


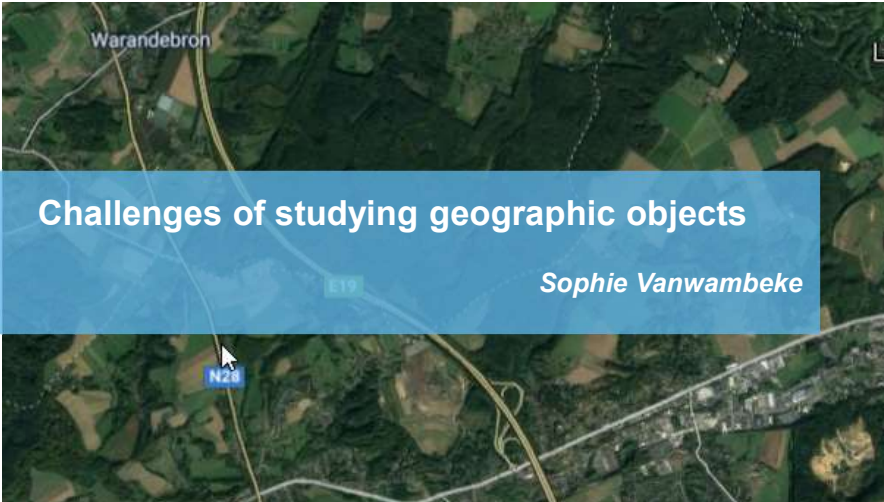
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Challenges of studying geographic objects

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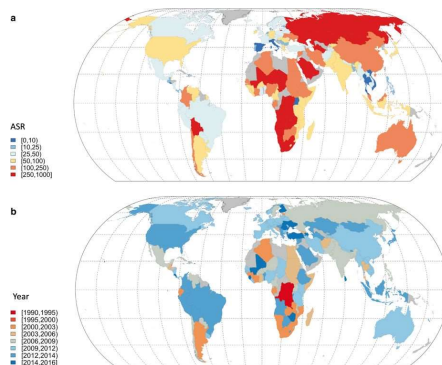


What are we really looking at?

- « Obvious » sources of uncertainty

- Currency of data
- Processing error propagation

- Less obvious sources of uncertainty...



Resolution and currency in the Gridded Livestock of the World

<https://doi.org/10.1038/sdata.2018.227>



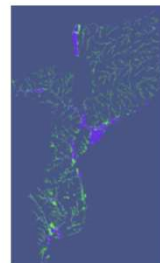
Complexity of geographic objects

- Many are difficult to define and separate from others (« vagueness »)

- Many zones of interest are at the interface between objects (eg: the river to the flood plain)



Froment, 2019



JRC vs. GAR flood risk

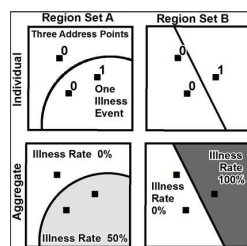


Data resolution vs. Process scale

- What is the scale at which a particular process is taking place?

i.e. do we have a problem with aggregate data?

- Is the scale at which data is available appropriate?



Wikipedia.org

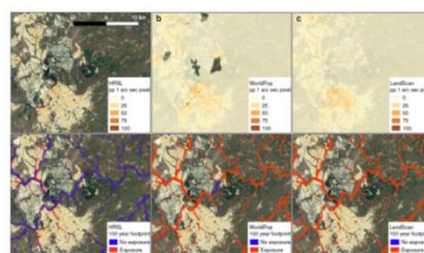


Fig. 2 Example of Exposure Mapping in Malawi. Example of population data and generated exposure maps for Lilongwe city, in Malawi. a, b, c display the HSL, WorldPop, and LandScan™ population data sets, respectively. d, e, f show the population located in the 100 year floodplain for each demographic data set, respectively.

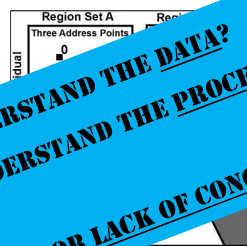
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<https://doi.org/10.1038/s41467-019-09282-y>

Data resolution vs. Process scale

- What is the scale at which a particular process is taking place?

AS A (SPATIAL) DATA USER, DO WE UNDERSTAND THE DATA?
AS A (SPATIAL) DATA USER, DO WE UNDERSTAND THE PROCESS WELL ENOUGH?
MARKUS REICHSTEIN: « LACK OF DATA? OR LACK OF CONCEPT? »



Wikipedia.org

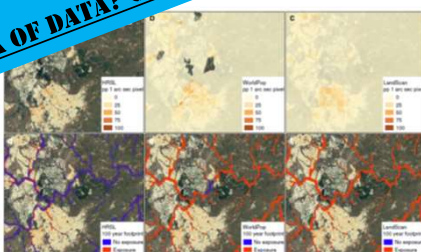
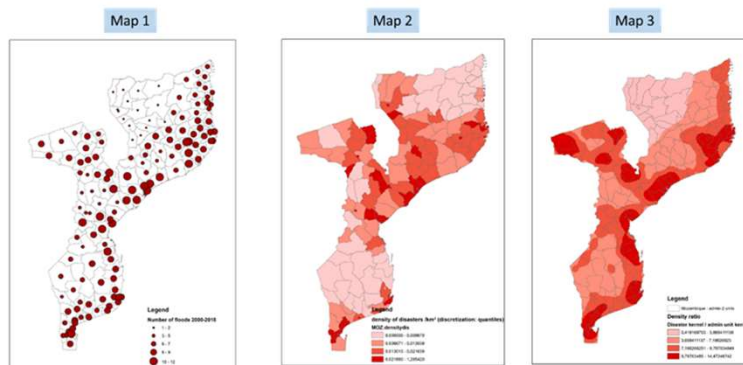


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EM-Dat recorded floods, 2000-2016, Mozambique

- ↗ detail ↘ « uncertainty »
- Vagueness of geographic objects persists
- New opportunities for understanding (spatial) processes
- Data are keyholes – but of what sort?

Challenge : Data are keyholes

Risk = hazard * exposure * vulnerability
 Risk of TBD = abundance of infected ticks * human exposure to tick infested environments * use of protection measures

