The democratisation of humanitarian mapping: insights into the MapSwipe app and data quality

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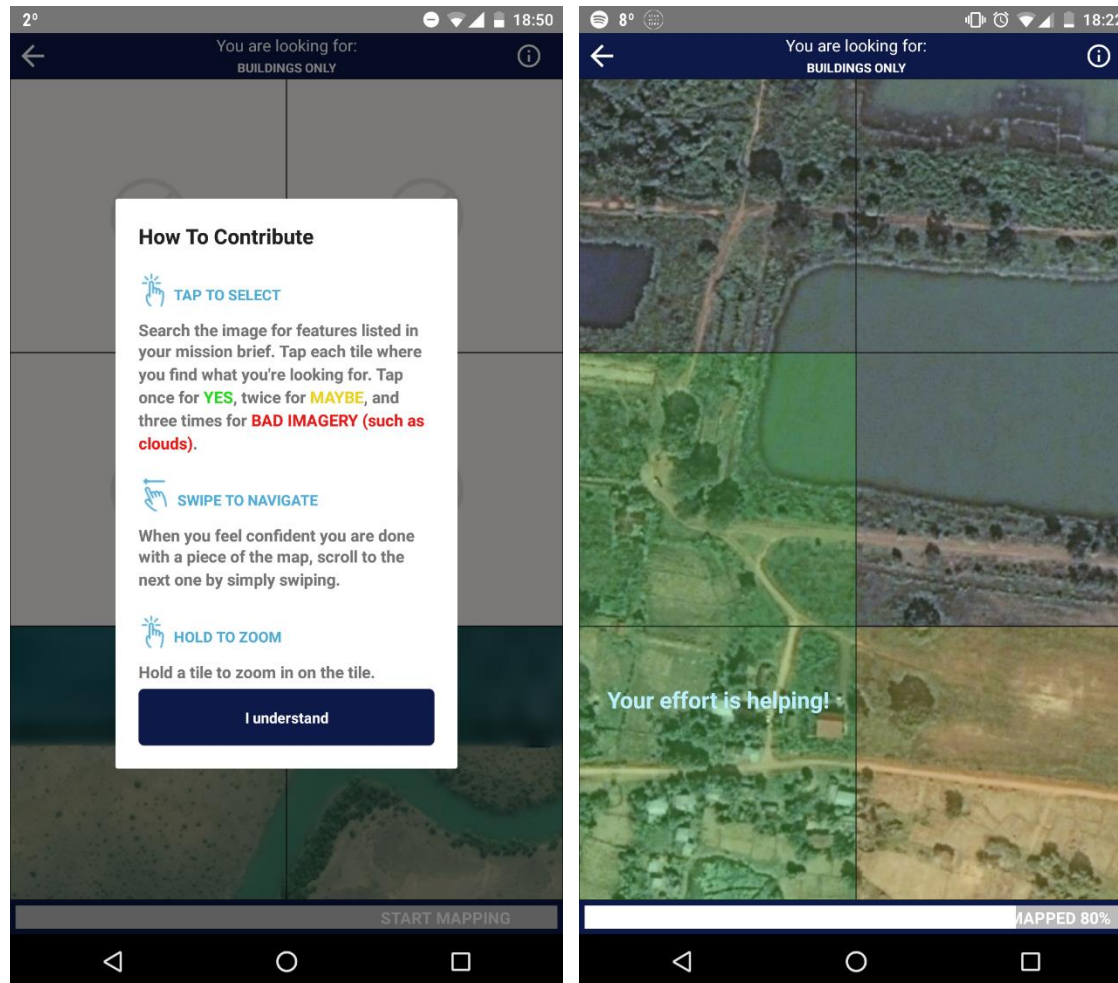*GIScience Research Group*

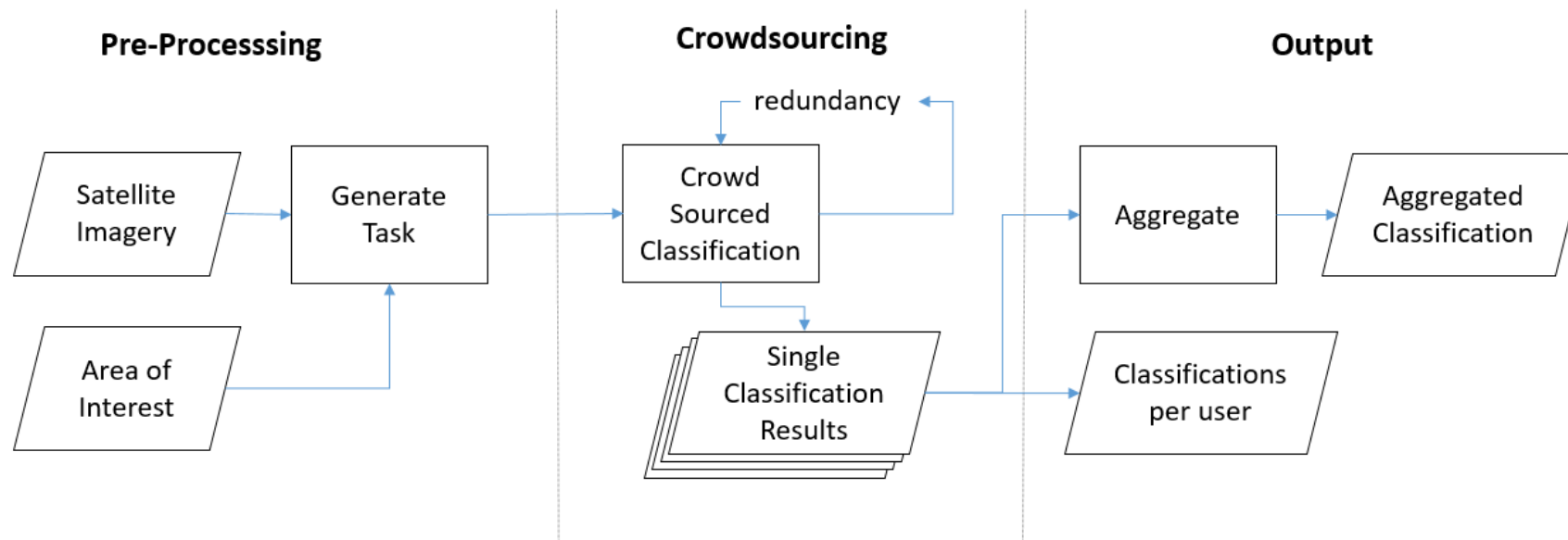*Heidelberg University*

The MapSwipe App

The MapSwipe workflow

Albuquerque, J., Herfort, B., & Eckle, M. (2016). The Tasks of the Crowd: A Typology of Tasks in Geographic Information Crowdsourcing and a Case Study in Humanitarian Mapping. *Remote Sensing*, *8*(10), 859. https://doi.org/10.3390/rs8100859
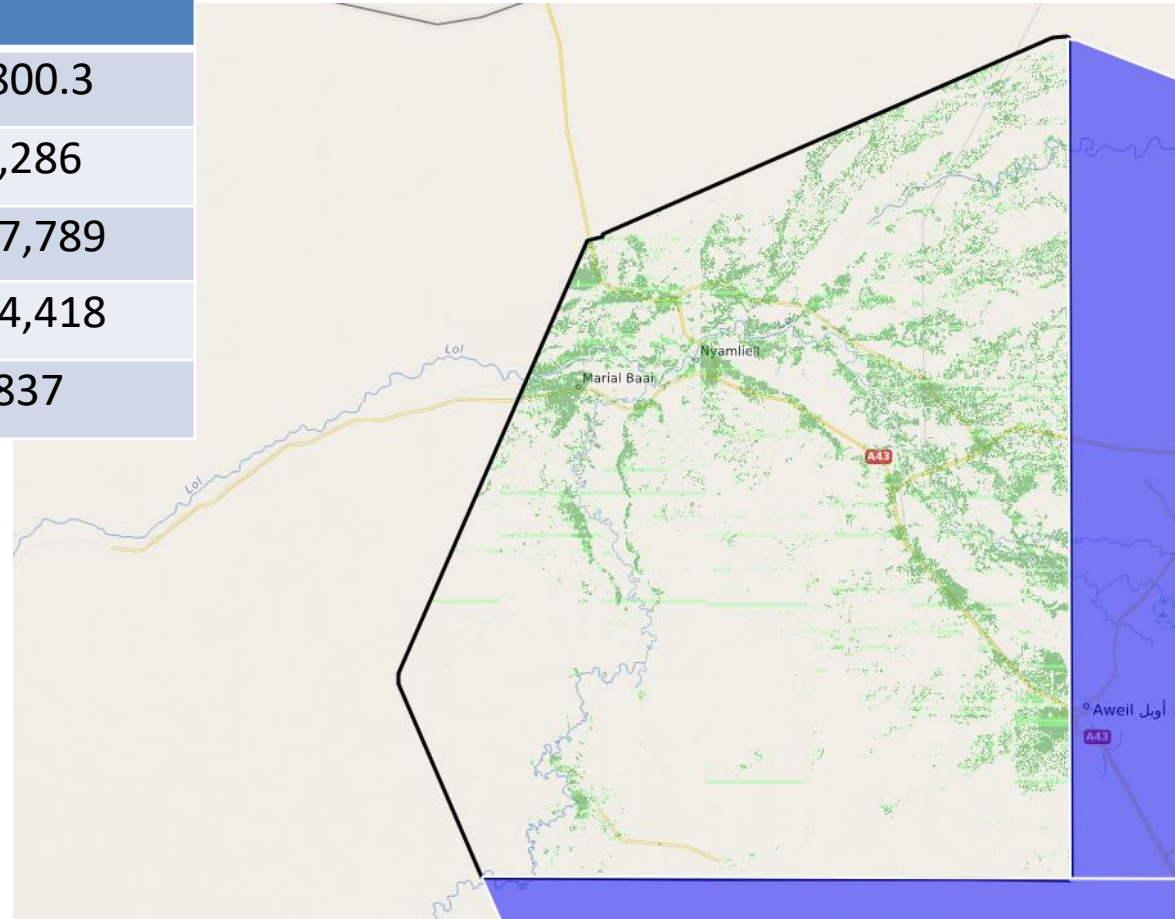
Case study: Madagascar

Name	Madagascar 1
Area (km^2)	6270.5
Groups	1,388
Tasks	278,688
Contributions	989,193
Users	867
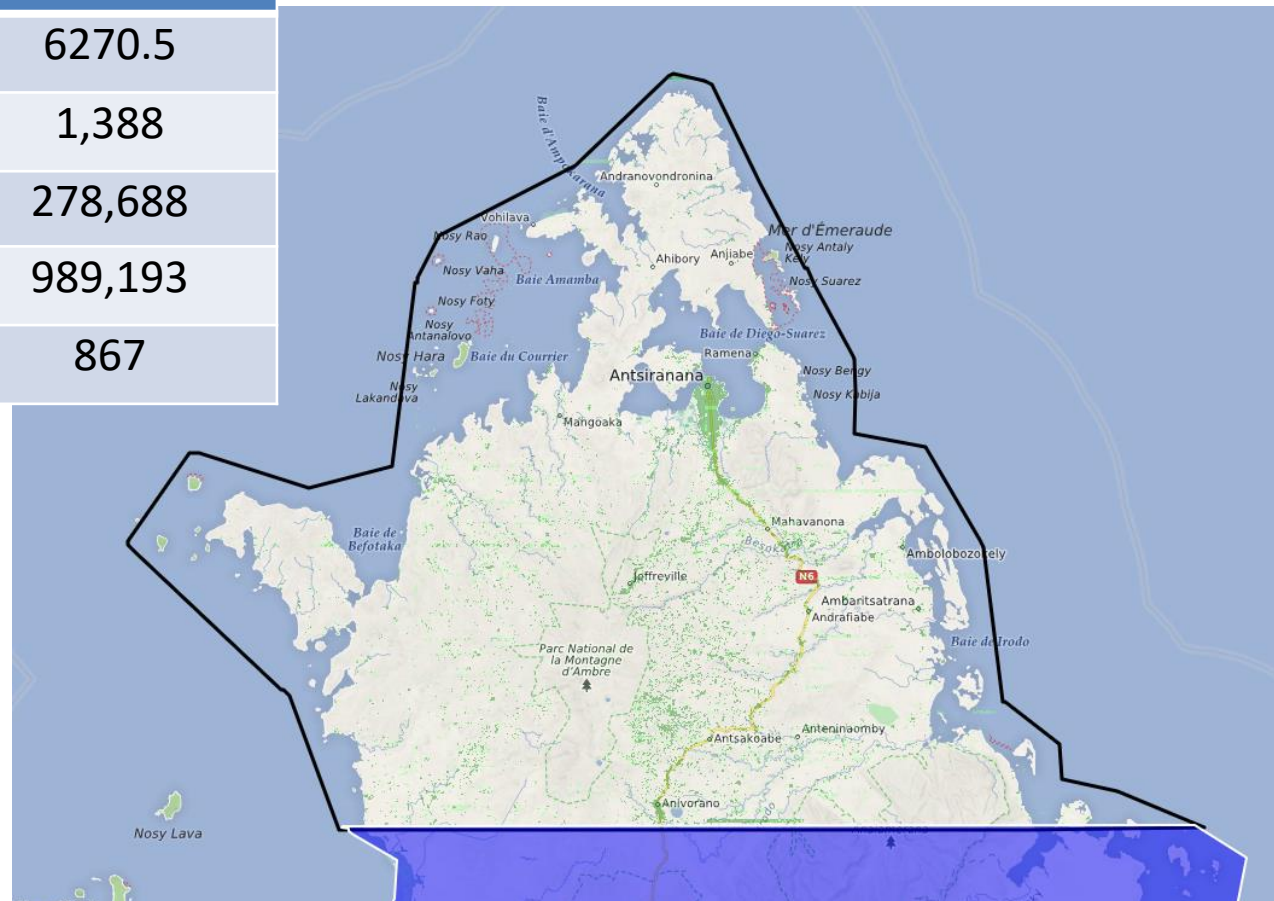
Case study: South Sudan

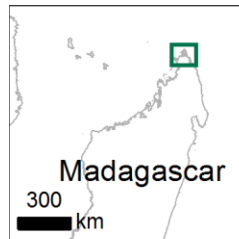| Name	South Sudan 1
Area (km²)	5800.3
Groups	1,286
Tasks	257,789
Contributions	874,418
Users	837

Inter-rater reliability per group

Madagascar
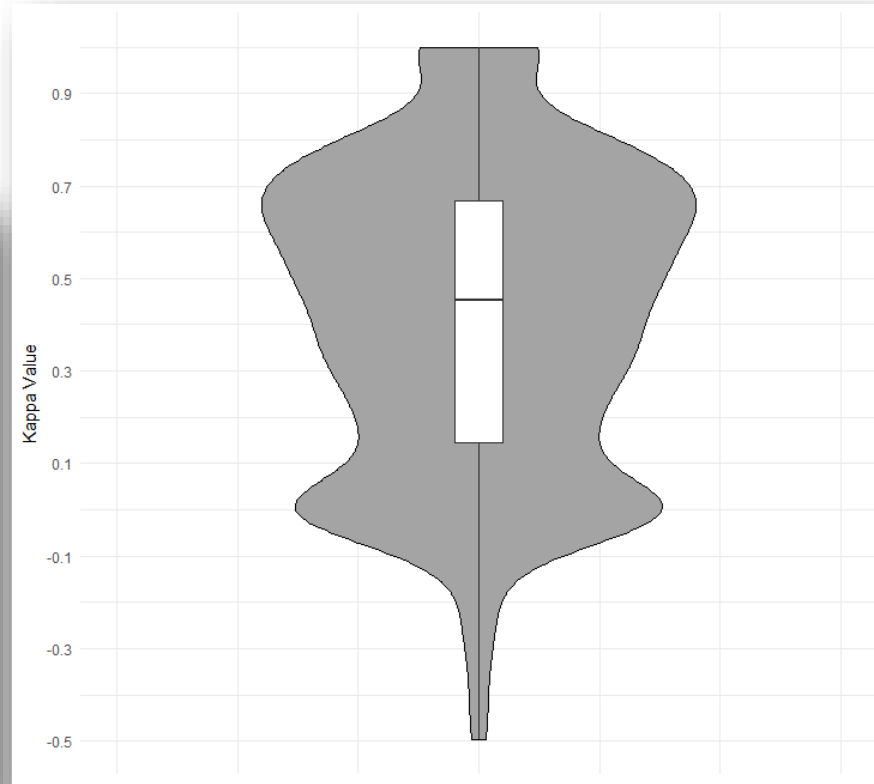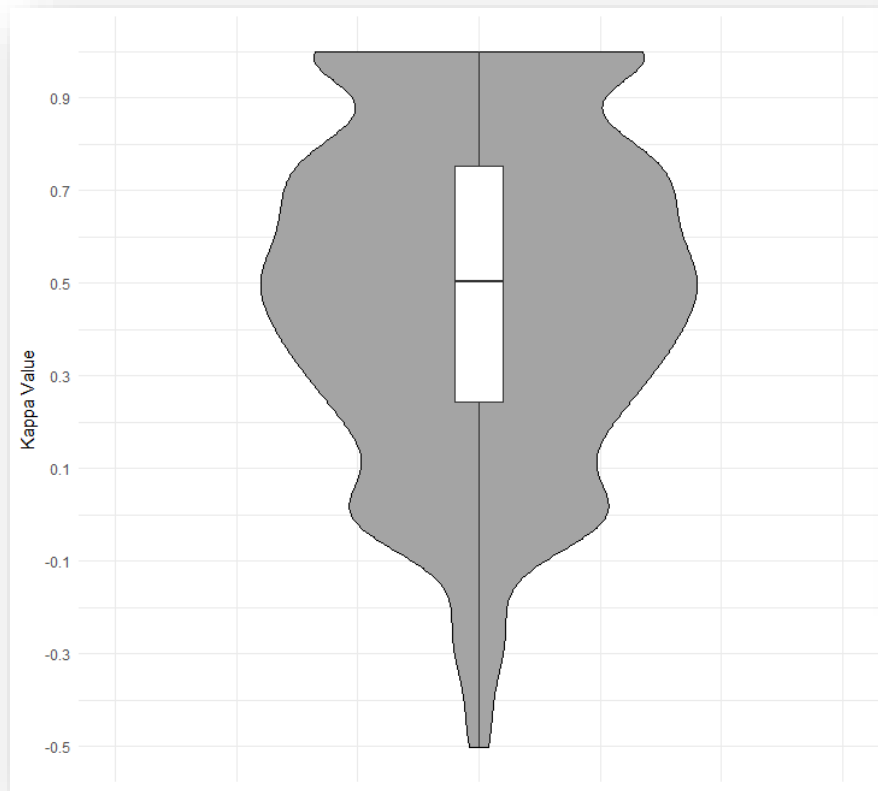
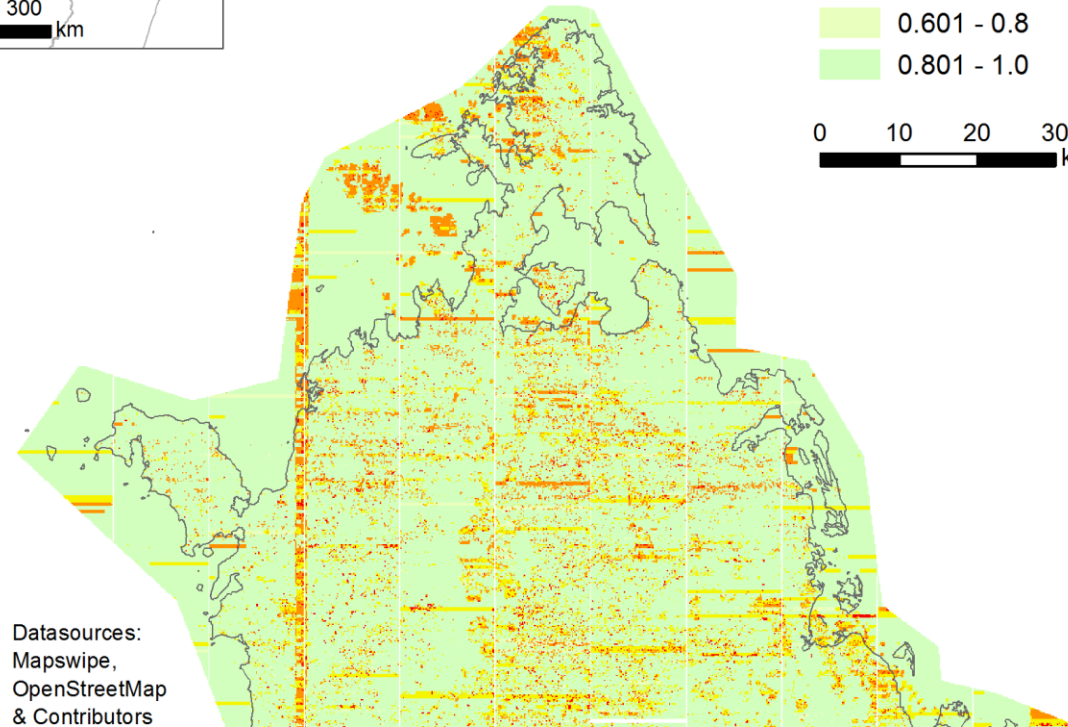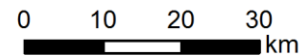South Sudan

Spatial distribution of agreement per task

Moran's I:0.508
Z-Score: 377.488
P-Value: 0.00

Madagascar

300 km

Agreement

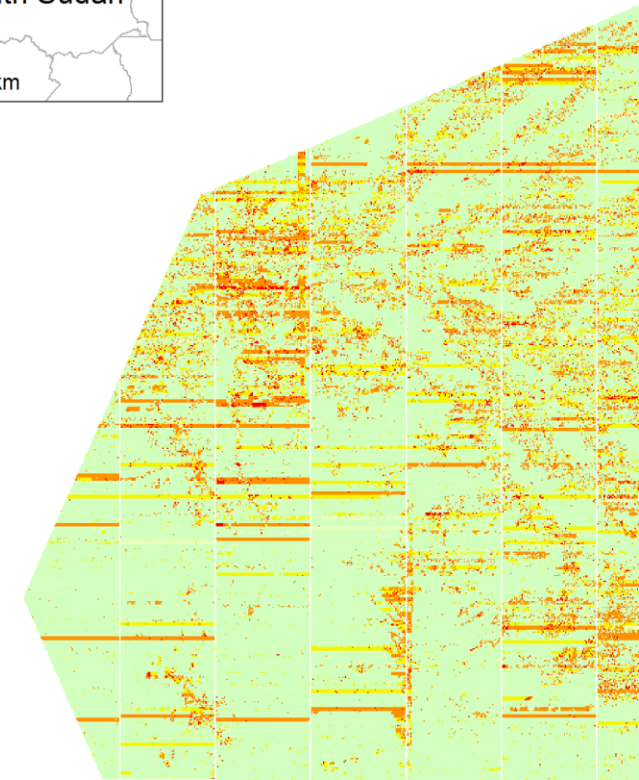|	
🟥	0.000 - 0.2
🟧	0.201 - 0.4
🟨	0.401 - 0.6
	0.601 - 0.8
	0.801 - 1.0

0   10   20   30
km

Moran's I: 0.442
Z-Score: 244.408
P-Value: 0.00

South Sudan

300 km
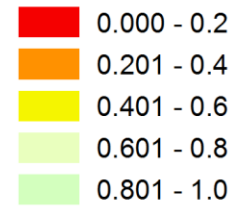
Datasources:
Mapswipe,
OpenStreetMap
& Contributors

Distribution of different cases of disagreement

| Case	Name	Madagascar		South Sudan	
		#	%	#	%
(a)	**"Yes-No"**	9,439	**18.3**	23,098	**38.9**
(b)	"Yes-Maybe"	849	1.6	1,498	2.5
(c)	"Yes-Bad"	601	1.2	661	1.1
(d)	**"No-Maybe"**	9,230	**17.9**	11,643	**19.6**
(e)	**"No-Bad"**	24,257	**47.0**	14,969	**25.2**
(f)	"Maybe-Bad"	1,134	2.2	482	0.8
(g)	"other"	6,077	11.8	7,047	11.9
	total	51,587	100	59,398	100

Spatial distribution of different cases of disagreement
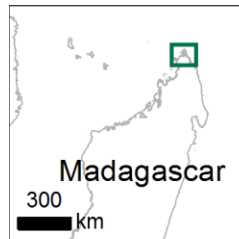
Cases
- Other
- Yes - Maybe
- Yes - Bad
- No - Yes
- No - Maybe
- No - Bad
- Maybe - Bad

Madagascar
300 km

South Sudan
300 km

0 10 20 30 km
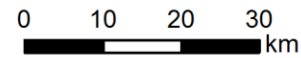
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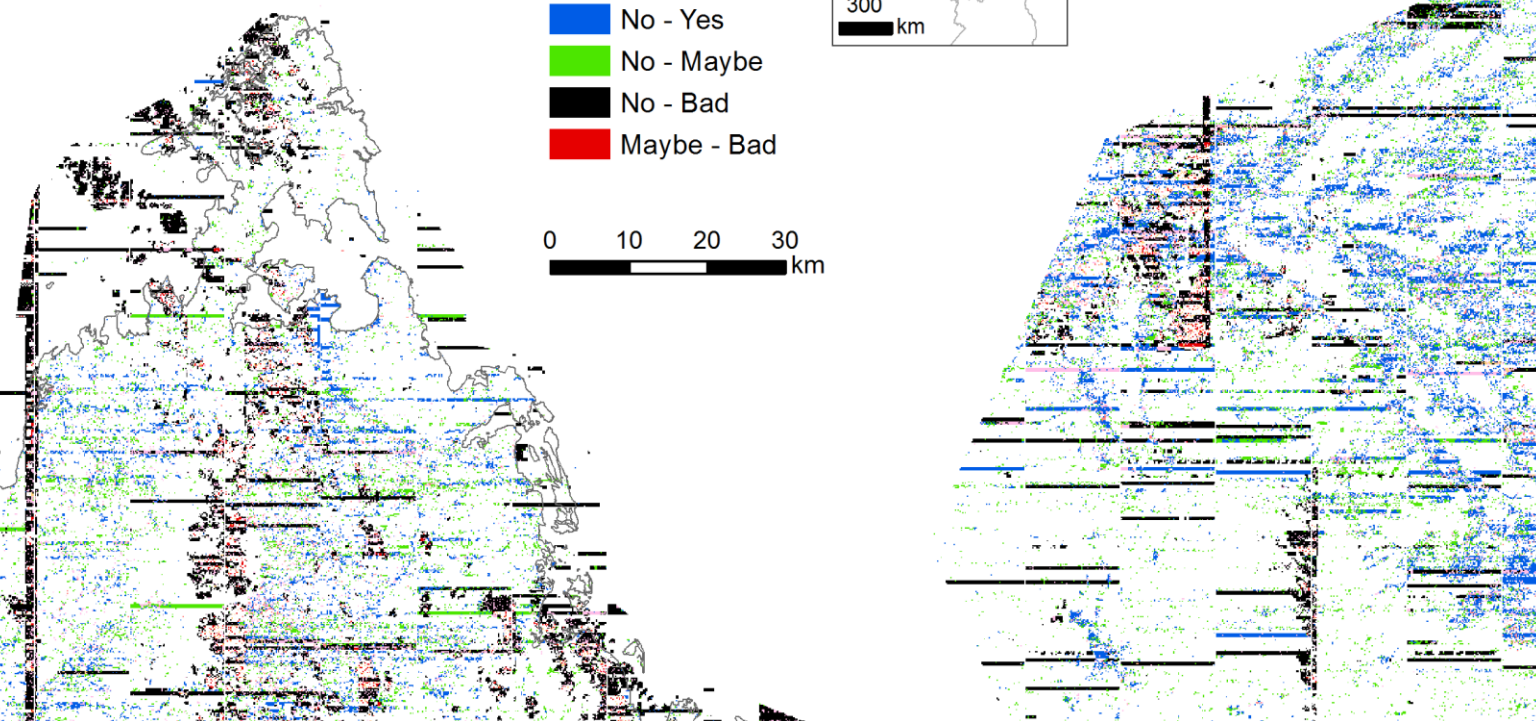
Future work

- Extend analysis for all MapSwipe projects (> 50 projects)
- Derive further intrinsic quality indicators
- Update MapSwipe tasks dynamically using agreement among volunteers
  - Low agreement → more users
  - High agreement → finish task
- Combine MapSwipe data and automated approaches (DeepVGI project)

Thank you for the attention.
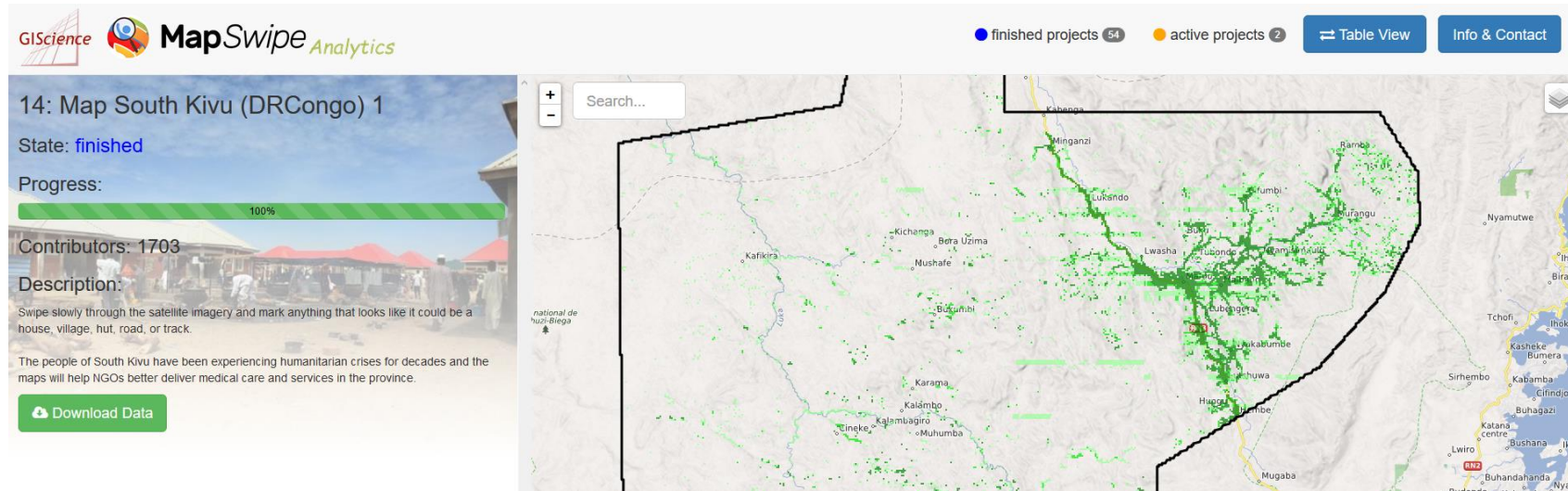
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