



# Implementation of Geonode for IGAD Program and Projects

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# Scenario and requirements



# IGAD Geoportal – Scenario and Requirements

- **Intergovernmental Authority on Drought and Development and Biodiversity**
- *“An integrated geoportal for IGAD’s and Biodiversity Development Program resources”*
- **Thematic Data and Document catalog**
  - Thematic areas categorization
  - Data management by country and cross border areas
  - Harvesting and remote services hub
- **GeoNode Custom Application**
  - Custom template and models
  - Extended remote services (WMS, GeoNode, ArcGIS REST)
  - Metadata harvesting from GeoNode remote instances



# IGAD Geoportal: A GeoNode Custom Project

- **GeoNode** cannot address all use cases
  - Avoid reinventing the wheel
  - Avoid implicit/explicit forks
- → **Custom GeoNode Applications** to the rescue!
- **A proper “GeoNode Project”:**
  - It extends the “**vanilla**” GeoNode
  - It provides a **custom Django app**
  - It addresses specific use cases
- You develop something of general interest?
  - Donate back to Core GeoNode!

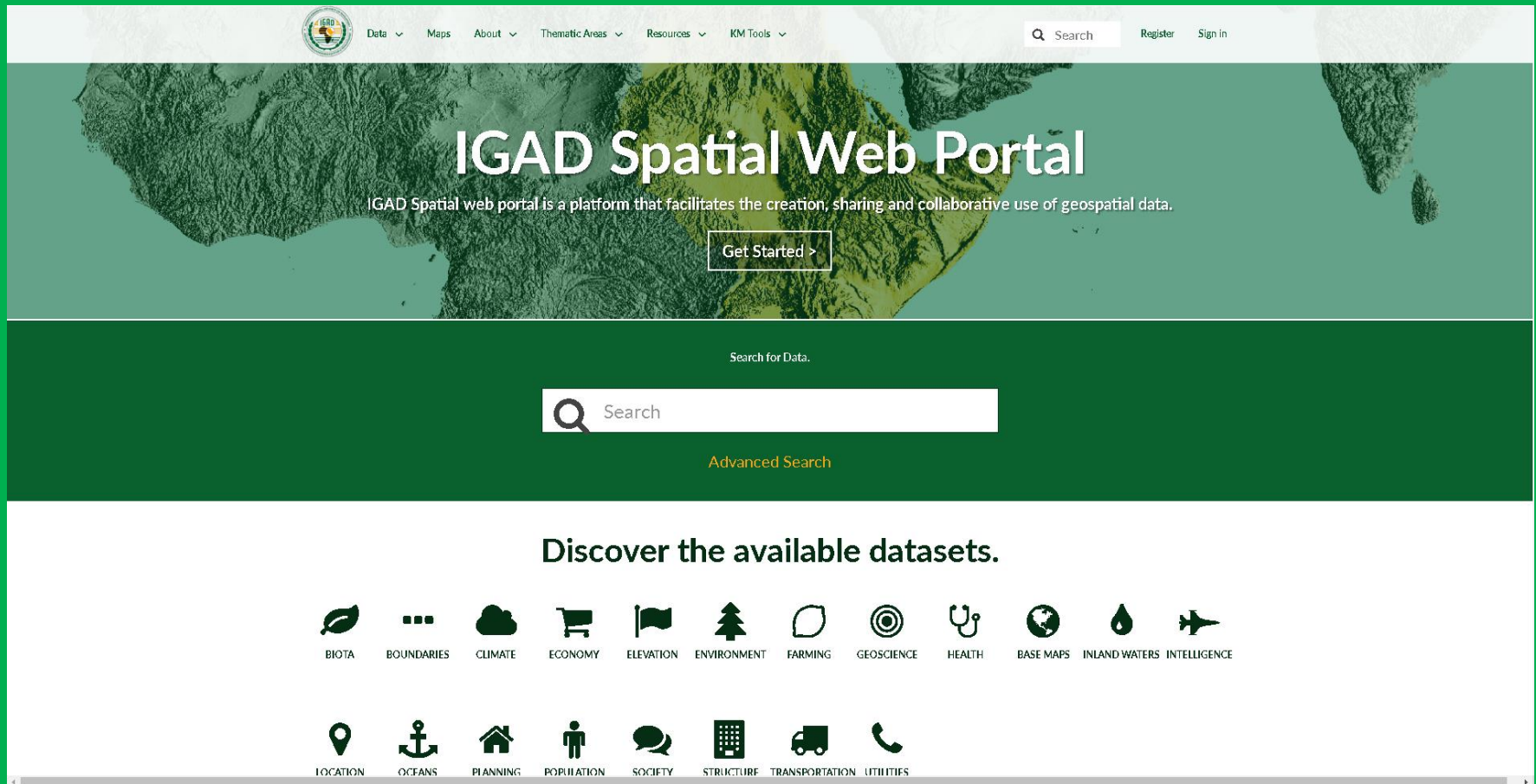


# GeoNode Most New Functionalities and Showcase



# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>



The screenshot displays the IGAD Spatial Web Portal interface. At the top, a navigation bar includes the IGAD logo, menu items (Data, Maps, About, Thematic Areas, Resources, KM Tools), a search bar, and links for Register and Sign in. The main banner features a map of Africa with the text "IGAD Spatial Web Portal" and a description: "IGAD Spatial web portal is a platform that facilitates the creation, sharing and collaborative use of geospatial data." A "Get Started >" button is positioned below the text. A dark green section follows, containing a "Search for Data." label and a search bar with a magnifying glass icon and the word "Search". Below the search bar is a link for "Advanced Search". The "Discover the available datasets." section lists 20 categories with corresponding icons: BIOTA, BOUNDARIES, CLIMATE, ECONOMY, ELEVATION, ENVIRONMENT, FARMING, GEOSCIENCE, HEALTH, BASE MAPS, INLAND WATERS, INTELLIGENCE, LOCATION, OCEANS, PLANNING, POPULATION, SOCIETY, STRUCTURE, TRANSPORTATION, and UTILITIES.

IGAD Spatial Web Portal

IGAD Spatial web portal is a platform that facilitates the creation, sharing and collaborative use of geospatial data.

Get Started >

Search for Data.

Search

Advanced Search

Discover the available datasets.

BIOTA BOUNDARIES CLIMATE ECONOMY ELEVATION ENVIRONMENT FARMING GEOSCIENCE HEALTH BASE MAPS INLAND WATERS INTELLIGENCE

LOCATION OCEANS PLANNING POPULATION SOCIETY STRUCTURE TRANSPORTATION UTILITIES



# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

- Different types of Geospatial information, like:
  - Local Layers
  - Remote Services
  - Documents (e.g.: PDFs, plain images...)

The screenshot displays the IGAD Geoportal interface for the 'Dams' layer. The top navigation bar includes links for Data, Maps, About, Thematic Areas, Resources, and KM Tools. A search bar and user options (Register, Sign in) are also present. The main map area shows a map of the Horn of Africa with dam locations marked by teal square point styles. To the right of the map, there are buttons for 'Download Layer', 'Metadata Detail', 'View Layer', and 'Download Metadata'. Below these is a legend indicating the teal square point style represents a 'teal point'. Further down, it states 'Maps using this layer' and 'This layer is not currently used in any maps.' At the bottom, there is a 'Create a map using this layer' section with a 'Create a Map' button. On the left side, there is a metadata panel with fields for Title, License, Abstract, Publication Date, Type, Keywords, Category, Regions, Owner, and Group.

**Dams**

Download Layer

Metadata Detail

View Layer

Download Metadata

**Legend**  
teal square point style  
■ teal point

**Maps using this layer**  
This layer is not currently used in any maps.

**Create a map using this layer**  
Click the button below to generate a new map based on this layer

Create a Map

**Info** **Attributes** **Share** **Ratings** **Comments**

**Title** Dams  
**License** Not Specified  
**Abstract** Location of Dams is obtained from Nile Basin Initiative(NBI) and FAO Web portal ( www.fao.org/nr/water/aquastat/dams/african\_dams.xls) in 2018 and used for Mapping of IGAD Infrastructure and corridors.  
**Publication Date** Sept. 29, 2018, 9:32 a.m.  
**Type** Vector Data  
**Keywords** Infrastructure , GOAL 7: Affordable and Clean Energy  
**Category** Inland Waters  
**Regions** Global  
**Owner** zelege  
**Group** IGAD Region

The screenshot displays the IGAD Geoportal interface for a document titled 'Seasonal Rainfall Probability March to May, 2017'. The top navigation bar is similar to the previous screenshot. The main content area features a map of the Horn of Africa with rainfall probability data represented by different colors (yellow, green, blue). To the right of the map, there are buttons for 'Metadata Detail', 'Download Document', 'Edit Document', and 'Download Metadata'. Below these is a section for 'Resources using this document' and 'Permissions'. At the bottom, there is an 'About' section with the owner's name and contact information. On the left side, there is a metadata panel with fields for Title, Abstract, and a description.

**Seasonal Rainfall Probability March to May, 2017**

Metadata Detail

Download Document

Edit Document

Download Metadata

**Resources using this document**  
This document is not related to any maps or layers

**Permissions**  
Click the button below to change the permissions

Change Document Permissions

**About**  
Owner, Point of Contact, Metadata Author  
ICPAC  
No Group

**Info** **Share** **Ratings** **Comments**

**Title** Seasonal Rainfall Probability March to May, 2017  
**Abstract** This is the latest release of the climate outlook for the Greater Horn of Africa



# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

- Each Entity has been enriched with further Metadata

The screenshot shows the 'Metadata for Unvalidated landcover classifications ...' form with the 'Basic Metadata' tab selected. The form is divided into four sections: Basic Metadata, Location and Licenses, Optional Metadata, and Dataset Attributes. The 'Basic Metadata' section includes a thumbnail map, a title field with the text 'Unvalidated landcover classifications for Nakt...', an abstract field with the text 'Landcover segments created using JRC's IMPACT classification tool for Lake Nakuru designated protected area, and a buffer of 20km surrounding it. These segments show automatically-derived landcover for the', a date type dropdown set to 'Publication', a date field with the value '2018-04-2', a category dropdown set to 'Environment', and a group field.

The screenshot shows the 'Metadata for Unvalidated landcover classifications ...' form with the 'Location and Licenses' tab selected. The form is divided into four sections: Basic Metadata, Location and Licenses, Optional Metadata, and Dataset Attributes. The 'Location and Licenses' section includes a language dropdown set to 'English', a license dropdown set to 'Not Specified', a regions section with buttons for 'Global', 'Africa', 'Asia', 'Pacific', 'Central Africa', 'East Africa', 'Kenya [East Africa]', 'East Asia', 'South Asia', and 'Kiribati', a data quality statement field with the text 'general explanation of the data producer's knowledge about the lineage of a dataset', and a restrictions field with the text 'other restrictions and legal prerequisites for accessing and using the resource or metadata'. A completeness bar at the top right shows '75 %' and a 'Check Schema mandatory fields' button.

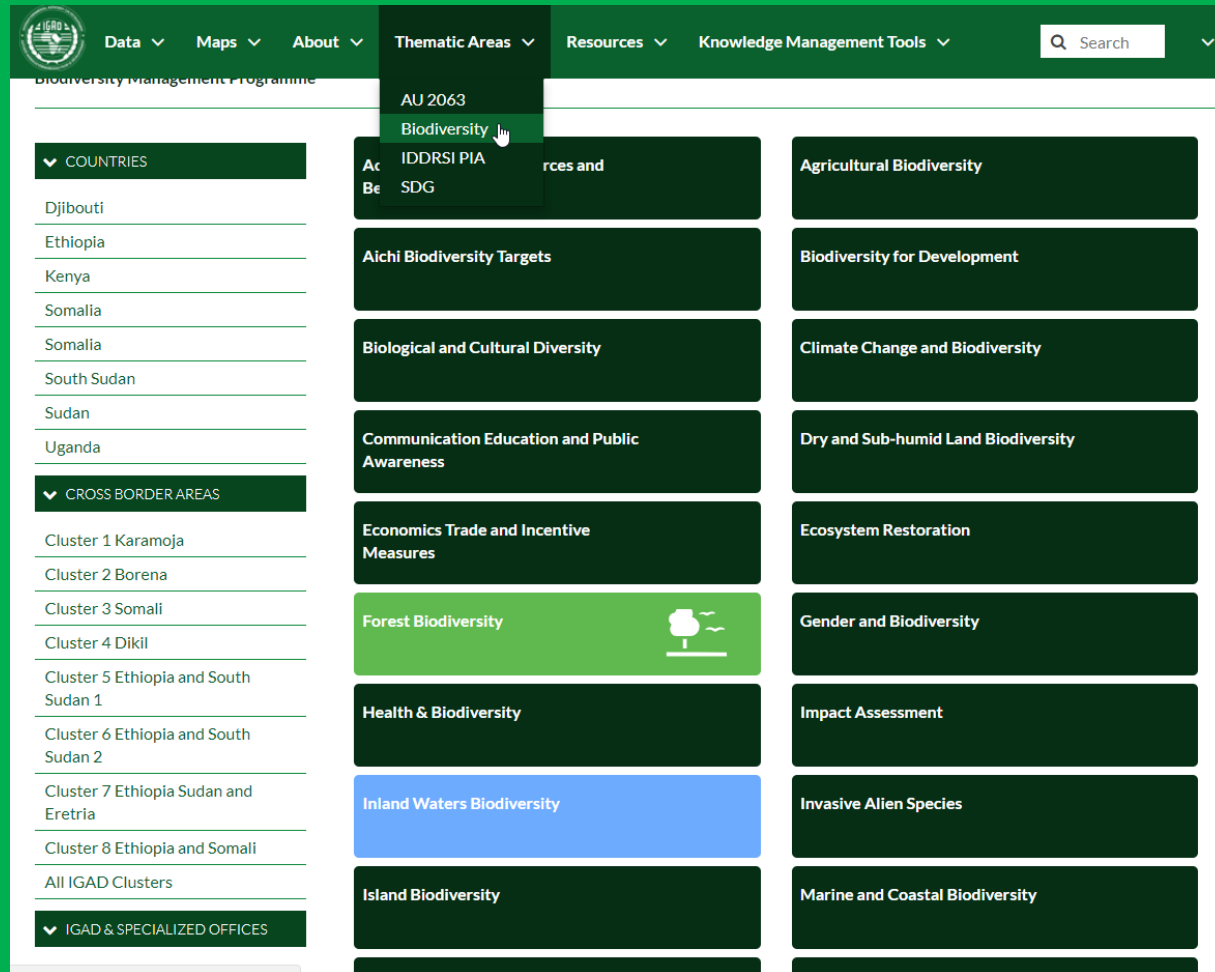




# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

- Thematic Areas and Top Menus (e.g.: Biodiversity)



# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

- Side Menus (e.g.: Cross Border Areas)

The screenshot displays the IGAD Geoportal interface. The top navigation bar includes the IGAD logo, a search bar, and menu items: Data, Maps, About, Thematic Areas, Resources, and Knowledge Management Tools. The left sidebar contains a list of categories: Somalia, South Sudan, Sudan, Uganda, CROSS BORDER AREAS (expanded), Cluster 1 Karamoja, Cluster 2 Borena, Cluster 3 Somali, Cluster 4 Dikil, Cluster 5 Ethiopia and South Sudan 1, Cluster 6 Ethiopia and South Sudan 2, Cluster 7 Ethiopia Sudan and Eretria, Cluster 8 Ethiopia and Somali, All IGAD Clusters, IGAD & SPECIALIZED OFFICES (expanded), ICPAC, ICPALD, CEWARN, and IGAD Biodiversity Programme. The main content area shows a map of the RPLRP project implementation areas in Ethiopia, Kenya, and Uganda, with administrative boundaries 1-3. A description box states: 'The layer details the RPLRP project implementation areas in Ethiopia, Kenya and Uganda. The layer is inclusive of administrative boundaries 1-3.' Below the map, there are icons for user (icpald), date (5 Aug 2008), view count (1), share count (0), star count (0), and a 'Create a Map' button. A pagination bar at the bottom right indicates 'page 1 of 1'.



# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

- Fully Customizable Menus and Menu Items

**Django administration**

Home > Igad\_Geonode > Menus > Add menu

### Add menu

**Name:**

**Order:**   
Position of menu, ascending

**Location:**

Top menu ▼

Top menu



Search sidebar

**Django administration**

Home > Igad\_Geonode > Menu items > MenuItem object

### Change menu item

**Menu:**

Menu: Cross Border Areas ▼  



**Title:**


**Url:**

☒ **New window**  
Open link in new browser window

**Order:**   
Position of menu item, ascending

**Group:**

Cluster 1 Karamoja ▼  

 **Delete**



# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

- You can Filter Data Either by Group...

**Django administration**

Home > Groups > Group profiles

**Select group profile to change**

Action:   0 of 17 selected

<input type="checkbox"/>	Group profile
<input type="checkbox"/>	Uganda
<input type="checkbox"/>	Sudan
<input type="checkbox"/>	South Sudan
<input type="checkbox"/>	Somalia
<input type="checkbox"/>	Kenya
<input type="checkbox"/>	Ethiopia
<input type="checkbox"/>	Djibouti
<input type="checkbox"/>	All IGAD Clusters
<input type="checkbox"/>	Cluster 8 Ethiopia and Somali
<input type="checkbox"/>	Cluster 7 Ethiopia Sudan and Eretria
<input type="checkbox"/>	Cluster 6 Ethiopia and South Sudan 2
<input type="checkbox"/>	Cluster 5 Ethiopia and South Sudan 1
<input type="checkbox"/>	Cluster 4 Dikil
<input type="checkbox"/>	Cluster 3 Somali
<input type="checkbox"/>	Cluster 2 Borena
<input type="checkbox"/>	Cluster 1 Karamoja
<input type="checkbox"/>	IGAD Secretariat

17 group profiles

IGAD Geoportal

Data Maps About Thematic Areas Resources Knowledge Management Tools Search

## Metadata for IGAD Cluster 1

Completeness: 83%  
Check Schema mandatory fields

Edit Preview Settings

Mandatory	Mandatory	Optional	
<b>1 Basic Metadata</b>	<b>2 Location and Licenses</b>	<b>3 Optional Metadata</b>	<b>4 Dataset Attributes</b>
<p>Thumbnail</p>  <p>Edit</p>	<p><b>Title</b></p> <p>IGAD Cluster 1</p> <p><b>Abstract</b></p> <p>This is the cross border IGAD Cluster between Ethiopia, Kenya, South Sudan and Uganda. Formerly this cluster was known as the Karamoja Cluster</p>	<p><b>Title</b></p> <p>igad_cluster_1_1 features</p> <p><b>Date type</b></p> <p>Publication</p> <p><b>Date</b></p> <p>2015-03-23 16:</p> <p><b>Category</b></p> <p>Location</p> <p><b>Group</b></p> <p>Cluster 1 Karamoja</p>	



## IGAD Geoportal – New Functionalities



<http://igad.geonode.int>

- ... and Hierarchical Keywords

## Django administration

Home > Igad\_Geonode > Hierarchical keyword metas > HierarchicalKeywordMeta object

### Change hierarchical keyword meta

<b>Hkeyword:</b>	Forest Biodiversity ▼  
<b>Title:</b>	Forest Biodiversity
<b>Description:</b>	<div></div>
<b>Icon:</b>	life_on_land.svg
<b>Color:</b>	#60b94e
<b>Url:</b>	<div></div>
<b>Order:</b>	69

Position of category, ascending

2

Location and Licenses

Title ?

IGAD Cluster 1

Abstract ?

This is the cross border IGAD Cluster between Ethiopia, Kenya, South Sudan and Uganda. Formerly this cluster was known as the Karamoja Cluster

3

Optional Metadata

igad\_cluster\_1\_1 x features x

IDDRSI PIA

PIA1: Natural Resources

PIA2: Market and Trade

PIA3: Livelihood Support and Bas...

Date type ?

Publication

Category

4

Dataset Attributes

Date

2015-03-23 16:00



# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

- Filter by ISO Category and other Metadata Fields

The screenshot displays the IGAD Geoportal interface. At the top, there is a navigation bar with links for Data, Maps, About, Thematic Areas, Resources, and Knowledge Management Tools, along with a search bar. The main content area shows a list of 13 layers found. The left sidebar contains filters for TEXT, KEYWORDS, and TYPE, as well as a CATEGORIES section with a list of categories and their counts. The main list of layers includes '35 Biodiversity Hotspots 2011' and 'Pate-kiunga Mangrove extent 2005', each with a thumbnail map, a description, and metadata.

**Selected Layers**

Add layers through the "checkboxes".

Set permissions Create a Map

**Filters** Clear

TEXT

Search by text

KEYWORDS

TYPE

Vector Temporal Serie 1

Raster Layer 1

Vector Layers 57

Remote Layers 20

**CATEGORIES**

Biota 13

Boundaries 12

Climatology Meteorol... 3

Economy 7

Environment 6

Geoscientific Inform... 3

**13 Layers found**

**35 Biodiversity Hotspots 2011**

The terrestrial biodiversity hotspots identified by Conservation International and partners delineate large regions characterized both by exceptional levels of plant endemism and by serious levels of habitat loss. To qualify as a hotspot, a region must meet two strict criteria: it must contain at le...

igad 27 Apr 2018 0 0 0 Create a Map

**Pate-kiunga Mangrove extent 2005**

This layer shows the extent of mangrove cover of Pate Kiunga seascape in 2005. The cover map was developed by CORDIO EA through Landsat Image classification under the International Centre for Research in Agroforestry (ICRAF)-led project funded by the Inter-Governmental Authority on Development (IGAD...

igad 27 Apr 2018 0 0 0 Create a Map

**Pate-kiunga Mangrove extent 2010**

This layer shows the extent of mangrove cover of Pate Kiunga seascape in 2010. The cover map was developed by CORDIO EA through Landsat Image classification under the International Centre for Research in Agroforestry (ICRAF)-led project funded by the Inter-Governmental Authority on Development (IGAD...



# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

- MapStore Integration!

The screenshot displays the IGAD Geoportal MapStore interface. At the top, there is a navigation bar with the IGAD logo, menu items (Data, Maps, About, Thematic Areas, Resources, KM Tools), a search bar, and links for Register and Sign In. Below the navigation bar is a map of East Africa, showing countries like Ethiopia, Sudan, and Kenya, with various geographical features and place names. A small inset map is visible in the bottom left corner of the map area. Below the map, there is a toolbar with icons for map interaction. At the bottom of the interface, there is a table titled "Dams" with the following columns: PLANT, STATUS, SUM\_MW, COUNTRY, LAT, LON, GEN\_TYPE, ISO, Name, and STATUS\_. The table contains five rows of data, each representing a dam project. The first row is highlighted in blue.

PLANT	STATUS	SUM_MW	COUNTRY	LAT	LON	GEN_TYPE	ISO	Name	STATUS_
GILGEL GIBE III	OPR	1870	ETHIOPIA	6.856073	37.304165	HYDRO	ETH	Gilgel gibe III	Existing
ALELTU EAST	PLN	186	ETHIOPIA	9.78	38.83	HYDRO	ETH	Aleltu east	Planned
ALELTU WEST	PLN	219	ETHIOPIA	9.78	38.83	HYDRO	ETH	Aleltu west	Planned
KOKA	OPR	45.6	ETHIOPIA	8.4667	39.1667	HYDRO	ETH	Koka	Existing
BELES	PLN	460	ETHIOPIA	11.68	37.21	HYDRO	ETH	Beles	Planned

42 Items

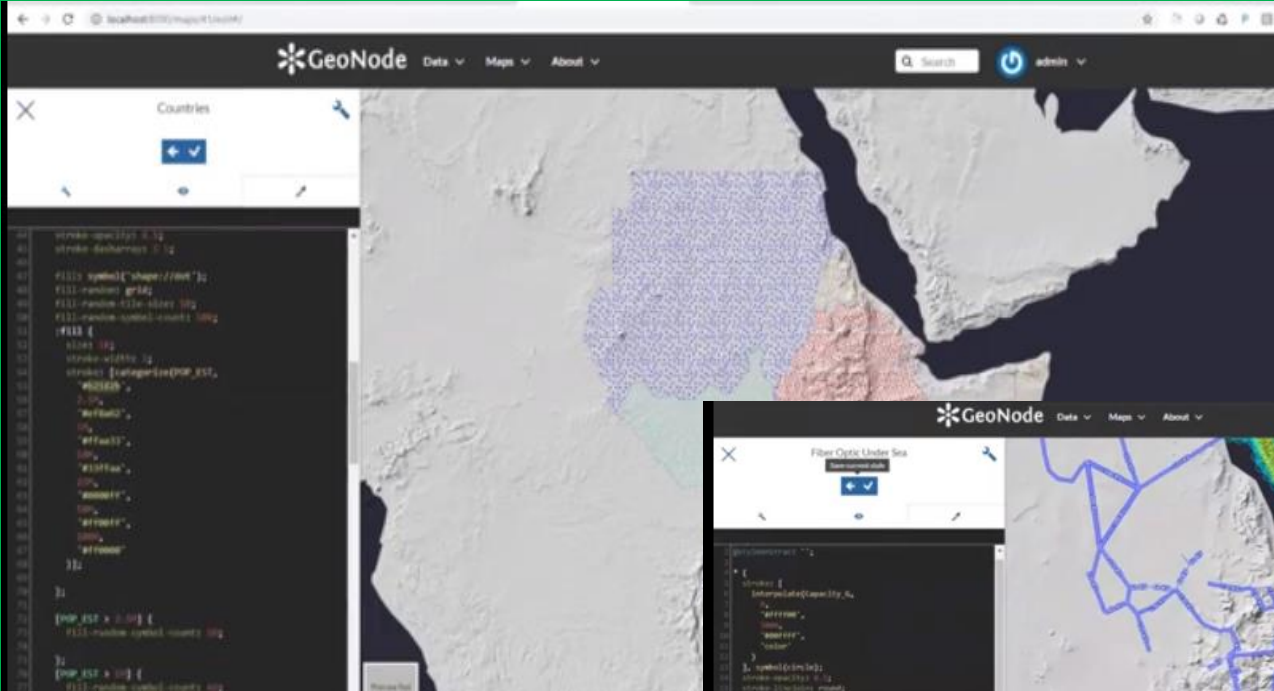
Scale: 1 : 18489935



## IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

- **MapStore Integration!**



## Advanced Styling using GeoCSS

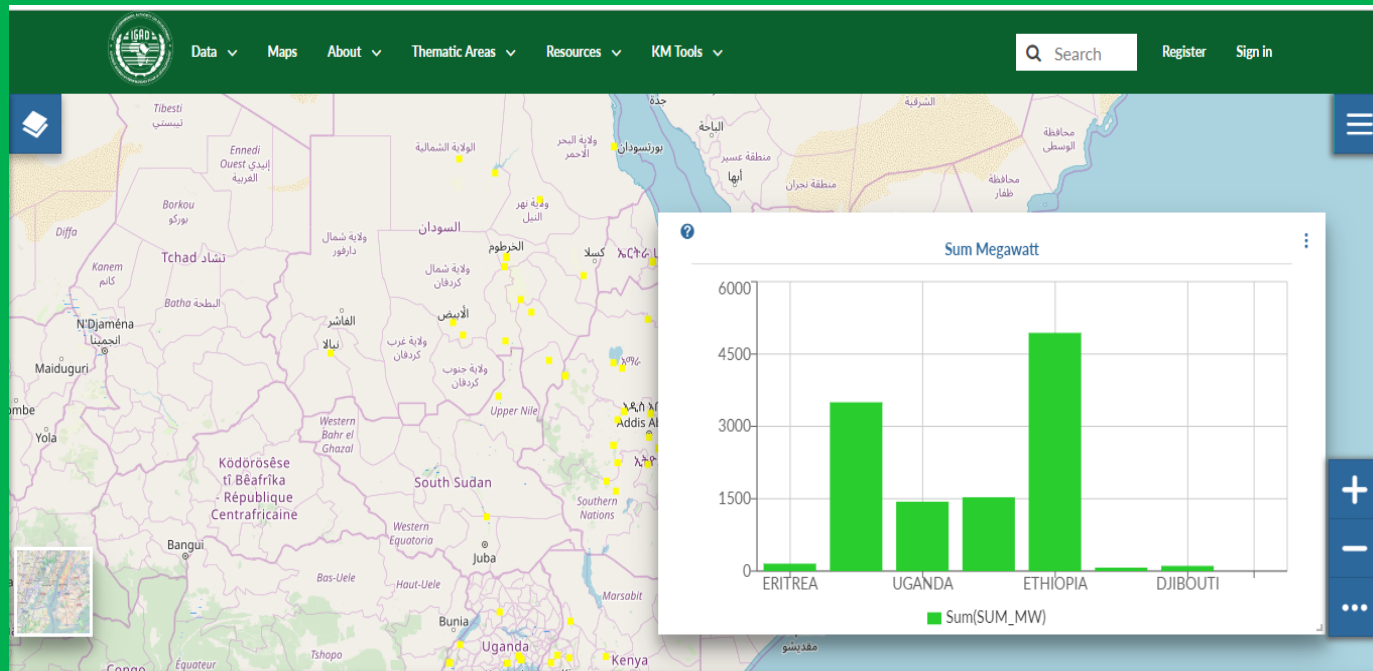




# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

- **MapStore Integration!**



**Widgets to  
create dynamic charts**



# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

**GeoNode** Data Maps About

## Register New Service

Service URL

Service Type

Create

**GeoNode** Data Maps About

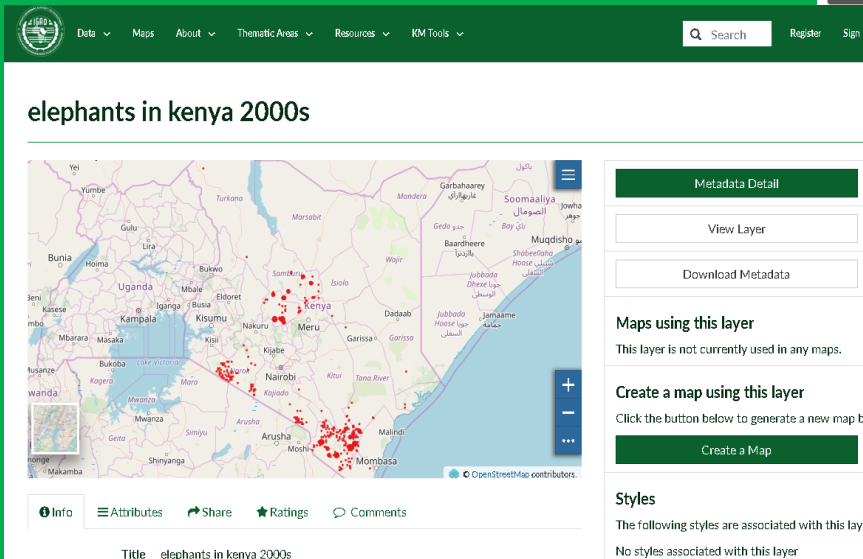
Harvesting resources...

Import resources world

3 resources can be imported

	Id	Name	Description
<input checked="" type="checkbox"/>	0	Cities	Cities
<input checked="" type="checkbox"/>	1	Continent	Continent
<input checked="" type="checkbox"/>	2	World	World

Service re Re-scan Service for new Resources



**GeoNode** Data Maps About

no image

Cities

Service is online

Cities

admin 23 Mar 2018 0 0 0 0 Create a Map

TEMPORAL SERIE

boxes\_with\_date

No abstract provided

admin 23 Mar 2018 3 0 0 0 Create a Map

ENVIRONMENT

Catchments in Djibouti

Service is online

This dataset is a water catchment boundaries in Djibouti. The country is divided into 25 drainage catchments in this GIS file. For detail applications, several smaller catchments should be generated from available topographic data

admin 25 Jan 2007 0 0 0 0 Create a Map

Improved Support for  
Remote Services




# IGAD Geoportal – New Functionalities

<http://igad.geonode.int>

**GeoNode** Data Maps About

## Upload Layers



Drop files here

or select them one by one:

[Choose Files](#)

Files to be uploaded

**SalesJan2009iso8601\_good**

Comma Separated Value

- [SalesJan2009iso8601\\_good.csv](#) [Remove](#)

Files are ready to be ingested! [Continue](#)

**GeoNode** Data Maps About Search admin

## Upload Layers

[Explore Layers](#)

### Inspect data for "SalesJan2009iso8601\_good"

Configure as Time-Series ☒ On

[Refresh](#)

City	Product	Name	Country	Price	Longitude	State	TransactionDate	LastLogin	PaymentType	Lai
Astoria	Product1	Federica e Andrea	United States	1200	-123.83	OR	2009-02-01T13:08Z	▲ 2009-03-01T12:32	Mastercard	46.
Echuca	Product1	Gouya	Australia	1200	144.75	Victoria	2009-03-01T14:44Z	▲ 2009-03-01T14:22	Visa	-36.
Cahaba Heights	Product2	Gerd W	United States	3600	-86.8025	AL	2009-04-01T12:56Z	▲ 2009-04-01T12:45	Visa	33.
Mickleton	Product1	LAURENCE	United	1200	-75.23806	NJ	2009-04-01T13:19Z	▲ 2009-04-01T13:04	Visa	39.
							20120:11Z	▲ 2009-04-01T19:45	Mastercard	40.
							20120:09Z	▲ 2009-04-01T20:04	Mastercard	36.

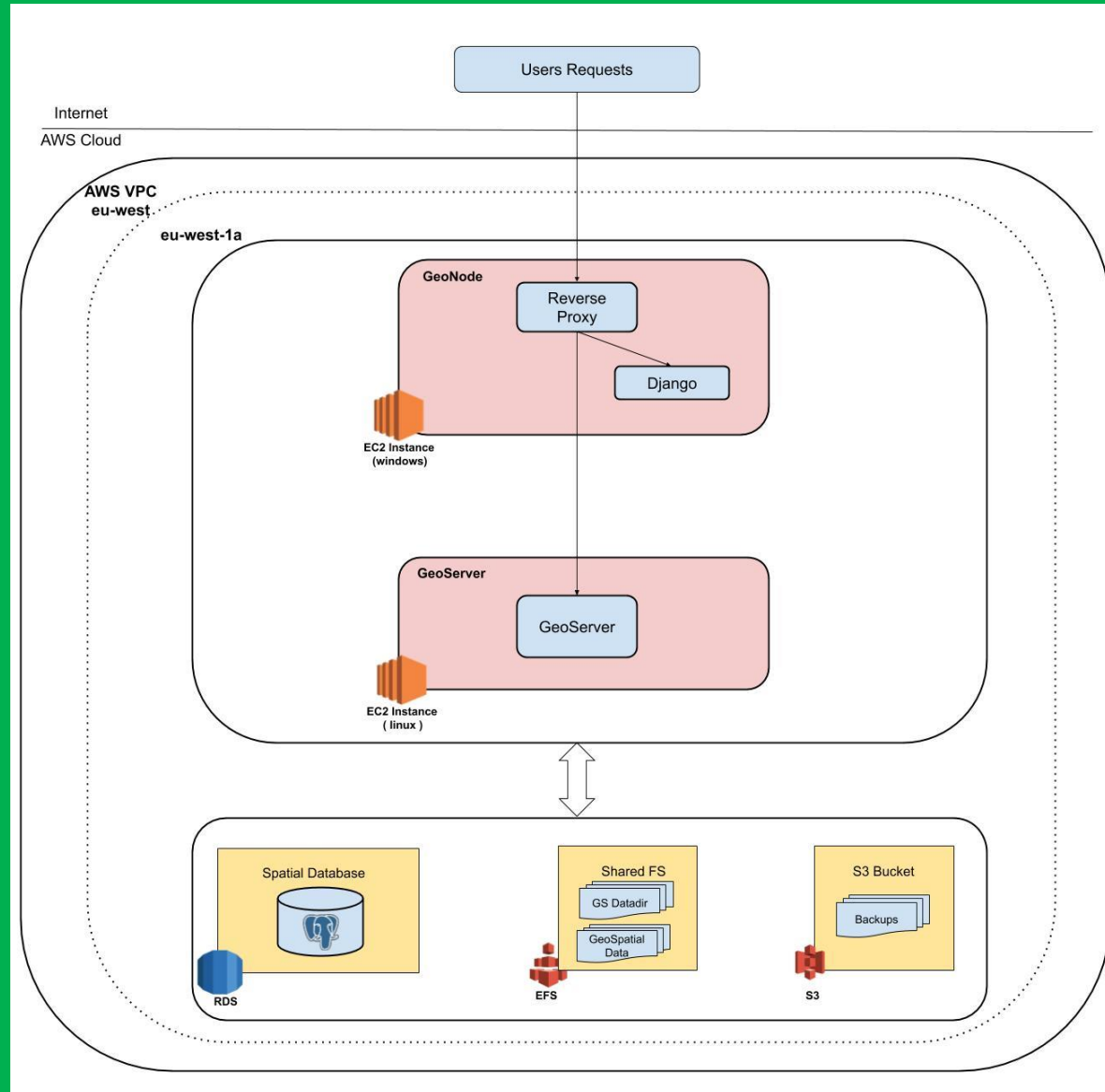
[1](#) [2](#) [3](#) [4](#) [5](#)

**Time Series import from CSV**



# IGAD Geoportal – Deployment

<http://igad.geonode.int>



# Challenges



## What are the challenges?

- Slow internet connection as the system requires strong connectivity
- Each uploaded information needs to be validated before publish to public
- Limited technical knowledge on the newly migrated Hosting platform (AWS)
- The GIS Working group is not active who suppose to contribute new maps / relevant information
- Working in silos within the IGAD institutions.



## What are the challenges?

- Conducting QGIS training and linking it to geonode use when possible
- Organize a training on the new revised portal to GIS and KM working group
- Organize a training on various IGAD Cluster offices /projects
- Using the existing maps for spatial planning in selected areas
- Continue to upload relevant Maps on the platform



**Thank you!**

***Visit***

***<http://geonode.igad.int>***