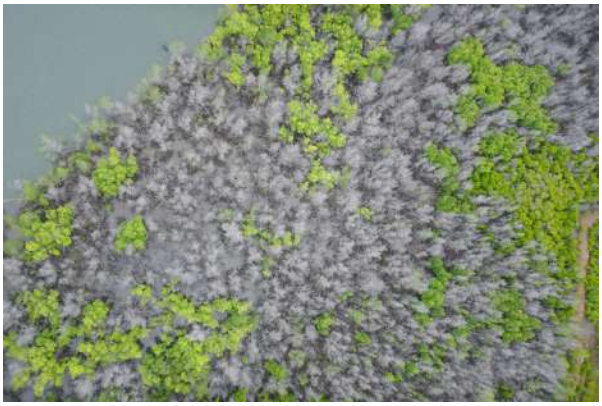
Fly for The Future: Youth Training in Geospatial Technology for Data Analysis

Drone flight training

Mangrove map



Mangrove die-off in Tanga Region

Flight maneuvers

OVERVIEW	
Flying Labs	Tanzania Flying Labs
Location	Tanga, Tanzania
Date	April 2023
Length (number of days)	2
Sector program (optional)	YouthRobotics
Format	In-Person

Co-organizer if applicable	Projekt Inspire
SDGs	GOAL 4: Quality Education

SCOPE & OUTCOMES	
Type of training	1. Introduction training to drones 2. Youth/STEM training
Goal of the training	1. Create drone awareness 2. Develop drone data acquisition skills 3. Develop drone data analysis skills 4. Develop data literacy/interaction skills 5. Train and empower youth and the workforce of the future
Expected outcome for participants	Most of the participants expected to learn drone flight maneuvers.
Confirmed outcome after training	● After the training participants understood the purpose of drones as geospatial tools for monitoring important issues in their community, like mangrove forest degradation due to anthropogenic activities and climate change. ● The main takeaway was to understand how these tools support various professionals in their chosen fields of work - in this case Marine Biologists.
Eventual next steps	The next step is practical training in the field in actual mangrove hotspots in their community. These will be youth-led projects using professional drones and processing software.

PARTICIPANTS	
Profiles and number of participants	100 school children (10-14 years old)
Name of participants' organizations	Kisosora Primary School
Gender ratio	48.6% Male **:** 51.4% Female

Who paid for the training?	Fondation Botnar
Participant fee rate (if applicable)	N/A
Scholarships offered?	N/A

CONTENT	
Training components	In-class training with introduction to the lead instructor and a safety presentation followed by practical flight training and data collection in a hall.

Training resources used	• **Hardware**
	  ○ DJI Tellos
	  ○ TECNO tablets
	  ○ Projector
	  ○ Processing laptop
	  ○ Posters
	• **Software**
	  ○ Epicollect
	  ○ Jotform
	  ○ Tello EDU
	  ○ PIX4Dfields

Approaches and methods used	• Young students have a short attention span and they easily tire. It's best to tailor the program in 3-hour sessions with a maximum of 25 students. This will allow every participant to fly and complete the final exercise on autonomous drone mapping. • It's a very hands-on program which needs a minimum of 4 assistants to help the instructor to manage the participants and perform such tasks like battery changes. • The idea is to lead the students towards the final simulation exercise where they survey an area-of-interest under distress and apply the lessons towards an intervention. Follow this link to view highlights from a typical session: https://youtu.be/7NSMyRh-HRA?si=lUhAJwRZGejR6RoP