ExCiteS | Extreme Citizen Science

UCL

Developing appropriate data collection and visualisation tools for communities with limited literacy

Sapelli

Marcos Moreu

MPhil/PhD Student

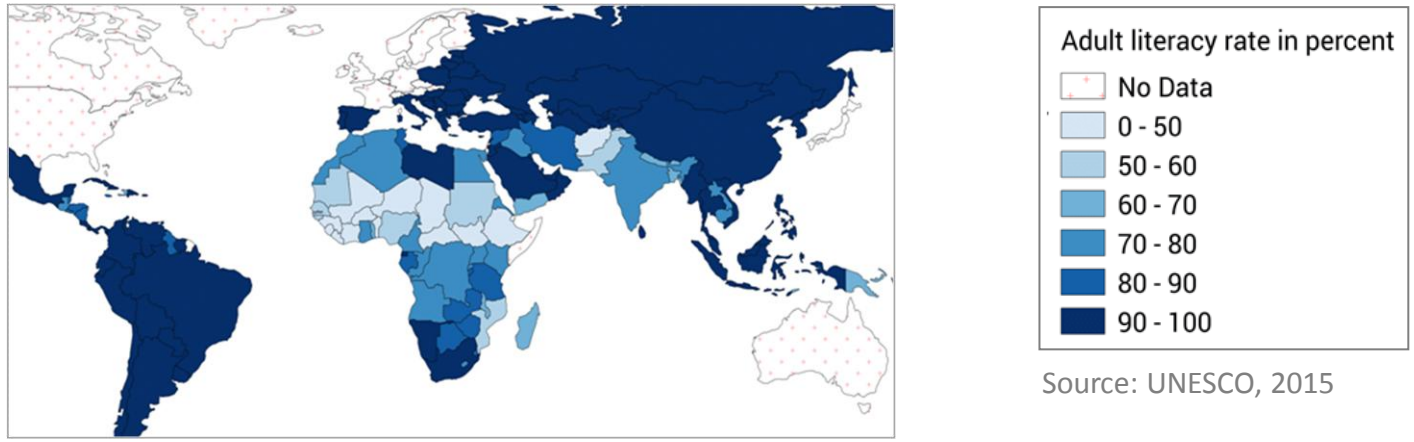
European Research Council

This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No 694767)

ExCiteS research group - participants

- Most of the communities we work with:
  - have **low levels of literacy** (both print and digital).
  - are also often **politically and economically marginalised**.

- Our work has often focused on tackling the specific issues that these communities face, and helping to put **protocols** in place that **protect** and **empower** the people who end up using the tools we **co-create** with them.



Source: UNESCO, 2015

ExCiteS research group - projects

- Illegal logging activity in the **Congo**
- Illegal poaching in **Cameroon**
- Illegal grazing and conservation in **Namibia**
- Water scarcity in **Israel** and **Palestine**
- Climate variation in **Ghana**

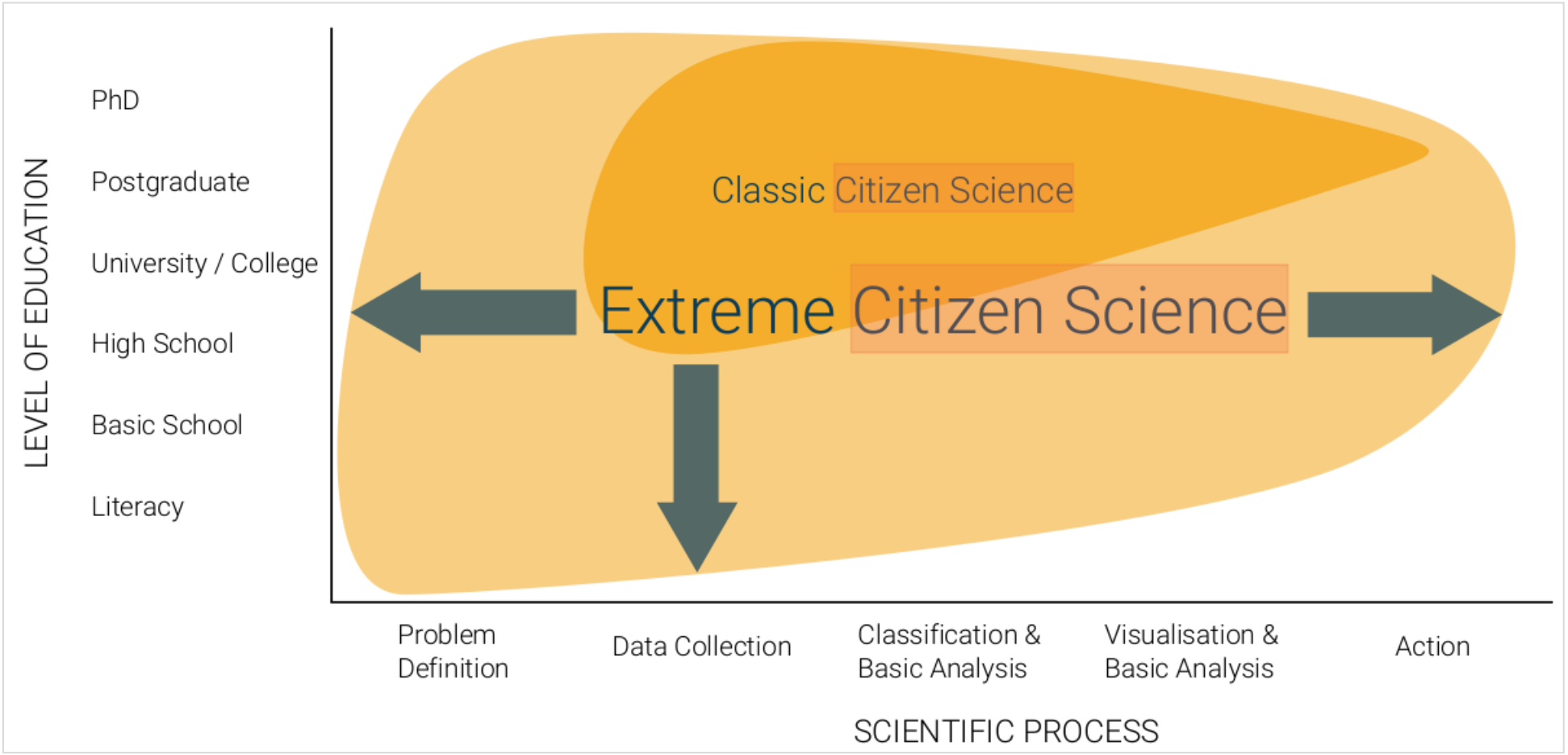
- In **Brazil,** growth of informal settlements, and hunting and fishing practices in the Amazon
- In **Kenya**, farming challenges in EMC county, and plant species distribution in Maasai's land
- Air quality monitoring and wheelchair user accessibility around London, **UK**

Citizen Science and Extreme Citizen Science

Citizen science is understood as **scientific activities** in which **non-professional scientists** ('citizens') participate in data collection (and sometimes data processing, by supplying brain or computing power) within a scientific project (Haklay, 2013).

Extreme Citizen Science is defined as a situated, **bottom-up** practice that takes into account **local needs**, **practices** and **culture** and works with broad networks of people to design and build new **devices** and **knowledge** creation processes that can transform the world (ExCiteS group, 2017).

Citizen Science and Extreme Citizen Science

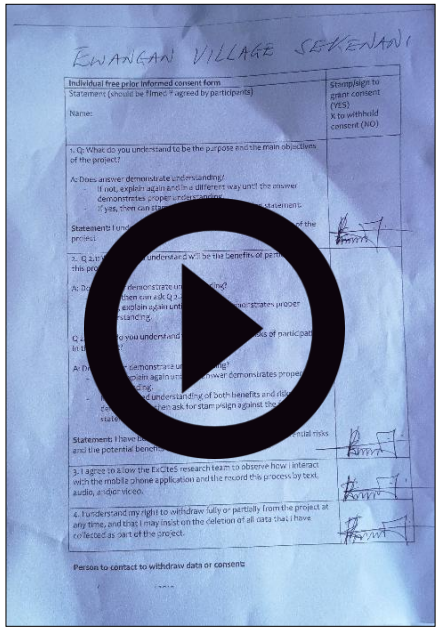


Boundaries of classic and Extreme Citizen Science (Haklay, 2013)

Free, Prior Informed Consent

A process that consists of **informing** the affected persons about planned **activities** and their **impacts** – both positive and negative – and **verifying** that the information provided has been **understood**, before explicit consent can be negotiated (Lewis, 2012).

- What is the purpose and main objectives of the monitoring and reporting project?
- What are the risks and benefits of the project?
- Who should have access to the data and what can they do with it?
- Can those who take part withdraw? If so, how can these measures be put in place?

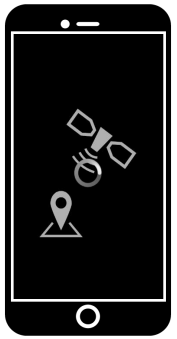


User-Centered Design

User-Centred Design (UCD) approach, or Participatory approach, focuses on the **users**, their **experiences** and their **concerns** (Preece et al., 2002).

- The role of the **designer** is to:
  - **Understand** and **capture** user needs and goals
  - **Design** appropriate interfaces
  - **Evaluate** the usability of the product
- The role of the **user** is to:
  - Provide, in **every stage** of the development, **insights** that drive the design decisions being made
  - **Evaluate** the suggested solutions according to the degree they satisfy their needs and goals (Saffer, 2009)

Technology



Sapelli Collector

GeoKey Server

Community Maps Visualisation

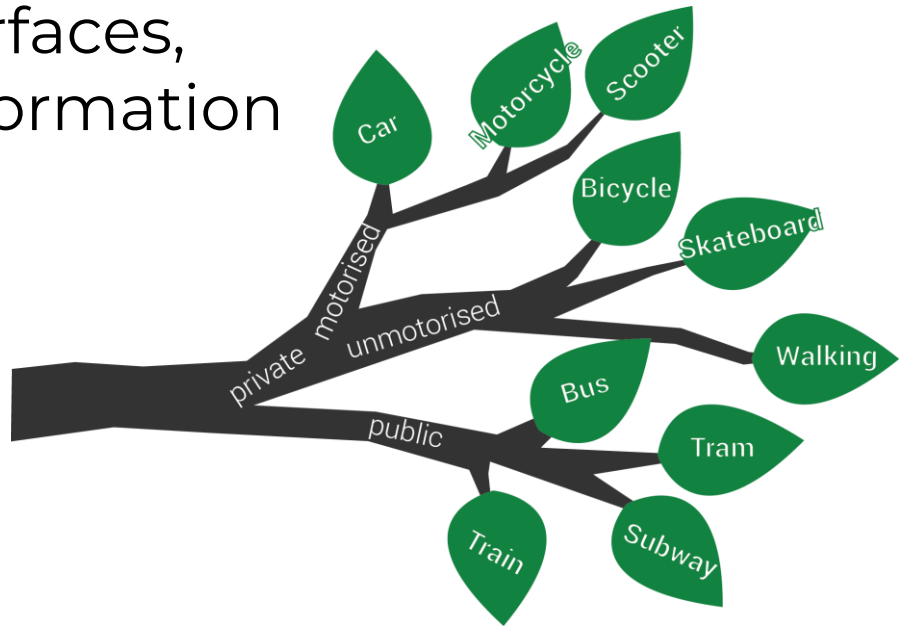
ExCiteS
Extreme Citizen Science

Mapping for Change

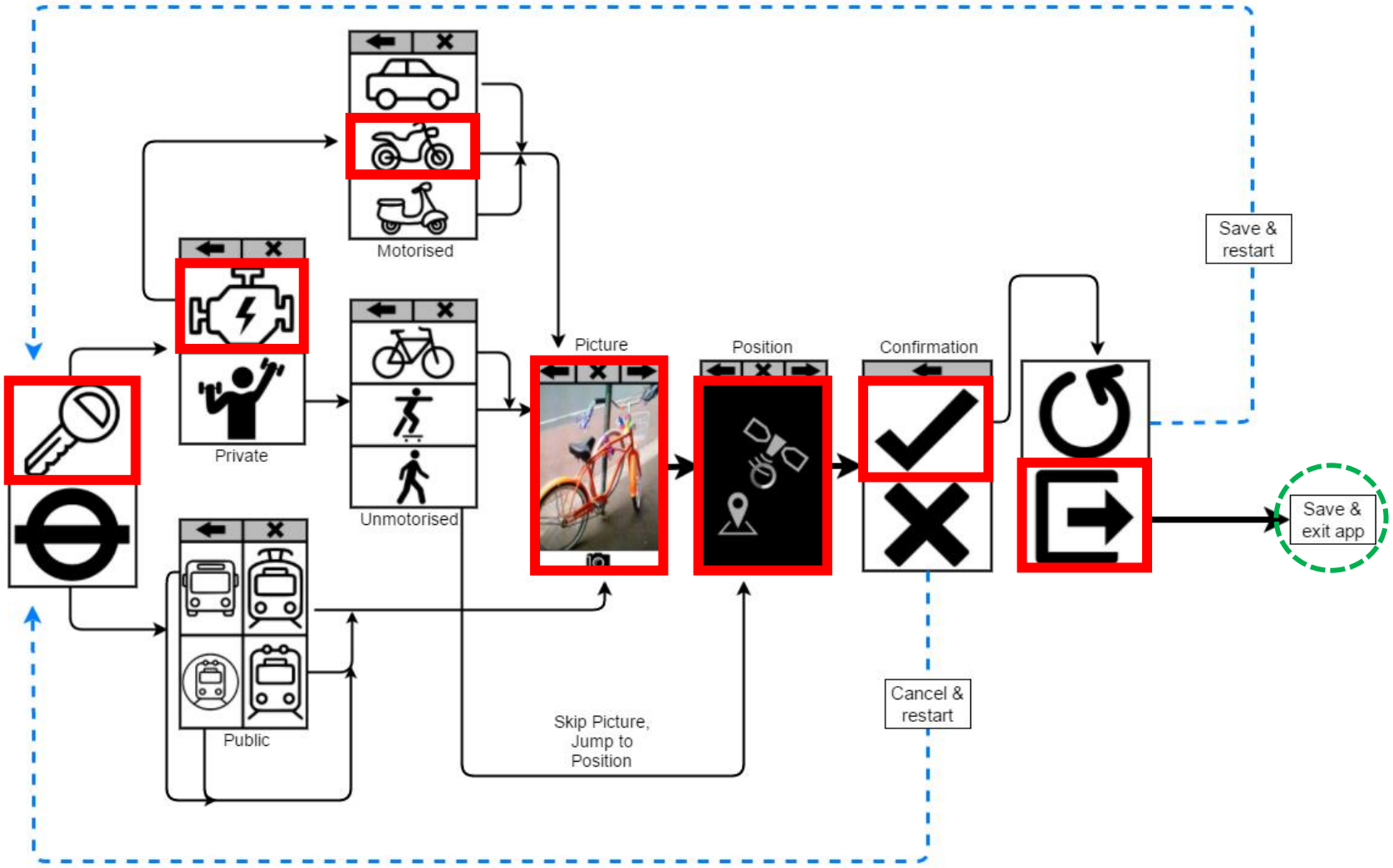
Sapelli

- Sapelli is a **mobile data collection and sharing platform** designed primarily (yet not exclusively) for non-literate or illiterate users with little or no prior ICT experience.

- Conceptually, Sapelli is like an empty and customisable **decision tree** that allows to easily design interfaces, the navigation flow, and how the information is transmitted and shared.

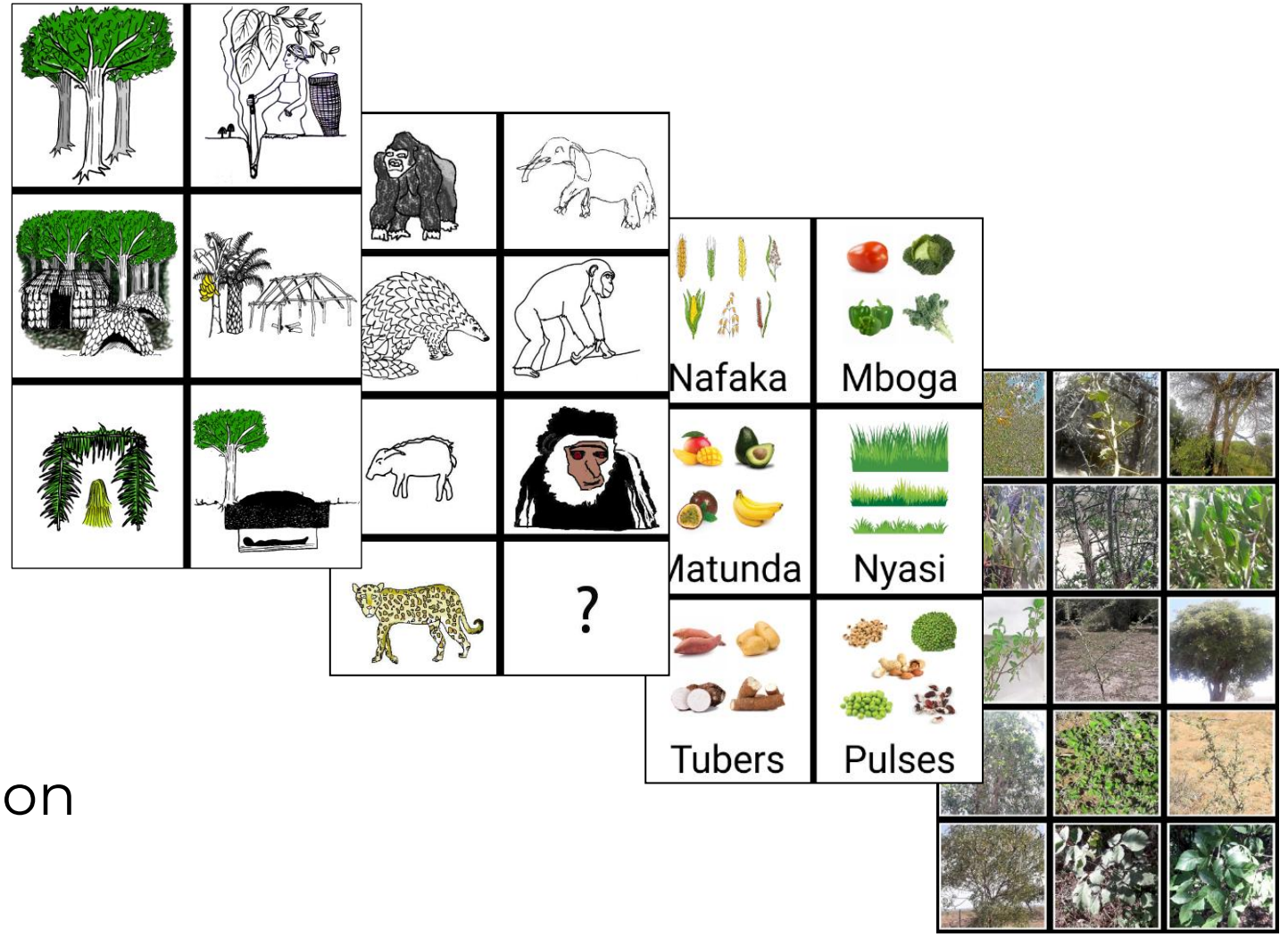


Sapelli

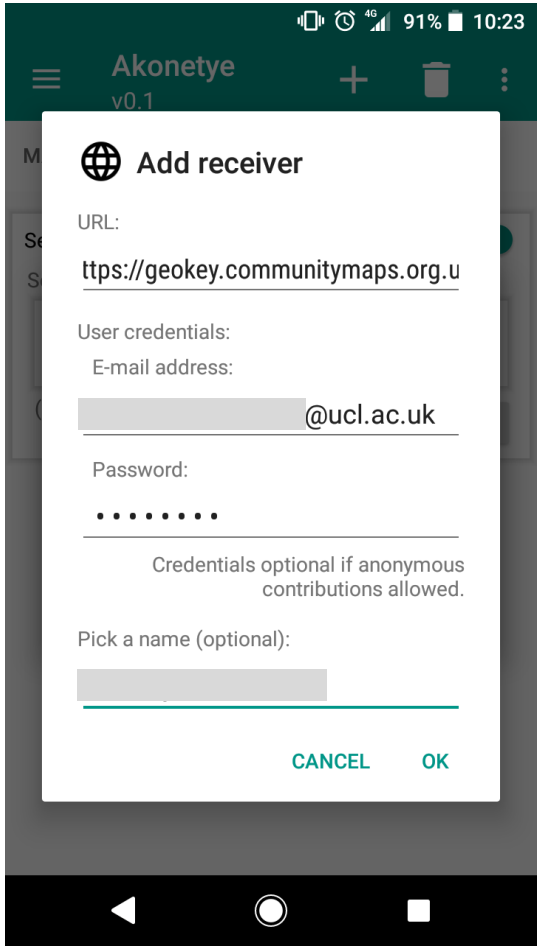

Motorised
Private
Unmotorised
Public
Picture
Position
Confirmation
Save & restart
Save & exit app
Cancel & restart
Skip Picture, Jump to Position

Sapelli

- Illegal logging
- Illegal poaching
- Farming
- Plant species distribution



GeoKey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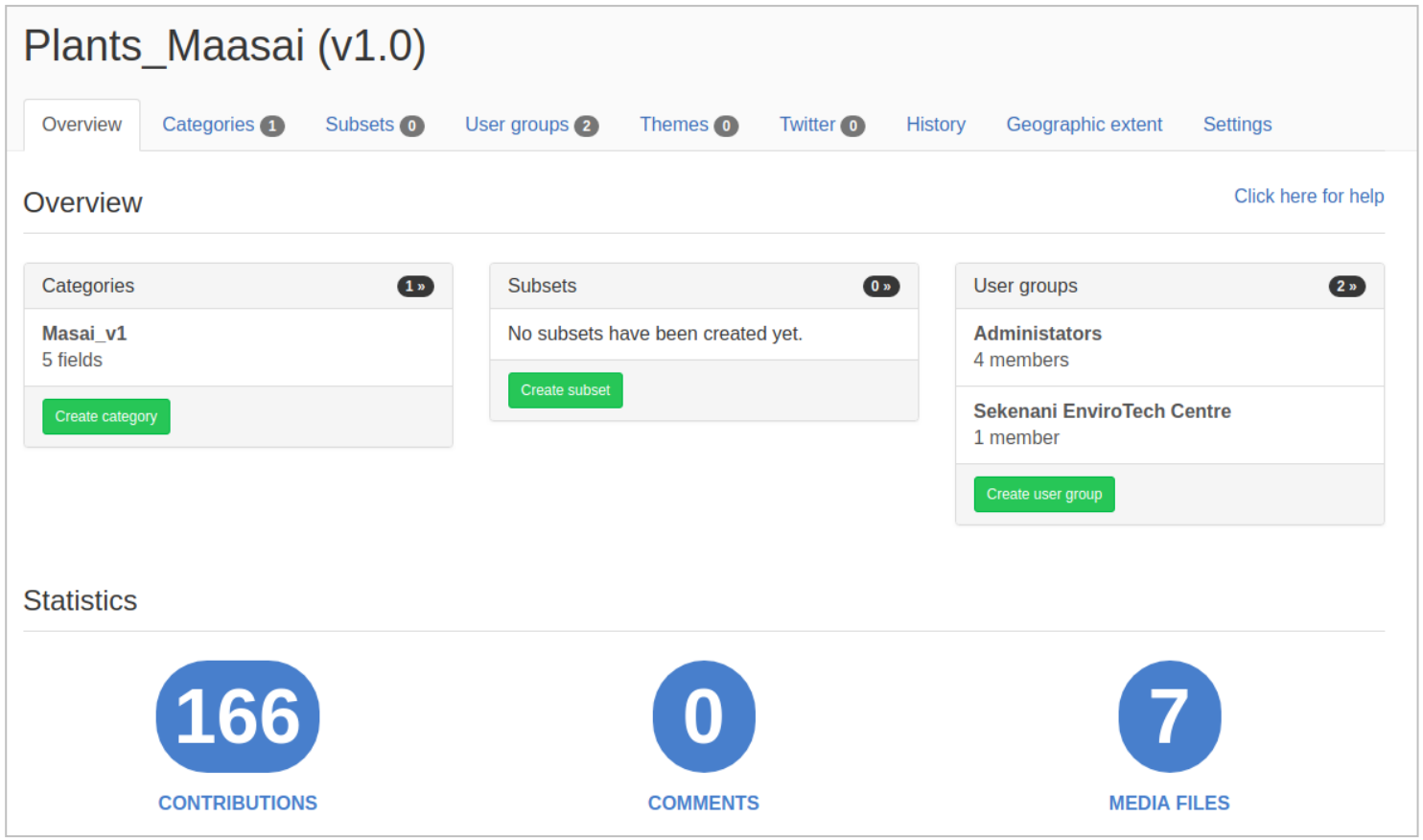
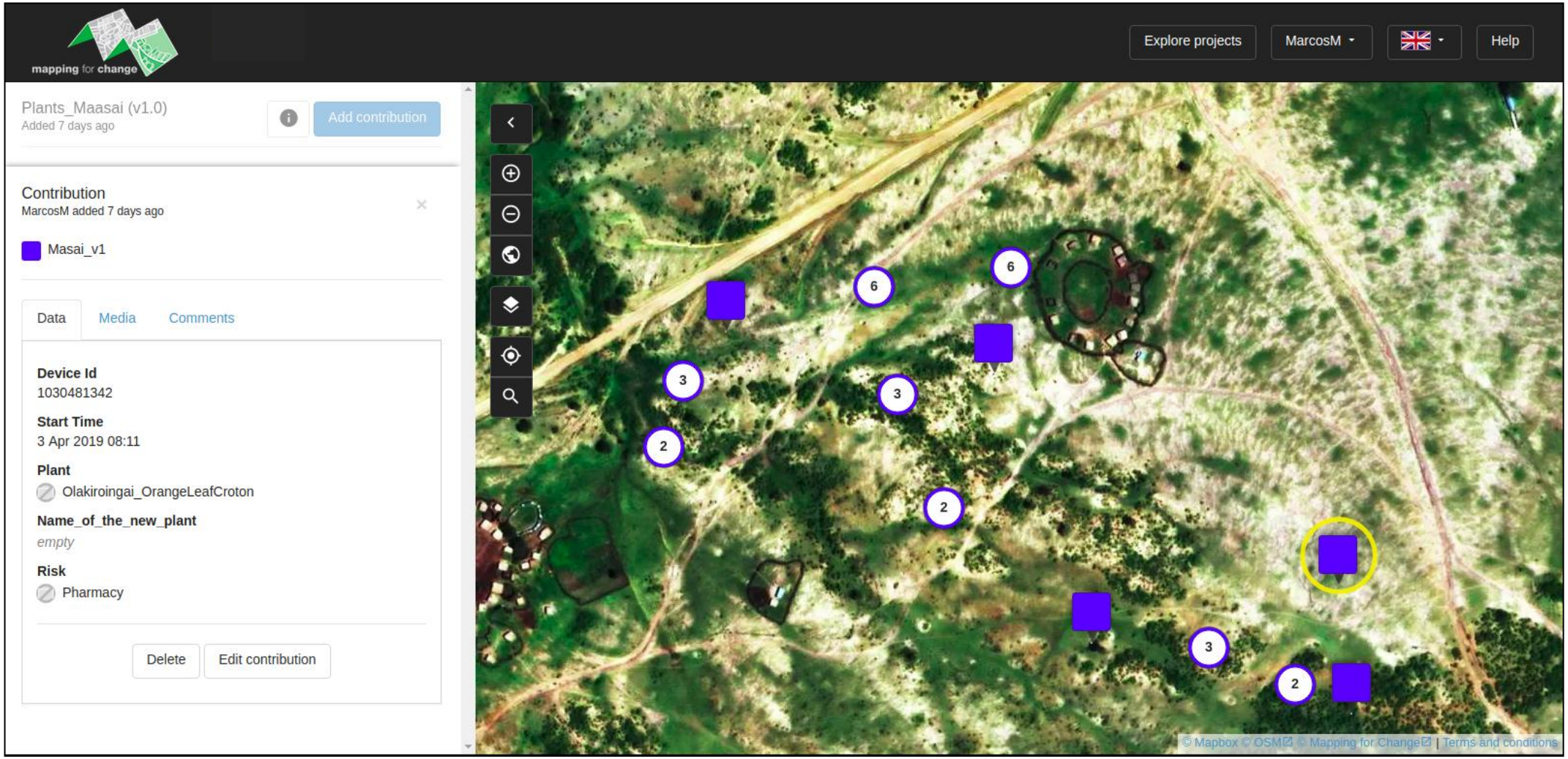
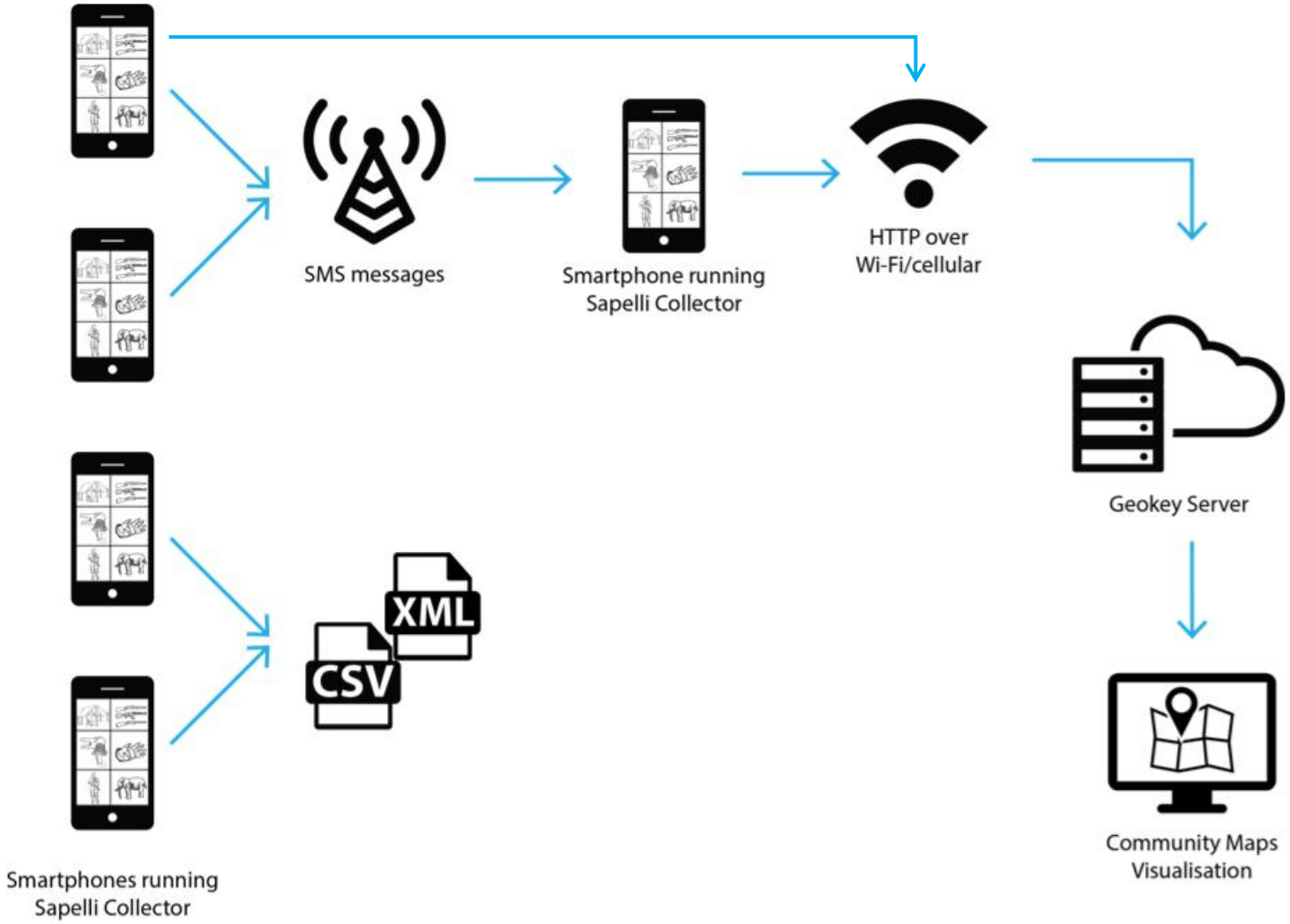

Plants_Maasai (v1.0)
Overview
Categories 1
Subsets 0
User groups 2
Themes 0
Twitter 0
History
Geographic extent
Settings
Overview
Click here for help
Categories 1 »
Masai_v1
5 fields
Create category
Subsets 0 »
No subsets have been created yet.
Create subset
User groups 2 »
Administators
4 members
Sekenani EnviroTech Centre
1 member
Create user group
Statistics
166
CONTRIBUTIONS
0
COMMENTS
7
MEDIA FILES

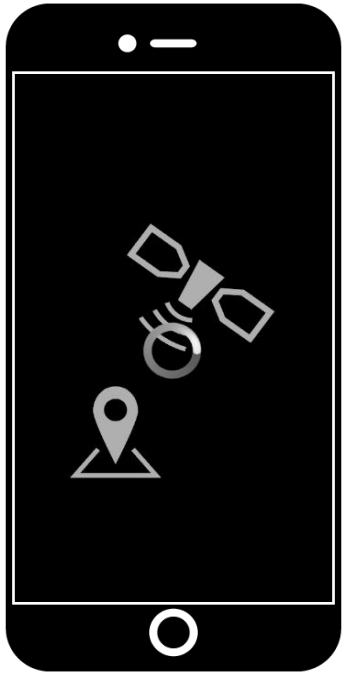
Community Maps



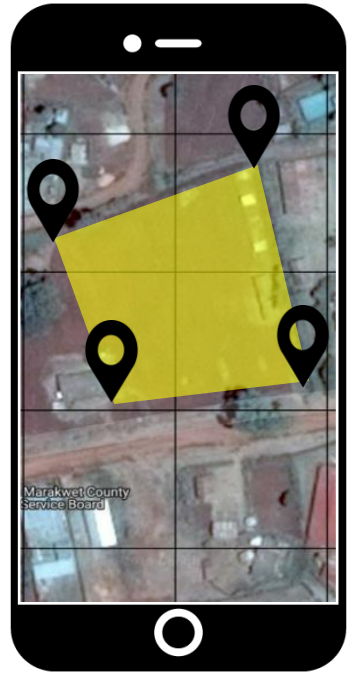
Data transmission



Evolving Sapelli



Point data collection



Point & area data collection
& visualization

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Thank you!

Questions?

marcos.moreu.18@ucl.ac.uk

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