

The Integrated Geospatial Information Framework

THE GUYANA EXPERIENCE

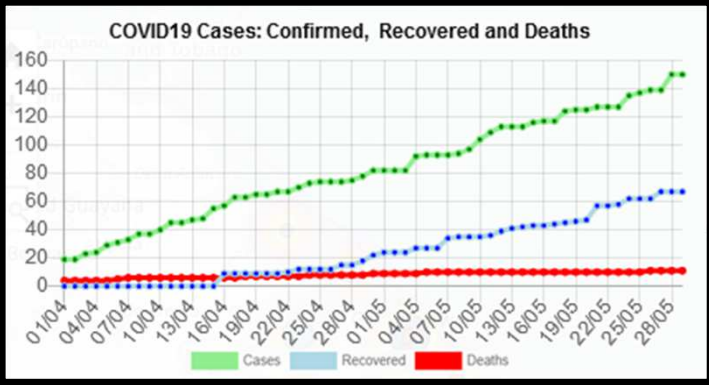
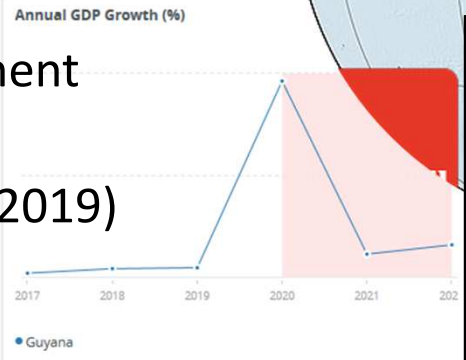
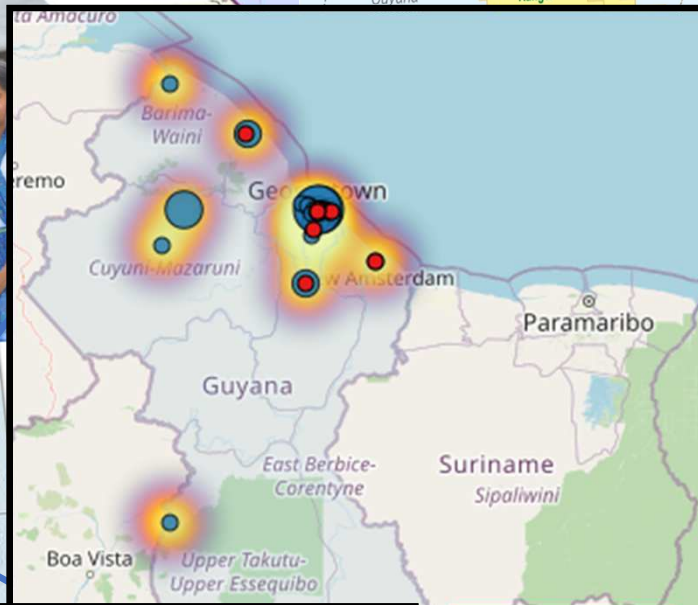
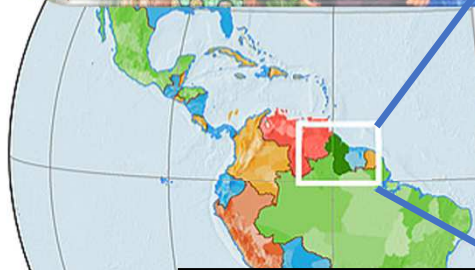




Cooperative Republic of Guyana



- Population: 750,000*
- Official Language: English
- Total Area: 215,000 km²
- Traditional Economic Base:
 - Agriculture
 - Forestry
 - Mining
- Emerging Oil Economy
- On a Green State Development Trajectory
- Real GDP Growth:** 4.7% (2019)
 - Projected 51.7% (2020)



DEATHS: 11

CASES: 150

Source: GLSC, 2020

Sources: *Bureau of Statistics, 2020 est.; **The World Bank, April 2020

IMPLEMENTING IGIF: THE GUYANA EXPERIENCE

1. MILESTONES ON THE JOURNEY TO IGIF DEVELOPMENT

- A. Overview of Key Milestones
- B. Refocused Mandate of National Geospatial & Mapping Agency - GLSC
- C. Mainstreaming SLDM Project – Assisted with funding, partnerships, capacity building, technical support for IGIF
- D. National Geospatial Information Policy – Aligned to Overarching Strategic Framework
- E. NSDI Road Map – Expression of IGIF Country Level Action Plan

2. IMPLEMENTING IGIF

- A. Implementation Status
- B. Reflections

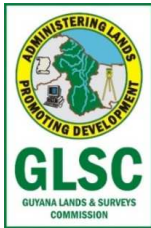
1. MILESTONES ON THE JOURNEY TO IGIF DEVELOPMENT

THE GUYANA EXPERIENCE

A. OVERVIEW OF KEY MILESTONES ON GUYANA'S ROAD TO IGIF

- **April 2016**- Refocus of NMGA (GLSC) mandate begins under new leadership
- **June 2017** – GLSC becomes National Focal Point for UNGGIM. Consistent participation in UNGGIM Events and Expert Groups (FELA)
- **2018** – Operationalisation commenced for 4-year GRIF /UNFAO enabled Mainstreaming SLDM Project
- **June 2018** - Formulation and alignment of National GI Policy with IGIF (with ECLAC support)
- **August 2018** – Began re-establishment of National GNSS CORS Network (with OS)
- **Jan 2019** – Adoption of NSDI Road Map: Expression of an IGIF Country Level Action Plan (under SLDM Project)
- **2019** - International first-hand exposure to NSDIs and best practices within geospatial sector through study tours to Jamaica, Cayman Islands, UK (OS, Geovation, Geospatial Commission), Netherlands (Dutch Cadastre, UoT), Serbia (RGA), Italy (UNFAO).
- **March 2020** – GLSC Board of Directors approves National GI Policy





B. REFOCUSING MANDATE OF GUYANA'S NATIONAL MAPPING AND GEOSPATIAL AGENCY

LEGAL MANDATE

- **The Guyana Lands and Surveys Commission (GLSC)** was formed in June 2001 through the GLSC Act 1999.
- Under the GLSC Act 1999, GLSC is mandated **“To have charge of and act as guardian over all public lands, rivers and creeks of Guyana”**
- There are 20 mandated functions in the GLSC Act

SUMMARY OF MANDATED FUNCTIONS

- National Mapping and Geospatial Agency
- National Surveying and Cadaster Authority
- National Public Land Administration Agency (Land Tenure administration, Land Use Planning, Land Development, Land Valuation)
- Lead liaison Agency among land agencies
- Advisor to Government on geospatial related Policy
- NSDI Lead Agency

NEW LEADERSHIP

In April 2016, Mr. Trevor L. Benn was appointed CEO and Commissioner of Lands & Surveys and focused on urgently transforming the GLSC to deliver on its wide mandate as Guyana's NMGA.



NATIONAL FOCAL POINT



Since 2003



Since 2017



Since 2019

C. Mainstreaming Sustainable Land Development and Management (SLDM) Project



Executing Agency on behalf of the Government of Guyana

Implementing Partner



Source of Financing:
Performance-based payments for avoided deforestation under the Guyana REDD+ Investment Fund (GRIF)

Project Period: Mid 2017- Mid 2021 (4 years)

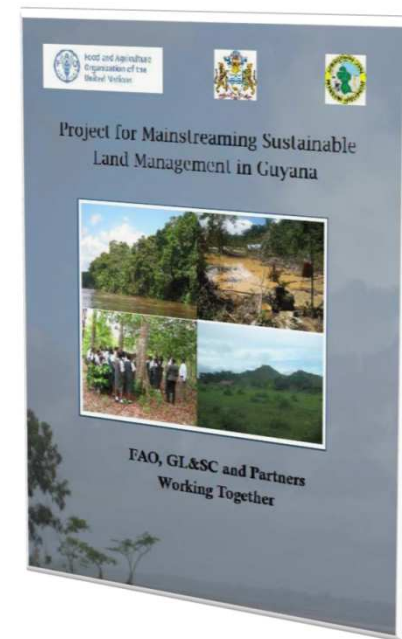


Indicative Project Outcomes

Outcome 1: Sustainable Land Development and Management (SLDM) Mainstreamed In Policy, Institutional and Governance Mechanisms to Prevent Degradation and Restore Degraded Lands

Outcome 2: Strengthened Institutional and Human Capacity for Participatory and Integrated SLDM

Outcome 3: Local Governance Strengthened in 3 Regions for Implementing SLDM



Activities related to NSDI identified under this Outcome as mechanism for SLDM

D. The National Geospatial Information Policy

VISION: To promote the efficient use of geospatial information to effectively measure, monitor and achieve sustainable social, economic and environmental development for current and future generations in Guyana.

- July 3-5, 2018 ECLAC Workshop in Georgetown - **Towards a National Geospatial Framework and Policy in Guyana**
- 5th draft iteration of a National GIS Policy was reviewed using the IGIF Overarching Strategic Framework
- **National Policy on Geospatial Information was formulated and subsequently approved by the GLSC Board of Directors in early 2020.**



National GI Policy Alignment with IGIF

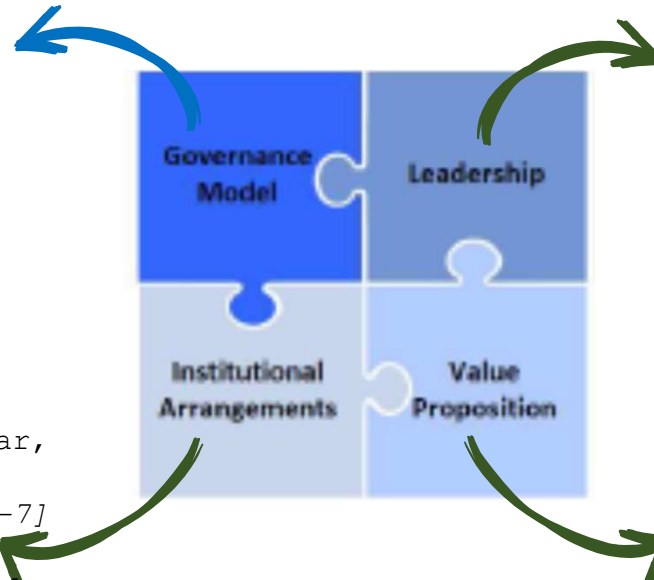
STRATEGIC PATHWAY 1: GOVERNANCE AND INSTITUTIONS

Periodic creation of **5-year National GIS Strategy** [3.1.8]

Public, Private and NGO Sectors: to provide appropriate **access to geospatial data** along clear, fair guidelines and mechanisms [3.1.5-6;3.9.5-7]

Geospatial Advisory Committee and Technical Sub-Committees [4.0]

NSDI Unit [3.1.2]



GLSC: for “visionary management and technical leadership” (in keeping with GLSC Act 1999 / Cap. 59:05) [3.1.3]

Government of Guyana: for political endorsement, to encourage collaboration and provide incentives to national geospatial stakeholders [3.1.4-6]

Executive Summary -**Social and Economic Business Case** [p.4]

Introduction - **Rationale** [1.2]

Context [2.0]

National GI Policy Alignment with IGIF

STRATEGIC PATHWAY 2: LEGAL AND POLICY

Operationalising functions in the **GLSC Act 1999 / Cap. 59:05** [1.0]



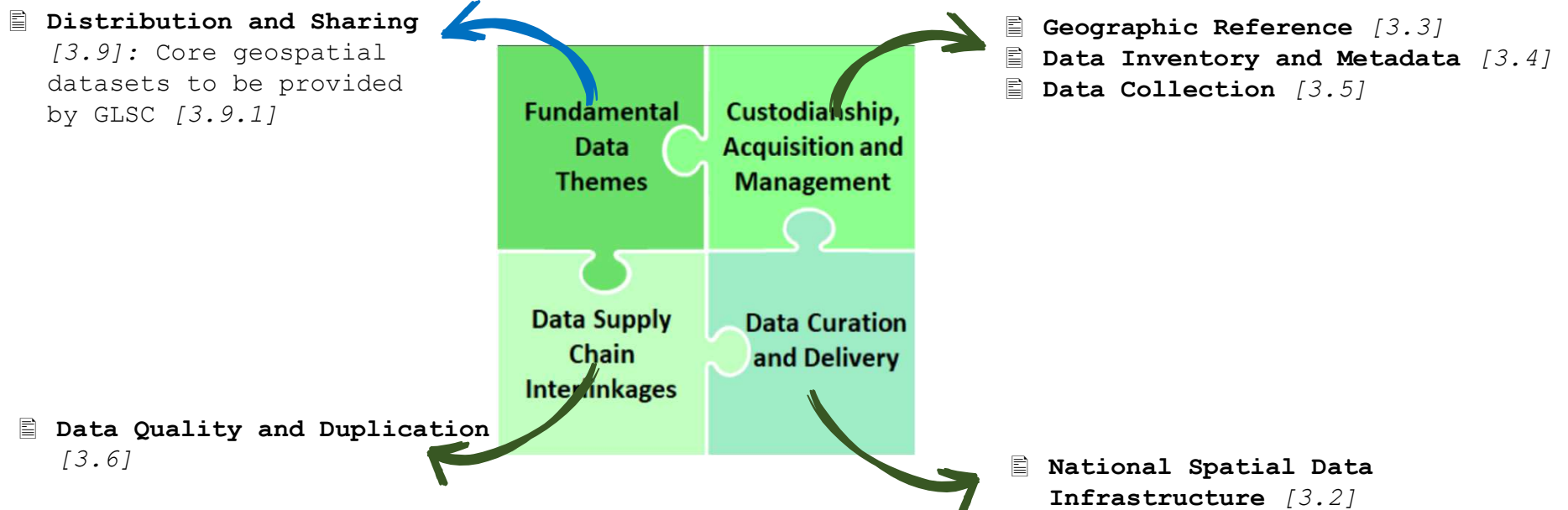
Create **NSDI Regulations** [3.1.1]
National Geospatial Policy
Guidelines on Distribution and Sharing [3.9], **National Geoportal** [3.12]

Policy Implementation Considerations [4.0]

Data Security [3.7]
Copyright and IPR [3.8]

National GI Policy Alignment with IGIF

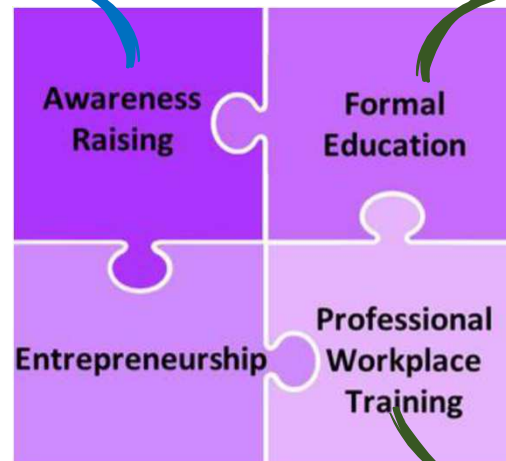
STRATEGIC PATHWAY 4: DATA



National GI Policy Alignment with IGIF

STRATEGIC PATHWAY 8: CAPACITY AND EDUCATION

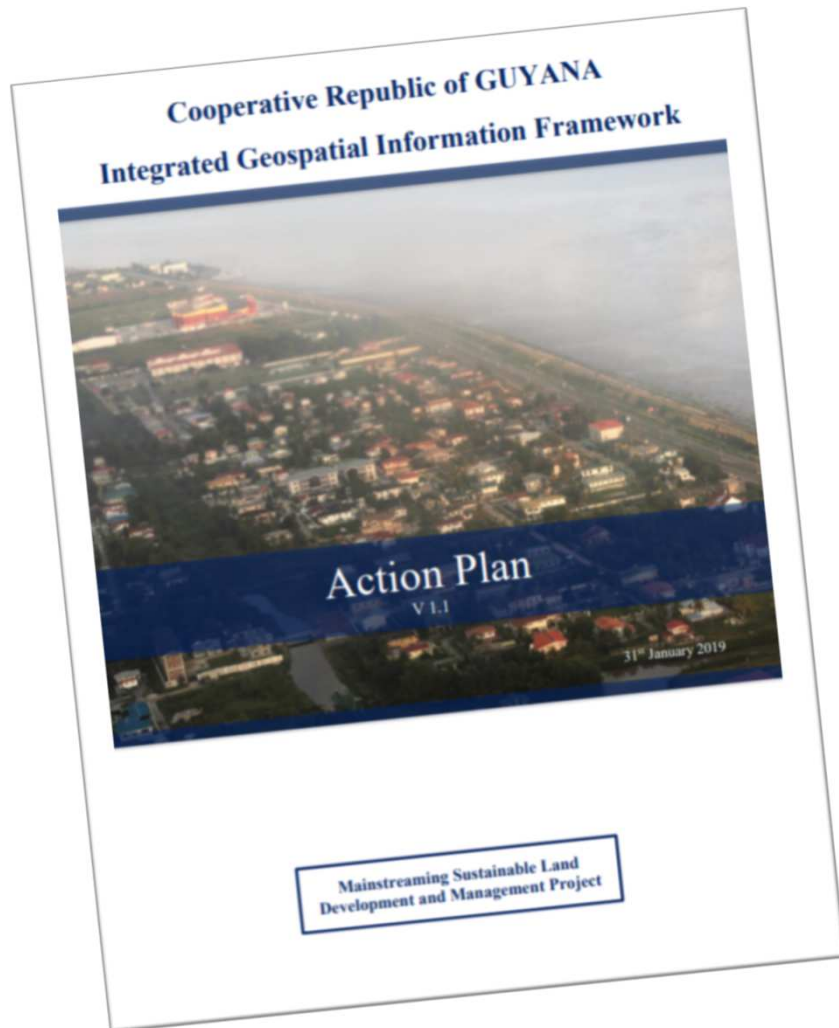
GLSC to spread awareness among non-traditional users, build spatial literacy among general public [3.13.4]



Government to facilitate development of human resources to manage and operate geospatial systems [3.13.1]

Collaboration between GLSC, Ministry of Education for **GIS in School Education Programs (students and teachers)** [3.13.3]

Collaboration among **GLSC, Ministry of Education, University of Guyana** for professional Geoinformatics education and training [3.13.2]



E. IGIF COUNTRY ACTION PLAN: NSDI DEVELOPMENT ROAD MAP

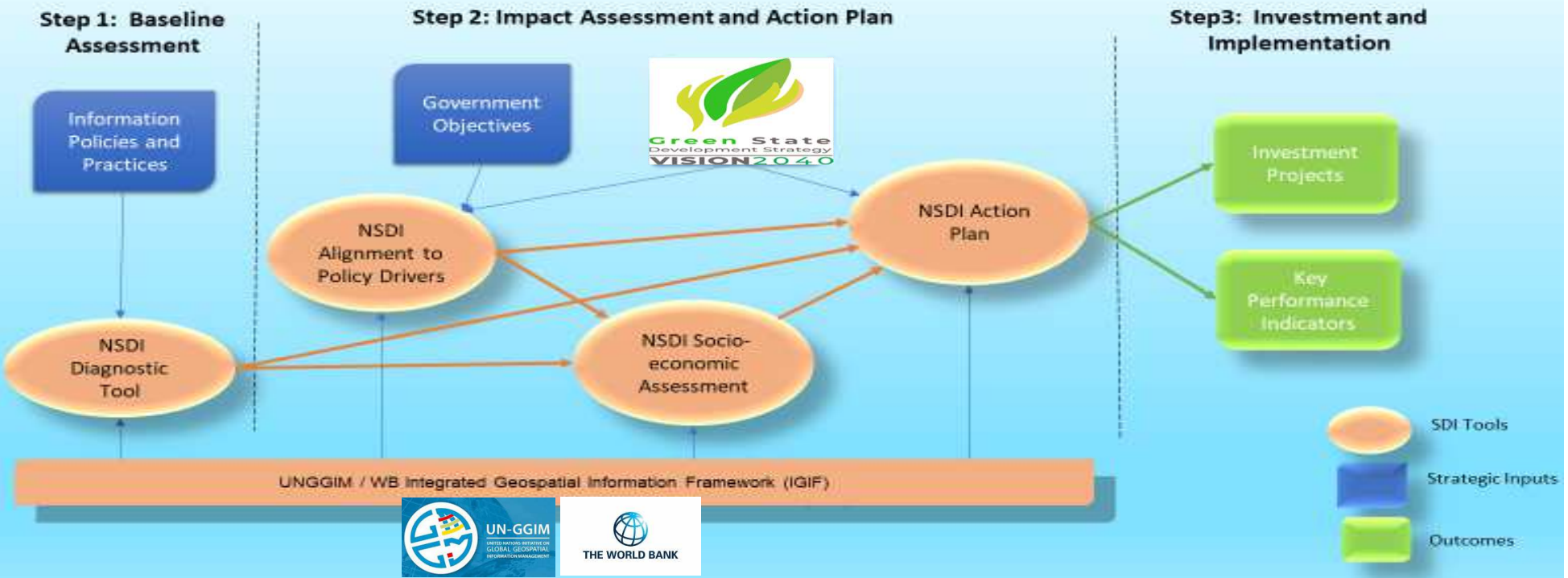
- Developed under the Mainstreaming SLDM Project, Approved by UNFAO & GLSC in January 2019 following highly consultative and review period (**5 months**).
- This document presents an Action Plan, based on the IGIF Overarching Strategic Framework, for development of a National Spatial Data Infrastructure (NSDI) for Guyana over a 5-year period and outlines its socio-economic benefits.
- The implementation of the Action Plan will require an indicative level of investment of US\$7.8m for the 5-year period.
- It is a living document!
- 80 pages
- Guyana is one of the first countries globally to start implementing the UNGGIM IGIF

Methodology to Develop NSDI Road Map: IGIF Country-Level Action Plan

(UNGGIM, World Bank, UNFAO)



Methodology

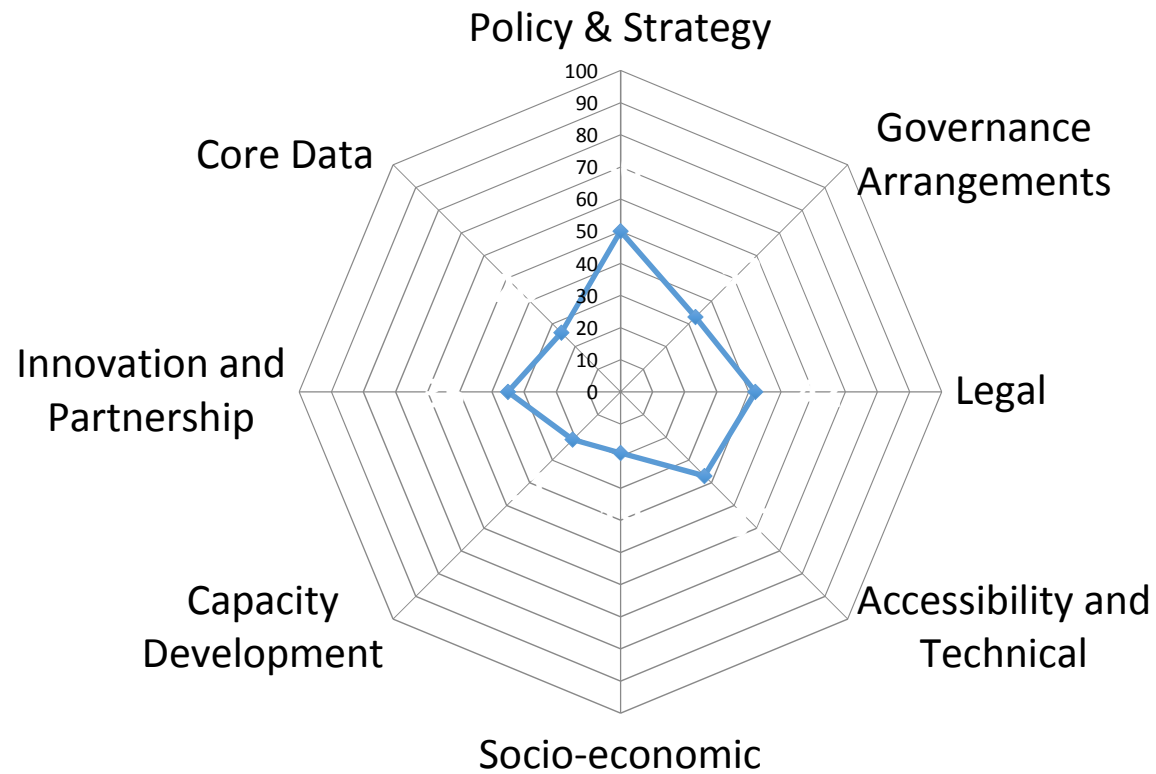


2. IMPLEMENTING IGIF

THE GUYANA EXPERIENCE (AS OF MAY 2020)

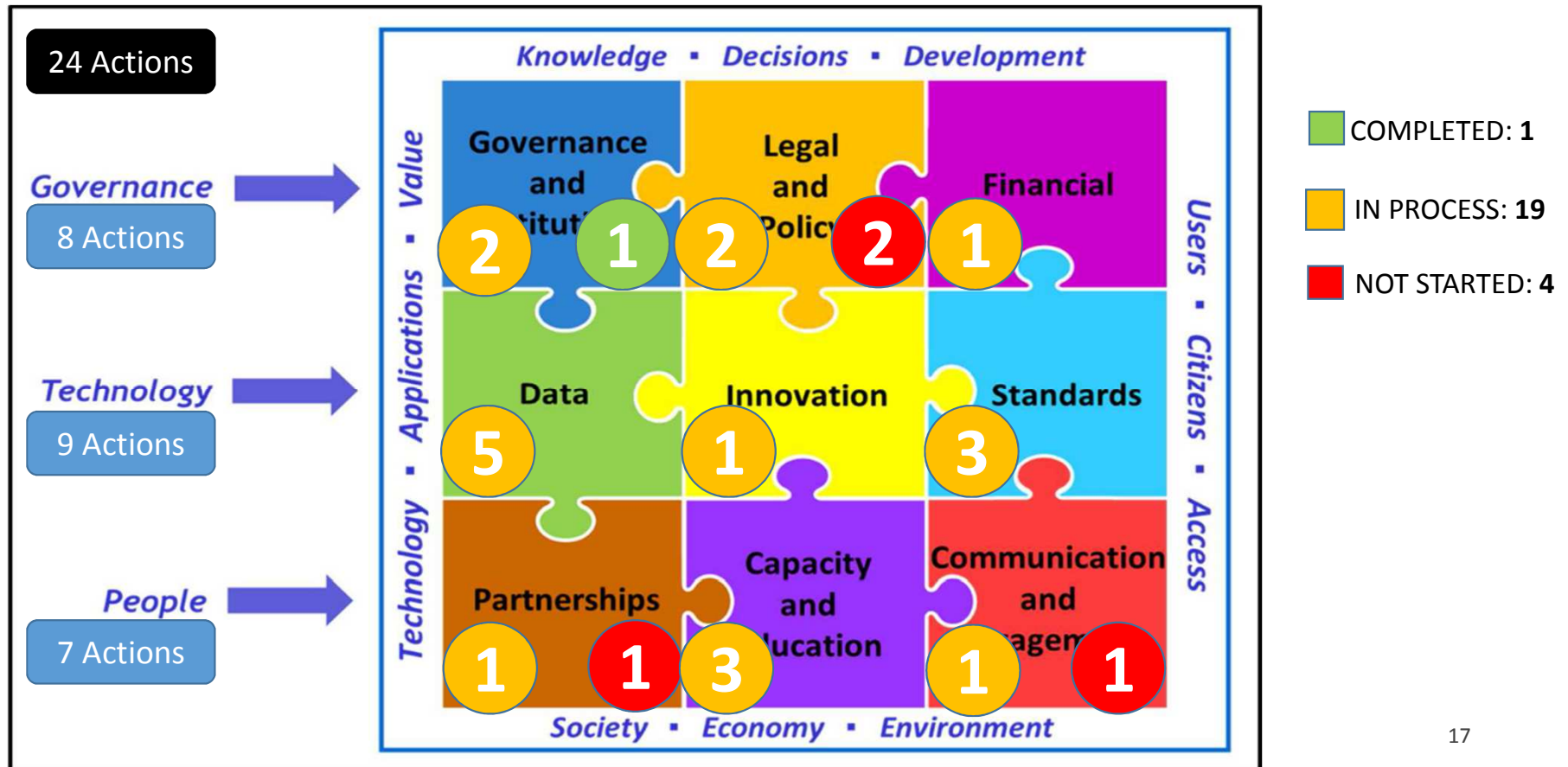
The Starting Point

Output from NSDI Diagnostic Tool from UNGGIM / World Bank Assessment Methodology, January 2019



NSDI Road Map: IGF Country-level Action Plan (Status Dashboard as of May 2020)

ACTIVITY STATUS: ■ COMPLETED ■ IN PROCESS ■ NOT STARTED

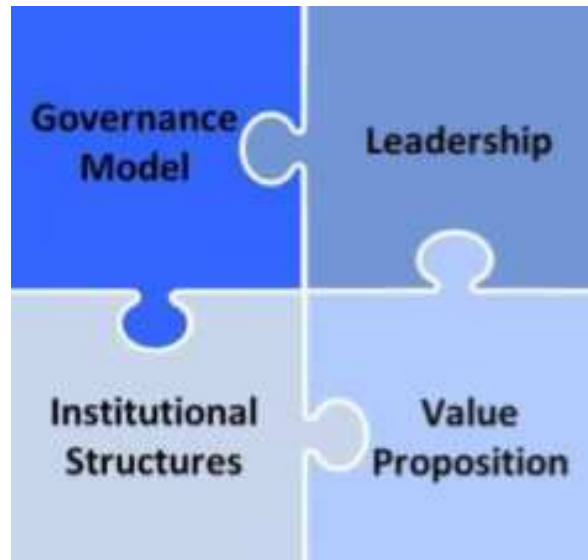


NSDI / IGIF ACTION PLAN: STATUS (MAY 2020)

Strategic Pathway 1:

ACTIVITY STATUS: ■ COMPLETE ■ IN PROCESS ■ NOT STARTED

Governance & Institutions



Actions

- Approval of National Geospatial Information Policy (High Priority)
- Establish Geospatial Advisory Committee (GAC) (High Priority)
- Establish Working Groups (Medium Priority)

KPIs

- Geospatial Policy (approval within 3 months)
- GAC and working groups established and operational within 6 months

NSDI / IGIF ACTION PLAN: STATUS (MAY 2020)

ACTIVITY STATUS: ■ COMPLETE ■ IN PROCESS ■ NOT STARTED

Strategic Pathway 2:

Policy and Legal



Actions

- Update Land Surveys legislation to support cadastral upgrading
- Create Data Sharing Agreement (High Priority)
- NSDI Regulations (Medium Priority)
- Data Protection and Pricing and Licensing (Low Priority)

KPIs

- ▶ Update Land Surveys legislation within 12 months.
- ▶ Data sharing agreement in place and regular operational sharing between 5 organisations within 12 months.
- ▶ Regular operational sharing between all major stakeholders within 3 years.

NSDI / IGIF ACTION PLAN: STATUS (MAY 2020)

STRATEGIC PATHWAY 3:

ACTIVITY STATUS: ■ COMPLETE ■ IN PROCESS ■ NOT STARTED

FINANCIAL



Actions

- Develop long-term GLSC Business Model (Medium Priority)

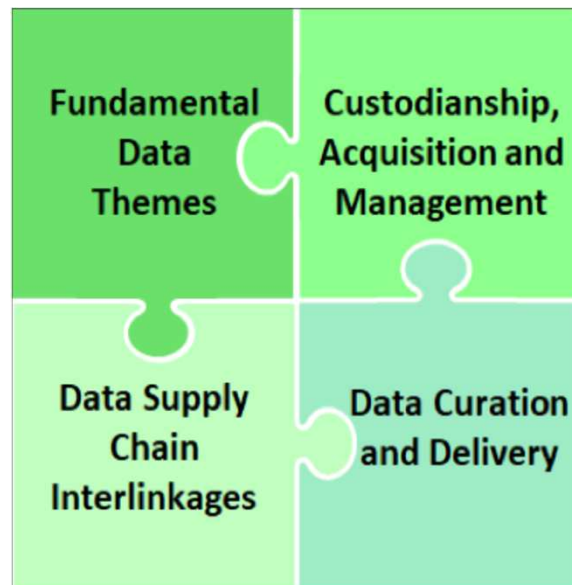
KPIs

- Long-term GLSC Business Model approved within 18 months

NSDI / IGIF ACTION PLAN: STATUS (MAY 2020)

ACTIVITY STATUS: ■ COMPLETE ■ IN PROCESS ■ NOT STARTED

Strategic Pathway 4: Data



Actions

- Create National Discovery Geoportal (High Priority)
- Rationalise State Land Leasing Process (Very high Priority)
- Create National Topographic Database (High Priority)
- Create a single National Street Address Database (High Priority)
- Hardware, Network and Software Needs to Support NSDI (Very High Priority)

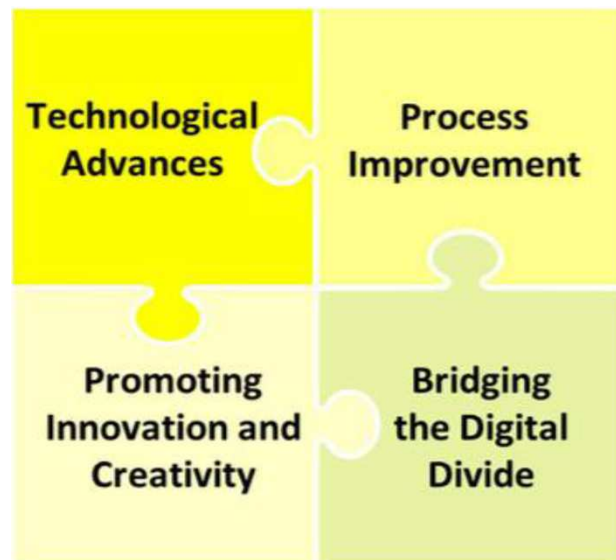
KPIs

- ▶ Discovery Metadata database populated with data from 10 key suppliers and openly accessible on the web within 6 months.
- ▶ Rationalise State Land Leasing process including new software live within 2 years.
- ▶ National street address database operational within 2 years.
- ▶ National coverage of updated topographic base mapping within 5 years.

NSDI / IGIF ACTION PLAN: STATUS (MAY 2020)

ACTIVITY STATUS: ■ COMPLETE ■ IN PROCESS ■ NOT STARTED

Strategic Pathway 5: Innovation



Actions

- Guyana Centre of Excellence for Geospatial Information(High Priority)

KPIs

- ▶ Centre of Excellence terms of reference, funding and recruitment plans approved by GAC within 12 months
- ▶ Centre of Excellence fully operational within 2 years.

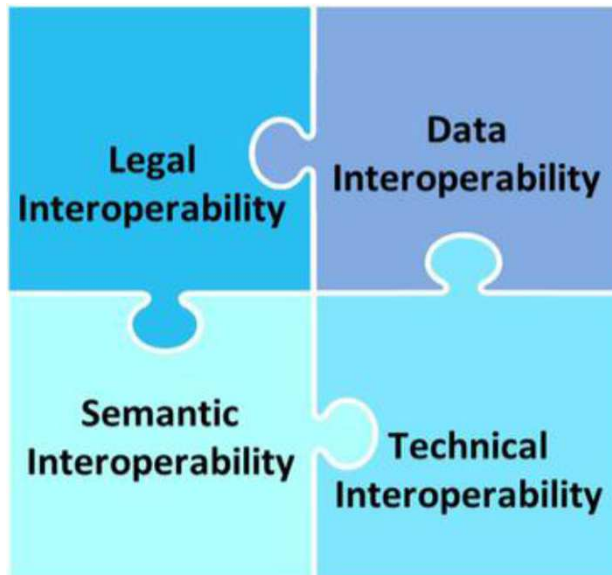
NSDI / IGIF ACTION PLAN: STATUS (MAY 2020)

ACTIVITY STATUS: ■ COMPLETE ■ IN PROCESS ■ NOT STARTED

Strategic Pathway 6: Standards

Actions

KPIs



- Development and implementation of standards policy (High priority)

- Discovery Metadata
- Base Mapping / National Topographic Database
- Addressing

- ▶ Street Addressing content standard agreed with 12 months.
- ▶ Content standards for 10 fundamental data themes agreed within 3 years.

NSDI / IGIF ACTION PLAN: STATUS (MAY 2020)

ACTIVITY STATUS: ■ COMPLETE ■ IN PROCESS ■ NOT STARTED

STRATEGIC PATHWAY 7:

Actions

KPIs

Partnerships



■ Define Scope of a Partnership with International NSDI Organisations

■ Support creation of Guyana Association for Geospatial Information

■ Study visits to two countries completed within 12 months.

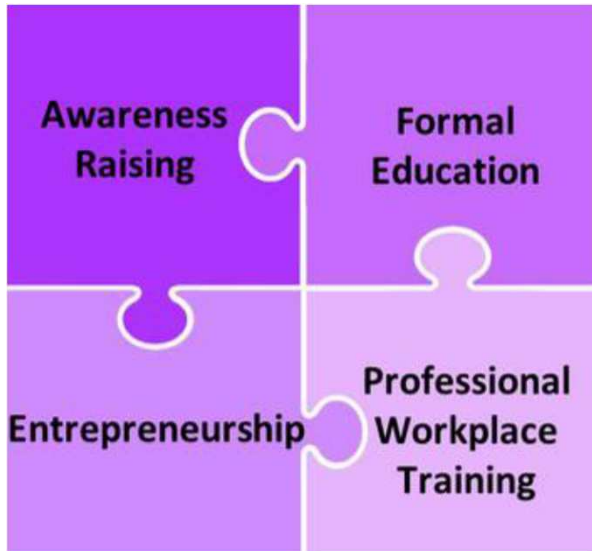
➤ Guyana Association of Geospatial Information formed within 2 years

NSDI / IGIF ACTION PLAN: STATUS (MAY 2020)

Strategic Pathway 8:

ACTIVITY STATUS: ■ COMPLETE ■ IN PROCESS ■ NOT STARTED

CAPACITY & EDUCATION



Actions

- Consolidate National Geospatial and Land Administration Capabilities at Tertiary Level (High Priority)
- Geospatial Information in the School Curriculum (Medium Priority)
- Foster Geospatial Entrepreneurship (Medium Priority)

KPIs

- ▶ GIS Laboratory at University of Guyana opened within 12 months
- ▶ 3 new geospatial topics within senior school curriculum within 2 years
- Land management and
- land valuation courses graduating students within 3 years

NSDI / IGIF ACTION PLAN: STATUS (MAY 2020)

STRATEGIC PATHWAY 9: COMMUNICATION & ENGAGEMENT

ACTIVITY STATUS: ■ COMPLETE ■ IN PROCESS ■ NOT STARTED

Actions

KPIs



■ Create Outreach Group (High Priority)

■ Monitoring and Evaluation Framework (High Priority)

- Monitoring and Evaluation framework approved by GAC within 6 months
- Outreach group staffed and communications plan approved within 12 months

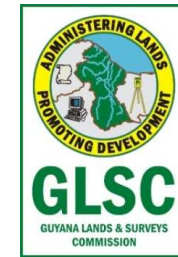
Implementing IGIF: Reflections on Guyana's Experience

Convergence of several strategic components made it possible for Guyana to become an early adopter and pioneer of IGIF:

1. Governance - Existing GLSC institutional structure with a legal, NMGA mandate led by a champion and with political support; financing from SLDM and GoG
2. People - Partnerships (e.g. UNFAO, UNGGIM, ECLAC, OS, UoT ITC, RGA), opportunities for capacity building (e.g. study tours, UNGGIM, World Bank, FIG fora)
3. Technology – the recognition and awareness that data, innovation and standards could be significantly improved within a IGIF approach (e.g. LiDAR, open source, FELA)



Kaieteur Falls



THANK YOU!

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