



GEO INDIGENOUS ALLIANCE

Titus Letaapo

**CO-FOUNDER OF THE GEO
INDIGENOUS ALLIANCE**

Indigenous coastal challenges



1

Climate change

2

Land ownership

3

Illegal fisheries

EO for Indigenous Peoples

1

Resource Management

2

Disaster Preparedness

3

Sustainable Development



Challenges in Accessing EO data

A person in a dark suit stands on the left side of the frame, looking towards a large globe. The globe is partially obscured by a complex network of glowing blue lines and nodes, representing data or connectivity. The background is a dark blue space with stars and a bright light source on the left.

1

Lack of support & infrastructure

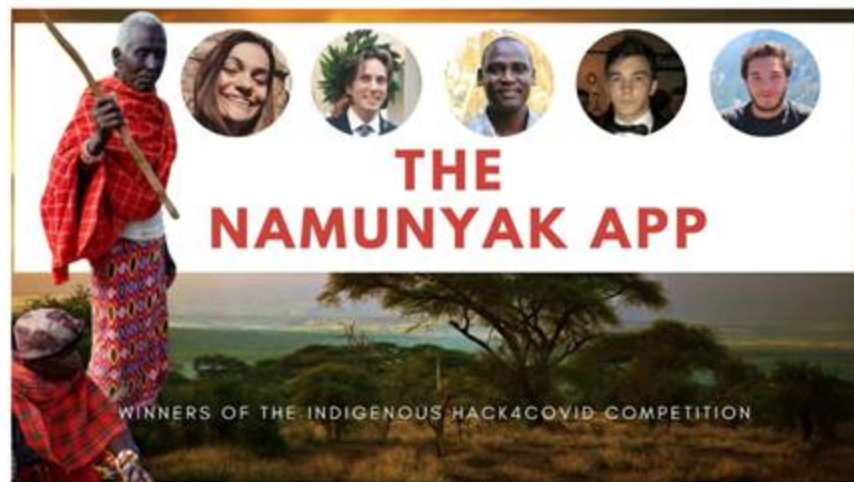
2

Language & cultural barriers

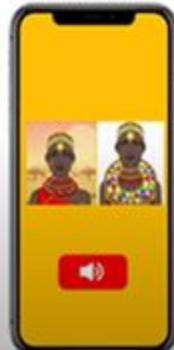
3

Data ownership

The Namunyak App



- Asks the user to give his/her name to enter app
- Tab the red button to record the voice



- Explains the user how to use the app
- Tab the image to go to next screen



- Shows the map
- Tab red button to record a site
- Tab green to learn about the area



Yoanna Dimitrova (Bulgaria/UK),
William Booth (UK), Nico Marin
(Colombia/Australia)
(Kenya), & Lucandrea Mancini (Italy)
Challenge submitted by Titus Letaapo

SAMBURU TRIBE

Space4Innovation

Samburu Water Warriors Team

Our Solutions

1. Data driven planning and investments for Sand Dams

- GIS Based Hydrological Modelling
- Indigenous knowledge:
 - Grazing patterns over years and seasons
 - Historical spatial knowledge
- Satellite derived soil moisture maps of historical rain events

Google Earth Engine Hackathon Script:

<https://ee.mohamedabiyev.projects.earthengine.app>

Soil Moisture Maps



AI and ML Driven Predictions for Planning



Our Solutions

2. Prediction & monitoring of existing sand dams

- IOT enabled soil-moisture + water quality monitoring
- Combined with satellite derived precipitation and soil moisture maps



Sahir Khan (Kenya/Austria), Abdul Ghaffar
(Pakistan), Mohamed Omar (Somali)
& Evaristo Ramos (Canada)
Challenge submitted by Titus Letaapo
Winners of #Gaia4All Indigenous Hackathon

GEO INDIGENOUS
ALLIANCE



GEO Indigenous Water Summit 2023



CONTRIBUTING PAPER







The GEO Indigenous Alliance: Perspectives, Opportunities and Challenges of Earth Observations for Disaster Risk Reduction

GVR
Global Assessment Report
on Disaster Risk Reduction
The World as We See It: Transforming Communities
for a Resilient Future

2022



The Contributions of Indigenous People's Earth Observations to Water Quality Monitoring Provisionally accepted

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Thank you

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