

Enhancing geospatial information management to advance national priorities and global agendas

Successes and challenges in the implementation of the United Nations Integrated Geospatial Information Framework



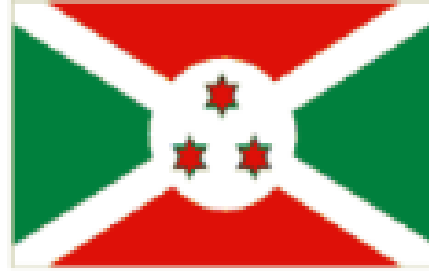
UN-GGIM Africa

UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Workshop on United Nations Integrated Geospatial Information Framework (UN-IGIF) ahead of the Eleventh Session of the United Nations Regional Committee on Global Geospatial Information Management for the Africa (UN-GGIM Africa)

REPUBLIC OF BURUNDI



National Geospatial Information Strategy to Support the Implementation of the Vision: Emerging Country by 2040, Developed Country by 2060

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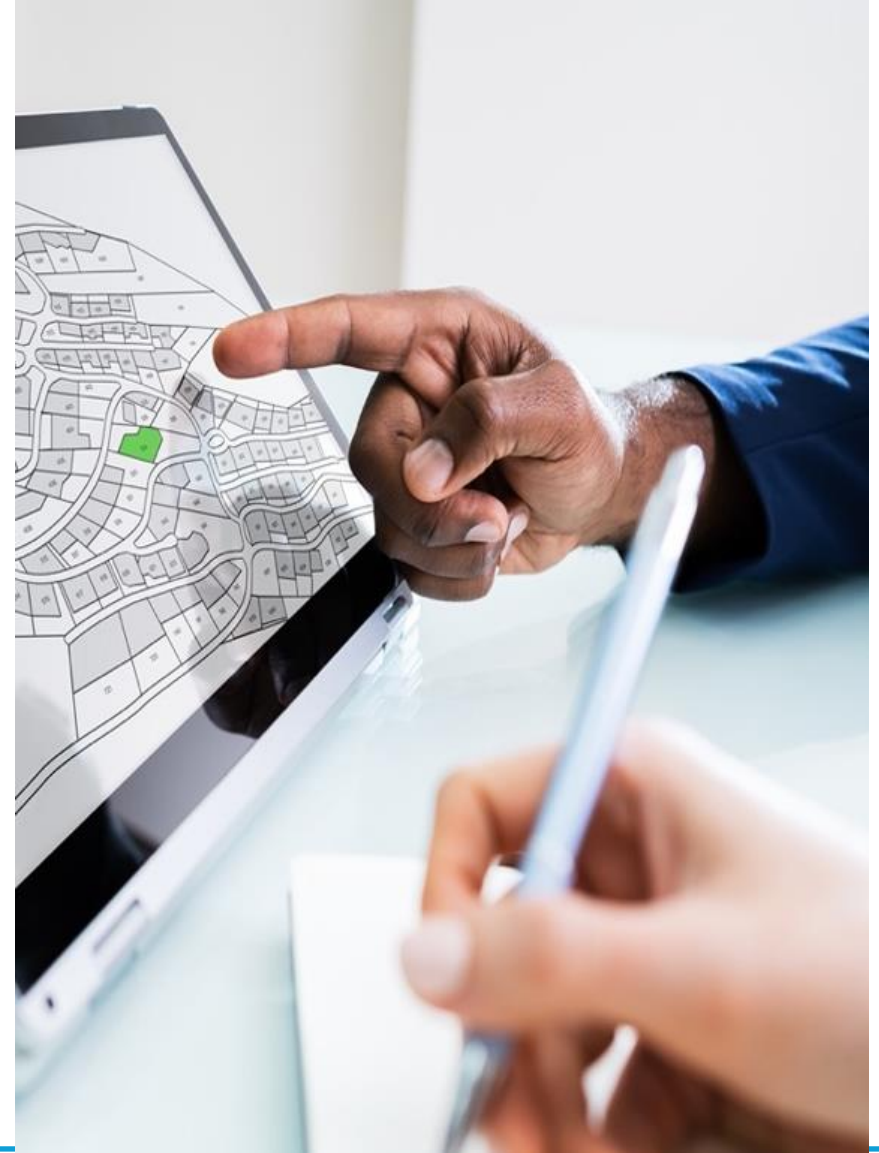


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Introduction



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Introduction



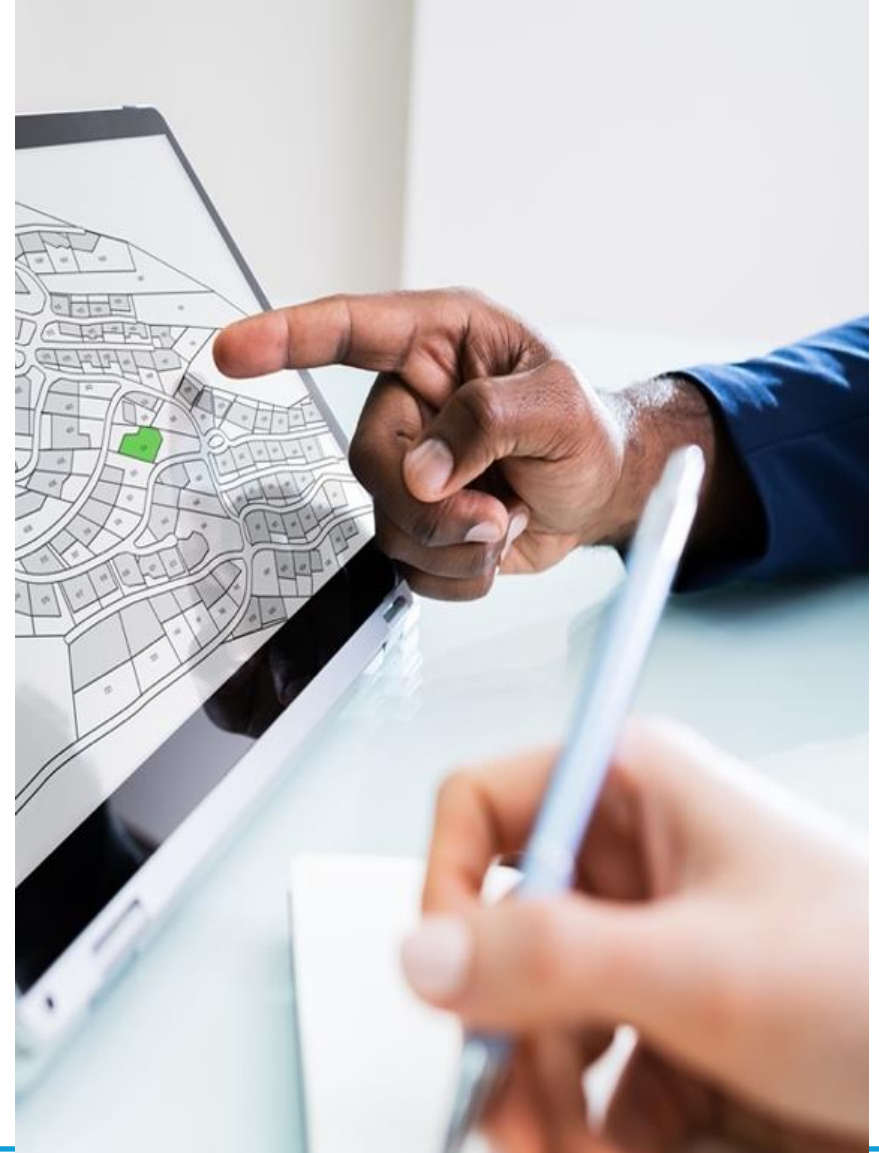
Burundi is finalizing its National Geospatial Information Strategy. The objective of the National Geospatial Information Strategy of Burundi is to deploy a detailed roadmap for the establishment and development of a National geospatial Data Infrastructure, in order to ensure the availability of reliable and accessible geospatial information, a key enabler of inclusive social, economic, and environmental development in support of Burundi's transformation into an Emerging Country by 2040 and a Developed Country by 2060.

The National Geospatial Information Strategy of Burundi is built upon three strategic axes derived from the nine pillars of the United Nations Integrated Geospatial Information Framework (IGIF):

- Governance and Institutions
- Policy and Legal
- Financial
- Data
- Innovation
- Standards
- Partnerships
- Capacity and Education
- Communication and Engagement



Current State of Geospatial Information Management in Burundi



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Current State of Geospatial Information Management in Burundi

The main institutions involved in geospatial information management in Burundi are:

- ▼ **The National Geomatics Center of Burundi**
- ▼ **The Geographic Institute of Burundi**
- ▼ **The National Institute of Statistics of Burundi**
- ▼ **The University of Burundi**
- ▼ **The National Cadastre**

In addition to these key actors, other national agencies also contribute to the management of geospatial information in Burundi.

The development partners, such as the Global Fund, the International Organization for Migration (IOM), the United Nations Development Programme (UNDP), the European Union, The Food and Agriculture Organization (FAO), The World Food Programme (WFP), The World Bank (WB), United Nations Children's Fund (UNICEF) and the United Nations Population Fund (UNFPA) play an important role in the use and production of geospatial data in the country.



Current State of Geospatial Information Management in Burundi

SWOT Analysis on geospatial information management in Burundi

1. Strengths

- **Existence of a governance structure based at the Prime Minister's office which ensures national coordination of geomatics and benefits from the support of national authorities.**
- **Implementation of the “Visa Géomatique”, a pre-validation tool for geospatial projects and a mechanism for certifying the resulting data.**
- **Establishment of a National Toponymy Commission.**



Current State of Geospatial Information Management in Burundi

SWOT Analysis on geospatial information management in Burundi

1. Strengths

- **Weekly broadcast of a geomatics-focused program on National Television**, aimed at raising awareness among stakeholders and the general public.
- **Mandate of the Geomatics Center of Burundi to centralize all geospatial data produced by public institutions**, with metadata available for approximately 60% of existing datasets.
- **Existence of a national institution responsible for base mapping** (cartographic reference frameworks at various scales) and fundamental geographic work (geodetic and leveling reference systems).
- **Institutional stakeholders are well-informed and fully understand the role and relevance of the Geomatics Center of Burundi**, demonstrating strong commitment to its mission.





Current State of Geospatial Information Management in Burundi



SWOT Analysis on geospatial information management in Burundi

1. Strengths

- **Institutional stakeholders are well-informed and fully understand the role and relevance of the Geomatics Center of Burundi, demonstrating strong commitment to its mission.**
- **Availability of a relatively robust technological infrastructure at the Geomatics Center of, including computers, GIS software, projection equipment, Wi-Fi and wired internet networks, and a dedicated training room.**
- **Designation of GIS units within sectoral ministries**



Current State of Geospatial Information Management in Burundi

SWOT Analysis on geospatial information management in Burundi

- **Awareness and training campaigns on geomatics conducted by the Geomatics Center, both at the central and decentralized levels.**
- **Integration of geomatics into several academic programs at the University of Burundi.**
- **Availability of all fourteen fundamental geospatial data themes at the national Geomatics Center.**
- **Existence of a training institute for land administration and cadastral mapping, affiliated with the University of Burundi.**
- **The recent MOU is to established between Geomatics Center of Burundi and the Land Satellite Remote Sensing Application Center of China.**





Current State of Geospatial Information Management in Burundi



SWOT Analysis on geospatial information management in Burundi

2. Weaknesses

- Private universities are not represented within the institutional framework for geospatial information management.
- Geospatial information programs offered by public and private academic institutions do not adequately meet the country's needs for accredited training.
- Deconcentrated and decentralized services are not integrated into the institutional framework, despite their potential role in data collection and the operation of sectoral GIS systems.
- Most public institutions are significantly under-equipped in terms of hardware, software, infrastructure, financial resources, and human capacity to effectively manage geospatial information activities.
- Ministerial GIS units are largely under-equipped, underfunded, and non-operational, resulting in limited capacity among sectoral entities to collect and transmit data to the BCG. In short, the overall capacity of sectoral actors remains critically low.





Current State of Geospatial Information Management in Burundi



SWOT Analysis on geospatial information management in Burundi

2. Weaknesses

- Fundamental, topographic, and sectoral datasets are not regularly updated, and the overall quality of these data remains low.
- Existing human resources within public institutions have limited geospatial information competencies, hindering their ability to design and develop GIS solutions.
- Geospatial information is not explicitly accounted for in the budget allocations provided by the State to public institutions.
- There is very limited adoption of data production and dissemination standards, with the exception of metadata.
- No legal framework currently governs the production and dissemination of geospatial information.
- There is no formal communication plan, despite awareness-raising efforts led by the Geomatics center of Burundi.
- A strategic framework for innovation is lacking, and innovation is not actively promoted.
- Sectoral data are not regularly transmitted to the Geomatics Center for archiving, which undermines compliance with institutional commitments.
- The private sector in geomatics is virtually nonexistent.
- Access to geospatial data is not fully open across institutions, and remains difficult due to the lack of digital mechanisms to facilitate data sharing.



Current State of Geospatial Information Management in Burundi

SWOT Analysis on geospatial information management in Burundi 3. Opportunities

- Many development partners in Burundi are willing to support geospatial information management, recognizing its mutual benefits.
- A large pool of young graduates from diverse academic backgrounds are highly motivated to learn geospatial sciences and technologies.
- Close cooperation with the University of Burundi in developing geomatics curricula specifically tailored to national needs.
- Implementation of the National ICT Policy provides a strategic framework for digital transformation.
- Presence of mobile network operators whose mobile data services help expand internet coverage to remote areas of the country.
- Ongoing implementation of the national policy for the digitalization of public services.
- Existence of a national policy for the transition from analogue to digital systems.
- Adoption by the State of a program-based budgeting approach.
- Statistical units and planning, monitoring, and evaluation cells can be strengthened to integrate geomatics.
- Regular regional and international conferences on geospatial information offer platforms for knowledge exchange and cooperation.
- Burundi's relatively small territorial size presents an advantage for cartographic work, making national coverage more feasible and cost-effective.





Current State of Geospatial Information Management in Burundi



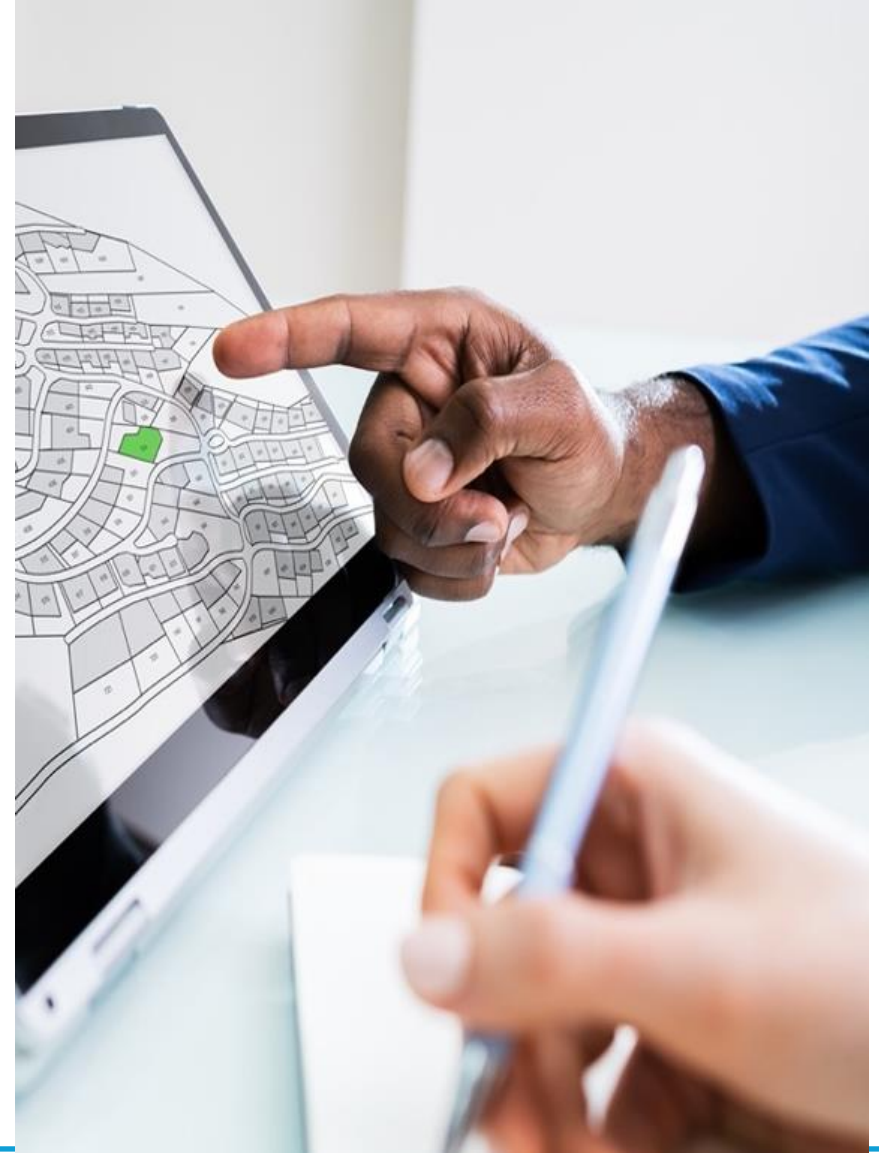
SWOT Analysis on geospatial information management in Burundi

4. Threats

- The overall limited capacities of most stakeholders may hinder the growth of the geomatics sector in the country.
- There is a reliance on ad hoc technical and/or financial assistance from development partners, including for capacity-building initiatives.
- Lack of buy-in from certain authorities who are not adequately sensitized may lead to the dissolution of some ministerial GIS units.
- Some authorities remain reluctant to integrate geomatics into ministerial sectoral policies.
- Geospatial data is not securely hosted at the Geomatics Center of Burundi or in other institutions such as IGEBU and INSBU.
- Low internet penetration rates, limited bandwidth, and a low electrification rate including frequent power outages and grid instability
- International economic crises.
- Delays in the disbursement of funds.
- Shortage of spare parts on the local market for technical equipment.
- Lack of motivation and high turnover among well-trained or qualified personnel working in the GIS sector.



Burundi Action Plan



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Burundi Action Plan

Order	IGIF-strategic pathway	Strategic objective	Activity	Period
1	Policy and Legal	Strengthen the policy and legal framework	<ul style="list-style-type: none"><input type="checkbox"/> Adopt the National Geospatial Information Strategy<input type="checkbox"/> Develop and adopt legislation governing the acquisition, access, use and dissemination of geospatial information	0-3 years
2	Governance and Institutions	Strengthen the existing Governance and Institutions to ensure effective management of geospatial information	<ul style="list-style-type: none"><input type="checkbox"/> Strengthen the National Geomatic Center , national intitutes managing geospatial information and sectoral ministries<input type="checkbox"/> Integrating the private sector into the existing institutional setup<input type="checkbox"/> Create 5 decentralised provincial geomatics centers	



Burundi Action Plan

Order	IGIF-strategic pathway	Strategic objective	Activity	Duration
3	Standards	Strengthen production and dissemination standards to facilitate the use and sharing of geospatial information	<ul style="list-style-type: none"><input type="checkbox"/> Create a Working Group on Geospatial Data Standards<input type="checkbox"/> Adopt standards for the production, dissemination and protection of geospatial data	0-3 Years
4	Innovation	Promoting innovation in geoinformation management	<ul style="list-style-type: none"><input type="checkbox"/> Create a Working Group on Geomatics Innovation<input type="checkbox"/> Develop a strategy for innovation in geomatics<input type="checkbox"/> Implement the strategy (Develop, improve, adapt or integrate new tools, methods and/or processes)	



Burundi Action Plan

Order	IGIF-strategic pathway	Strategic objective	Activity	Duration
5	Financial	Enhance the level of funding for geospatial information	<ul style="list-style-type: none"> <input type="checkbox"/> Establish a budget line in the annual work plan and budget dedicated to the management of geospatial information <input type="checkbox"/> Mobilize additional financial resources from partners for the management of IG 	5 years +
6	Data and related technologies	Improve the production of geospatial data and their availability to users to facilitate the implementation of public policies	<ul style="list-style-type: none"> <input type="checkbox"/> Acquire hardware and software equipment for the implementation of the national geospatial data infrastructure <input type="checkbox"/> Develop a Data Catalogue for the National Geospatial Data Infrastructure <input type="checkbox"/> Establish the national database centralizing all fundamental and sectoral data 	



Burundi Action

Order	IGIF-strategic pathway	Strategic objective	Activity	Duration
6	Data and related technologies(Next)	Improve the production of geospatial data and their availability to users to facilitate the implementation of public policies	<ul style="list-style-type: none"> <input type="checkbox"/> Develop online data and metadata access services for the National Geospatial Data Infrastructure <input type="checkbox"/> Densify the existing geodetic and levelling networks, define a national spatial reference system and a transformation model, and set up a network of permanent GNSS stations <input type="checkbox"/> Update the national coverage of high-resolution imagery and produce highly accurate Digital Elevation Model <input type="checkbox"/> Strengthening the national cartographic repositories (1/50K and 1/25K) 	



Burundi Action Plan

Order	IGIF-strategic pathway	Strategic objective	Activity	Duration
7	Partnerships and collaboration	Building international partnerships and strengthening stakeholder collaboration to improve geoinformation information management	<ul style="list-style-type: none"> <input type="checkbox"/> Identify and initiate contact with potential partners who can contribute to the management of the geospatial information <input type="checkbox"/> Strengthen the framework for exchanges between stakeholders by establishing partnership agreements / memoranda of understanding / contracts 	
8	Communication and Engagement.	Promote increased communication and engagement on the use of geospatial information in public policies	<ul style="list-style-type: none"> <input type="checkbox"/> Develop a communication plan with an engagement strategy <input type="checkbox"/> Set up an operational system with a dedicated team and resources <input type="checkbox"/> Develop content for communication (National Radio and Television broadcasts, key messages, ...) and execute the communication plan 	



Burundi Action

The strategic objectives set for geospatial information management in Burundi come from the nine strategic pathways (UN-IGIF):

Order	IGIF-strategic pathway	Strategic objective	Activity	Periode
9	Capacity and Education	To train a critical mass of competent human resources for the management of IG	<ul style="list-style-type: none"><input type="checkbox"/> Develop new curricula for diploma courses purely in geomatics (B.Sc. and M.Sc.) and for professional university courses<input type="checkbox"/> Integrate and implement the new created curricula<input type="checkbox"/> Create a department at university of Burundi specializing in geomatics (including topography and geodesy)<input type="checkbox"/> Strengthening the skills of professionals from the Geographical Institute of Burundi and the National Institute of Statistics<input type="checkbox"/> Revision of the national training plan associated with the National	3+5 years



Burundi Action

Training of stakeholders on the use of geospatial information to improve disaster risk management planning and decision-making, and to support the prioritization of investments.



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Burundi Action



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Conclusion



Conclusion

- **Burundi's National Geospatial Information Strategy aims** to enhancing the management, accessibility, and utilization of geospatial data to implement national priorities and SGDs.
- At the request of the Prime Minister, **the Geomatics Center has recently developed an roadmap outlining how geospatial information and geospatial technologies will support the implementation of the Vision: Emerging Country by 2040, Developed Country by 2060 and for sustainable development.**
- We wish to express **our sincere appreciation for the technical support provided by the UN-GGIM Secretariat** in New York to finalize the document, and we respectfully request continued support to implement the proposed national action plan to enhance geospatial information management in Burundi.
- We also extend **our gratitude to UN-GGIM Africa** for its daily support in encouraging Burundi's efforts to position geospatial information as a driver of inclusive social development, leaving no one behind.



Thank you



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