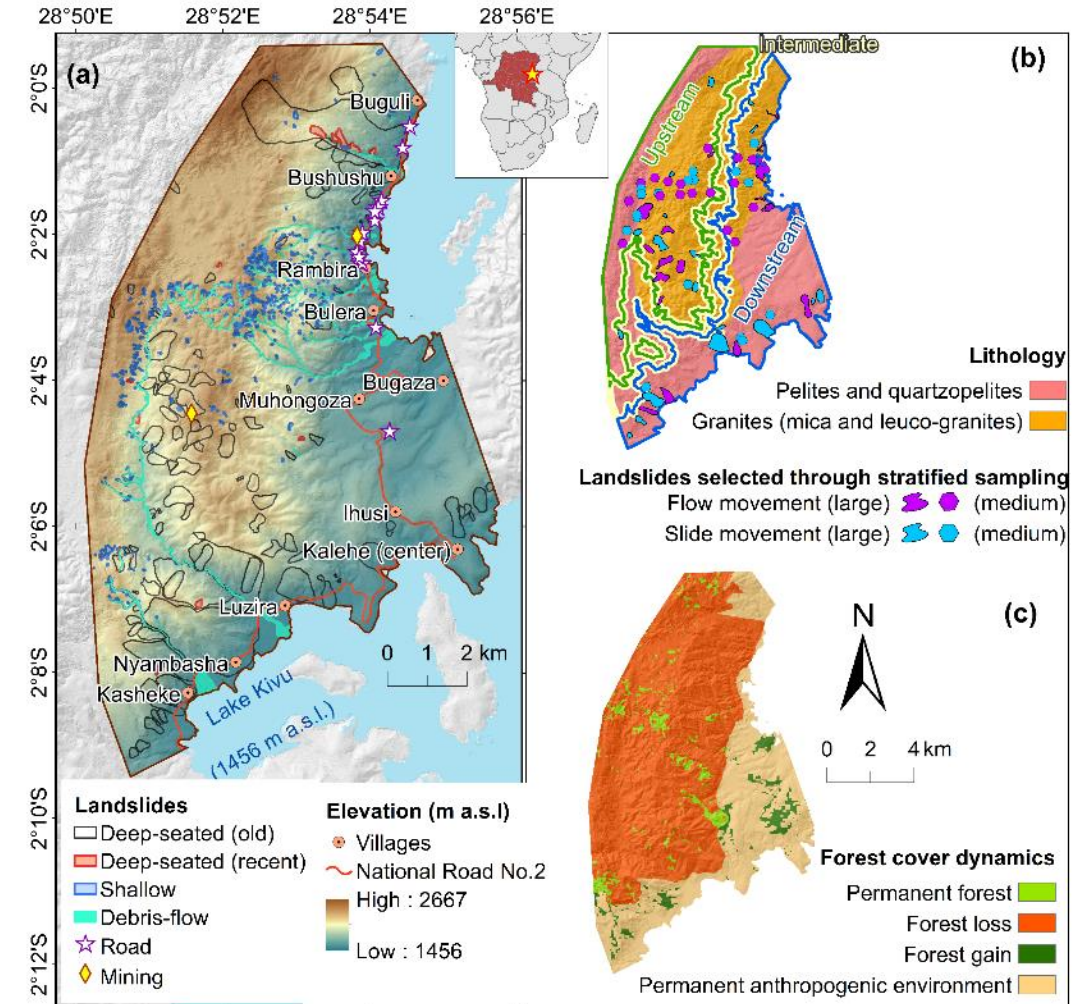
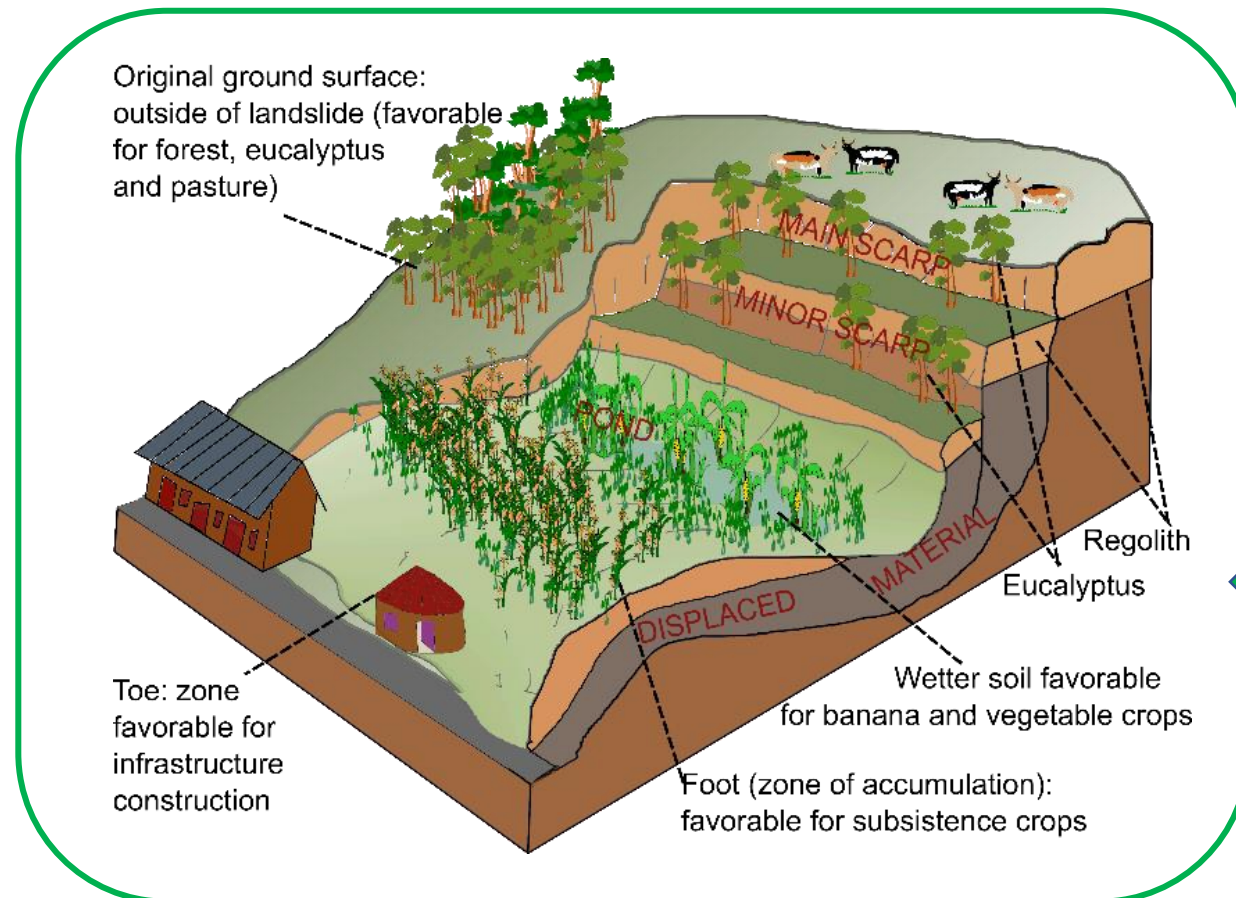


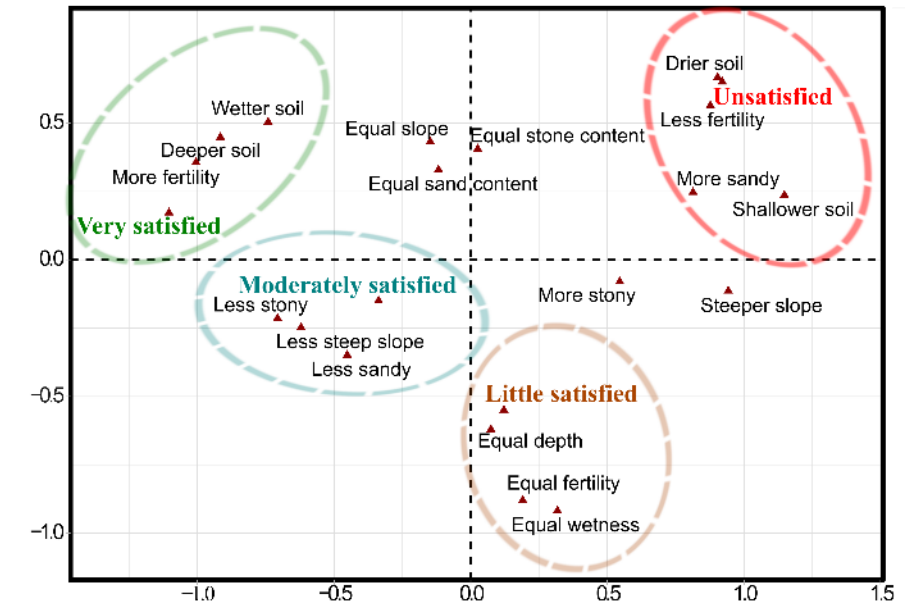
Figure: (a) Landslide inventory (b)Topographic position and lithology;
(c) Forest cover dynamics between 1955-58 and 2016

Knowledge about landslide and risk perception

- ❖ All farmers know what a landslide is
- ❖ Farmers perceived risk to be higher for recent landslides and those with flow movement



Land value in landslide and farmer satisfaction

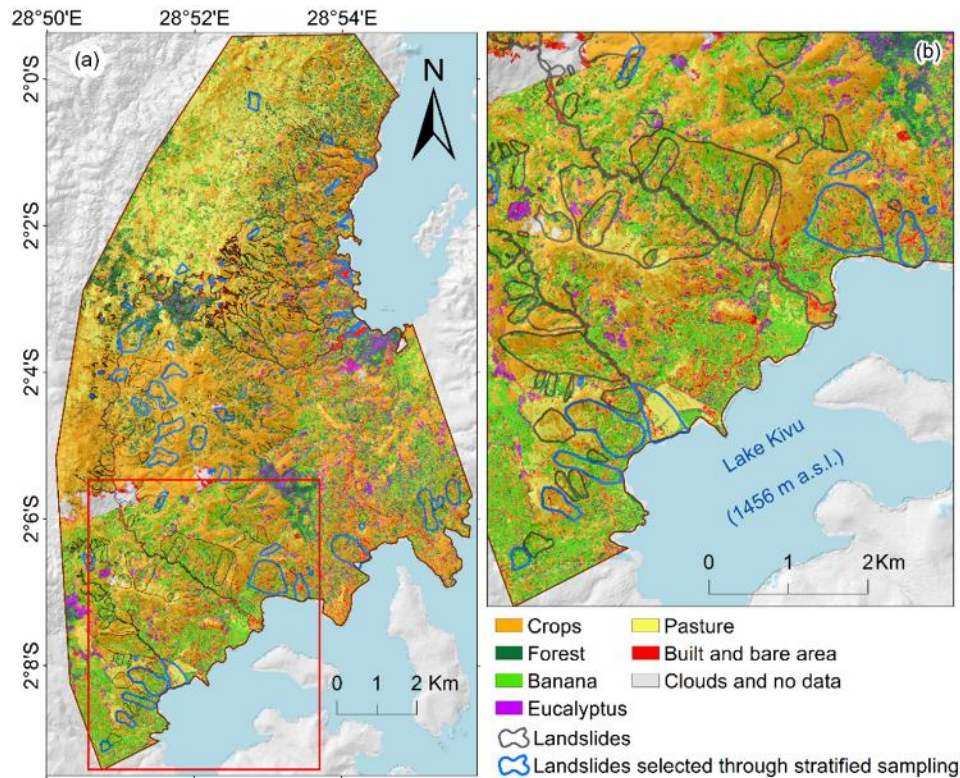


- ❖ High satisfaction results from the exploitation of wetter, deeper and more fertile soil in landslides than the adjacent flanks

Factors that increase the value of a plot on a landslide:

- (1) Soil characteristics: **fertile, humid** and **deep soil**
- (2) Lower slope: **less unstable**
- (3) Opportunity to **cultivate all year**
- (4) Soil favorable for **banana cropping**

Landslide valorization



- ❖ **Farmers adapt crop choices** to the characteristics of landslides
- ❖ **Landslide characteristics** induce a differentiation in land use

Discussion and conclusion

- ❑ **Large old deep-seated landslides** are more favorable to valorization than **shallow landslides**
- ❑ **Land use inside and outside landslides** is often different and conditioned by landslide characteristics
- ❑ **Human settlement on unstable slopes** would be justified because any future hazards are outweighed by the immediacy of the benefits
- ❑ **Better understanding of the reasons** for the settlement of rural populations on unstable hillslopes may help devise better risk mitigation strategies.



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