Ministry of Economic Growth & Job Creation
National Spatial Data Management Division
&
Land Information Council of Jamaica

Caribbean Geospatial Workshop

Mexico City
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Presenter:

Simone M. Lloyd, GISP

Senior GIS Manager & Trainer

Caribbean Geospatial Workshop

Country Perspectives:
Status of GIS within Jamaica

Outline

- **Background:**
  - LICJ
  - NSDMD
- **Projects and Programmes**
  - Current & Future
- **Needs & Gaps**
  - Geospatial Data
  - Technology
- **Data Sharing Initiatives**
- **Jamaica GIS Landscape**
  - Current Status
  - Standards
  - Data Needs & Gaps
- **NSDI Status**

Jamaica's GIS Landscape

- Jamaica – **GIS pioneer** within the English Speaking Caribbean

- Establishment of the **Land Information Council of Jamaica (LICJ)** in 1992.

- LICJ: **joint-up government approach** (approximately **sixty** entities - GIS producers and consumers)

- LICJ - highly recognized by GIS communities locally, regionally and internationally

- Executed through its Secretariat, the **National Spatial Data Management Division (NSDMD)** of the Ministry of Water, Land, Environment and Climate Change.

- NSDI Efforts documented in **Chapter 2 of the National Land Policy** since **1996.**

GIS Standards
Policies
Training & Education
GIS Professionals
General GIS utilization
land information management

disaster and emergency management
national security
environmental science
water resources management
Infrastructure & transportation
land administration management
health monitoring

National GIS Vision

Geospatial data, products and services are **current**, **available** and **accessible**, to all users to facilitate planning, management and use of the island's resources thereby contributing to sustainable development and economic growth.
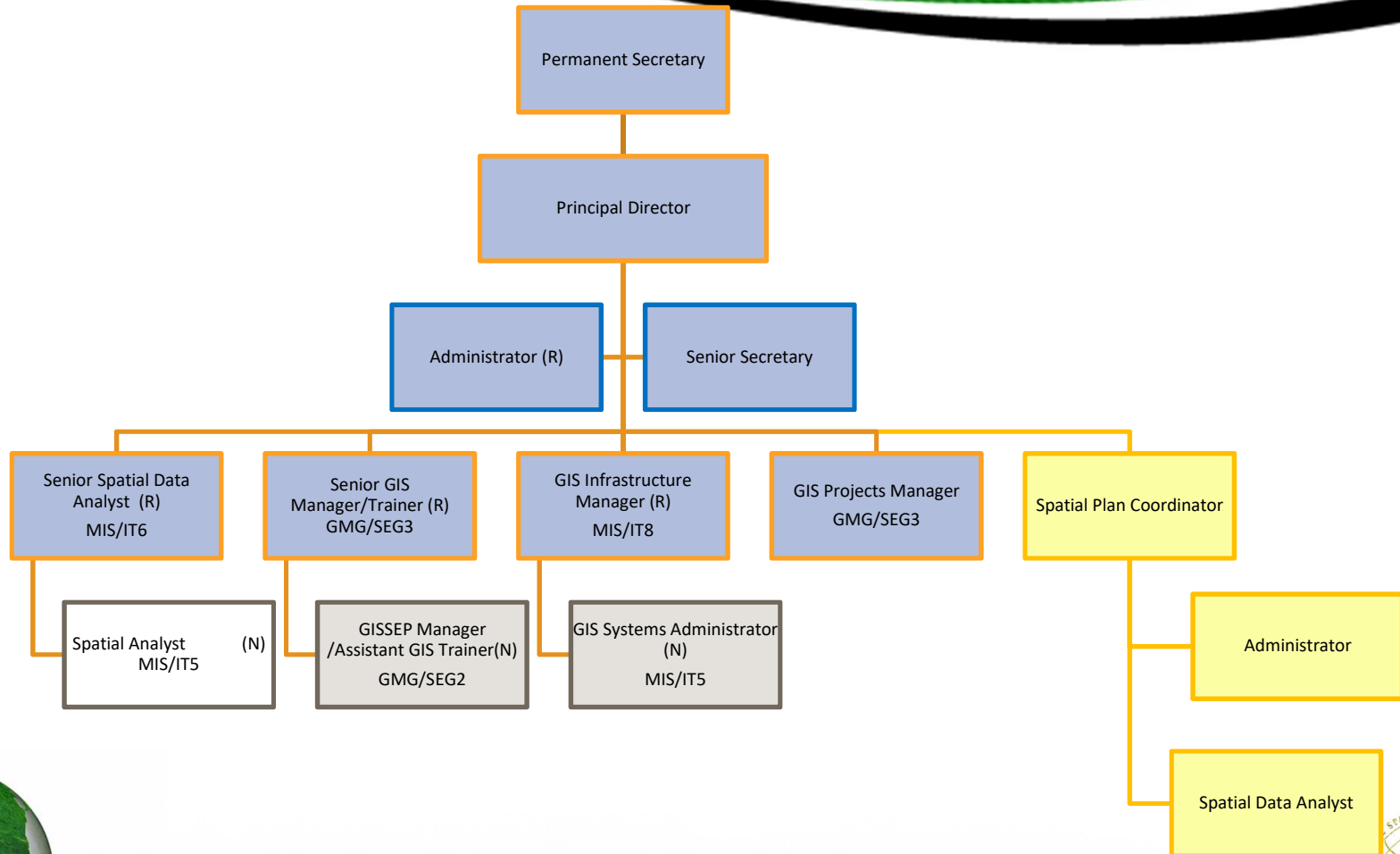
NSDMD Mission

To coordinate the development and implementation of a national networked GIS inclusive of, comprehensive and accurate spatial data, for land and land related agencies and to develop and provide advice on policy, institutional requirements, legislation and regulations.

New NSDMD Organizational Structure

National GIS Objectives

To :

- promote the adoption and use of GIS that supports informed decision making

- create a NSDI that provides access to geospatial data

- create/adopt standards for the collection and management of geospatial data

- facilitate the development of a geo-informatics skills group

- facilitate the creation and maintenance of fundamental geospatial datasets

National GIS Objectives

To:

- promote efficient use of GoJ spatial data sets – create once and use many times

- provide technical and institutional guidance for the implementation and management of GIS facilities

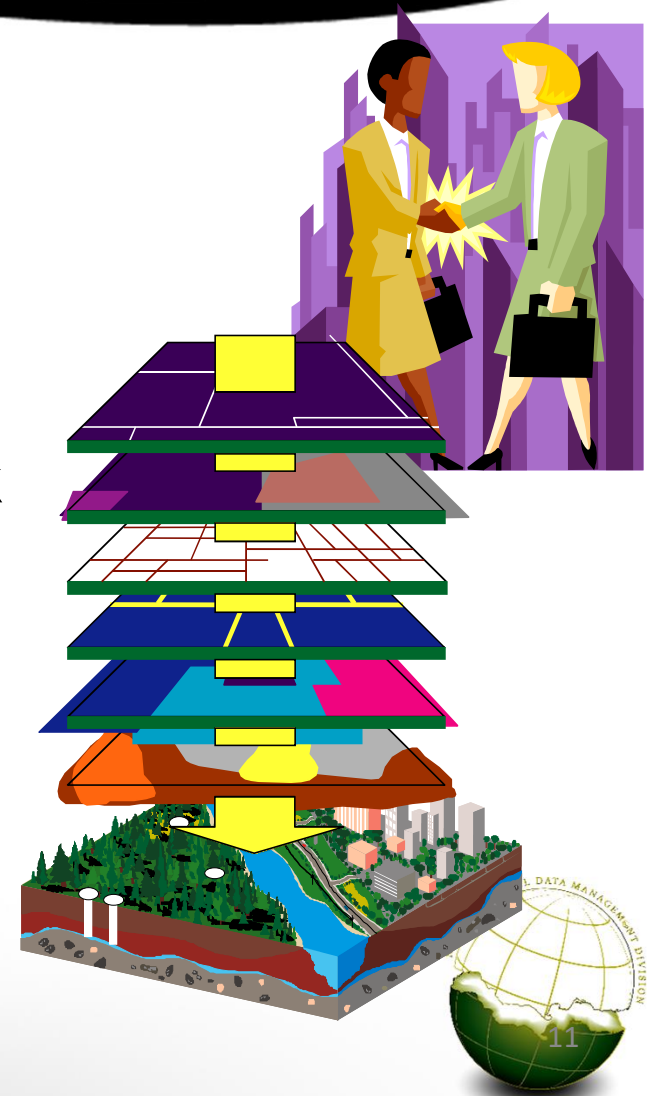- promote research and development and increase awareness of the Jamaican geospatial sector.

Projects and Programmes

Projects and Programmes

- Metadata and Geospatial Portals
- Public Education and Training –
  - LICJ GIS Training Programme
  - GIS in Schools Education Programme
- Physical Infrastructure – VRS Network
- Spatial Data Creation –
  - The National Spatial Plan
  - Large scale mapping update
- Policy – Data sharing and Access
- National Emergency Response GIS Team

JAMAICA'S GIS STATUS

Jamaica GIS Growth Survey 2018

- Economic and Social Survey of Jamaica 2018 (prepared by Planning Institute of Jamaica):

- Thirty one (31) of forty three (43) organizations responded to poll: 24 public sector and 7 private sector

- 80.6% indicated GIS integrated in mainstream operations (58.1% in 2017)

- 58.1% maintained an internet map service or web mapping application eg. Online Crash map, Project Performance Tracking & Reporting Application, Disaster Risk Information Platform

Areas of GIS Integration

- Census mapping
- Pole patrol & metre reading
- Mine planning
- Site suitability & analysis
- Environmental management
- Land resources management
- Planning and development
- Crime mapping & public safety
- Disaster response and emergency management

GIS Application Projects 2018

Area	Agency	GIS Applications
Land Management	Mines & Geology Division	Due to proliferation of residential development within geologically sensitive areas, **Geotechnical Mapping Project** undertaken in Montego Bay, St. James. Classification of city into areas of suitability for future development.
Resource Management	Forestry Dept.	Ground truthing and land surveying assessments of proposed area to be protected as the Cockpit Country. Land of over 76,726 hectares spanning 5 parishes proposed as Cockpit Country protected area.
Agriculture and Fisheries	National Fisheries Authority	GIS used to determine sites for 7th Survey to assess Conch stock on Pedro Bank. GPS units used to plan diving expeditions, record dive site and habitat locations. Information supported he national total allowable catch (NTAC)

GIS Application Projects 2018

Area	Agency	GIS Applications
Agriculture	Agriculture Land Management Division	GIS used to survey and monitor outbreak of Frosty Pod Rot disease and to assist affected farmers. Location, size and status of cocoa farms obtained.
Census Mapping	National Water Commission	Customer census mapping activities in Kingston, St. Andrew, St. Catherine and Clarendon. Geocoding of customer locations, illegal connection and billing iregularities.
	Statistical Institute of Jamaica	Field mapping and boundary verification acivities for 2021 Population and Housing Census
Development/ Planning	National Works Agency	Created Road Detour Maps to better communicate traffic changes, road closures and detours associated with Major Infrastructure Development Programme (MIDP). GIS also used to determine suitable fibre optic cable ducts along road ways.

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GIS Application Projects 2018

GIS Web Mapping Applications	Agency	Summary
Jamaica Minerals Information Web map	Mines and Geology Division	Economic and industrial mineral potential of Jamaica to guide investments
JAMPRO Investment Map version 1.0	National Spatial Data Management Division & JAMPRO	Overview of island's investment opportunities for evidence based decision making. A 'Jamaica – A Great Place to do Business Story Map' was also developed to showcase investment projects across major sectors.
JAMNAV API	Mona Geoinformatics Ltd	Car navigation system - Includes many spatially referenced datasets (eg. grocery stores, gas stations, banks etc) for busines owners, project managers, etc.
NWA MIDP Major Projects Web Map (2017/2018)	National Works Agency	Highlights all roadworks projects conducted in 2017/18 FY under MIDP. Inclusive of expenditure and completion status. Used internally for project monitoring.

Jamaica GIS Growth Survey 2018

Quantity	Survey Entities Response
64.5 %	Had documented policies regarding data ownership, sharing, maintenance and liabilities
59.3%	Required clients to sign an MOU or disclaimer to obtain data
67.7%	Practiced Metadata management occasionally
22.6%	Practiced Metadata management consistently
38.7%	Indicated that metadata accompanies all datasets shared (increase of 15.6%)
16.1%	Had 50% or more datasets with completed and up-to-date metadata
55%	Did not have dedicated staff for Metadata Management
45.2 %	Sold GIS data, products or services. Earning $26,000 to $155.7 million JMD. Estimated savings from GIS implementation ranged from $500,000 to $129.7 million.

Jamaica GIS Growth Survey 2018

Quantity	Survey Entities Response
29%	Reported that <10% of IT budget assigned to GIS software, hardware and maintenance
19.4%	Reported that no budget was assigned.
25.8%	Uncertain if any budget allocations were made.
	NB. Implications for contribution to GOJ/ESRI ELA and harware upgrade to meet deployment of software.
	GIS Jobs
Avg. 4	GIS Posts within organizations
9	Persons performing GIS related tasks but were not employed in a GIS post

Jamaica GIS Growth Survey 2018

SELECTED GIS GROWTH AND DEVELOPMENT INDICATORS, 2017-2018

Indicator	2017	2018
Number of respondents to the questionnaire	31	31
Number of organisations that use and/provide GIS services	31	31
Number of organisations that have integrated GIS into its mainstream operations or business processes	18	25
Average number of GIS positions	3	4
Average number of persons who perform GIS tasks but are not employed in a GIS position	9	9
Number of persons trained and educated in GIS		
Certificate	83	101
Diploma	15	35
First Degree	53	61
Advanced Certificate/Diploma	4	14
Higher Degrees	19	36
GIS personnel lost to migration	6	10
Functional Data Servers	29	33
Functional Plotters	18	21
Functional Large Format Scanners	25	29
Average gross annual salary paid to GIS personnel ($ million)	1.7	2.2
Average number of GIS software licenses	19	20
Number of organisations that sell spatial data	9	14
Average number of workshops, conferences, training courses etc. attended by staff		
Local conferences/seminars	2	2
Local training	2	2
International Conferences/Seminars	1	1
International training	1	1
Number of persons involved in GIS professional associations	11	67

Source: Data compiled from survey conducted by PIOJ

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GIS TRAINING

LICJ GIS TRAINING AND SENSITIZATION SESSIONS, 2018

Course/Session	Number of Participants
GIS Sensitization	23
GIS & Metadata	6
Applied GIS and Remote Sensing	22
Introduction to ArcGIS Desktop 10.4	13
Introduction to GIS	5
Introduction to GIS	12

Source: National Spatial Data Management Division

ELA TRAINING SESSIONS AND NUMBER OF PARTICIPANTS, 2018

Course Name	Number of Participants
Creating Story Maps	22
Collector for ArcGIS	36
ArcGIS 2: Essential Workflows	22
ArcGIS 3: Performing Analysis	22
Image Analysis for ArcGIS	24

Source: National Spatial Data Management Division

GIS IN SCHOOLS EDUCATION PROGRAMME

17 Geography and Social Studies lecturers and student teachers trained in 'Teaching with GPS: Fieldwork Execution'.

2 GISSEP Mentorship workshops held: 23 geospatial professionals from 14 organizations trained for re-establishment of GISSEP Mentorship programme.
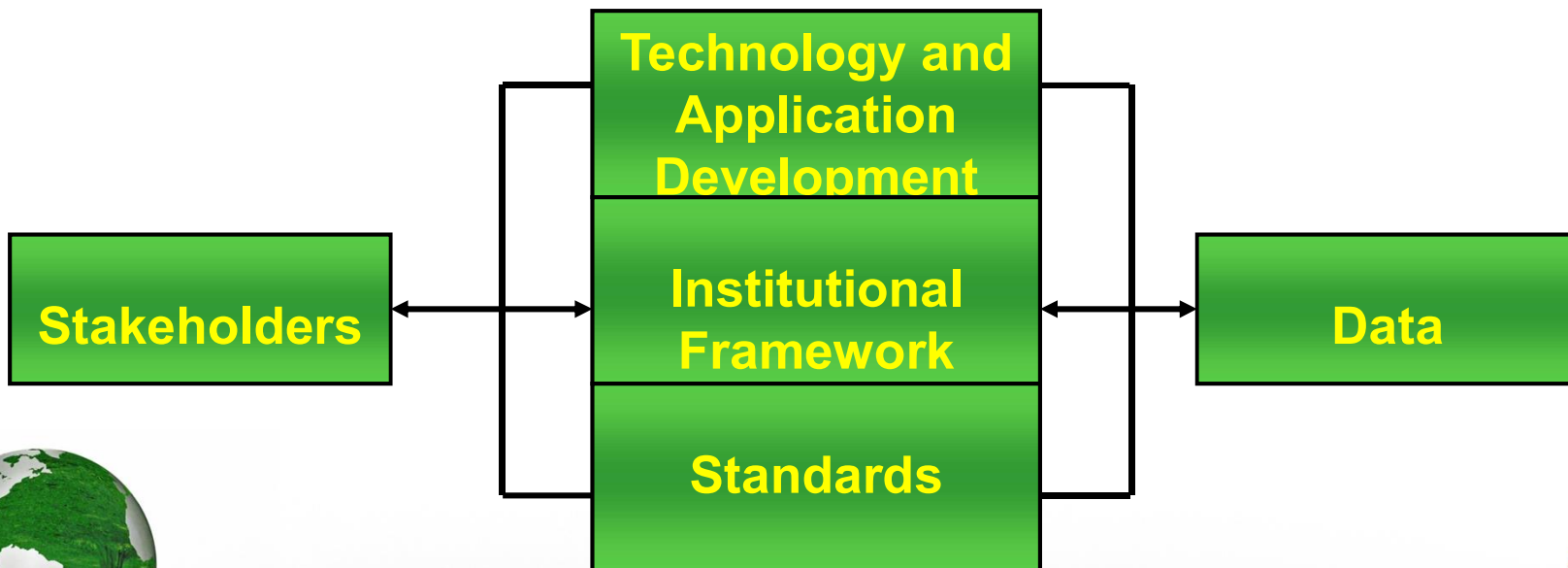
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GIS Awareness Initiatives

Quantity	Initiatives (October – November 2018)
>200 students	From 7 secondary schools participated in GIS School tour series held at and in partnership collaboration with the Caribbean Maritime University – highlight use of geospatial technologies in logistics and transportation (2018 Geography Awareness Week theme). (October 2018)
102 participants	10th GIS Business Executive Forum (November 2018)
>70 participants	7th GIS Technical Seminar held in collaboration with University of Technology, Jamaica
>830 students, teachers etc.	16th National GIS Day Exposition held at and in collaboration with UWI, Mona (home of Jamaica GIS Day)
>74 participants	GIS Symposium held at and in collaboration with CMU.

Spatial Data Infrastructure (SDI)?

SDI is the technologies, policies, institutional arrangements and people necessary to promote the sharing and access to geospatial data throughout all levels of government, the private and non-profit sectors, academia and citizens in general.

Stakeholders	**Technology and Application Development** **Institutional Framework** **Standards**	Data

Jamaica's NSDI Status

Legal and Policy Framework	National Land Policy (Ch. 2), NGIM Policy (being redrafted), Open Data Policy (being reviewed)
Capacity Development	Many Training & Education offerings: LICJ GIS Training programme, ELA Training programme, NERGIST Human Capacity Dev. Programme, partnerships with UWI Mona and HEART Trust/NTA
Finance	Sporadic & Project Driven and also provided by special GOJ allocation for GOJ/ESRI ELA.
Data Availability	Many datasets generated and maintained by custodian organizations
Standards	Metadata Guidelines, Cartographic Standards doc.
Technology	COTS solutions available via GOJ/ESRI ELA and also FOSS available
Awareness	Annual GAW, GIS Day, GIS Technical seminars, GIS Symposiums, GIS Executive Forum, GIS User Conference, GIS Workshops, TV and Radio features etc.

Discussion and Feedback

Simone M. Lloyd, GISP

Senior GIS Manager & Trainer

National Spatial Data Management Division

Land Information Council of Jamaica

Ministry of Economic Growth & Job Creation

191 Old Hope Road, Kingston 6.

Jamaica W.I

(876) 927-0441 / 927-0398

simone.lloyd@megjc.gov.jm

http://www.licj.org.jm

http://www.facebook.com/gisjamaica