



# GWFF

GEOSPATIAL WORLD FORUM

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# UN-Integrated Geospatial Information Framework

*inspired*

**South African  
Committee for Spatial Information  
Strategy, 2022**



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## The SDI Act establishes:



[An Electronic  
Metadata Catalogue](#)

- The **South African Spatial Data Infrastructure (SASDI)** as the national, technical, institutional; and policy framework to regulate the collection, management, maintenance, integration, distribution, and use of spatial information for improved socioeconomic development.
- The **Committee for Spatial Information (CSI)**. Established in terms of section 5 of the Spatial Data Infrastructure Act, Act 54 of 2003. The role of the CSI: to advise the Minister, the Director General or an organ of state dealing with spatial information on any matter the CSI considers necessary or expedient for achieving the objectives of South African Spatial Data Infrastructure (SASDI).



# GLOBAL

PROGRESS WITH IGIF

1990's

## EXPANSION AND STANDARDIZATION

- Early 1990s: Advancements in computer technology enhance GIS software capabilities.
- 1994: Establishment of the Open Geospatial Consortium (OGC)

2000's

## TECHNOLOGICAL INTEGRATION AND PUBLIC ACCESSIBILITY

- 2000: Rise of web-based GIS technologies.
- 2004: Launch of Google Maps.

2010's

## BIG DATA AND INCREASED ANALYTICAL CAPABILITIES

- 2010: GIS begins integration with big data analytics.
- 2011: Establishment of UN-GGIM.
- 2015: Development of the IGIF concept by UN-GGIM.

2020's

## THE ERA OF THE IGIF

- 2018: Official adoption of IGIF by UN-GGIM.
- 2020: Release of the IGIF implementation guide.

# SOUTH AFRICA

PROGRESS WITH SDI

1990's

## SPATIAL INTEGRATION POST APARTHEID SOUTH AFRICA

- 1994: South Africa lays the groundwork for formalized the integration of spatial data systems and GIS technologies, setting the stage for future initiatives.

2000's

## ENACTMENT OF SDI

- In 2003, the Spatial Data Infrastructure Act established SASDI to enhance technical capabilities and address challenges in integrating geospatial data across government levels.

2010's

## PARTICIPATION IN GLOBAL FORA

- In 2010, South Africa focused on enhancing local government geospatial data management without integrating global big data.
- In 2011, South Africa joined the UN GGIM during the 2nd meeting.

2020's

## NATIONAL, CONTINENTAL AND GLOBAL GROWTH FOCUS

- 2019: Launch of the Municipal Capacity Building Project aimed at empowering local government capabilities in line with GIS implementation and geospatial standards.
- 2020 Support to National Departments with Data Standards
- 2021-Present: Focus on aligning local data management practices with IGIF standards, indicating ongoing efforts to integrate and utilize global frameworks.
- 2022: Joins several Expert groups of the UN-GGIM
- 2022: Chairs UN GGIM Africa for first time.

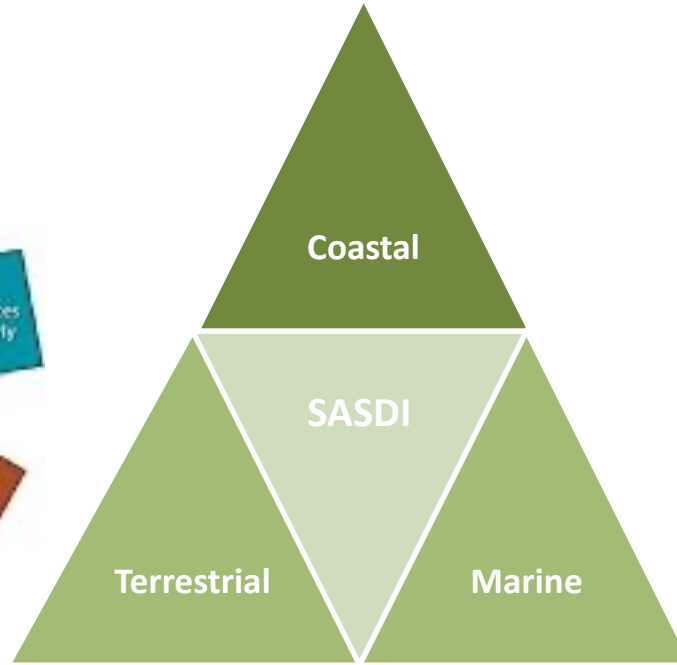


# NATIONAL POLICY DIRECTIVES

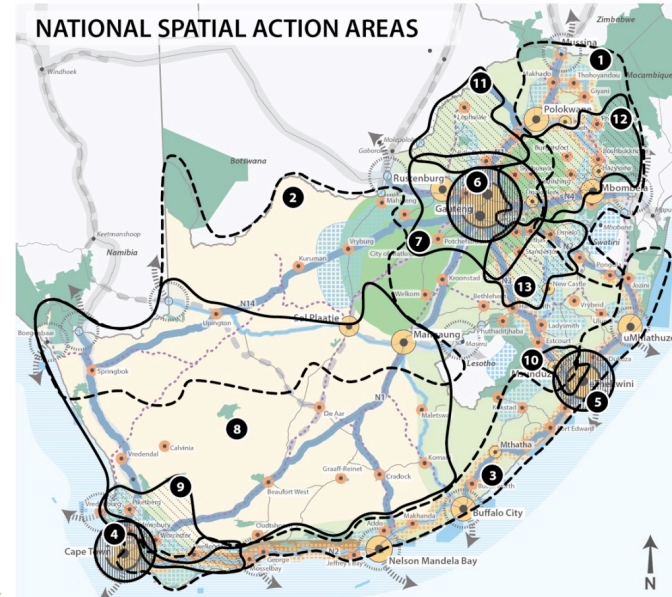
## NDP 2030



National Spatial Observatory



National Spatial Data Infrastructure



National Spatial Action Areas

## WE, THE PEOPLE OF SOUTH AFRICA,

Recognize the injustices of our past; Honour those who suffered for justice and freedom in our land; Respect those who have worked to build and develop our country; and Believe that South Africa belongs to all who live in it, united in our diversity. We therefore, through our freely elected representatives, adopt this Constitution as the supreme law of the Republic so as to -

Heal the divisions of the past and establish a society based on democratic values, social justice and fundamental human rights;

Lay the foundations for a democratic and open society in which government is based on the will of the people and every citizen is equally protected by law;

Improve the quality of life of all citizens and free the potential of each person; and

Build a united and democratic South Africa able to take its rightful place as a sovereign state in the family of nations.

May God protect our people.  
Nkosi Sikelel' iAfrika. Morena boaleke ardhaha sa hoo.  
God seiso Suid-Afrika. God bless South Africa.  
Mozijima phatshehisa Afrika. Hosi bontleka Afrika.

(Preamble to the Constitution of the Republic of South Africa)

ONE CONSTITUTION, ONE NATION



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Follow us on

Constitution



# COMMITTEE ON SPATIAL INFORMATION ROADMAP

- 2004**
- The Spatial Data Infrastructure Act was assented

- 2008**
- Section 5 Committee Establishment Regulations Published

- 2012**
- Data themes, datasets, and custodians identified with prioritization of 10 themes.

- 2016**
- Policies Published on Data Custodianship and Pricing, Full Regulations Published, CSI Code of Conduct Approved

- 2006**
- Sections 1 to 11, 13, and 19 to 22 of the Act are now in effect.

- 2010**
- 1st CSI Inauguration

- 2015**
- 2nd CSI Inauguration
  - SDI Act implemented fully
  - Published policies on data custodianship and pricing of spatial information products and services

- 2017**
- Approval of CSI Code of Conduct, Ministerial approval of Land Cover Standard, Metadata Training, 1st Compliance Audit, Appointment of Coordinators, Custodians for base data sets appointed, Base Data Set Governance Model established, and regulations for section 5 published.

- 2018**
- Considerations for capturing spatial information according to Regulations 5(2) and Standards identification for publication under section 11 of the Act.

- 2019**
- Form D and F considerations, launch of SASDI Website ([www.sasdi.gov.za](http://www.sasdi.gov.za)), and approval of SDI terminologies.

- 2020**
- Quarterly reporting sessions, revamp of EMC with DCPR incorporation, and review/approval of Themes to align with UN-GGIM's Fundamental Geospatial Data Themes.

- 2021 -**
- 3rd CSI Inauguration



# UN-IGIF INSPIRED STRATEGY (2022 - 2024)





# GOVERNANCE STRUCTURE



**Morena Letsosa**  
CSI Chairperson




**Michael Manyama**  
Chair: Governance Subcommittee



**Marlanie Moodley**  
Chair: Technology Subcommittee



**S'lindile Mhlongo**  
Chair: People Subcommittee

- Working Groups**
- Governance and Institutions
  - Policy and Legal
  - Financial

- Working Groups**
- Data
  - Innovation
  - Standards

- Working Groups**
- Partnerships
  - Capacity and Education
  - Communication and Engagement

## Other Members of the CSI

- Rajesh Makan
- Serena Coetzee
- Flora Makgale
- Gareth Muthumuni
- Terence Turnbull
- Tumisang Modiole
- Ndiyafhi Denge

## Office of the Secretariat

- Clinton Heimann
- Nontuthuzelo Ntshabele
- Maroale Chauke
- Vutomi Ndlovu
- Serati Mashamaite

## Outcomes

- An enabled environment for the capture, use, sharing and maintenance of geospatial information
- A standardized Data, Processes and Technology
- A nation that is geospatially aware and engaged

# SWOT ANALYSIS



## STRENGTHS

- Legislative framework
- Skilled, knowledgeable and professional members of the Committee
- Innovative, driven and committed members.

- Availability of an international geospatial information management framework
- Enabling legislation that foster collaboration
- New technologies and media to promote communication and visibility
- Build a geospatial data observatory and innovation hub



## OPPORTUNITIES

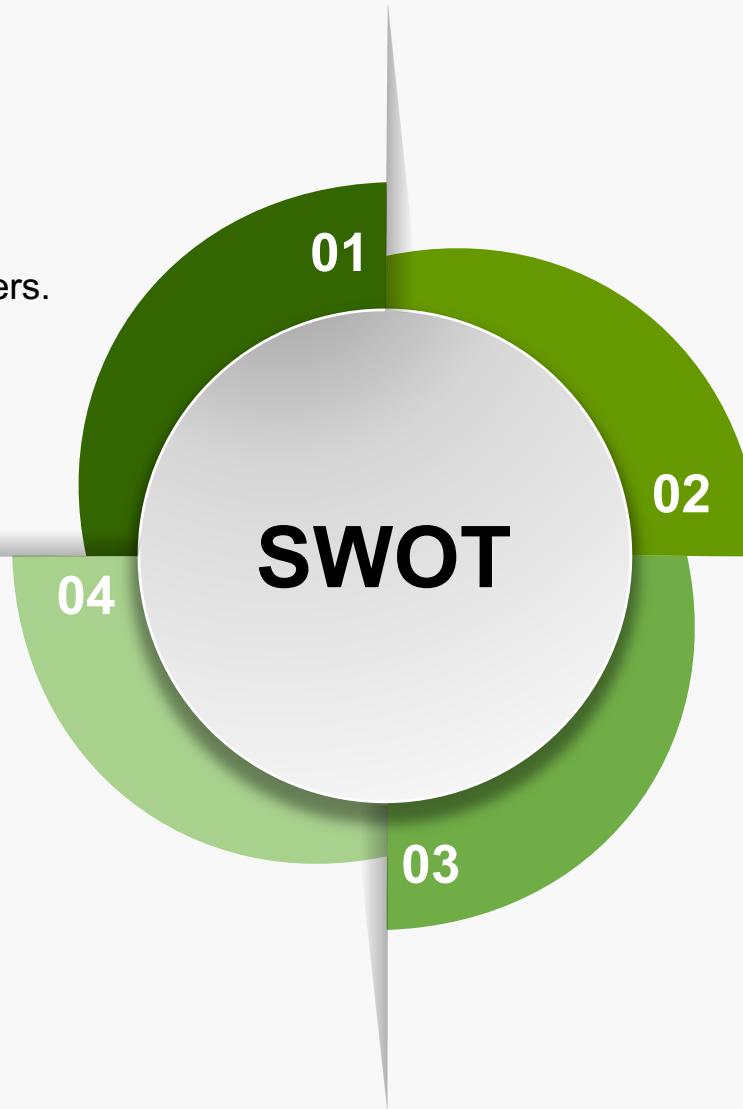
## WEAKNESSES

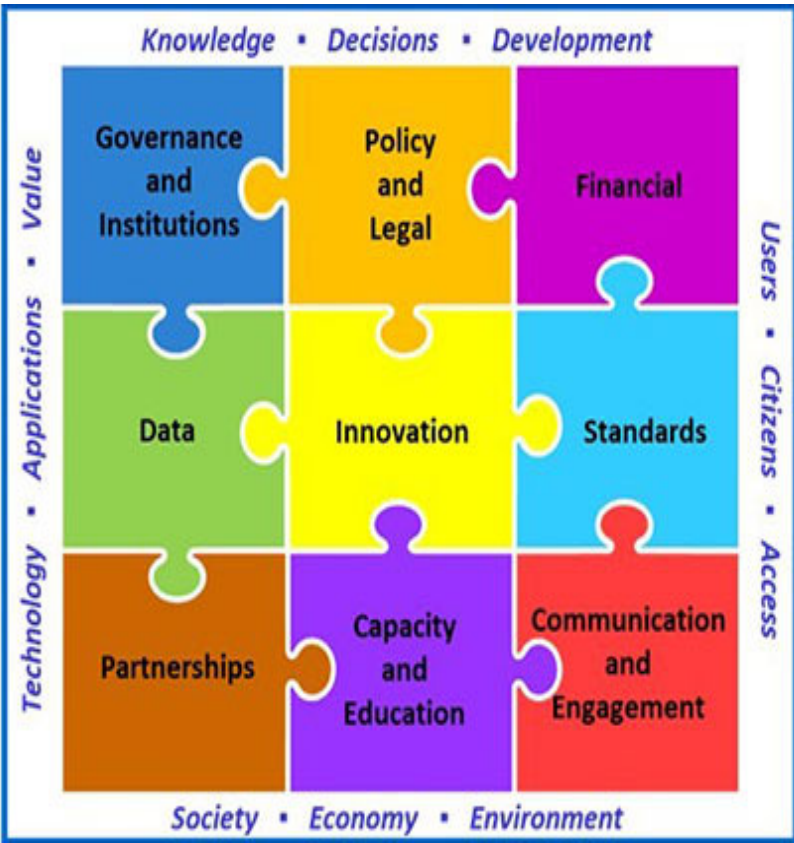


- Lack of political support and resources
- Lack of visibility
- Lack of ICT representativity and complex ecosystem
- Slow take-up of new trends

- Lack of support and competing government priorities
- CSI not autonomous
- Non-compliance to SDI prescripts

## THREATS





Subcommittee	Outcomes	Indicator
Governance	An enabled environment for the capture, use, sharing and maintenance of geospatial information	<ul style="list-style-type: none"> <li>% of institutionalisation of SDI/GIM and data governance at national /provincial /local level</li> <li>% of finalisation of the SDI compliance guidelines</li> <li>% of the development of SASDI financial framework</li> </ul>
Technology	A standardized Data, Processes and Technology	<ul style="list-style-type: none"> <li>Number of base data set themes implemented</li> <li>% of establishment of SASDI geospatial data ecosystem and % of incorporation of Marine and Coastal Geospatial Data</li> <li>Number of standards and/or prescription identified</li> </ul>
People	A nation that is geospatially aware and engaged	<ul style="list-style-type: none"> <li>Number of partnership agreements signed</li> <li>Number of training and capacity events held</li> <li>Number of engagements and communication events held</li> </ul>









# BASE DATASET GOVERNANCE MODEL

Annex I: Ten Priority Base Data Set Themes - 2012

 <b>Administrative Boundaries</b> <small>municipal demarcation board</small>	 <b>Land Cover</b>
 <b>Imagery</b> <small>SANSA SPACE AGENCY</small>	 <b>Cadastre</b>
 <b>Transport</b> <small>transport</small>	 <b>Hydrology</b> <small>SANBI South African National Biodiversity Institute</small>
 <b>Social statistics</b> <small>stats sa</small>	 <b>Geodesy</b>
 <b>Land Use</b>	 <b>Conservation Areas</b>

Annex II: Base Data Set Themes Review to align to UN-GGIM Fundamental Geospatial Themes - 2021

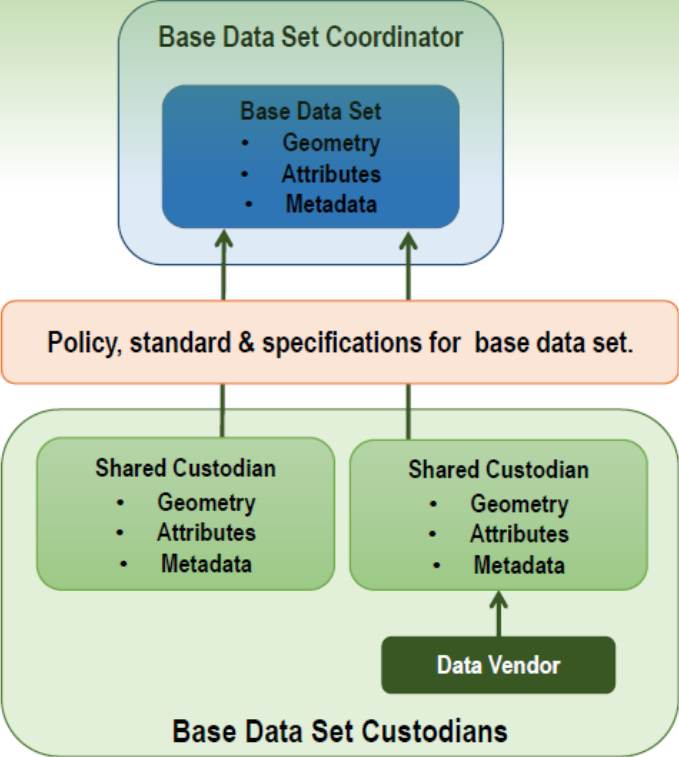
 <b>Infrastructure</b>	 <b>Geology and Soils</b>	 <b>Geographic Names</b>	 <b>Elevations and Depth</b>	 <b>Buildings and Settlements</b>	 <b>Addresses</b>
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Work underway to implement the theme

Base Data Set Governance

Base Data Set Governance Framework

Base Data Set Creation



# SDG DATA HUB

South Africa is part of the SDG Data Alliance and in the process of developing the SDG Data Hub. Partnerships with Statistics South Africa and other role players are being strengthened.

## UPCOMING HUBS

The data alliance has created beta versions of the following 15 hubs. In the upcoming months, the data alliance will be engaging with countries to further develop the hubs.

- Cameroon
- Chile
- Eswatini
- Ethiopia
- Fiji
- Guatemala
- Honduras
- Mozambique
- Panama
- Rwanda
- Senegal
- South Africa
- Tonga
- Tunisia



## South Africa's SDG Geospatial Data Hub

# INTEGRATED GEOSPATIAL EMPOWERING THE NATIONAL ECONOMY



## EXPLORE SOUTH AFRICAN TAX DATA

There is a glaring gap in the availability of credible spatial economic data in South Africa. This ambitious project draws on administrative tax records to generate new insights about the economy of South African cities and regions

- DASHBOARDS**  
Go on a journey to discover distinctive features about your municipality
- MAP EXPLORER**  
An open ended tool to visualize spatial tax data based on your interests
- DOWNLOAD DATA**  
Get access to the raw data, metadata and methodology user guide

**Spatial Economic Activity Data: South Africa (SEAD-SA)** is a new initiative led by the **National Treasury** providing granular spatial data to help answer vital policy and research questions about urbanisation, uneven development, territorial disparities, productivity and economic conditions of municipalities, cities, towns and suburbs/wards.



# KEY SUCCESS FACTORS

01

Strategic Focus – Leadership and management support from the DALRRD

02

People - Adequately resourced and skilled Secretariat and Administrative Office

03

Operations - clearly defined engagement processes between the CSI, DALRRD and Minister

04

Finances - a dedicated budget to deliver activities of the CSI

05

The Secretariat must carry out all the substantive (Professional and Technical) work of the CSI as directed by the CSI and its Subcommittees.

06

The Secretariat must carry out all the secretarial and administrative work of the CSI as directed by the CSI and its Subcommittees.

07

The Secretariat must gather and prepare background information on various issues for the CSI and Subcommittees to make recommendations and or decisions.

08

The Secretariat must carry out the decisions/resolutions made by the CSI.

09

The Secretariat must communicate the activities of the CSI and its Subcommittees.

# CONCLUSION

## Enhance Institutional Collaboration across state organs

The CSI is an important structure as it enhances institutional arrangements and collaboration amongst organs of the state

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## Strengthening private and Academia Partnerships

Partnerships with the private sector and academia must be strengthened

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## Leverage geospatial data effectively for national development.

This juxtaposition highlights that while South Africa has been somewhat reactive in integrating early global GIS advancements, recent efforts demonstrate a proactive alignment with international standards, emphasizing capacity building and strategic implementation to leverage geospatial data effectively for national development.



## Localisation of Global Development

South Africa's journey in the spatial data information space, has closely mirrored global developments but with distinct local adaptations and challenges.

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## Post- Apartheid Spatial Integration

The initial lag during the early stages can be attributed to the political and social transitions of the 1990s.

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## Enhanced Municipal Capabilities aligned to UN-IGIF

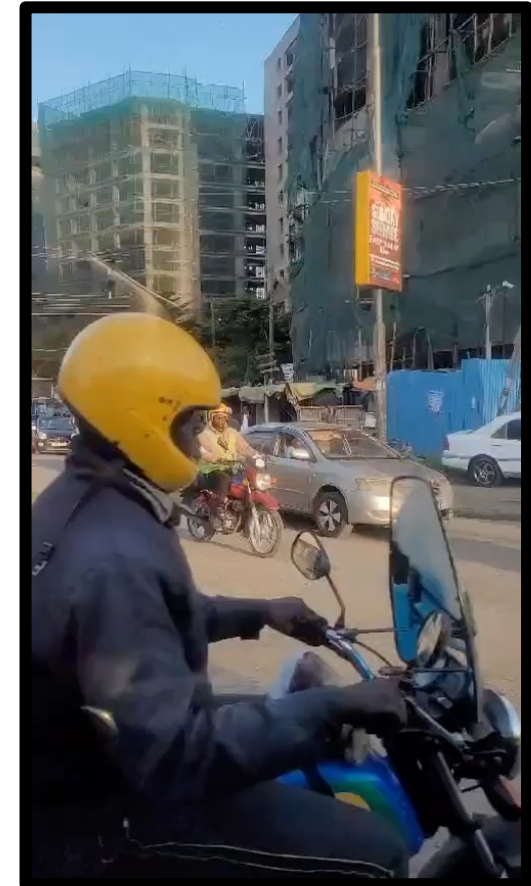
However, subsequent efforts have increasingly aligned with global standards, particularly with the recent emphasis on enhancing municipal capabilities in line with the IGIF.

# A Tale of Two cities – 13 May 2024 (08:00 am)

it was the best of times it was the worst of times - Dickens



First-World City	Category	Developing City
<ul style="list-style-type: none"> <li>High-resolution data from LiDAR, drones, and satellite imagery</li> <li>Smart city integration with IoT sensors</li> </ul>	<b>Data Collection and Integration</b>	<ul style="list-style-type: none"> <li>Use open-source satellite imagery and crowd-sourced data</li> <li>Focus on basic infrastructure mapping</li> </ul>
<ul style="list-style-type: none"> <li>Sustainable development modelling</li> <li>Traffic and transport optimization</li> </ul>	<b>Urban Planning and Development</b>	<ul style="list-style-type: none"> <li>Prioritize critical infrastructure development</li> <li>Implement geospatial tools for disaster management</li> </ul>
<ul style="list-style-type: none"> <li>Track and optimize energy, water, and waste</li> <li>Environmental monitoring for air quality, noise, and green cover</li> </ul>	<b>Resource Management</b>	<ul style="list-style-type: none"> <li>Equitable resource allocation</li> <li>Support local agriculture with soil, water, and climate data</li> </ul>
<ul style="list-style-type: none"> <li>Public participation platforms with interactive maps</li> <li>Transparent governance with shared municipal data</li> </ul>	<b>Community Engagement and Participation</b>	<ul style="list-style-type: none"> <li>Engage communities in data collection and decision-making</li> <li>Implement geospatial educational programs</li> </ul>
<ul style="list-style-type: none"> <li>Business intelligence for market trends and optimal locations</li> <li>Innovation hubs for start-ups and tech companies</li> </ul>	<b>Economic Development</b>	<ul style="list-style-type: none"> <li>Improve market access and map trade routes</li> <li>Provide geospatial insights for investment planning</li> </ul>



**Value of GKI**



**T**HANK **Y**OU!