

## Project Introduction

Since 2011, **Mara Elephant Project** has aimed to protect elephants and their habitats across the Greater Mara Ecosystem (GME).

Mara Elephant Project employs local people as rangers and researchers, tracks elephant movement using satellite collars, and partners with government and other conservation organizations to make an impact.

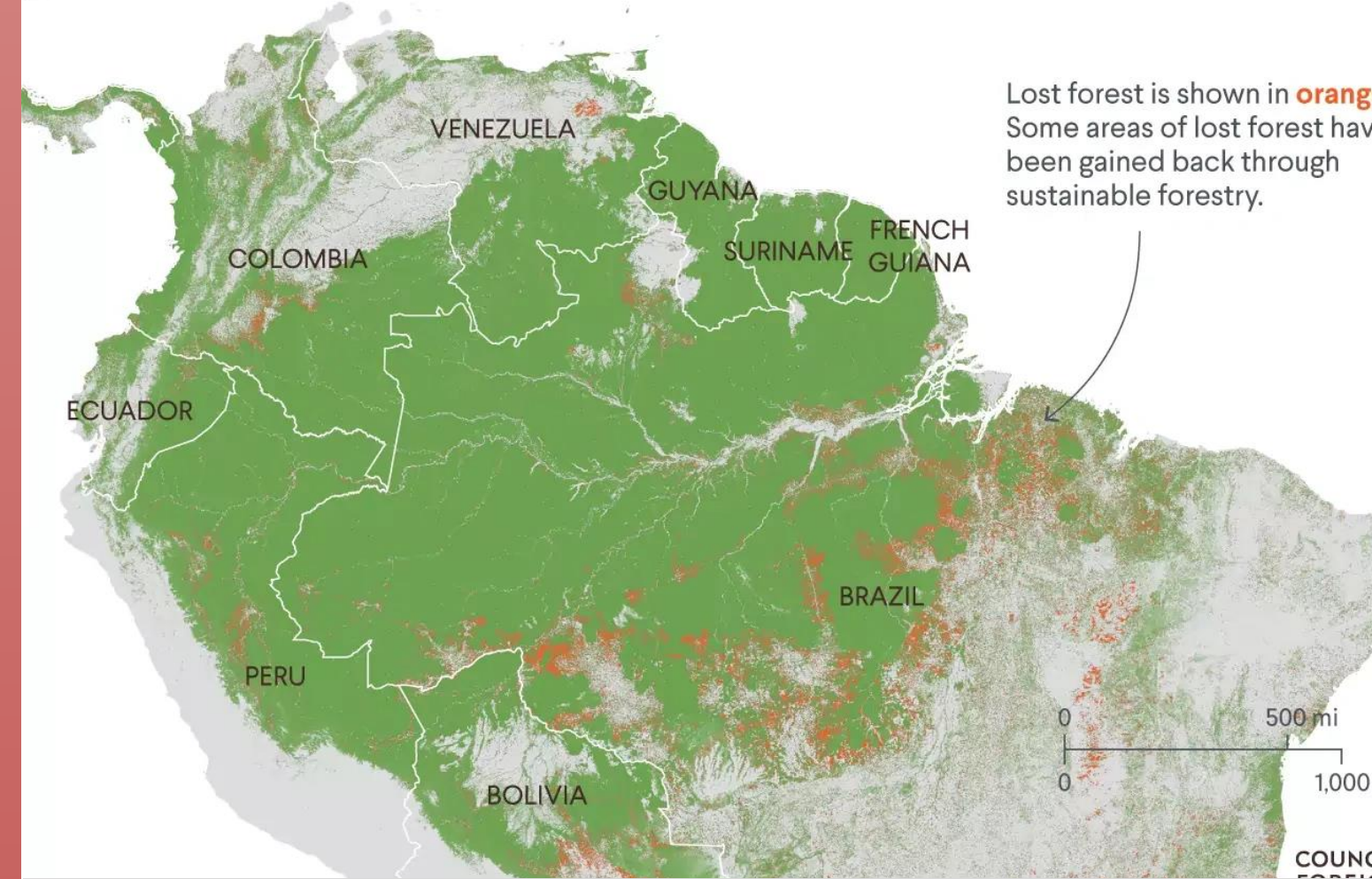
This team had the opportunity to introduce functionality and report generation within MEP's Ecoscope Server, which is a **custom, open-source data analytics platform geared towards tracking, conservation, and environmental data analyses.**

Introducing these elements to Ecoscope Server promotes MEP's effective management and conservation of wildlife and protected areas in the GME.



### Forest Loss in the Amazon Rainforest

● Forest lost from 2001 to 2020 ● Forest remaining from 2000



Lost forest is shown in orange. Some areas of lost forest have been gained back through sustainable forestry.

An example of the Deforestation report referred to in the Report Team section.

\*Future applications will include a heatmap visualization, but of the Mara region instead

## Django Team

**Django** is a Python web framework that facilitates pragmatic and interactive website design. We utilized Django to expand on Ecoscope Server functionalities as outlined in the MVP and Secondary Goal.



2 Major goals:

**MVP:** host and export the deforestation report PDF within Ecoscope Server on demand.

Allows stakeholders to query deforestation information using given input parameters, receiving the informational product on the front end.

**Secondary Goal:** Introduce interactivity to the PDF template by installing functionality for custom informative elements, such as graphs and data tables, and possibly customizing the report design, which will require strong cooperation with the report team.

## Report Team

**The Deforestation Report:** PDF document with graphs having information about deforestation in the Mara forest.

3 Major goals:

**MVP 1:** Create HTML template for deforestation report

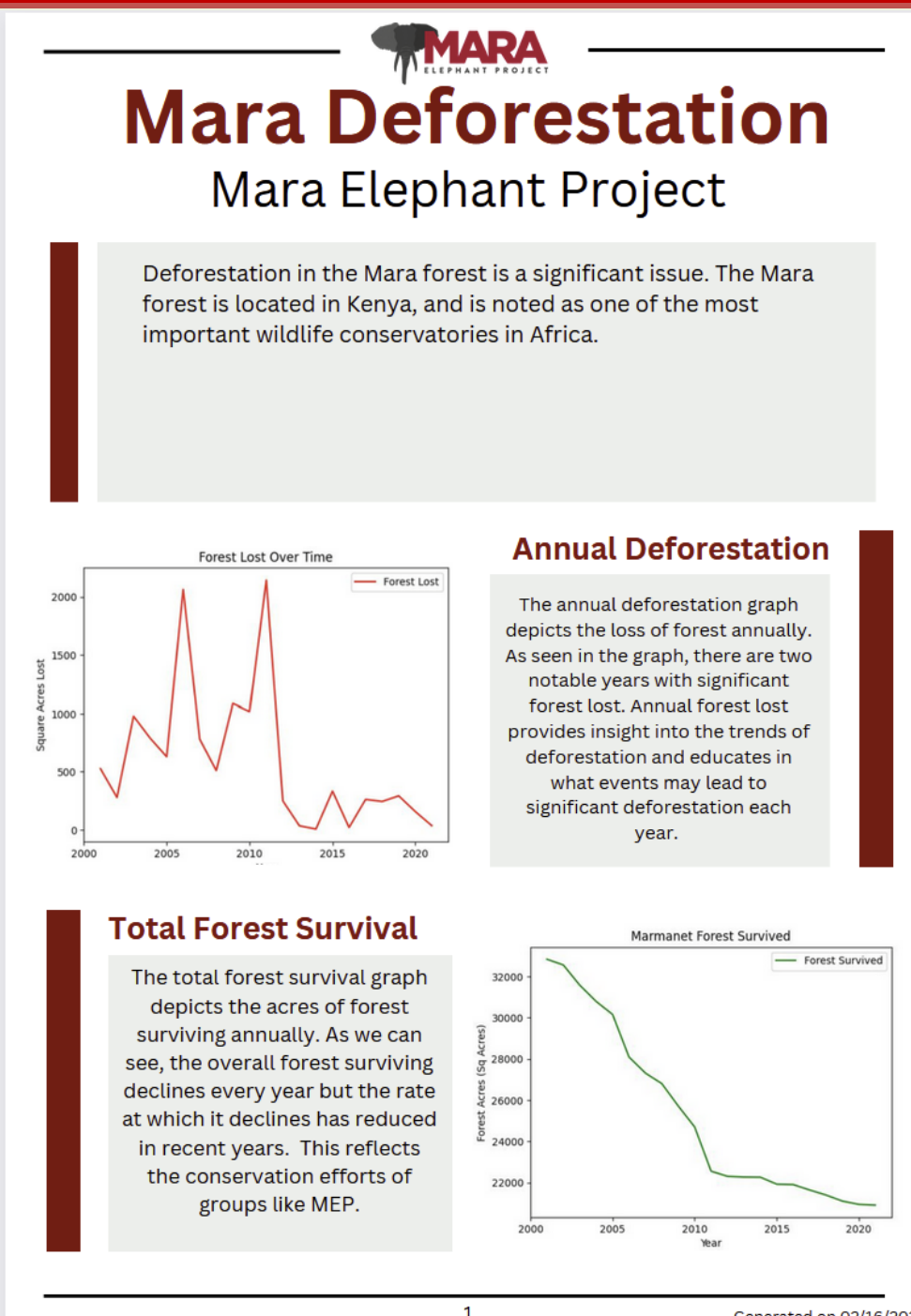
**MVP 2:** Create HTML to PDF functionality to host the report on a DJANGO app

**Secondary goal:** Develop additional graphs to include on the report, such as a heat map of deforestation over time (Amazon rainforest graphic)

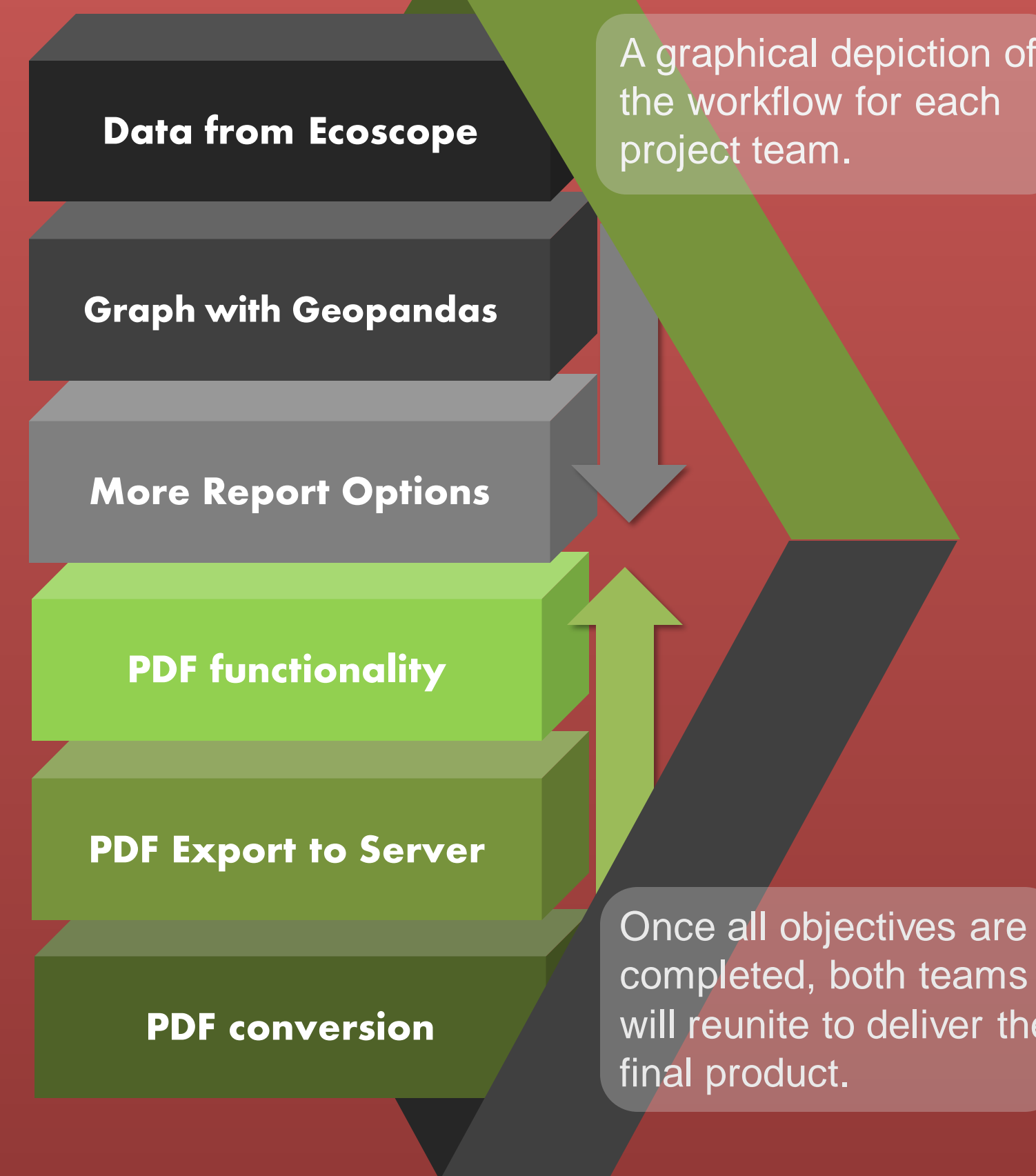
Data is provided by the Hansen Google Earth Engine Dataset, Earth Ranger and ARCGIS

\*Annual Deforestation Graph: Depicts forest loss by year

\*Total Forest Survival Graph: Depicts the acres of forest surviving each year



## REPORT



## DJANGO

## Conclusion & Next Steps

### Report Team:

- Created a sample PDF deforestation report
- Created a website (HTML) template to generate the report
- Integrated report on the Django server

### Django Team:

- Hosted deforestation report on Ecoscope Server
- Introduced the ability to export and save the PDF report

### Next Steps:

- Ability to customize reports on the Django server with specific graphs tailored to the users' needs
- Ability to select a specific region and/or time period to generate a report of
- Create additional graphs for the PDF report, such as a heat map visualization of forest loss
- Adapt Django server to display these additional graphs in a user-friendly interface

## References

<https://maraelephantproject.org/>

[https://the-examples-book.com/crp/students/spring2023/poster\\_guidelines](https://the-examples-book.com/crp/students/spring2023/poster_guidelines)

## Acknowledgements

This project was conducted with the support of Dr. Jake Wall, Claire Bolles, Eric Gitonga, and the entire MEP team who graciously gave us the opportunity to help contribute to MEP's mission. We would also like to thank student mentors Jisoo Kim and Aniket Mohanty and The Data Mine Staff for their assistance and guidance.