The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. The shapes are primarily triangles and polygons, creating a dynamic, layered effect. The text is centered in the white space between these shapes.

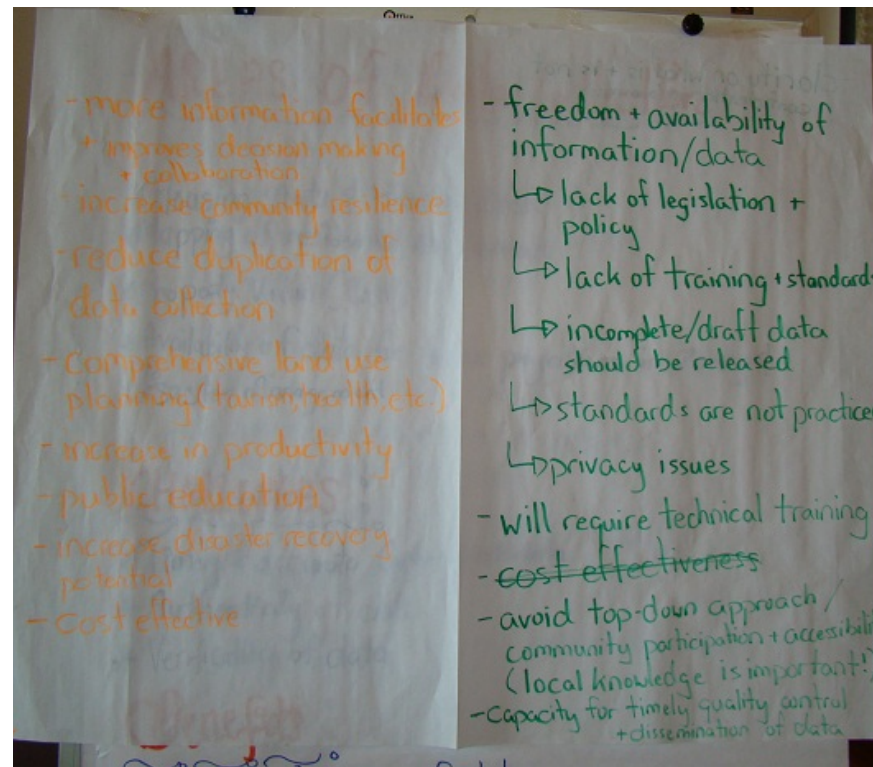
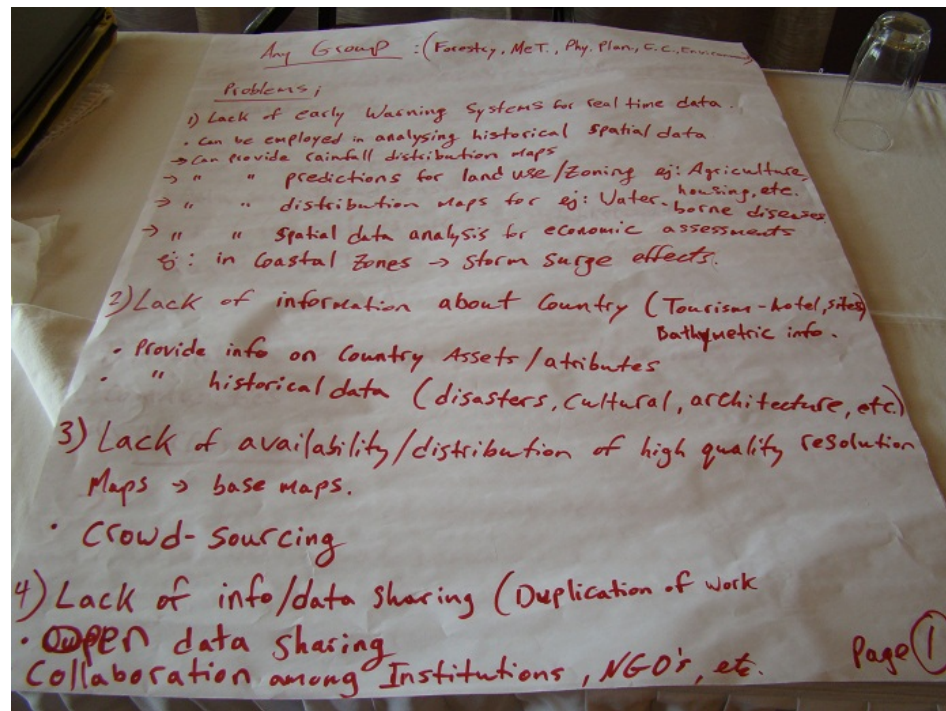
Creating Dominica's Spatial Data Management Platform "Dominode" from the Ground-up

Outline

- ▶ Review of Past GIS Projects in Dominica
- ▶ Present Day Situation
 - ▶ Shelter Assessments
 - ▶ National Land Use Plan
 - ▶ Dominode Portal
- ▶ Implementation
- ▶ Challenges
- ▶ Current Work
- ▶ Future Goals

Genesis of Dominica's GeoNode

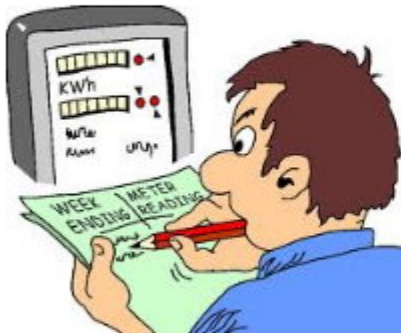
- ▶ On Aug, 2012 about 40 participants from different institutions participated in a workshop on “Spatial Data Management”



► <http://dominicanewsonline.com/news/homepage/news/business/dominica-moves-to-improve-data-collection-capability/>

Dominica moves to improve its data collection capability

Dominica News Online - Wednesday, August 8th, 2012 at 4:10 PM



Dominica is positioning itself to better deal with the problems being faced in data collection.




Individuals from the public and private sectors in Dominica are currently participating in a consultation on Geospatial Data Management.




The initiative is a joint one between the government of Dominica and the World Bank.



Speaking at the consultation, Minister responsible for Physical Planning, Dr. Kenneth Darroux, identified insufficient collaboration and data sharing as Dominica's shortcomings in that area.


He says the lack of data policies is one of the fundamental reasons for this.

9 Comments

 **budman** Like or Dislike:  0  0
August 9, 2012
finally!
Reply to this comment

 **lightbulb** Like or Dislike:  2  0
August 9, 2012
I hope an open source solution is being used; based on non licensed technologies.
Reply to this comment

 **budman** Like or Dislike:  0  0
August 9, 2012
we wish!
Reply to this comment

 ********* Like or Dislike:  0  0
August 9, 2012
i know right!!!
Reply to this comment

GeoNode as Spatial Data Management Platform Technology

GeoNode

- ▶ A new approach to spatial data infrastructure focused around users and collaboration
- ▶ Simple web-based tools
- ▶ Make Data Sharing Easy



History of Mapping and GIS in Dominica

The background of the slide features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the slide, creating a modern, layered effect. The rest of the slide is a plain white background.

Mapping Prior to the Introduction of GIS

- ▶ British Overseas Ordnance Survey (Until early 1990s)
 - ▶ Aerial Photography
 - ▶ Topographic Mapping
 - ▶ Creation of the Dominica British West Indies Grid based Survey Network (EPSG 2002)
- ▶ Dominica Lands and Surveys Division
 - ▶ Survey Plans and Property Deeds for Government Lands Only.
- ▶ D.M. Lang
 - ▶ Soil Maps 1960s-70s (1:25,000 scale)
- ▶ J.V. DeGraff
 - ▶ Landslide inventory and mapping (1970s -80s)

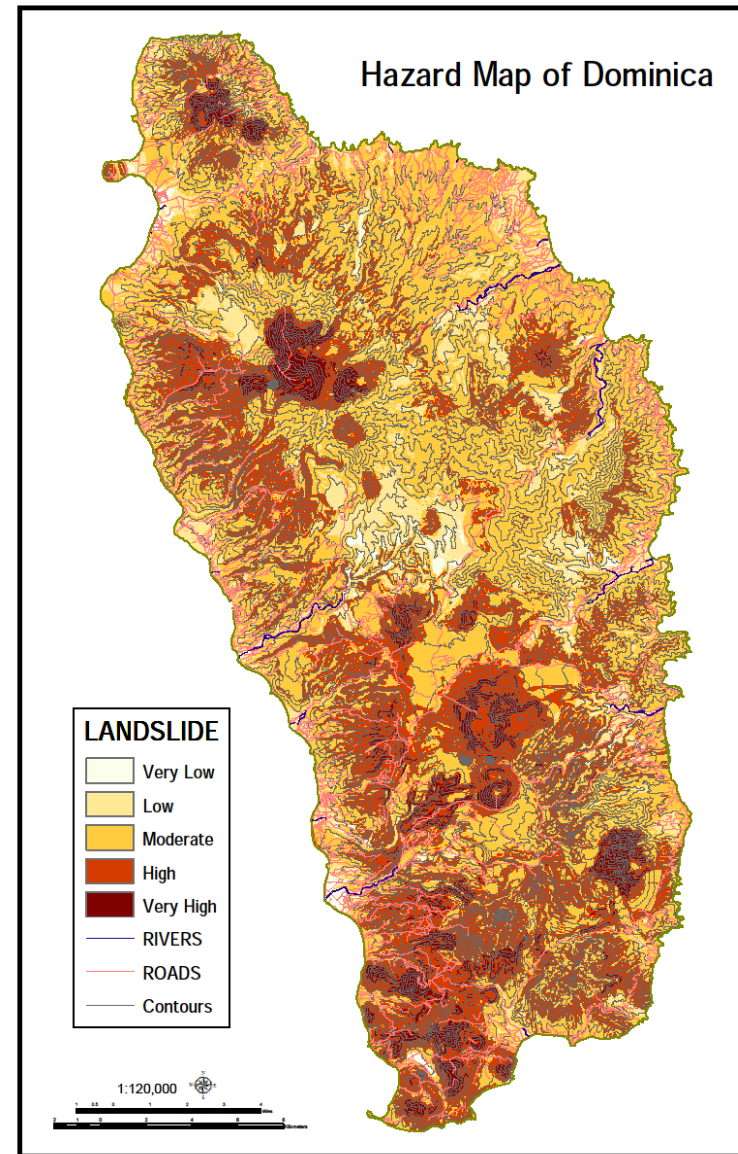
Introduction of GIS

- ▶ CIDA funded project in 1995 started a GIS at the Physical Planning Division
 - ▶ Data collection
 - ▶ Digitizing
 - ▶ Creation of database schema and metadata
 - ▶ Purchased Hardware and Software (SPANS)
- ▶ Lands and Surveys Division in 1998 worked with LIME to build GIS capacity.
 - ▶ Director of Division had a background in GIS
 - ▶ Physical Planning data migrated to ArcView shapefiles
 - ▶ Software changed to ESRI Arcview 3.1
 - ▶ Until 2005, Lands and Surveys and Physical Planning collaborated on maintaining the database created in 1995 (periodic updates of base layers).

USAID -Landslide Hazard Map and Multi-Hazard Assessment

► 2005-2006

The primary purpose of this study was to develop a landslide hazard map of Dominica and focus of the development of individual hazard maps such as river and coastal flooding, seismic and volcanic activity and hurricane strength wind maps. By improving hazard mapping information for Dominica, it created a basis for developing realistic natural hazard planning.



JICA Activities

- ▶ Geodetic Conversion from British Grid to WGS84
- ▶ Survey Network Modernization Project - Lands and Surveys
- ▶ Cadastral mapping and lot database at Physical Planning.
- ▶ Provided extensive training

Sustainable Land Management Project (SLM)

► 2010

community vulnerability maps and adaptation plans were developed for 11 communities in Dominica. This work was undertaken through a collaborative initiative supported by two Global Environment Facility (GEF) funded projects, namely the (GEF/UNDP) Sustainable Land Management (SLM) Project and the GEF/World Bank Special Program on Adaption to Climate Change project.

Unified Land Information System (ULIS)

- ▶ European Union, World Bank and Government of Dominica project to modernize land title management.

Objectives :

- ▶ Provision of a clear and transparent legal framework for land registration, ownership and tenancy;
- ▶ Adoption of improved systems to facilitate guarantee property rights and the effective and efficient methods of property transfers;
- ▶ Strengthening of the capacity of, and linkages between key institutions and agents of Government involved in the administration of land.

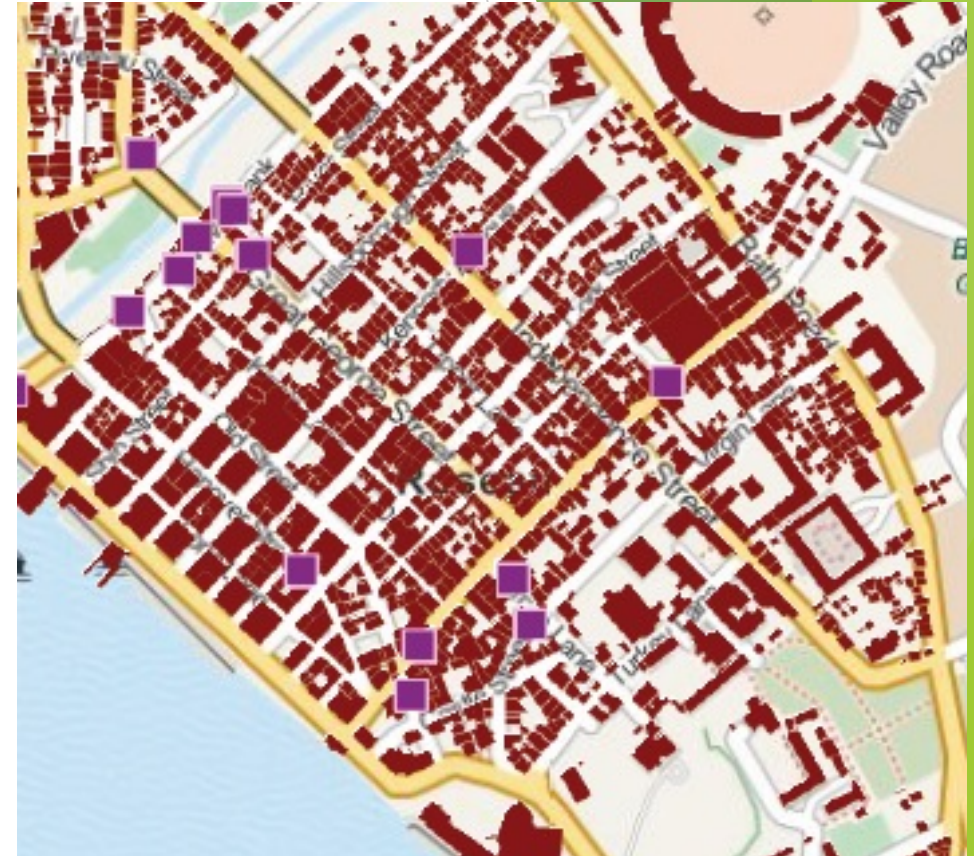
Agriculture, Forestry and Census Activities

2001 Started using GIS

- ▶ Created several maps such as vegetation cover, crop suitability
Acquired software (ArcView 3.1) and hardware (digitizers, computers, GPS units)
- ▶ 2008 AIMS (Agricultural Information Management Systems) Project
- ▶ 2010 Farmers Census

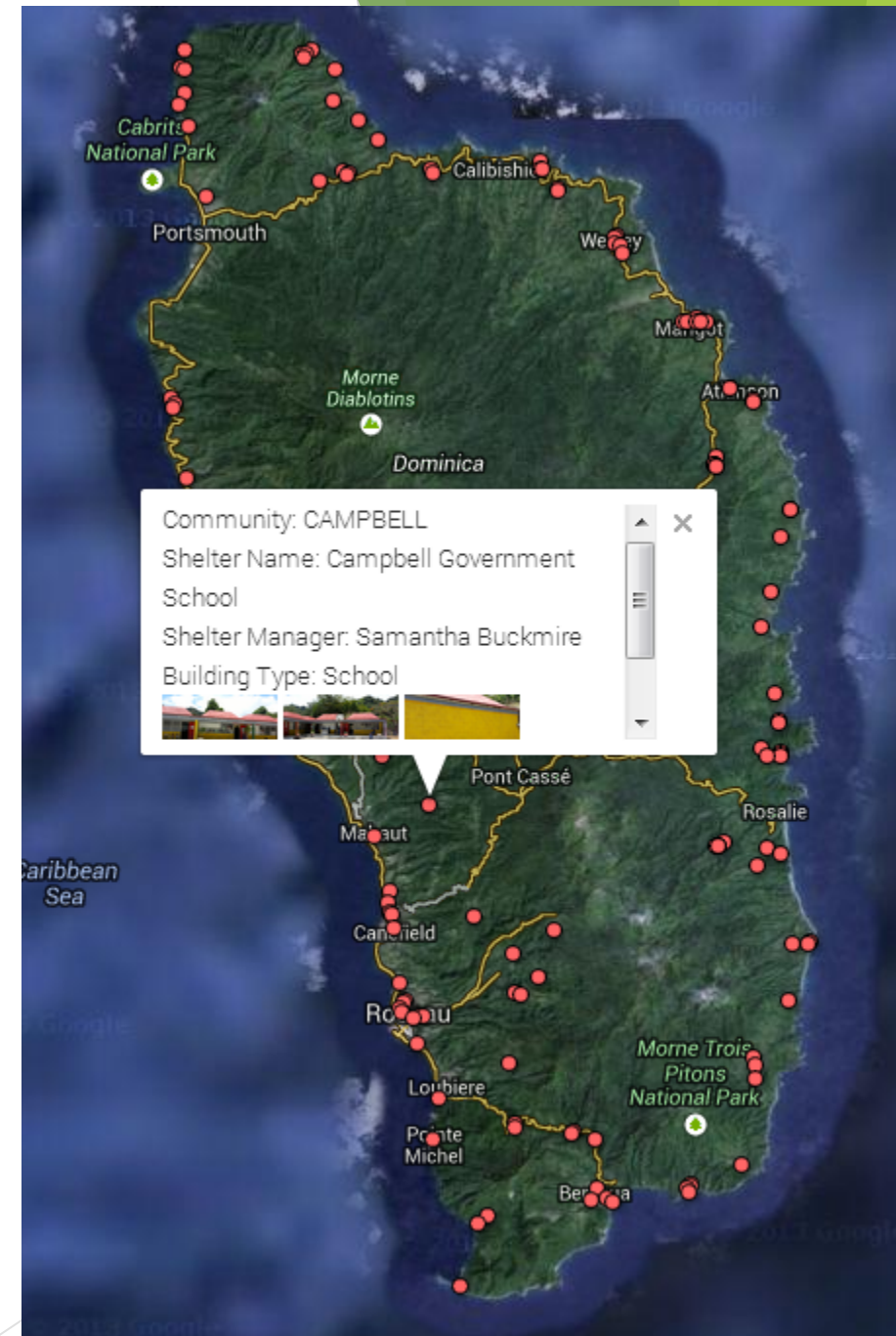
Canadian Institute of Planners: National Land Use Plan

- ▶ Updating GIS data for the land use plan. Roseau data updated using Aerial Photography.
- ▶ Extensive field validation and additional data collection using handheld GPS receivers in Roseau.
- ▶ GIS capacity assessment and data inventory. All government departments with geospatial activities were interviewed and their needs and capabilities assessed.



2013 Hurricane Shelter Assessments

- ▶ Ministry of Public Works Shelter Building Assessments
- ▶ In the past paper forms were used and the data was not digitized which made analysis difficult.
- ▶ Training in the use of GPS devices, as well as the platform was provided to Public Works staff.
- ▶ Used Google Infrastructure for data entry, database hosting and website creation
 - ▶ Google forms for data entry
 - ▶ Google Fusion Tables for data management and analysis (how many shelters have bad roofs?)
 - ▶ Google App Engine for website hosting
 - ▶ Google Fusion Tables and Maps APIs for Hurricane Shelter Finder creation: domshelters.appspot.com
- ▶ Once the GeoNode was operational, the shelters layer was transferred: <http://dominode.net/maps/148>



What has worked and what hasn't?

- ▶ For transfer of skills; long duration projects which provided hardware and training.
- ▶ Projects supported by directors of departments who were knowledgeable in the topic
- ▶ Effective and useful deliverables
- ▶ What hasn't worked? Projects that haven't made *good* information accessible in an easy to use way or did not have support from upper-level decision makers.

Implementation: Training and Workshops

- ▶ When possible, monthly multi agency workshops are held in Dominica to update people on the progress of the GeoNode, teach people how to use the platform, and get feedback for improvements.
- ▶ Continuing changes to the site reflect the received feedback.
- ▶ Dominican government staff from Physical Planning, ICT and Lands and Surveys as well as consultants have attended regional training sessions on using and developing the platform.
- ▶ Specialized training has been offered to individual ministries based on their needs:
 - ▶ Local Government: GPS and OSM Use
 - ▶ Social Planning: Using QGIS to make Choropleth maps
 - ▶ Agriculture: Data organization and uploading to the GeoNode
 - ▶ Lands and Surveys and Physical Planning: Using Linux and Open Source GIS

Implementation: Server and Network Setup

- ▶ The first test instance of GeoNode 1.2c1 was set up at ICT. However, the server used lacked the sufficient amount of ram and no permanent ip address was provided. Furthermore, staff did not have experience working in a Linux environment.
- ▶ The second test instance of GeoNode 2.0 has been set up at the Office of Disaster Management on a server running only Ubuntu 12.04 LTS.
 - ▶ Hard Drive 100 GB, RAM 8 GB, Connection DSL (plans are in place to upgrade to fibre provided the costs can be moderated).
 - ▶ Dynamic IP, changes are monitored via a shell script and changes are sent to namecheap to update the DNS information for Dominode.net A static IP is very costly.
 - ▶ FTP server setup for allowing downloads of the larger image files (geoserver does not serve these properly).

Dominode as a National GeoSpatial Platform

- ▶ Currently hosts 42 data layers
- ▶ Baseline data, exposure and hazard data
- ▶ Data can be freely downloaded
- ▶ Data can be used to create maps

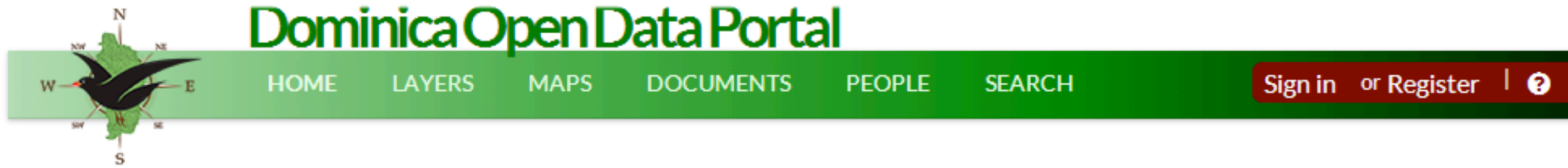
Implementation: Data Uploading

- ▶ Much of the data currently uploaded to the GeoNode comes from the previously mentioned projects
- ▶ Prior to uploading, data was inventoried and metadata collected
- ▶ Coordinate systems were set properly where necessary and all layers were transformed to either WGS84 or WGS84 UTM Zone 20N
- ▶ PostGIS was added to the GeoNode database and configured as the vector datastore (now standard on GeoNode releases).
- ▶ Existing shapefiles and Geotiffs were copied to the server and added to GeoNode via the 'importlayers' management command.
- ▶ Open Street Map data was uploaded to its own database in postgres using osm2pgsql and added to GeoNode by first adding the layers to geoserver and then using the geonode 'updatelayers' management command.

Challenges

- ▶ Data Layers that need updating
- ▶ Hosting and bandwidth (particularly for large image files)
- ▶ Bringing the proper training to the people that need it
- ▶ Hardware and Software to be able to maintain a national GIS
- ▶ Personnel
- ▶ Acquiring new data sources

Current Work



- ▶ Training with all ministries that wish to attend and specialized training where needed.
- ▶ Modifications to the GeoNode interface
- ▶ Preparation of Documentation
- ▶ Server administration
- ▶ Sharing of resources between agencies
- ▶ Updating schema for new data collection (data dictionaries)

Current Work: Updating Base Layers

- ▶ Review of the schema created as part of the CIDA funded project
- ▶ Determined which layers are a priority for updating
- ▶ Searched existing sources (SLM, OpenStreetMap) for current data that can be integrated into the base layers
- ▶ Created new data dictionaries for data collection and revised the schema through consulting the agencies responsible for elements that would make up the databases
- ▶ Determined the software and equipment that would be needed to carry out the data collection and updating of layers
- ▶ Made plans for how the GeoNode may be used as the focal point for collaboratively updating the base layers

GeoNode Current Users and Usage

Dashboard [Visitors](#) [Content](#) [Searches](#) [Links](#) [Platforms](#) [Locale](#) [Campaigns](#) [Goals](#) [Uptime](#) [Spy](#) [Big screen](#) [Twitter](#) [Alerts](#) [Preferences](#)

The Basics

[Summary](#) [Visitors](#) [Actions](#) [Uniques](#) [Time](#)

👤 Visitors Expand	97	+126%
🎯 Actions	130	+23%
📊 Average actions	1.3	-48%
🕒 Total time	1h 24m	-74%
🕒 Average time per visit	39s	-78%
🏹 Bounce rate	70%	+8%

Visitors

Sep 11 - Oct 8 ▼



Links

[Incoming](#) [Domains](#) [Recent](#) [Unique](#) [Outgoing](#)

No results found!

Searches

[Searches](#) [Keywords](#) [Recent](#) [Unique](#) [Rankings](#)

[secure search]	5	+400%
---------------------------------	---	-------

Content

[Pages](#) [Entrance](#) [Exit](#) [Downloads](#) [Events](#) [Video](#)

/	129	+22%
/page=2	1	0%

Locale

[Countries](#) [Cities](#) [Languages](#) [Org](#) [Hostnames](#)

🇧🇩 Barbados	43	+19%
🇬🇩 Grenada	9	0%
🇺🇸 The United States	8	+100%
🇦🇬 Antigua And Barbuda	8	+300%
🇮🇹 Italy	7	0%
🇰🇾 Cayman Islands	3	+200%
🇫🇷 France	3	0%
🇬🇧 The United Kingdom	2	0%
🇹🇩 Trinidad And Tobago	2	0%
🇩🇲 Dominica	2	0%

Traffic sources

👤 Direct	92	+119%
🔍 Searches	5	+400%

Future Goals

- ▶ Bringing the GeoNode into data collection and management workflows
 - ▶ Versioned data management
 - ▶ Mobile data collection
 - ▶ Handling of a greater variety of file formats
- ▶ Updated base layers with ISO standard metadata
- ▶ Formal data sharing agreements between ministries
- ▶ Data collection using an updated vertical and horizontal datum for large-scale surveys (setting data quality standards).

Potential Use of Data in GeoNode into Focused Application

- ▶ Shelter Vulnerability Assessment and Prioritization
- ▶ Hazard and Risk Analysis
- ▶ Land use Planning
- ▶ Emergency Response
- ▶ Environmental Analysis
- ▶ Coastal Erosion