



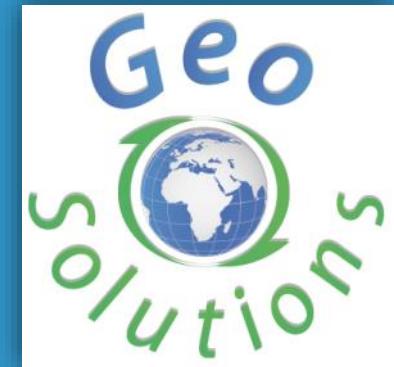
One GeoNode Many GeoNodes

Ing. Alessio Fabiani
Dott. Giovanni Allegri
Ing. Simone Giannecchini

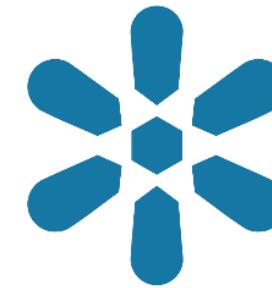


Quick Facts

- Founded in late 2006
- Expertise
 - GeoSpatial Data Fusion, Web Mashups, Mobile Apps
 - OGC, ISO, INSPIRE Standards
- Supporting/Developing FOSS4G projects
 - MapStore, GeoServer, GeoNetwork, CKAN, GeoNode
- Offer
 - [Enterprise Support Services](#)
 - [Deployment Warranty](#)
 - Professional [Training](#)
 - End-To-End Projects ([Integration](#))
- Clients
 - UN FAO (CIOK, FIGIS, NRL, FORESTRY, ESTG), UN WFP, World Bank, DLR, EUMETSAT, JRC, ARPAT, NATO CMRE, UNESCO, IGAD, UNEP, etc..
 - Private Companies all over the world like BAYER, BASF, DigitalGlobe, MDA, e-GEOS, Halliburton, etc..



One GeoNode





Sharing, Collecting, Using Information to Inform Decisions

Sharing

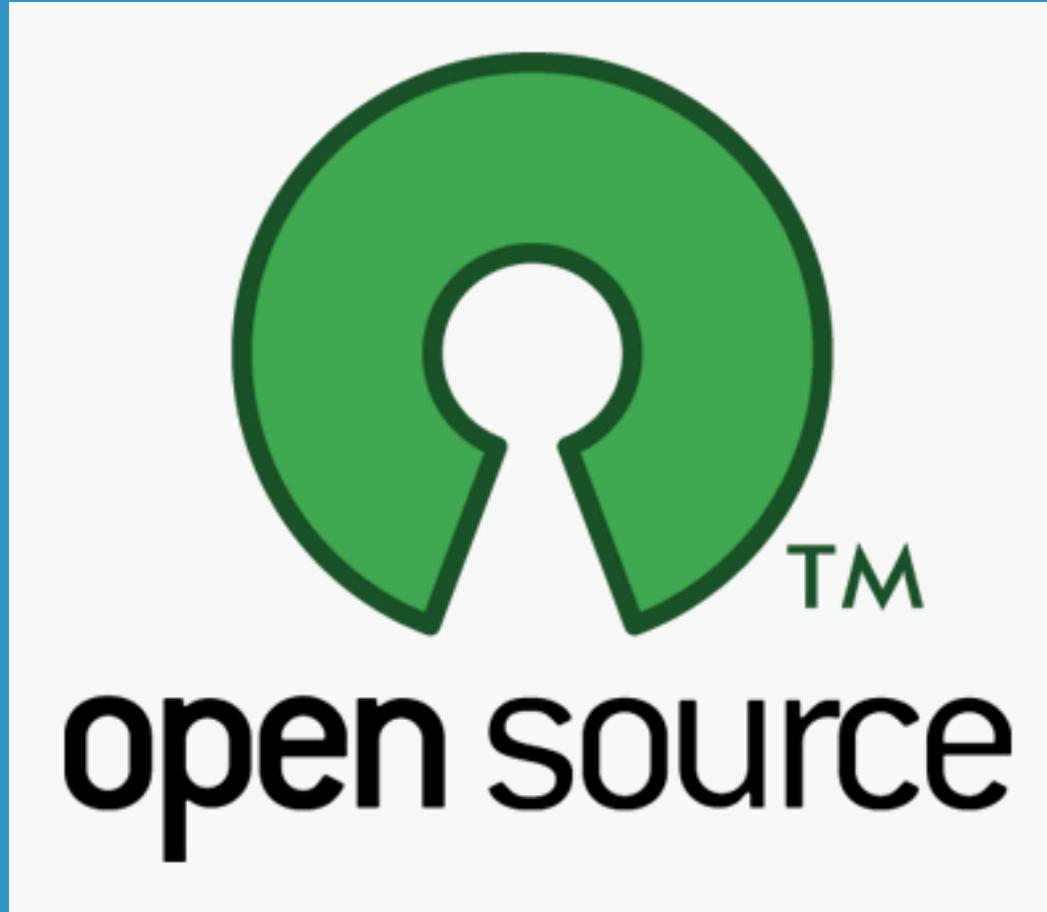


Collecting

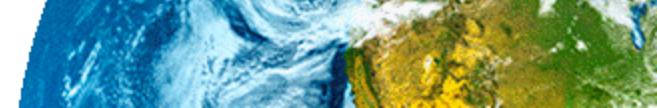


Using





It's open source, Of course!





GeoNode

Is a platform for the management and publication of geospatial data. It brings together mature open-source software projects under an easy to use interface. With GeoNode, non-specialized users can share data and create interactive maps.



GeoNode



GEONODE IS MADE FOR



Users

who log into a GeoNode website and use its functionality.

Administrators

who install and deploy GeoNode websites in production for their Users.

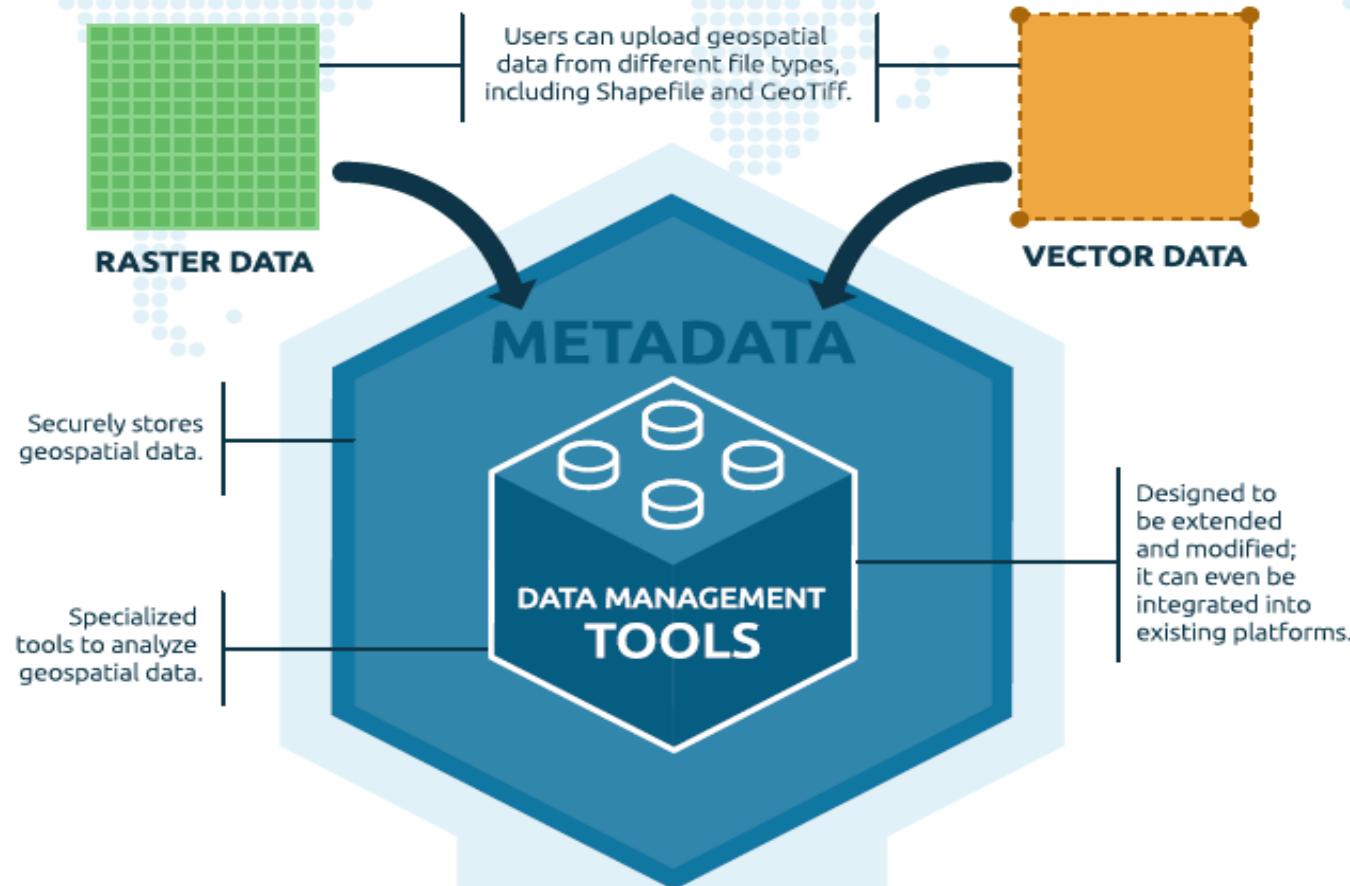
Developers

who write code to add functionality, integrate with other systems, fix bugs, and potentially help an Administrator setup a server and deploy a GeoNode instance for production.



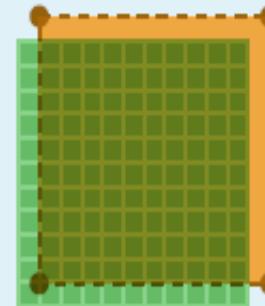


MANAGEMENT AND PUBLICATION OF GEOSPATIAL DATA





GeoNode



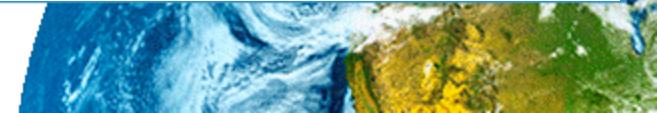
DATA MIXING



MAPS CREATION / MAP VISUALIZATION

Open standards are compatible with external layers from OpenStreetMap, Google Satellite or elsewhere.

Features a web-based styles editor to create maps.



GeoNode



*GeoNode Data Maps About

Upload Layers



Drop files here

or select them one by one:

Choose Files

Files to be uploaded

san_andres_y_providencia_water

ESRI Shapefile

- san_andres_y_providencia_water.dbf [Remove](#)
- san_andres_y_providencia_water.prj [Remove](#)
- san_andres_y_providencia_watershp [Remove](#)
- san_andres_y_providencia_watershx [Remove](#)

Your layer was successfully uploaded

Layer Info

Edit Metadata

Upload Metadata

Manage Styles

Data Upload





GeoNode



The screenshot shows the GeoNode web application interface. On the left is a map of a coastal area with various geographical features like roads, buildings, and water bodies labeled "La Loma", "Loma N", "Carrera 5", and "San Andrés". On the right is a "Style Rule: New Rule" dialog box. The dialog has tabs for "BASIC", "Labels", and "Advanced", with "BASIC" selected. It includes fields for "Name" (set to "Water"), "Symbol" (a small cyan square), and checkboxes for "Fill" and "Stroke". Under "Fill", there is a color picker set to "#3F3" (41% opacity) and an opacity slider at 100%. Under "Stroke", there are dropdowns for "Style" (set to "solid"), "Color" (#bbffff), and "Width" (0.7). At the bottom are "Cancel" and "Save" buttons.

Styling



Editing

The screenshot shows the GeoNode web application interface. At the top, there is a navigation bar with the GeoNode logo and links for Data, Maps, and About. Below the navigation bar is a toolbar with icons for Map, Print, Identify, Query, Measure, and Edit.

The main area is divided into several sections:

- LAYERS:** A sidebar on the left lists layers under Overlays and Base Maps. The "San Andres Y Providencia Highway" layer is selected, indicated by a grey background.
- Map View:** The central area displays a map of a highway segment. The highway is shown in yellow with a dashed line for the center. A red dotted line indicates a proposed or planned route. The map also includes other geographical features like buildings and roads.
- Editing Panel:** A floating panel on the right is titled "san_andres_y_providencia_highw". It contains a table with the following data:

Name	Value
NAME	Test
ONEWAY	False
LANES	2
TYPE	

At the bottom of the panel are "Save" and "Cancel" buttons.



Permissions

Set permissions for this resource

Who can view it?

Anyone
The following users:

The following groups:

Who can download it?

Anyone
The following users:

The following groups:

Who can change metadata for it?

Download

Download Layer

[Images](#) [Data](#)

Zipped Shapefile
GML 2.0
GML 3.1.1
CSV
Excel
GeoJSON

[Close](#)



Edit Your Profile

First name: Alessio
Last name: Fabiani
Email address: alessio.fabiani@geo-solutions.it
Organization Name: GeoSolutions S.A.S.
name of the responsible organization
Profile:

GeoNode Data Maps About

Users & Groups

Create a Group

Title: GeoSolutions S.A.S.
Logo: Choose File: GeoSolutions.tif
Description:

GeoSolutions is a specialized in the processing and dissemination of raster and vector geospatial data with Open Source software according to the standards created by Open Geospatial Consortium (OGC) and the ISO Technical Committee 211 which provide the base building blocks for the INSPIRE regulations. The GeoSolutions team is composed by renowned international professionals with leading roles in some of the main Open Source products for the geospatial field like GeoServer, GeoNetwork, MapStore and GeoNode for which GeoSolutions provides Enterprise Support Services. GeoSolutions counts among its customers more than 100 major national and international government agencies as well as private companies worldwide.

GeoSolutions is an OGC Member since 2016.

Email: info@geo-solutions.it
Access: Public

Public: Any registered user can view and join a public group.
Public (invite-only): Any registered user can view the group. Only invited users can join.





GeoNode Data Maps About Search Alessio Fabiani

Metadata for San Andreas Administrative Bounds

Completeness
Check Schema mandatory fields 91%

Edit Preview Settings

Mandatory Mandatory Optional

1 Basic Metadata 2 Location and Licenses 3 Optional Metadata 4 Dataset Attributes

Thumbnail

Title San Andreas Administrative Bounds

Abstract No abstract provided

Free-text Keywords "San Andreas" Bounds A space or comma-separated list of keywords

Date type Publication Date 2017-07-18

Category Imagery Base Maps Earth Cover

Group Choose one of the following...

Save Close Update Next >>

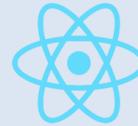
Metadata



What's it made of?



GeoExt



React



OpenLayers



django



GeoServer





Many GeoNodes





- **GeoNode** cannot address all use cases
 - Avoid reinventing the wheel
 - Avoid implicit/explicit forks
- **Custom GeoNode Applications** to the rescue!
- A proper “**GeoNode Project**”:
 - Start from a **template** (`geonode-project`)
 - Generate a “**materialized**” Django 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!





This approach offers several opportunities

- Customize GeoNode look and feel
- Extend its models without modifying GeoNode Core
- Extend its functionalities without modifying GeoNode Core
- Define a brand new end user interface

This approach allows us to

- make the most out of what GeoNode core offers
- without sacrificing **versatility**
- without sacrificing **specific project needs**

It's doable, we did it (or at least we tried to ☺)

Hold tight, awesome examples next!





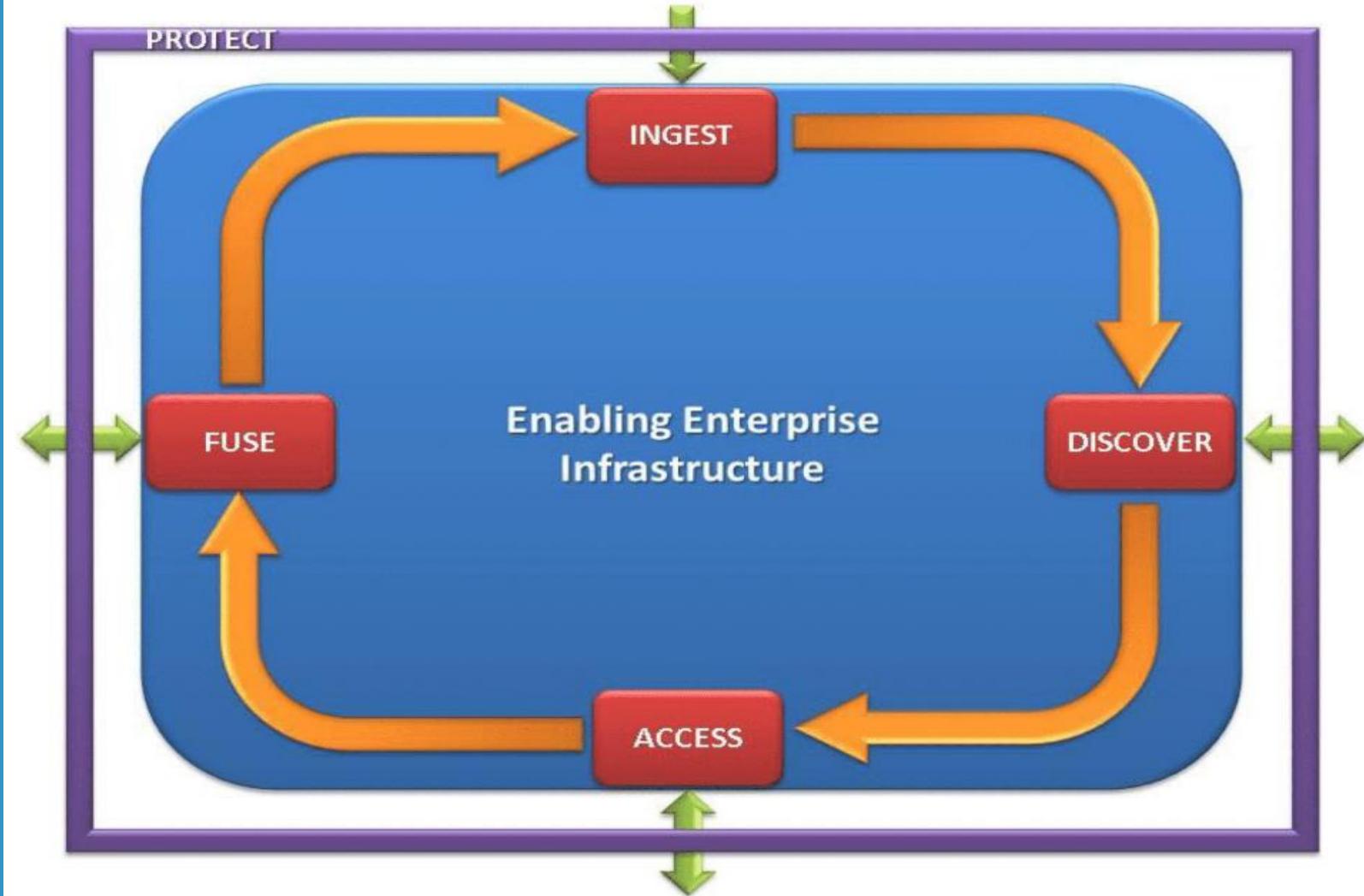
- Caribbean Community Climate Change Centre – C-READ (Regional Environment and Atmospheric Data)
- Development and Installation of a Database Management System for a Regional Integrated Observing Network for Environmental Change in the Wider Caribbean
 - **Ingest**, to provide functionalities to preprocess, transform, load and refine the data that needs to be ingested into the system for later reuse
 - **Discover**, in order to allow external and internal players to search for data and information for later access and fusion
 - **Access**, to support the dissemination of data and information both in raw form as well as in more sophisticated forms like portrayals, reports and maps (superimpositions of multiple portrayals of raw data)
 - **Fuse**, to provide advanced geoprocessing functionalities to extract higher level information from the data and information managed by the data warehouse
- <http://c-read.net>



Project 1: C-READ



<http://c-read.net/>



Project 1: C-READ



<http://c-read.net/>



The screenshot shows the homepage of the C-READ Management System. At the top, there is a banner with the text "C-READ (Caribbean - Regional Environmental and Atmospheric Data) Management System". Below the banner are logos for the Caribbean Community Climate Change Centre (CCCCC), CIMH (Caribbean Institute for Meteorology and Hydrology), and BID (Inter-American Development Bank). The main search area features a search bar with placeholder text "SEARCH YOUR DATA" and a magnifying glass icon. Below the search bar is a "POPULAR TAGS" section with buttons for "Jamaica", "jamaica", and "services". At the bottom, there are four categories represented by icons: "Cat 9: Socio-Economy" (line graph), "Cat 8: Energy" (wind turbines), "Cat 1: Hydromet" (water droplets), and "Cat 5: Land Cover" (mountain).

C-READ (Caribbean - Regional Environmental and Atmospheric Data) Management System

Caribbean Community Climate Change Centre

CIMH

BID

SEARCH YOUR DATA

POPULAR TAGS

Jamaica

jamaica

services

Cat 9: Socio-Economy

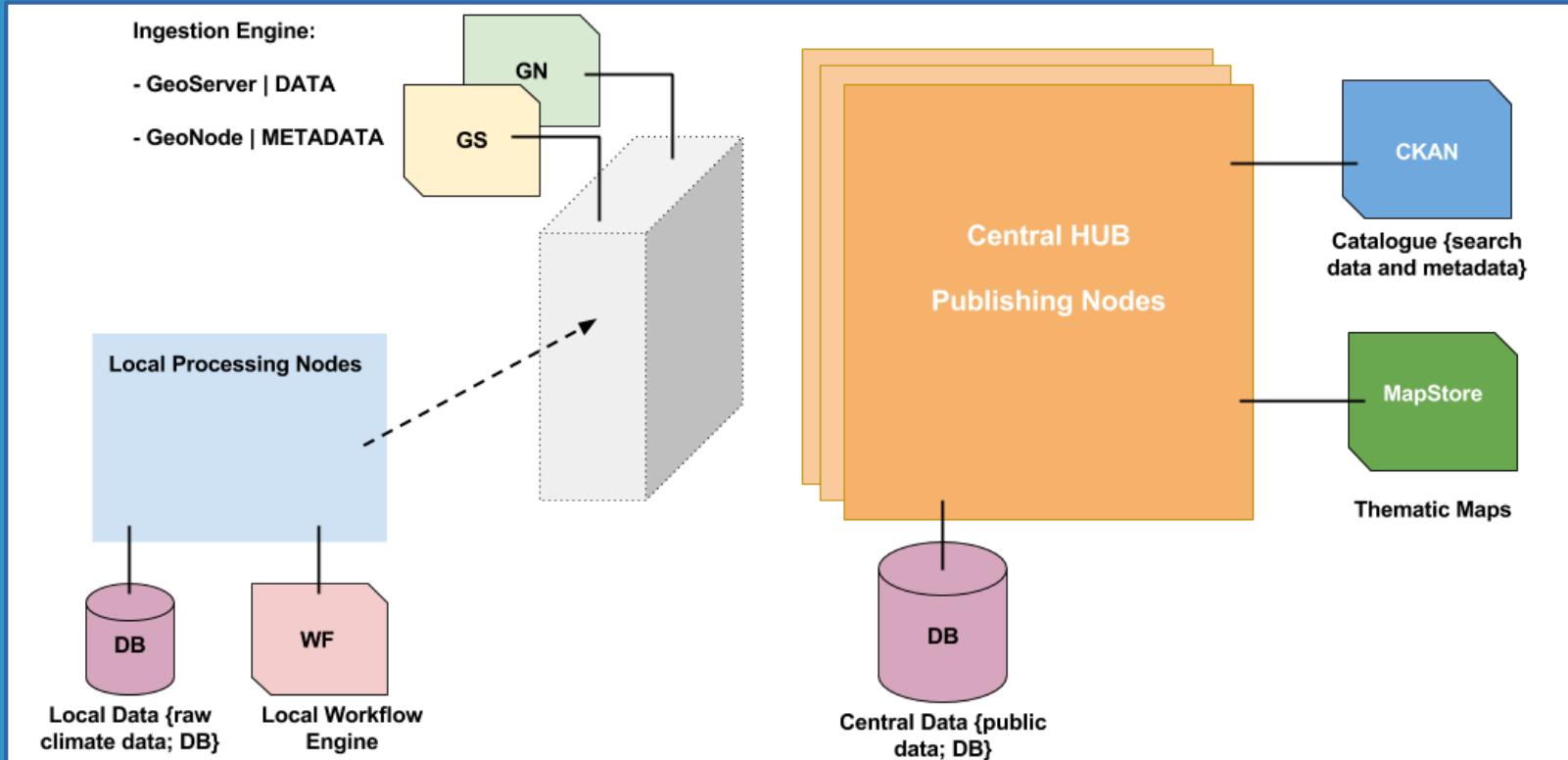
Cat 8: Energy

Cat 1: Hydromet

Cat 5: Land Cover



C-READ





The screenshot displays the C-READ application interface, which includes a main map view and two detailed views. The main map shows a heatmap over South America and Africa, with a color scale from green to red. A legend on the right indicates temperature ranges in Å K.

Top Left View:

- Map:** Shows a heatmap over South America and Africa. A color scale bar indicates temperatures from 260.15 Å K to 305.15 Å K.
- Table:**

EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	Time	Actions
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T00:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T01:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T02:30:00.000+0000	
- Table:**

EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	Time	Actions
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T00:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T00:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T01:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T02:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T03:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T04:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T05:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T06:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T07:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T08:30:00.000+0000	

Bottom Left View:

- Map:** Shows a heatmap over the Amazon region with a color scale bar indicating temperatures from 260.15 Å K to 305.15 Å K.
- Table:**

Dimension	Enabled	Regex
TIME	True	[0-9][8]T[0-9]{6}Z
- Table:**

Attribute Name	Label	Description
GRAY_INDEX		

Right Panel:

- Map:** Shows a heatmap over Africa with a color scale bar indicating temperatures from 260.15 Å K to 305.15 Å K.
- Table:**

EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	Time	Actions
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T00:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T00:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T01:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T02:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T03:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T04:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T05:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T06:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T07:30:00.000+0000	
EPSG:4326;-80.0003,-29.9995,19.9997,29.7505	2015-08-05T08:30:00.000+0000	



- **WB-GFDRR Project - Design and Implementation of Risk Management Modules to the Afghanistan Disaster Risk GeoNode**
- **Risk Management and Cost Benefit Analysis Modules**
 - Fill Afg gvt information gap on hazards by a multi-peril risk assessment and cost-benefit analysis covering the entire country
 - Extend GeoNode with modules able to easy the access to all this amount of analysis in a way that people can easily recognize
 - Create flexible/extensible modules to present different types of Cost Benefit Analysis
- <http://disasterrisk.af>



Project 2: Afghanistan Disaster Risk



<http://disasterrisk.af/>

The screenshot shows the homepage of the Afghanistan Disaster Risk Info website. At the top, there is a navigation bar with links for 'Layers', 'Maps', 'Documents', 'Risk Management Tools', 'People', and 'Groups'. On the left, there is a logo for 'Afghanistan GeoNode'. On the right, there are logos for 'The World Bank' and 'GFDRR' (Global Facility for Disaster Reduction and Recovery). The main content area features a large photograph of a rugged mountain landscape with a small, simple mud-brick building in the foreground. Overlaid on the image is the text 'Welcome to the Afghanistan Disaster Risk Info' and a subtitle: 'A public platform for creating, sharing and accessing geospatial data and maps for decision-making about disaster risk'. Below the image, the text 'Afghanistan Disaster Risk WebGIS' is visible. At the bottom of the page, there are three smaller images: a map of Afghanistan, a detailed map of Kabul City, and a photograph of a group of people in a meeting room.





Risk Data Extraction & Visualization Tool FROM THIS ...

REFERENCE	ISO	ADMIN_NAM	ADMIN_LEVEL	DIST_CODE	10	20	50	100	250	500	1000
0	Afghanist	AF	Afghanist	0 AF	2	2	2	2	2	2	2
1											
2	Afghanist	AF	Badakhsh	1 AF15	5	5	5	5	5	5	5
3	Afghanist	AF	Badghis	1 AF29	2	2	2	1	1	1	1
4	Afghanist	AF	Baghlan	1 AF09	2	2	2	2	2	1	1
5	Afghanist	AF	Balkh	1 AF18	2	2	2	1	1	1	1
6	Afghanist	AF	Bamyan	1 AF10	3	2	2	2	2	2	2
7	Afghanist	AF	Daykundi	1 AF22	2	2	2	2	2	2	2
8	Afghanist	AF	Farah	1 AF31	2	2	1	1	1	1	1
9	Afghanist	AF	Faryab	1 AF28	2	1	1	1	1	1	1
10	Afghanist	AF	Ghazni	1 AF11	2	2	2	1	1	1	1
11	Afghanist	AF	Ghor	1 AF21	2	2	2	2	2	2	2
12	Afghanist	AF	Hilmand	1 AF32	1	1	1	1	1	1	1
13	Afghanist	AF	Hirat	1 AF30	1	1	1	1	1	1	1
14	Afghanist	AF	Jawzjan	1 AF27	1	1	1	1	1	1	1
15	Afghanist	AF	Kabul	1 AF01	1	1	1	1	1	1	1
16	Afghanist	AF	Kandahar	1 AF33	1	1	1	1	1	1	1
17	Afghanist	AF	Kapisa	1 AF02	1	1	1	1	1	1	1
18	Afghanist	AF	Khost	1 AF26	2	2	1	1	1	1	1
19	Afghanist	AF	Kunar	1 AF13	3	2	2	2	2	2	2
20	Afghanist	AF	Kunduz	1 AF17	1	1	1	1	1	1	1
21	Afghanist	AF	Laghman	1 AF07	2	2	2	2	1	1	1
22	Afghanist	AF	Logar	1 AF05	1	1	1	1	1	1	1
23	Afghanist	AF	Nangarhar	1 AF06	1	1	1	1	1	1	1
24	Afghanist	AF	Nimroz	1 AF34	1	1	1	1	1	1	1
25	Afghanist	AF	Nuristan	1 AF14	5	5	5	5	5	5	5
26	Afghanist	AF	Paktika	1 AF25	2	2	1	1	1	1	1
27	Afghanist	AF	Paktya	1 AF12	2	2	2	1	1	1	1
28	Afghanist	AF	Panzher	1 AF08	5	4	3	3	2	2	2
29	Afghanist	AF	Parwan	1 AF03	2	2	2	2	1	1	1
30	Afghanist	AF	Samangan	1 AF19	3	2	2	2	2	2	1
31	Afghanist	AF	Sar-e-Pul	1 AF20	2	2	2	2	1	1	1
32	Afghanist	AF	Takhar	1 AF16	3	3	3	2	2	2	2
33	Afghanist	AF	Uruzgan	1 AF23	2	2	1	1	1	1	1
34	Afghanist	AF	Wardak	1 AF04	2	2	2	2	1	1	1
35	Afghanist	AF	Zabul	1 AF24	2	2	2	2	1	1	1
36											

< > | baseline | SSP1 | SSP2 | SSP3 | SSP4 | SSP5 | +





Risk Data Extraction & Visualization Tool

... TO THIS

Screenshot of the Afghanistan GeoNode interface showing risk data extraction and visualization tools.

The top navigation bar includes: Layers, Maps, Documents, Risk Management Tools (dropdown), People, Groups, and Sign in.

The main menu items are: Overview, Earthquake, Riverflood, Water scarcity (selected), Avalanche, and Landslide.

A sub-menu for "Population affected by droughts (Classes)" is displayed:

This directory contains two files indicating the population affected by droughts. Results are given for the current (reference, or baseline) situation and for the future situation (2050; five SSP scenarios). File "available_water_per_capita.xlsx": The results show, for each admin level, return values of the average available water per capita in m3/year. File "available_water_per_capita_class.xlsx": Same results as above, but now presented in terms of five classes, varying from severe drought (class 1) to abundance of water (class 5). Class | Lower limit [m3/cap./year] | Upper limit[m3/cap./year] 1|0|50 2|50|500 3|500|1,000 4|1,000|1,700 5|1,700| -

Scenario selection: Scenario: SSP1

Map view showing population affected by droughts across Afghanistan provinces. A callout bubble indicates "Zoom to Helmand".

Map scale: 300 km

Attribution: Leaflet | OpenStreetMap contributors

Return Period: 10

Current Scenario Chart: drought [1]-abundance of water [5]



Risk Data Extraction & Visualization Tool ... AND THIS

The screenshot displays the Afghanistan GeoNode interface, a web-based platform for disaster risk management. At the top, a navigation bar includes links for Layers, Maps, Documents, Risk Management Tools (with a dropdown menu), People, Groups, and Sign in. The main content area is titled "Scenario: SSP4". On the left, a vertical sidebar lists scenarios: ResAA1, SSP1, SSP2, SSP3, SSP4, and SSP5. A central chart, titled "Current Scenario Chart", shows a bar graph of economic losses for different return periods. An annotation highlights a bar at 1,000 years with a value of \$24,275,907,910.8. Below this is a "Summary Chart" showing trends over time. To the right, a map of South Asia and parts of Central Asia is shown, with a specific focus on Pakistan and India. A legend indicates loss thresholds from \$0 to \$6,000,000,000. A "Return Period: 10" section is also visible.

Scenario: SSP4

ResAA1 — SSP1 — SSP2 — SSP3 — SSP4 — SSP5 —

Current Scenario Chart

Return Period : 1,000 Years
\$: 24,275,907,910.8

Summary Chart

Return Period: 10

300 km

Islamabad Chiniot Lahore Bikaner Jaipur Sukkur叶letta Balochistan پاکستان اسلام سیستان و بلوچستان افغانستان

Return Period: 10

\$0 - \$10,000,000
\$10,000,000 - \$50,000,000
\$50,000,000 - \$100,000,000
\$100,000,000 - \$200,000,000
\$200,000,000 - \$250,000,000
\$250,000,000 - \$300,000,000
\$300,000,000 - \$500,000,000
\$500,000,000 - \$1,000,000,000
\$1,000,000,000 - \$1,500,000,000
\$1,500,000,000 - \$3,000,000,000
\$3,000,000,000 - \$4,500,000,000
\$4,500,000,000 - \$6,000,000,000

Afghanistan Disaster Risk



Cost Benefit Analysis & Decision Tool FROM THIS ...

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
						Base	AR1	BB2	CT1	DC1	DC2	DC3	AAL				
Base	Improved masonry (Engineered)				Scenario 0	0,04	0,345925926	0,345925926	0,061728395	0,183419753	0,02	0,003	\$ 3.311.319,72	Average			
AR1	Masonry/adobe/rubble stone masonry/unengineered				Scenario 1	0,04	0	0,691851852	0,061728395	0,183419753	0,02	0,003	\$ 2.426.520,22	Adjusting masonry in rural and bad qualit			
BB2	Brick masonry (horizontal reinforcement or otherwise)				Scenario 2	0,04	0	0	0,061728395	0,875271605	0,02	0,003	\$ 2.303.303,02	Adjustment to RC (Low Code)			
CT1	Timber frame - heavy infill masonry				Scenario 3	0,04	0	0	0,061728395	0	0,895271605	0,003	\$ 1.467.846,08	Adjustment to RC (Moderate Code)			
DC1	In-situ RC Frame with non-structural cladding				Scenario 4	0,04	0	0	0,061728395	0	0,447635802	0,450635802	\$ 1.277.786,08	Improvement of Stock to code			
DC2	RC frame with infill masonry				Scenario 5	0,04	0	0,345925926	0,061728395	0,172962963	0,356382716	0,023	\$ 2.016.248,44	Rural School Improvement			
DC3	In-situ RC Frame with shear wall					\$ 1.706.672,69	\$ 5.112.112,81	\$ 2.554.341,24	\$ 2.004.774,40	\$ 2.376.243,58	\$ 1.421.731,94	\$ 997.145,69					
RP	return period				RP (years)	Scen 0	Scen 1	Scen 2	Scen 3	Scen 4	Scen 5						
see the full national risk analysis sheets for the vulnerability function																	
					1	\$ 203.747,27	\$ 104.959,29	\$ 82.733,36	\$ 24.189,01	\$ 14.715,88	\$ 61.888,44						
					5	\$ 3.890.050,48	\$ 2.803.952,74	\$ 2.595.331,58	\$ 1.563.211,27	\$ 1.313.202,30	\$ 2.252.694,32						
					10	\$ 7.599.026,72	\$ 5.699.488,15	\$ 5.412.514,69	\$ 3.511.530,38	\$ 3.042.032,84	\$ 4.792.059,21						
					15	\$ 10.527.220,44	\$ 7.990.022,46	\$ 7.668.474,19	\$ 5.111.150,43	\$ 4.486.369,28	\$ 6.803.064,38						
					20	\$ 12.931.983,15	\$ 9.891.182,27	\$ 9.565.617,36	\$ 6.488.394,94	\$ 5.710.804,90	\$ 8.535.568,58						
					25	\$ 15.120.793,71	\$ 11.606.166,93	\$ 11.300.904,41	\$ 7.640.450,96	\$ 6.801.010,37	\$ 9.975.992,45						
					30	\$ 16.892.920,38	\$ 13.053.512,73	\$ 12.713.560,91	\$ 8.732.844,34	\$ 7.763.728,82	\$ 11.371.314,27						
					35	\$ 18.665.047,04	\$ 14.500.858,53	\$ 14.126.217,40	\$ 9.657.683,45	\$ 8.678.593,54	\$ 12.511.547,81						
					40	\$ 20.215.532,79	\$ 15.662.278,88	\$ 15.357.814,94	\$ 10.582.522,56	\$ 9.446.470,75	\$ 13.651.781,35						
					45	\$ 21.568.552,75	\$ 16.749.207,13	\$ 16.424.303,95	\$ 11.438.788,11	\$ 10.214.347,96	\$ 14.792.014,89						
					50	\$ 22.921.572,71	\$ 17.836.135,37	\$ 17.490.792,97	\$ 12.157.292,10	\$ 10.982.225,18	\$ 15.644.268,71						
					55	\$ 24.274.592,67	\$ 18.923.063,61	\$ 18.557.281,99	\$ 12.875.796,09	\$ 11.622.963,20	\$ 16.494.491,58						
					60	\$ 25.627.612,63	\$ 19.875.382,91	\$ 19.592.629,90	\$ 13.594.300,09	\$ 12.213.369,30	\$ 17.344.714,44						
					65	\$ 26.628.040,97	\$ 20.675.423,69	\$ 20.390.787,52	\$ 14.312.804,08	\$ 12.803.775,39	\$ 18.194.937,30						
					70	\$ 27.576.986,44	\$ 21.475.464,46	\$ 21.188.945,15	\$ 14.968.406,42	\$ 13.394.181,49	\$ 19.045.160,17						
					75	\$ 28.525.931,92	\$ 22.275.505,24	\$ 21.987.102,77	\$ 15.491.521,28	\$ 13.984.587,58	\$ 19.788.608,90						
					80	\$ 29.474.877,40	\$ 23.075.546,02	\$ 22.785.260,39	\$ 16.014.636,13	\$ 14.574.993,68	\$ 20.409.227,04						
					85	\$ 30.423.822,87	\$ 23.875.586,80	\$ 23.583.418,01	\$ 16.537.750,99	\$ 15.064.127,62	\$ 21.029.845,19						
					90	\$ 31.372.768,35	\$ 24.675.627,58	\$ 24.381.575,63	\$ 17.060.865,85	\$ 15.490.900,06	\$ 21.650.463,33						
					95	\$ 32.321.713,83	\$ 25.475.668,36	\$ 25.179.733,25	\$ 17.583.980,70	\$ 15.917.672,50	\$ 22.271.081,47						
					100	\$ 33.270.659,30	\$ 26.121.472,56	\$ 25.920.967,06	\$ 18.107.095,56	\$ 16.344.444,94	\$ 22.891.699,62						
					110	\$ 34.790.398,45	\$ 27.202.768,40	\$ 27.006.472,79	\$ 19.153.325,27	\$ 17.197.989,83	\$ 24.132.935,91						
					120	\$ 36.074.117,37	\$ 28.284.064,24	\$ 28.091.978,52	\$ 19.994.117,88	\$ 18.051.534,71	\$ 25.374.172,20						
					130	\$ 37.357.836,28	\$ 29.365.360,09	\$ 29.177.484,26	\$ 20.733.103,13	\$ 18.905.079,60	\$ 26.345.118,80						
					140	\$ 38.641.555,20	\$ 30.446.655,93	\$ 30.262.989,99	\$ 21.472.088,37	\$ 19.680.764,58	\$ 27.174.913,00						
					150	\$ 39.925.274,12	\$ 31.527.951,77	\$ 31.348.495,72	\$ 22.211.073,62	\$ 20.277.346,48	\$ 28.004.707,21						
					160	\$ 41.208.993,03	\$ 32.609.247,62	\$ 32.434.001,45	\$ 22.950.058,86	\$ 20.873.928,38	\$ 28.834.501,41						



Cost Benefit Analysis & Decision Tool ... TO THIS

Afghanistan GeoNode

Layers Maps Documents Risk Management Tools ▾ People Groups Sign in

Overview Earthquake Riverflood Waterscarcity Avalanche Landslide

Doshi-Bamyan Road Case Study

A case study of the Doshi-Bamyan Road was undertaken to examine the effect of earthquakes on the potential path of the road. Current analysis depicts the risk reduction of meters of roads damaged along several Return Periods (10y, 50y, 100y, 250y, 500y, 1000y, 2500y) and for different damage scenarios (Slight, Moderate, Extensive, Complete), by applying Structural Retrofitting and Geotechnical Engineering methods.

50 Year Lifetime Benefit (assuming constant increase of benefits)

	Using AAL (mean)	Using median of 50 year lifetime
Cost of Project:	\$16,677,797.81	\$16,677,797.81
Existing Losses:	\$16,080,589.68	\$2,278,557.93
Retrofitted Losses:	assuming NPV, discount etc as set out in report \$6,649,654.07	\$341,783.69
Potential Savings:	\$9,430,935.61	\$1,936,774.24
B/C ratio	0.565478471582561	0.116128895860483

Current: Baseline

Current situation; without Structural Retrofitting and Geotechnical Engineering



Cost Benefit Analysis & Decision Tool ... AND THIS

Afghanistan GeoNode | Layers | Maps | Documents | Risk Management Tools | People | Groups | Sign in

Overview Earthquake Riverflood Waterscarcity Avalanche Landslide

Schools case study

Retrofitting and Benefit ratio estimation.

Cedillos et al. (2012) and Smyth et al. (2004) detail successful retrofitting of schools in different environments around the world. The price of retrofit is often around 8-20% the value of the structure but would improve life safety far in excess of that. The base AAL for schools is approximately 0.2% across Afghanistan which corresponds to slightly higher than the total AAL which is around 0.15-0.16%. This indicates the vulnerable nature of poorly built masonry schools. If these were adjusted in different ways using various scenarios of government or external improvement, the following savings could be made. Five scenarios are set out in order to examine the impact change of adjusting the vulnerability of the school stock.

Current: Baseline

Risk Reduction Scenario Compared to Baseline

Adjusting masonry in rural and bad quality to better quality | Adjustment to RC (Low Code)

Adjustment to RC (Moderate Code) | Improvement of Stock to code

Rural School Improvement

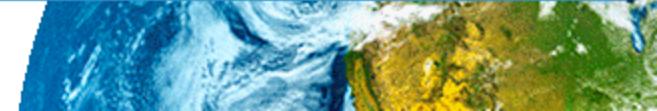
Map showing risk reduction scenarios across Afghanistan and surrounding regions. The map includes labels for major cities like Kabul, Herat, Mazar-e-Sharif, and Quetta, as well as provinces like Helmand, Kandahar, and Badghis. A legend indicates risk levels from \$0 - \$25 to \$1.600. A 300 km scale bar is shown.

Leaflet | Open StreetMap contributors

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- **UNESCO Project - Water Information Network System by the International Hydrological Programme of UNESCO**
- **Enable a publishing workflow for spatial Layers**
 - Give real powers to Group Managers
 - Isolate GeoNode Groups private data
 - Each dataset must be approved by an editor before it can become public
- **Improve the contributors experience**
 - Introduce the possibility of uploading KMZ and Temporal Series
 - Improve the integration with external Desktop GIS clients, and allow people to upload SLDs from external resources
- **<http://ihp-wins.unesco.org>**





Project 3: UNESCO WINS



<http://ihp-wins.unesco.org/>

The screenshot shows the homepage and a detailed map page of the UNESCO WINS system.

Homepage: The top navigation bar includes the United Nations Educational, Scientific and Cultural Organization (UNESCO) logo, the International Hydrological Programme (IHP) logo, and the WINS logo. The menu options are Layers, Maps, Documents, People, Groups, and TimeSeries. A search bar and user registration/sign-in links are also present. The main content area features a dark background with a network of blue lines and dots, and the text "Welcome to the Water Information Network System by the International Hydrological Programme of UNESCO".

Map Page: This page displays a world map where countries are colored according to their mean water footprint of national consumption per capita for the period 1996–2005. The legend indicates the following ranges:

Mean water footprint range (m³/year/capita)
550 - 750
750 - 1000
1000 - 1200
1200 - 1500
1500 - 2000
2000 - 2500
2500 - 3000
3000 - 3775

Below the map, detailed information about the layer is provided, including the title "Mean water footprint of national consumption per capita (1996–2005)", an abstract describing the methodology and results, and a table of data. The map also includes a scale bar (1:279540572) and a north arrow.

Bottom Navigation: The footer contains links for About Us, Terms of use, and Get Started, along with language selection (English) and a GeoNode-powered link.

Project 3: UNESCO WINS



GeoNode Data Maps About

Upload Layers

Drop files here

or select them one by one:

Choose Files

Files to be uploaded

LSMensCSR5r3120_0_T_tendance_235678_trend

Google Earth KMZ

- LSMensCSR5r3120_0_T_tendance_235678_trend.kmz Remove

Select the charset or leave default

KMZ
Raster
Upload

GeoNode Data Maps About

LSMensCSR5r3120_0_T_tendance_235678_trend

© OpenStreetMap contributors



Project 3: UNESCO WINS

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

SalesJan2009iso8601_good

Print

OpenStreetMap contributors

GeoNode Data Maps About

Search admin

Upload Layers

Explore Layers

Geospatial Data "SalesJan2009iso8601_good"

Please indicate which attributes contain the latitude and longitude coordinates in the CSV data.

With this data, GeoNode was able to guess which attributes contain the latitude and longitude coordinates, but please confirm that the correct attributes are selected below.

Latitude: Latitude
Longitude: Longitude

Cancel Next

GeoNode Data Maps About

Search admin

Upload Layers

Explore Layers

Inspect data for "SalesJan2009iso8601_good"

Configure as Time-Series

City	Product	Name	Country	Price	Longitude	State	TransactionDate	LastLogin	PaymentType	Lat
Astoria	Product1	Federica 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 States	1200	-75.23806	NJ	2009-04-01T13:19Z	2009-04-01T13:04	Visa	39
Peoria	Product1	Fleur	United States	1200	-89.58889	IL	2009-04-01T20:11Z	2009-04-01T19:45	Mastercard	40
Martin	Product1	adam	United States	1200	-88.85028	TN	2009-02-01T20:09Z	2009-03-01T12:50	Mastercard	36

Showing 1 to 10 of 49 rows 10 rows per page

Vector Time Series



Project 3: UNESCO WINS

GeoNode Data Maps About

Notification Settings

Notification Type	Email
User following you	<input checked="" type="checkbox"/>
Another user has started following you	
User requested access	<input checked="" type="checkbox"/>
A new user has requested access to the site	
Account activated	<input checked="" type="checkbox"/>
This account is now active and can log in the site	
Request to download a resource	<input checked="" type="checkbox"/>
A request for downloading a resource was sent	
Layer Created	<input checked="" type="checkbox"/>
A Layer was created	
Layer Updated	<input checked="" type="checkbox"/>
A Layer was updated	
Layer Approved	<input checked="" type="checkbox"/>
A Layer was approved by a Manager	
Layer Published	<input checked="" type="checkbox"/>
A Layer was published	

Improved Notifications

GeoNode Data Maps About

Create Message

To users

To groups

Test Group

Subject

Hi

Content

Test Message

GeoNode Data Maps About

Messages

Inbox All

With	Subject	Last Sender	Preview	Delete?
Test Group	Hi	me	Test Message...	Delete

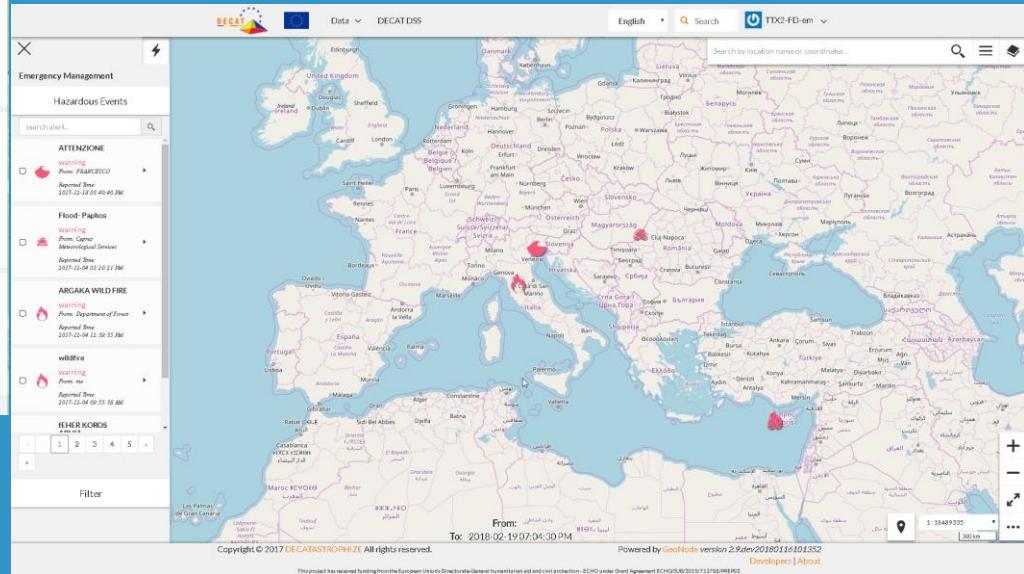




- EU Project
- *“Towards Better Protection of Citizens against Disaster Risks: Strengthening Early Warning Systems in Europe”*
- 3 Phases Approach to Emergency Preparedness
 - Early Warning & Alert
 - Impact Assessment
 - Emergency Management
- GeoNode Custom Application
 - Various GeoNode Enhancements
 - Various GeoNode Extensions
- <http://decat.geo-solutions.it>



DECATASTROPHIZE – Early Warning



- **Early Warning**
- **Collect Alerts for potential disasters**
- **Promote to disaster when confirmed**
- **Early Warning Module (front-end and back-end)**
- **Single Page Front-End (based on MapStore)**
- **Custom Back-End**

DECATASTROPHIZE – Impact Assessment



Impact Assessment

Probable Flood

Hazard Info

advisory

Reported from John Doe
Updated Time 2017-09-28 11:58:33 AM
Reported Time 2017-09-28 11:58:26 AM
Location 43.527868°N 10.313619°E
Description: Water is showing up in the surface of the parking lot.

Save assessment
No items

Cancel Add Assessment

Early Warning Confirmed as Disaster

Impact Assessment

Test EU Tsunami

Model Info

Water level simulation 1

Created Date 2017-09-29 12:54:33 PM

From: -- To: 2017-09-29 12:01:31 PM

Copyright © 2017 DECATASTROPHIZE. All rights reserved. Powered by GeoNode version 2.9.dev20170922122838 Developers | About

Create the COP as a GeoNode Map

- **Impact Assessment**
- **Upload of disaster models runs**
- **Create Update COP for Emergency Managers**

Data DECAT DSS English Search test_la

Impact Assessment Models Filter

by Hazards

oilspill
 wildfire
 drought
 flood
 tsunami
 earthquake

Select All Deselect All

Impact Assessment Test EU Tsunami Model Info

Add New Run

Name: Run Name * required

Description: Run Description

Date: DD/MM/YYYY

Time: HH:MM:SS

Cancel Add New Run

Add Disaster Impact Model Run

Data DECAT DSS English Search test_la

Search by location name or coordinates ...

OPTIONS

CATALOG MEASURE SETTINGS SAVE AS... ANNOTATIONS

Default

test_upload_1_1 test_levels_1 points_Italy_2 Flood Area

Share the COP with Emergency Managers



DECATASTROPHIZE



DECAT DSS

Annotations

- Special protection areas of Cyprus
Paphos forest
- Village Kynoussa might be in Danger
Population: 71
- Police
Close road to protect civilians
- Technical School - Shelter
Analytically: 10 Men
- Department of Forests - Ground Forces
- Department of Forests - REQUEST FORCES
- Department of forest - Ground Forces
- Police - Ground Forces
one police vehicle with two police officers.

Search by location name or coordinates ...

Feature Info

Lat: 35.06267 - Long: 32.52451

Annotations

International assistance - Aerial means

Permalink

<http://decat.geo-solutions.it/decat/#/permalink/hazard/124/95>

Description

- 5 Italian planes
- 1 Greek plane
- 1 Greek Helicopter

There are no features for the following layers: event, selectedalerts, alerts, Road Network

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Powered by GeoNode version 2.9.dev20180116101352

Developers | About

This project has received funding from the European Union's Directorate-General humanitarian aid and civil protection - ECHO under Grant Agreement ECHO/SUB/2015/713788/PREP02

- Emergency Management → coordinate field interventions
- Use Impact Assessment COP as back-end layers
- Collaborative Map Annotations Module (front-end and back-end)





- GFDRR and UK Department for International Development
- “*Hazards, Exposures and Vulnerabilities Explorer*”
- Explore, preview and download risk related global data
 - Hazards (British Geological Survey)
 - Exposures (GEM)
 - Vulnerabilities (University College London)
- GeoNode Custom Application
 - Custom API + GeoNode API
 - Custom frontend (REST API)





Project 5: HEV-E



GFDRR | HEV-E Hazard, Exposure and Vulnerability Explorer | About | Support | United Republic of Tanzania | X

Hazards Exposures Vulnerabilities

Filter title, description or category

Sort by: alphabetical: A to Z

moz_v10_buildings_137
Mozambique exposure v10 by ImageCat

osm_test_ph_buildings_65
Zanzibar OSM Data with GEM taxonomy

osm_tnz_main_roads_road_network_115
Tanzania main roads, imported from OpenStreetMap.

tanzania_arusha_exposure_buildings_76
Tanzania Gridded Building Exposure for Admin Arusha

tanzania_dar_es_salaam_exposure_buildings_77
Tanzania Gridded Building Exposure for Admin Dar es Salaam

Loaded 11 of 11 matched

200 km

© OpenStreetMap contributors | Imagery from MapBox



Project 5: HEV-E



GFDRR | HEV-E Hazard, Exposure and Vulnerability Explorer | About | Support | United Republic of Tanzania | X

ex1_buildings_63

Filter by tanzania_industrial_exposure

Styles

Construction

Occupancy

Construction

- Masonry
- Concrete
- Steel Frame
- Composite
- Wood
- Earth
- Unknown

Occupancy %

Construction

Construction	Occupancy %
Masonry	~10%
Concrete	~10%
Steel Frame	~2%
Composite	~35%
Wood	~10%
Earth	~15%
Unknown	~20%

Occupancy

- Residential
- Commercial
- Industrial

You might be also interested in the following data

200 km

© OpenStreetMap contributors | Imagery from MapBox



- **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





Project 6: IGAD

<http://igad-dev.geo-solutions.it>

The screenshot shows the homepage of the IGAD SDG website. At the top, there is a navigation bar with links for Data, Mappe, A proposito, Thematic Areas, Resources, Knowledge products, a search bar, and a dropdown menu. Below the navigation bar, the page title "SDGs" is displayed, followed by the subtitle "Sustainable Development Goals". On the left side, there are two dropdown menus: "COUNTRIES" and "CROSS BORDER AREAS", each listing various entities. The main content area is a grid of 16 colored boxes, each representing a Sustainable Development Goal (SDG) with its name in white text. The colors of the boxes follow a repeating pattern: red, yellow, green, blue, red, yellow, green, blue, red, yellow, green, blue, red, yellow, green, blue, red, yellow.

- ▼ COUNTRIES
 - Djibouti
 - Ethiopia
 - Kenya
 - Somalia
 - Somalia
 - South Sudan
 - Sudan
 - Uganda
- ▼ CROSS BORDER AREAS
 - 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 Eritrea
 - Cluster 8 Ethiopia and Somali

GOAL 1: No Poverty	GOAL 2: Zero Hunger
GOAL 3: Good Health and Well-being	GOAL 4: Quality Education
GOAL 5: Gender Equality	GOAL 6: Clean Water and Sanitation
GOAL 7: Affordable and Clean Energy	GOAL 8: Decent Work and Economic Growth
GOAL 9: Industry, Innovation and Infrastructure	GOAL 10: Reduced Inequality
GOAL 11: Sustainable Cities and Communities	GOAL 12: Responsible Consumption and Production
GOAL 13: Climate Action	GOAL 14: Life Below Water
GOAL 15: Life on Land	GOAL 16: Peace and Justice Strong Institutions



Project 6: IGAD



GeoNode Data Maps About

Register New Service

Service URL
<https://gis.ngdc.noaa.gov/arcgis/rest/services/SampleWorldCities/MapServer/?f=json>

Service Type
ArcGIS REST MapServer

Create

GeoNode Data Maps About

Import resources world...

Harvesting resources...

3 resources can be imported

Id	Name	Description
0	Cities	Cities
1	Continent	Continent
2	World	World

GeoNode Data Maps About

OWNERS

Cities
Service is online
Cities

admin 23 Mar 2018 0 0 ★ 0 Create a Map

TEMPORAL SERIE
boxes_with_date
No abstract provided

admin 23 Mar 2018 3 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 Create a Map

Improved Import Remote Services

Project 6: IGAD



The screenshot displays the GeoNode web application interface across three main sections:

- Left Panel (Upload Layers):** Shows a "Drop files here" area with a cloud icon and a "Choose Files" button. Below it, a table lists "Files to be uploaded" with one entry: "SalesJan2009iso8601_good".
- Middle Panel (Upload Layers):** Shows the "Inspect data for 'SalesJan2009iso8601_good'" page. It includes a "Configure as Time-Series" button and a table of data. The table has columns: Price, Longitude, State, TransactionDate, LastLogin, PaymentType, and Lat. The data shows several rows of transaction details.
- Bottom Panel (Map View):** Shows a world map with a red marker. A "Feature Info" window is open for the point at approximately (-123.83, 46.0). The window displays the following data for "SalesJan2009iso8601_good.13":

Name	Value
Transaction...	2009-01-01T00:00:00Z
Product	Product1
Price	1200
Payment_T...	Diners
Name	Janis
City	Ballynora

Time Series import from CSV

Too Many GeoNodes?





Our current and future needs:

- Development and Deployment of multiple different GeoNode projects.
- On premise and on cloud instances management and monitoring
- Continuous Delivery and Continuous Deployment requirements
- HA and Failover



The Future: Docker

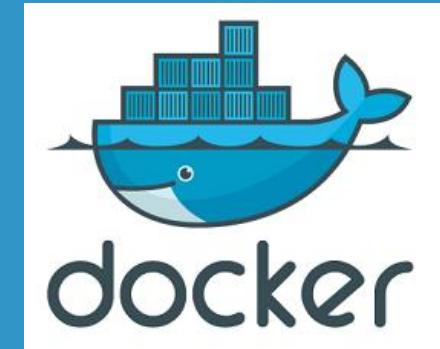


GeoNode's stack containerization is helping in managing complex deployments and streamlining DevOps activities.

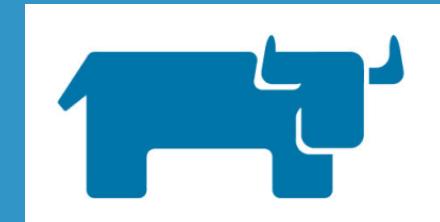
We are testing **Docker** images and settings layout as defined in upstream GitHub repositories.

Our use cases (e.g. World Bank GeoNode instances) are giving us the opportunity to

- stress the Docker approach
- improve it
- bring back to the community.



Rancher will be our next step





We experienced that custom end user frontends and APIs are often required.

We are seeking to:

- design a replicable and versatile approach to implement custom frontends
- extend and enhance GeoNode's APIs, both as exposed methods and API architecture
- enhance the geonode-project approach

We think the next GeoNode should be a **modular framework** to easily adopt / adapt it within the most disparate custom projects.





That's all!



<http://www.geo-solutions.it/contacts>

info@geo-solutions.it

