

GLOBAL RANGELANDS DATA PLATFORM MVP

UPDATE 2022

GMV and ILRI

TABLE OF CONTENTS

1. INTRODUCTION	3
1.1. PURPOSE	3
1.2. OBJECTIVES	3
2. VISUAL NARRATIVE	4
3. TOOLS AND FUNCTIONALITIES	5
3.1. LANDING PAGE	5
3.2. EXPLORE MAP	5
3.3. COUNTRY SPECIFIC RESULTS INTERFACE	5
3.4. STORIES	6
3.4.1. Additional features	6
3.5. SHARING AND DOWNLOADING	7
3.6. PROPOSED DATA UPLOAD TOOL	7

1. INTRODUCTION

1.1. PURPOSE

This project aims at contributing to the UN resolution 2/24 on combating desertification, land degradation and drought and promoting sustainable pastoralism and rangelands; and UN resolution 4/15 on innovations in sustainable rangelands and pastoralism, as well as the UNEP-led gap analysis on rangelands and the resulting report: Rangelands: A case of benign neglect.

This rangeland resource assessment was also to compliment the global Rangelands Atlas produced in 2021 as a collaboration between UNEP, ILRI and other stakeholders; contribute to a baseline for the development of a GEF-funded global project on rangeland restoration and the development of a rangeland monitoring system for Africa led by the European Space Agency.

The assessment contributes to discussions and interventions focusing on One Health, with rangelands health being an important pillar of this, as well as sustainable food systems. This includes attention to such as land degradation, climate impacts on livestock and other environmental challenges, and allow better analysing opportunities for more sustainable investments in rangelands through restoration or other and livestock production systems. As part of this assessment, this document defines the objectives for the development of a Minimum Viable Product (MVP) for a Global Rangelands Data Platform.

1.2. OBJECTIVES

The objective of this document is to analyse the scope of an MVP for the Global Rangelands Data Platform that includes the visual narrative, tools, and functionalities.

2. VISUAL NARRATIVE

The main objective in the first phase of the Global Rangelands Data Platform's development is to ensure that we build **a user centred and scalable Minimum Viable Product** that gives users the tools they need to find and analyse the rangelands data and extract insights in a seamless and intuitive way.

Our proposal is to design and develop a platform that includes a global interactive map view (that could also include some engaging analysis tools) and country (or some other type of aggregation) dashboards with pre-calculated trends and insights, for anyone to monitor the rangelands evolution and the datasets chosen. In this regard, the idea is to identify the key datasets to be included in the MVP (two or three datasets) with additional contextual layers, ensuring a tool that scales easily in the project's future phases. Users will discover the **core functions through additional features** that will help them find their way around the core datasets. Our proposal would be to choose dataset(s) that allow both global and regional temporal analysis of rangelands and important issues associated with them (water stress, food security, etc). We think the temporal aspect and the global/local one are both important as it responds to one of the features (trend analysis) most demanded in the survey responses obtained during past projects. We can also present such data in an engaging animated view.

For the MVP we assume the core datasets to be available through an API provided third parties or developed already by GMV both in aggregated and map form, and ready to be queried from the client.

The MVP objective is to build a web tool that demonstrates the value of beautiful, clear data visualisation. From this initial approach we will identify pathways to scale up tools to achieve much greater impact.

3. TOOLS AND FUNCTIONALITIES

The following components could be read as a preliminary idea of the type of functionalities to be developed by our team. However, the final details about the interfaces and features should be discussed and agreed with ILRI.

3.1. LANDING PAGE

The purpose of a landing page is to convert visitors into loyal and recurrent users and give them a first insight into the project as a whole and its importance. The Landing page exists to invite people to navigate to an additional page and trigger the willingness to know more about the project. For any website, the landing page is mostly the first thing a visitor sees - thus it's representative of the overall tool and presents its most important and impactful highlights.

3.2. EXPLORE MAP

Geospatial information will be the core of the platform. As an **explore section**, the map interface will be a user centred map that would allow them to explore and navigate the information in an engaging and comprehensive manner.

The map acts as a representation of the geographic component of the underlying data, with a set of **basic options for zoom & pan, base map selection or layers to be represented**. The map will also act as a **selection and filter tool by clicking on a country**.

- **Animated time lapse.** If the selected core dataset has a temporal dimension, the map can allow the user to animate the evolution of the data interactively at any zoom level.
- **Contextual layers.** They support the main dataset(s) and help better understand issues and trends, allowing users to gain insight on their importance. These could be administrative or geophysical boundaries (countries, river basins, biomes...) demographic or socio-economic data (population, development indicators, etc) or other supporting environmental data (drought/flood risk, deforestation, desertification...). For the MVP, we propose to add a limited (one to three) number of contextual layers, to show their potential.
- **Base maps.** Different base maps can be selected both to improve the dataset visualization (dark, light, simplified...) or to enrich it (satellite).
- **Basic map-based analysis.** If the nature of the data allows it, a simple map-based analysis tool can be implemented (e.g., selecting a point or drawing a polygon would return the associated data) this feature is highly dependent on the data nature, structure, and API querying availability, so we'd need to evaluate it carefully.

Examples of map visualisations:

- Aqueduct Project: [Map Visualisation](#)
- Resource Watch: [Map Visualisation](#)
- Global Fishing Watch: [Map Visualisation](#)
- PREP Project: [Map Visualisation](#)
- Global Mangrove Watch: [Map Visualisation](#)

Examples of map animations:

- Global Fishing Watch: [Timeline Animation](#)

3.3. COUNTRY SPECIFIC RESULTS INTERFACE

The visualisation layer of the country specific results would deliver an engaging and enticing user experience, giving site visitors the tools they need to **find the data and trends for a specific country**.

- **Country dashboards** would provide aggregated, pre-calculated information on the different datasets for a given country, presented in interactive visualisations, and including both the core and contextual data.

Country dashboards can also include textual information. For the MVP, we could include such textual information for a limited number of countries (or even just a sample one) if it's available.

- **Graph widgets.** We propose designing a set of graph widget templates (such as sparkline, bar chart, pie chart, scatterplot, linear area, and radial area) that are configured to accept data as an API endpoint in a specific format and with a limited set of customization options (like title, axis, or colour scheme).
- **Tabular widgets.** Tabular widgets are data representations that may include fundamental interactions like sort by column, search, filter, or pagination. Apart from the data being filtered from the filter/group controls in analysis tools, the tables can contain users' search/filter functions handled by the client.
- **Shareable widgets.** All the Graph, Map and tabular widgets in country pages can have their own URL and as such be embeddable and shareable. Several configuration options (such as filter state) for widgets can be surfaced to their URL as parameters, including the data source, allowing the end user to share or embed them into other applications. Considering that the MVP may evolve significantly in the future, we will analyse together the opportunity and necessity of allowing sharing/embedding at this point.
- **Country rankings/comparisons.** It is possible to include pages that allow comparison and ranking of specific data about countries (grouped by different criteria such as continent or biome). For the MVP we would propose, if the data suggests it, a very simple tabular interface with sorting/filtering options that can, in the future, evolve to a more complex one.

Examples of dashboard visualisations:

- GFW country dashboard: [Brazil Deforestation rates](#)

Examples of visual comparisons:

- Climate Watch: [Country Comparison](#)
- PREP Project: [Spatial Comparison](#)

Examples of graph and tabular widgets:

- Global Forest Watch: [Dashboard Graphs and tables](#)
- Resource Watch: [Resource Watch dashboards](#)
- Insight to Impact Countries Dashboards: [Country Dashboards](#)

3.4. STORIES

Stories are standalone narratives that explain a point and provide users with a more comprehensive explanation of a specific dataset or location. These pre-defined narratives would be geolocated and linked to specific datasets by topic and time series. These narratives would be handed by ILRI.

3.4.1. ADDITIONAL FEATURES

Animated stories can bring an idea to life or support a written message more powerfully than static imagery. Animated timeline maps of land changes and transitions is a highly impactful

visualisation that allows users to understand the evolution of a specific area, based on the data that wants to be highlighted.

For the MVP we propose either to create a limited number of simple stories (if there is content that allows for it in) or presenting it as a “coming soon” teaser section.

Examples of Stories:

- Half Earth: [Map Stories](#)
- Neptis: [Map Stories](#)

3.5. SHARING AND DOWNLOADING

Because sharing is such an important part of the impact and value contribution of the data platforms, the **shareable features** would make it easy for users to do so. For the approach to be successful, content must be tailored to the users and delivered in formats they use. These formats might be bite-sized chunks of information delivered as a simple graphic, longer in-depth analyses, or downloadable factsheets.

We can deliver a **download feature** in several ways. The normal approach is to produce .csv or .xls downloads that only show the data for the area or layers the user is currently looking at.

If there are people that want larger downloads (e.g., all data for a country) or access to specific dataset, we could point users to where the data is stored (assuming a cloud database solution is used).

3.6. PROPOSED DATA UPLOAD TOOL

Although it is not realistic to implement a functioning data upload tool for the MVP, it may be a good idea to show the contributory nature of the tool by adding calls to users to share their data if they have better local versions of it through a form in country pages.

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