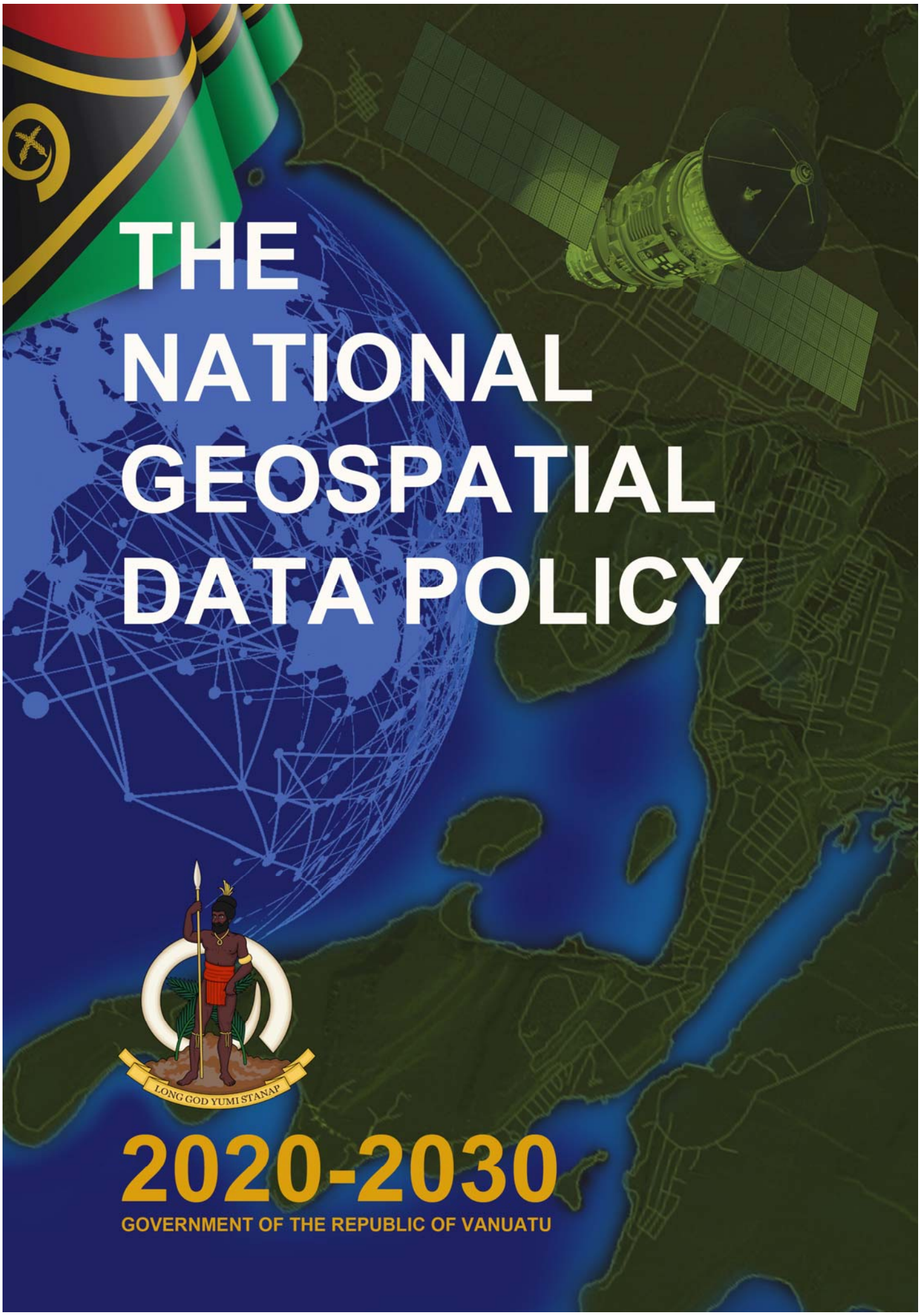
THE
NATIONAL
GEOSPATIAL
DATA POLICY
LONG GOD YUMI STANAP
2020-2030
GOVERNMENT OF THE REPUBLIC OF VANUATU

Acknowledgements

The development of the National Geospatial Data Policy (NGDP) would not have been completed without the tireless efforts and contributions of individuals; and the financial and technical support from various institutions.

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Tankio tumas to the past and present members of the National Geospatial Data Committee who have voluntarily provided guidance and contributions throughout the development of this Policy.

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Vanuatu National Geospatial Data Committee, 2020

Table of Contents

List of Abbreviations

API	Application Programming Interface
COM	Council of Ministers
CROP	Council of Regional Organisations of the Pacific
DOL	Department of Lands
GIS	Geographic Information Systems
GIT	Geographic Information Technology
ICT	Information and Communications Technology
iGOV	Integrated Government Initiative
IRD	Institute de Recherche pour le Dévélopement
IUCN	International Union for the Conservation of Nature
LUPO	Land Use Planning Office
MOLNR	Ministry of Lands and Natural Resources
MOU	Memorandum of Understanding
NGDP	National Geospatial Data Policy
NGO	Non-Government Organisation
NSDI	National Spatial Data Infrastructure
NSDP	National Sustainable Development Plan (The Peoples Plan)
OGCIO	Office of the Government Chief Information Officer
PO	Policy Objective
RS	Remote Sensing
RTI	Right to Information
SPC	Secretariat of the Pacific Community
SOPAC	Pacific Islands Applied Geoscience Commission
SPREP	South Pacific Regional Environmental Programme
VANRIS	Vanuatu Resource Information Systems
VNSO	Vanuatu National Statistics Office

Definitions

Confidential	Data available to selected persons upon official request.
Data	In this policy, where necessary "data" refers to GIS and Remote Sensing data
Data Bank	A system established within the ITC, which stores and manages restricted, confidential, secret and state secret datasets
GIS	A digital geographical information system that represents spatial relationships in digital formats, making it possible to capture, store, visualize, analyse and provide customized access to geospatial data.[1]
National Geospatial Data Committee Executive	A core group established within the National Geospatial Data Committee with the specific role of providing advice on the proper coordination of accessing, sharing, utilizing and distributing spatial data.
National Geospatial Data Committee	A national GIS Committee that comprises of the developers and users of GIS and data from Government Departments, Private Sector and members of the civil society. The committee is established as a means to centralise and maximise use of GIS and RS resources.
LAN	Local Area Network
Memorandum of Understanding	Agreement made between two parties who have agreed to share GIS and/or RS data. The nature and purpose of the agreement will be resolved by either party and further determined by the contents of the MOU.
OGCIO	This Office will play a primary role in centralizing all information technology and data utilised by all government Agencies.
Restricted	Data restricted to the members within an agreement
RS	Remote Sensing, a means of obtaining data and images indirectly through sensors or cameras located some distance away from the object being observed rather than by direct observation.[2]

[1] Adapted from the Handbook of Geographical Information systems and Digital Mapping.

[2] Adapted from the Handbook of Geographical Information systems and Digital Mapping.

Secret	Data not available to any third party.
Stakeholders	The person or organization distributing or providing the GIS and R/S data
State Secret	Data not available to any third party and is actively protected.
Unclassified data	Data that is open/public and can be freely provided to any person
Users	this refers to the general public, including government, private sector, non-government organizations that own, produce or share their data. This collectively extends to regional and international organizations.
WKB	Well Known Binary, the binary or compressed format of WKT (see below).
WKT	Well Known Text is a text mark-up language for representing vector geometry objects on a map.

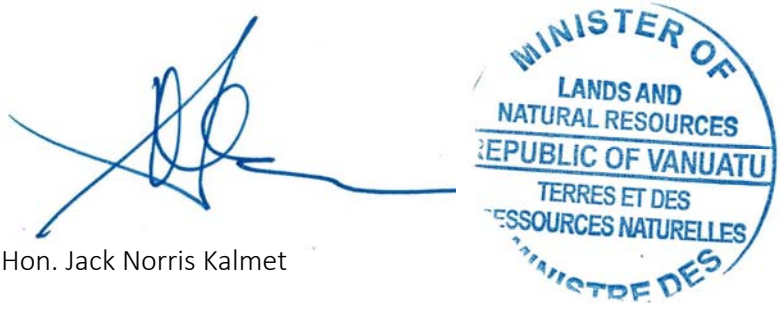
Foreword

Vanuatu faces the growing challenge of achieving resilience in an era where the economy, environment and society, are highly vulnerable to climate change and disaster risks. A key priority for the Vanuatu government is achieving sustainable and resilient development across all levels and sectors, by addressing the risks we face from climate change and disaster impacts. We need to collaborate with our partners to plan, prepare for, and respond to, these challenges. To be able to achieve sustainable development in Vanuatu, all links between different sectors need to be highlighted, developed, promoted and maintained. One of the most vital components of creating this synergy is the collation, standardization and utilization of geospatial data at the national level.

The objectives of this policy have been informed by stakeholder consultations including government, the private sector and other geospatial data users. The policy creates a foreseeable pathway towards achieving a more coordinated and collaborative management system for consolidated geospatial data in Vanuatu. The national geospatial data committee has progressively provided input into this policy and has made efforts to ensure that all relevant stakeholders and partners are involved in the implementation of this policy.

Centralizing and managing access to geospatial data at the national level will develop and enhance national capacity to utilize geospatial data for decision making at all levels of society. This is an ambitious policy, considering the environment surrounding information sharing at the national level. However, the national geospatial data committee in collaboration with relevant government and private sector stakeholders is committed to implementing this policy and engaging in reviews when necessary. The committee is committed to monitor and report on the progress on implementation. Success, however, is dependent on collective ownership of the plan and collaborative partnerships. Development partners would benefit from aligning geospatial data related initiatives with this policy.

I would like to acknowledge everyone who contributed to producing the national geospatial data policy – a first of its kind. Through collaboration we have the ability to fully implement this policy and achieve the desired outcomes to enhance geospatial data governance in Vanuatu.



Hon. Jack Norris Kalmet

Minister, Ministry of Lands & Natural Resources

Executive Summary

Vanuatu is a country emerging in the geospatial arena with the most progress happening over the last ten (10) years. The collection and collation of geospatial data at the national level has been fragmented thus far. The national geospatial data policy is a step forward to address this and create an enabling environment for centralization, coordination, management and dissemination of geospatial data.

Vulnerability to climate change and disaster risks poses a threat to resilience and sustainable development in Vanuatu. This policy provides an avenue for the utilization of geospatial data to support progress towards a resilient nation by improving the coordination, dissemination and use of geospatial data to inform decision making.

The geospatial data committee undertook consultations including sector wide provincial and government level representatives as well as the private sector, resulting in the formulation of the following strategic areas under this policy:

- Strategic Area – 1: Geospatial Data Governance
- Strategic Area – 2: Geospatial Data Standardization
- Strategic Area – 3: Geospatial Data Management
- Strategic Area – 4: Geospatial Data Security
- Strategic Area – 5: Geospatial Data Support
- Strategic Area – 6: Geospatial Data Infrastructure

The policy employs a practical approach including considerations for available resources for implementation and the scope of inclusivity and commitment from stakeholders.

The national geospatial data committee and relevant stakeholders are committed to the implementation plan associated with this policy. It is hoped that consistent and timely reviews throughout the lifetime of this document will support monitoring and enhance the dissemination of lessons learnt to achieve the anticipated outcomes of this policy. Ultimately, this will contribute to achieving improved geospatial data governance, and enhance national resilience and sustainable development, as enshrined in the National Sustainable Development Plan 2030.

Mr. Arthur Faerua

Director General, Ministry of Lands & Natural Resources

1.0 Introduction

1.1 Geospatial Data Management in Vanuatu

Achieving sustainable development presents Vanuatu with a set of significant development challenges that are almost entirely geographic in nature. Many of the issues impacting sustainable development can be analyzed, modelled, and mapped within a geographic context, which in turn can provide the integrative framework necessary for collaboration, consensus and evidence-based decision-making (Scott & Rajabifard, 2017).

Despite significant advances in geospatial information technologies, there is a lack of awareness and understanding, particularly at the policy and decision-making level, of the vital and integrative role of geospatial information and related enabling architectures such as National Spatial Data Infrastructures.

This policy is intended to pave the way for the acceptance and (or) realisation of the significant role of geospatial information in contributing to sustainable development in Vanuatu and ultimately contribute to achieving the goals of the National Sustainable Development Plan 2016 – 2030 (NSDP).

Geospatial data is any data that has a location on the Earth's surface. It combines location information (usually coordinates on the earth), attribute information (the characteristics of the object, event, or phenomena concerned), and often also temporal information (the time or life span at which the location and attributes exist). (Stock & Guesgen, 2016). These data are vital for any country to enhance its development into the future. In Vanuatu, these data sets having been collected since the early days prior to World War II and is stored and managed locally by various government and non-government agencies including the private sector; and regionally by various regional institutions.

1.2 Rationale for the National Geospatial Data Policy

The National Geospatial Data Policy has been developed to enable all government agencies, statutory bodies, Non-Government Organisations (NGOs), private sector and members of the public to identify with a strategic and coordinated mechanism for the access, distribution and use of geospatial data.

Accordingly, the purposes of this policy are to;

- Ensure provisions for the effective centralization and management of all national spatial data information;
- Provide for and guide the process around sharing, accessing and dissemination of information in Vanuatu and internationally;
- Ensure providers and receivers of spatial information serve national interests and protect the sovereignty of this nation;
- Recognize the powers and functions of the National Geospatial Data Committee.
- Acknowledge individual institutional geospatial data custodianship.

1.3 National Consultation for the National Geospatial Data Policy

The first geospatial workshop was held in July 2002 by the South Pacific Applied Geoscience Commission (SOPAC) at the University of the South Pacific's (USP) Emalus campus. This workshop witnessed a significant increase of geospatial users which indicated a growing recognition of the application and benefits of geo-spatial data within the various respective Government departments, NGOs and private sector. However, the increasing number of geospatial users grew in the absence of a policy to govern the use and dissemination of geospatial data developments in Vanuatu. This prompted the establishment of a Vanuatu National Geospatial Data Committee to bring together geospatial data producers and users for the purpose of developing and implementing a sustainable geospatial data policy to govern national geospatial data in Vanuatu.

In 2002 the National Geospatial Data Committee developed a Council of Ministers (COM) paper to address the geospatial agenda which unfortunately, it did not advance for endorsement by COM. Despite this setback, the users and producers of geospatial data continued to use GIS application as a tool to achieve relevant outcomes. In 2012-2013 the Mama Graon project (funded by Australia and New Zealand) provided financial and technical support as part of its work programme to develop a draft policy. When the Mama Graon project ended, the draft policy did not advance to a consultation phase.

In 2018, the Minister of Lands & Natural Resources requested that the National Geospatial Data Committee review and finalize the draft Policy accompanied by an implementation plan.

For a number of years Vanuatu has been engaged in many projects including training, workshops and conferences related to the application of geospatial data. This has resulted in a growing recognition of geospatial data needs and values that have benefitted Vanuatu and advanced development in terms of research, education, policy, planning and decision making.

Initial technical efforts and financial obligations have been met to centralize geo-spatial data, with the Vanuatu Resource Information System (VANRIS) hosted by the Land Use Planning Office (LUPO). Geo-spatial data in Vanuatu is still highly scattered due to the absence of a relevant national policy and a centralised data storage mechanism that is sustainable and protects sovereign geospatial data, particularly protects the institutions producing and developing geospatial data.

Geospatial data encompasses all government sectors and ministries posing enormous potential for utilisation by decision makers in an effort to support sustainable development.

2.0 Strategic Areas, Guiding Principles and Alignments

2.1 Strategic Areas

The National Geospatial Data Policy contains six (6) Strategic Areas (SA) that form the basis of policy objectives to guide the implementation for the period 2020 to 2030.

These are outlined in the table below.

Strategic Areas	
SA - 1	Geospatial Data Governance
SA - 2	Geospatial Data Standardization
SA - 3	Geospatial Data Management
SA - 4	Geospatial Data Security
SA - 5	Geospatial Data Support
SA - 6	Geospatial Data Infrastructure

***Table 1**: Strategic Areas.*

2.2 Guiding Principles

This document addresses the key aspects of spatial data management, giving consideration to the following guiding principles:

- Promote the effective management of spatial data in Vanuatu.
- Ensure that spatial data is reliable for use, sharing or distribution.
- Ensure security and authenticity of spatial data.
- Ensure the preservation of the integrity of spatial information.
- Mitigate duplication of data acquisition and production.
- Prioritise the broadest value data—that is, data that has benefits for multiple processes and users.
- Develop and enforce spatial data formats and standards.
- Identify best practices and integrate where appropriate.
- Develop and enforce appropriate spatial data documentation and metadata standards and approaches.
- Develop long-term strategic goals for data and information management aligned with organisational needs.
- Select the most robust organisation with the broadest span of interest to be the most appropriate custodian of high-value general-use spatial information.
- Reinforce, protect and support the intellectual rights of data owners/custodians and the rights to access data for users as well as, negotiate protocols for data access.
- Promote capacity building and technical support for GIS and RS in Vanuatu.

This strategic direction will ensure that National Geospatial Data Committee focuses on areas of importance for the collation and management of Geospatial data to support sustainable development goals as identified in the NSDP at the national level. The NGDC is well placed to promote and progress the centralisation and management of Geospatial data and will maximise this opportunity through the implementation of this policy. The NGDP is valid for 10 years beginning in July 2020 and ending in July 2030 with strategic reviews to be determined by the NGDC

2.3 NGDP Alignment to National Sustainable Development Plan

The NGDP is strategically aligned to the NSDP and will contribute to the implementation of the strategies outlined across the three pillars[3] of the NSDP. The following are key strategies of the NSDP that the NGDP is aligned to:

NSDP Goals and Policy Objectives	SA-1	SA-2	SA-3	SA-4	SA-5	SA-6
SOC 1: Vibrant cultural identity 1.3- Conserve sites of cultural and historical significance 1.7- Safeguard the traditional economy in order to contribute to the well-being of the population				✓ ✓		
SOC 2: Quality Education 2.1- Equitable access to quality education			✓	✓		
SOC 3: Quality Health Care 3.1- Equitable access to quality Health Care			✓	✓		
SOC 5: Security, Peace and Justice 5.4- Effective maritime security and monitoring	✓		✓	✓		
SOC 6: Strong and effective institutions 6.5, 6.6 & 6.7- Strengthen physical planning and management to meet service delivery needs 6.9- Strengthen research, data and statistics for decision making	✓		✓	✓ ✓	✓	
ENV 1: Food and Nutrition Security 1.1, 1.4 & 1.5- Sustainable food production systems for food and nutrition security			✓	✓		

[3] The three (3) pillars of the NSDP are: Society Pillar (SOC), Environment Pillar (ENV), and Economy Pillar (ECO). The society pillar seeks to ensure we maintain a vibrant cultural identity underpinning a peaceful, just and inclusive society that is supported by responsive and capable institutions, delivering quality services to all citizens. The environment pillar seeks to ensure a pristine natural environment on land and at sea that continues to serve our food, cultural, economic and ecological needs, and enhance resilience and adaptive capacity to climate change and natural disasters. The economy pillar seeks to ensure we have a stable economy based on equitable, sustainable growth that creates jobs and income earning opportunities accessible to all people in rural and urban areas (Department of Strategic Policy, Planning and Aid Coordination, 2016).

ENV 2: Blue-Green Economic Growth 2.1&2.5- Strengthen institution and governments to enact our blue-green growth strategies 2.3- Promote renewable and efficient energy use 2.6- Ensure financial resource to support sustainable development	✓	✓	✓	✓ ✓ ✓	✓	
ENV 3: Climate and Disaster Resilience 3.2 &3.3- Strengthen early warning and post-disaster systems	✓		✓	✓		✓
ENV 4: Natural Resource Management 4.1 Sustainable Management of Land, water and natural resources 4.1, 4.2, 4.4, 4.5 & 4.5-Sustainable management of natural resources 4.2 & 4.4- Protect and conserve marine and freshwater resources	✓	✓	✓	✓ ✓ ✓		
ENV 5: Ecosystems and Biodiversity 5.1, 5.2, 5.3 & 5.6- Ensure conservation and sustainable management of biodiversity and ecosystems	✓	✓	✓	✓		
ECO 2: Improve Infrastructure 2.1, 2.2, 2.3 & 2.9- Improve infrastructure for all including increasing access to information and communication technologies		✓	✓	✓		✓
ECO 3: Strengthen Rural Communities 3.1- Spread economic opportunities to the rural communities 3.5- Improve the collection, analysis and dissemination of market data on the rural economy and communities	✓	✓	✓	✓ ✓	✓	✓

Table 2: *Alignment of NGDP strategic areas with the three pillars of the NSDP.*

3.0 The National Geospatial Data Committee

The National Geospatial Data Committee is a volunteer group of people who are interested (in) and who utilise GIS & RS applications for personal or work-related activities; whether it be in the government sector, Non-Government Organisations (NGO) or the private sector.

The focal point of NGDC is the office of the Director General (DG) of the Ministry of Lands and Natural Resources and is steered by the Departments of Lands, Survey and Registry.

The objective of the NGDC is primarily to bring together individuals and institutions who aspire to enhance their skills and experience with GIS & RS.

3.1 Overall Structure

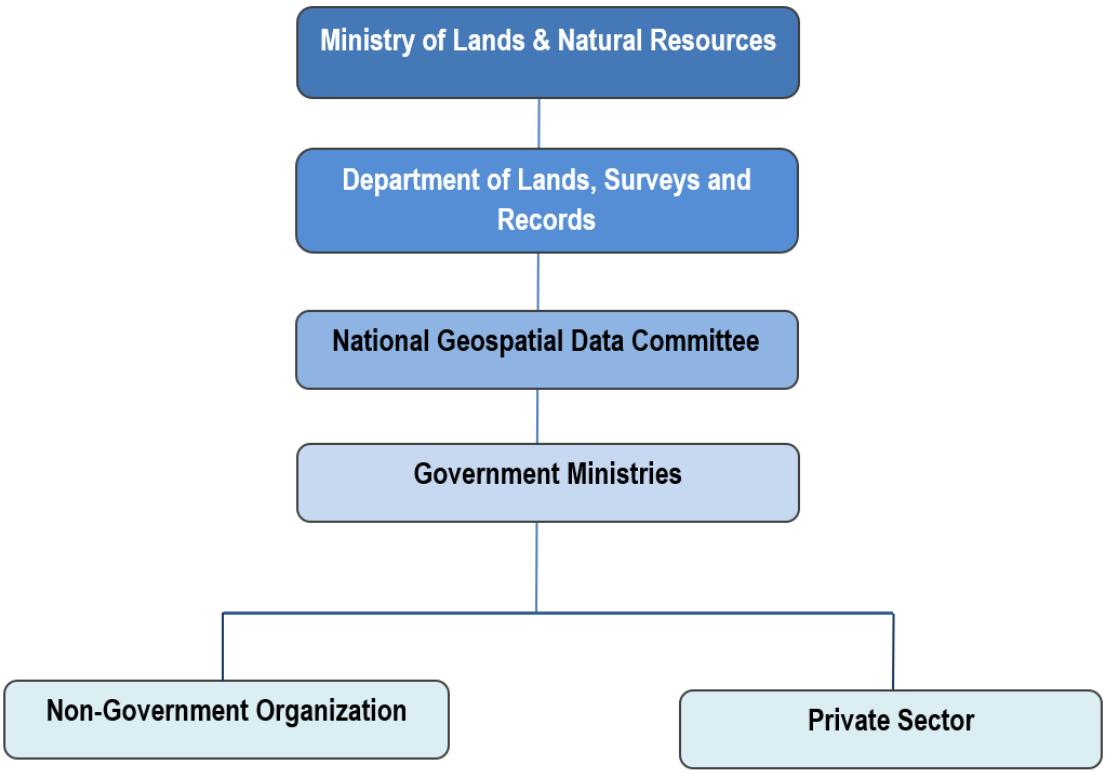


Figure 1: *Overall Structure.*

3.2 Roles of the National Geospatial Data Committee

The roles and functions[4] of the National Geospatial Data Committee includes:

1. Centralise spatial data storage, utilisation access and distribution mechanisms to reduce government expense on duplication and minimise GIS and RS projects funds in Vanuatu.
2. Unify and standardise digital data capture and dissemination among government and non-governmental institutions in Vanuatu.
3. Enhance information about technology, applications, spatial data and current future projects on geospatial data towards national interests.
4. Identify requirements and make suggestions for GIS and RS software requirements and training
5. Identify and discuss problems regarding GIS implementation and operations for the user group
6. Provide feedback and recommendation to GIS committee on standards, policies, priorities towards national interests,
7. Strengthen mechanisms to gather and provide data to support (national cluster teams) before, during and after natural disasters and climate change events.
8. Integrate mechanisms to gather and provide data for reporting to national government initiatives, regional and international meetings such as the Vanuatu Peoples plan, Multilateral MEAs and Regional targets etc.
9. Work towards the development of a Geospatial Information Cluster at the national level to complement existing clusters.

[4] Specific functions of the **executive committee** included in Annex 2.

3.3 National Geospatial Data Committee Executive Structure

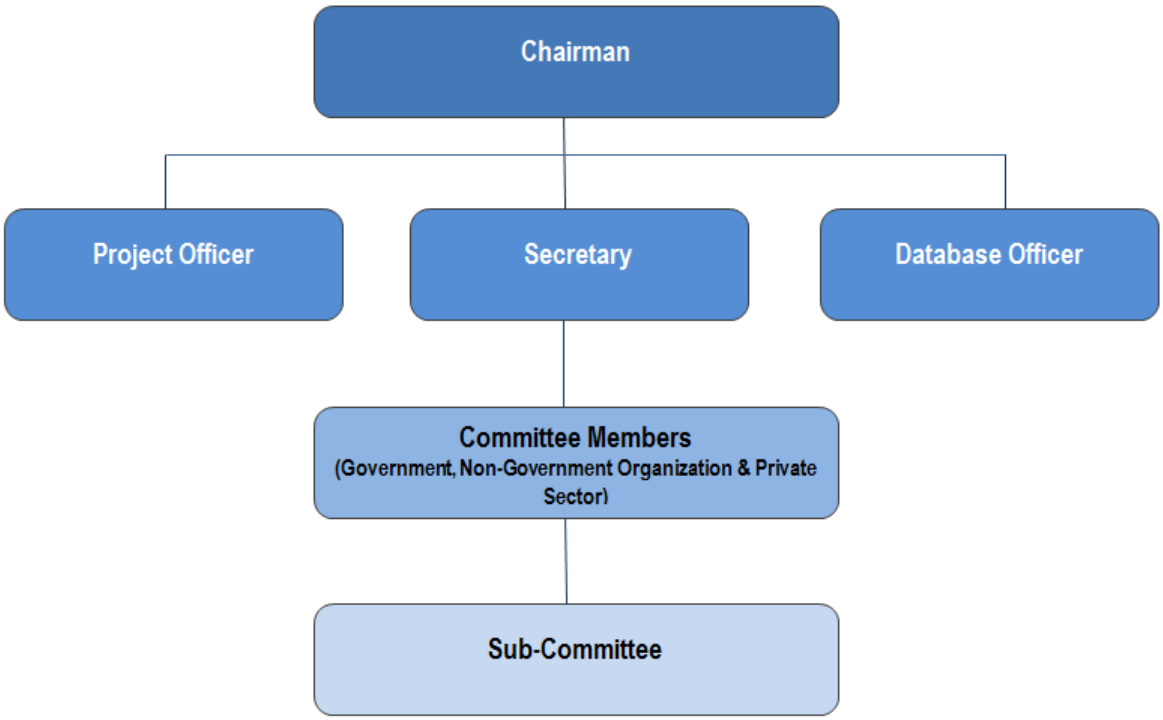


Figure 2: *National Geospatial Data Executive Committee Structure.*

4.0 Strategic Area–1: Geospatial Data Governance

Geospatial data governance identifies the legal framework which governs procedures for the use and management of geospatial data. The procedures outline specific terms and conditions to be agreed upon and adhered to by parties when it comes to the sharing of geospatial data. These terms and conditions are specifically outlined in written Memorandum of Understanding (MOU) and End User License Agreement (EULA) agreements between both parties. This is an essential step to ensuring any geospatial data whether existing or recently collected remains in-country. All MOU's developed through the line government agencies must provide links to this Policy.

Geospatial data governance also provides the mechanism for the registration of all development projects and/or individual researches existing or new, carrying out geospatial related activities in Vanuatu. Through this registration process, a registered surveyor will be assigned to assist and supervise activities and ensure data collection follows standard procedures and guidelines.

There are three (3) Policy Objectives (PO) under this Strategic Area:

	Strategic Area 1 – Geospatial Data Governance
PO-1.1	Legal Framework for NGDC in Vanuatu.
PO-1.2	Registration of geospatial users and activities.
PO-1.3	Geospatial data negotiations and agreements.

Table 3: *Policy objectives under strategic area 1 of the NGDP.*

5.0 Strategic Area–2: Geospatial Data Standardization

Geospatial data capture and collection standards provide directions to ensure data accuracy; data quality and data standards are maintained at all times. This strategic area makes provisions for the different tools and software recommended for a heterogeneous workflow and specifies preferred data types and formats that can be used to ensure data reliability.

Under this strategic area, emphasis is placed on the inclusion of metadata standards for new or existing geospatial datasets. In order to meet ISO standards[5] it is recommended that the Australian and New Zealand Land Information Council (ANZLIC) metadata[6] profile be adopted.

There are two (2) policy objectives under this strategic area:

	Strategic Area 2 – Geospatial Data Standardization
PO – 2.1	Geospatial data capture guidelines.
PO – 2.2	Projections and datum standards.

Table 4: *Policy objectives under strategic area 2 of the NGDP.*

[5] ISO standards available at https://www.iso.org/search.html?q=27000

[6] Metadata is information about data. It makes spatial information more useful to all types of users by making it easier to document and locate data sets (ESRI, 2002).

6.0 Strategic Area–3: Geospatial Data Management

Good data management ensures that datasets can meet current needs or uses that are suitable for further value adding. This policy goal emphasizes the acknowledgment of data ownership and custodian rights. All data and information must have an 'owner'. The owner is mostly referred to as the organization which originally commissioned the data collection or database development and has managerial and financial control. Each data producer has the obligation to provide the use of copyrighted data or Patent data.

The policy goal also provides the mechanism for the dissemination of geospatial data. Currently, access to geospatial data and information in Vanuatu is a challenge, due to the fact that there are no proper platforms, procedures or standards in place to enable this. To ensure accessibility, an inventory of all geospatial datasets in-country and overseas including its users must be carried out. A centralized location for geospatial data is therefore essential.

There are two (2) policy objectives under this strategic area:

Strategic Area 3 – Geospatial Data Management	
PO – 3.1	Data hosting, ownership and custodian rights.
PO – 3.3	Data classification.

***Table 5**: Policy objectives under strategic area 3 of the NGDP.*

7.0 Strategic Area–4: Geospatial Data Security

Geospatial data security will be enabled through a platform that is compatible with government standards. The format of this spatial database must conform with current Integrated Government Initiative (iGoV) specifications on database environments.

Security and access to geospatial data is controlled by setting up user roles in the database which allows certain privilege for various users identified in the inventory of policy goal 3, geospatial data management.

Applying 'Data Security' and 'Security Best Practices' on all geospatial data that are created, shared, amended, stored or deleted is critically important. Proper security standard operational procedures should be implemented and followed to ensure geospatial data and information in Vanuatu are always secured and protected, even when in used. It is equally important that the conception of geospatial data as a commodity be thoroughly managed with respect to data security and fully comply with the all relevant data security policies outlined by the Office of the government Chief Information Officer (OGCIO).The Traffic Light Protocol (TLP) approach must be used when communicating sensitive geospatial data or information. Any misuse or dishonest practices in relation to geospatial data and information is a violation of this policy and breach of normal data sharing and handling of 'sensitive' data.[7]

There are two (2) policy objectives under this strategic area:

	Strategic Area 4 – Geospatial Data Security
PO – 4.1	Data Security and Protocols.
PO – 4.2	Access control, data sharing, directions and guidelines.

Table 6: *Policy objectives under strategic area 4 of the NGDP.*

7 Official Secrets Act Available at http://www.paclii.org/cgi-bin/sinodisp/vu/legis/consol_act/osa156/osa156.html?stem=&synonyms=&query=Officials%20Secrets%20Act

8.0 Strategic Area–5: Geospatial Data Support

Geospatial data support provides a system for supporting GIS and RS experts and activities in Vanuatu, either through political, technical or financial support. It establishes an in-country focal point, in this case the NGDC to collaborate with any international, regional or national organizations regarding registration of GIS and RS experts, logistics, trainings, workshops, conferences, aids/grants or any other geospatial related activities. Area secretaries will be appointed as community liaison experts and will be assigned to work with any individual researchers or organizations carrying out geospatial related activities in any of the six provinces. This will ensure any data collected is shared with the provincial governments.

The use of GIS and RS provides lots of benefits, yet it can be confusing if GIS and RS usage is not fully understood and the 'know-how' or its functionality are not taught well to its users. Therefore, 'Geospatial Data Support' is very important to build capacity and cultivate GIS talents.

There are three (3) policy objectives under this strategic area:

	Strategic Area 5 – Geospatial Data Support & Innovation
PO – 5.1	Capacity Building.
PO – 5.2	Funding and Procurement.
PO – 5.3	Research and Development.

Table 7: *Policy objectives under strategic area 5 of the NGDP.*

9.0 Strategic Area–6: Geospatial Data Infrastructure

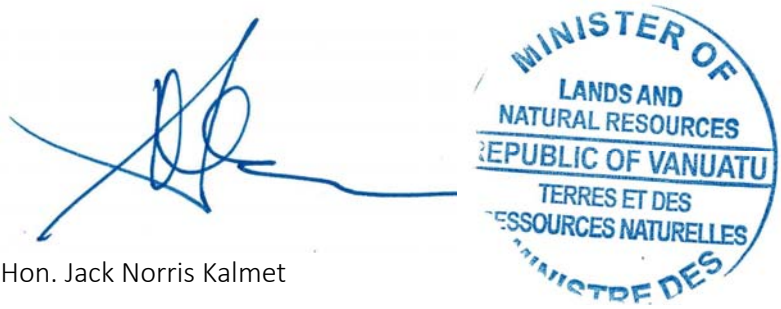
Geospatial infrastructure refers to the platforms on which geospatial products and information can be stored and disseminated, for instance Geonode, VANRIS, Geoserver, VanMap, PopGIS, etc. This policy goal ensures that any platform currently being developed or to be developed in the future, must have specifications that conform to government standards and recommends homogeneity between different platforms.

There are three (3) policy objectives under this strategic area:

	Strategic Area 6 – Geospatial Data Infrastructure
PO – 6.1	Geospatial Platforms.
PO – 6.2	Remote Sensing Infrastructure.
PO – 6.3	Storage Infrastructure.

Table 8: *Policy objectives under strategic area 6 of the NGDP.*

The National Geospatial Data Policy is hereby officiated by:



Hon. Jack Norris Kalmet

Minister, Ministry of Lands & Natural Resources

And

Mr. Arthur Faerua

Director General, Ministry of Lands & Natural Resources

On this 27th Day of November 2020

10.0 Annexes

Annex 1 The National Geospatial Data Policy Implementation Plan 2020 - 2030

The NGDP Implementation Plan outlines the intended goals for the short, medium and long-term. The short-term goals are intended for a three (3) year period, the medium-term goals are for a six (6) year period, and the long-term goals, for a ten (10) year period. There are also ongoing goals.

10.1 Implementation Plan for Strategic Area –1: Geospatial Data Governance

SA-1: Geospatial Data Governance					
Policy Objective	Actions	Targets	Intended Outcome/ Indicator	Timeframe	Key partners
1.1. Legal Framework for NGDC in Vanuatu	Develop a legal framework to provide mandate for NGDC under the Land Surveyors Act.	Legal framework completed within 6 months of policy launch.	Legal framework launched	Short-Term	NGDC, Lands Survey & State Law Office
	Operationalize legal framework.	NGDC is legally established and functional.	National geospatial data regulated under the Land Surveyors Act[8]	Short to Medium Term	NGDC and Department of Lands and Survey
1.2. Registration of Geospatial Users and Activities	Develop user registration templates	User registration templates tailored for target audience	User registration forms made available	Short term	NGDC

	Registration of users	Government, projects private companies' academia and individuals	Registry of users developed	Ongoing	NGDC
1.3 Geospatial data negotiations and agreements	Develop MOUs and End User License (EULA)	MOUs developed and signed.	Endorsed MOUs and EULA.	Ongoing	Government, NGOs and Private Sectors

8 Land Surveyors Act available at http://www.paclii.org/cgi-in/sinodisp/vu/legis/consol_act/lsa201/lsa201.html?stem=&synonyms=&query=Land%20Surveyors%20Act

10.2 Implementation Plan for Strategic Area –2: Geospatial Data Standardization

SA-2: Geospatial Data Standardization					
Policy Objective	Actions	Targets	Intended Outcome/indicator	Timeframe	Key Partners
2.1.Geospatial Data	Develop a national geospatial data capture standard.	Metadata standards, data types and format standard, register of existing data capture standards.	Published geospatial data capture guidelines.	Short-Term	NGDC, government departments non-government organization and private sector
2.2 Projections and datum standards	Review, update and maintain national geodetic datum and projection.	Unified geodetic datum and projection	Vanuatu Map grid (VMG)	Long term	NGDC and Government Departments

10.3 Implementation Plan for Strategic Area –3: Geospatial Data Management.

SA-3: Geospatial Data Management					
Policy Objective	Action	Targets	Outcome/Indicator	Timeframe	Key Partners
3.1 Data Hosting, ownership and custodian rights	Alignment with other relevant department Acts	Adhere to department actor or guidelines regarding data access	MOUs for data sharing	Short-Term	NGDP and all government ministries
	Establish a national geospatial data storage infrastructure	Purchase and populate national geospatial data server	National geospatial data storage infrastructure established	Long-Term	Government and NGDC
3.2 Data Classification	Develop a geospatial data classification guideline	Classification of geospatial data from all institutions	Documentation geospatial data classification from all institution	Short- Term	Government and NGDC

10.4 Implementation Plan for Strategic Area –4: Geospatial Data Security

SA-4: Geospatial Data Security					
Policy Objective	Action	Targets	Outcome/Indicator	Timeframe	Key Partners
4.1. Data security and protocols.	Apply Traffic Light Protocol (TLP) to and through classification of geospatial data	Access control and data sharing	Geospatial data security	Ongoing	NGDC, CERTVU and OGCIO
4.2. Access control, data sharing, directions and guidelines	Develop a national geospatial data sharing guideline to inherit relevant security policies through the governments Security Policy Handbook	Government Institutions, non-government organisations and the private sector	Publish a national Short-Term geospatial data sharing guideline	Short-Term	NGDC, CERTVU and OGCIO
	Design secure data sharing mechanisms	Secure data sharing platforms	Secure data sharing platforms developed and used.	Short-Term	NGDC, OGCIO and relevant agencies

10.5 Implementation Plan for Strategic Area –5: Geospatial Data Support

SA-5: Geospatial Data Support					
Policy Objective	Action	Targets	Outcome/Indicator	Timeframe	Key Partners
5.1. Capacity Building	Develop a GIS & RS Registry for Analyst and Developers	Increased skills and capacity of GIS &RS users.	Acquired Geospatial data that adheres to NGDP standards	Short-Term	NGDC
	Strengthen training coordination	GIS & RS trainings and workshops are effectively coordinated and disseminated	Registration of GIS & RS users nationally	Annual	NGDC
	Awareness raising events.	Strengthen Outreach and awareness programs	Record of awareness raising events	Ongoing	NGDC and Ministry of Education
		Provide GPS and GIS/RS training opportunities to Area administrators and Community liaison officers	Area Administrators and Area Secretaries training to use GIS & RS	Ongoing	NGDC
5.2 Funding and Procurement	Identify funding sources to support NGDC activities	NGDC to secure operational budget through government budget and development partners	Available funding to support GIS &RS activities in Vanuatu	Ongoing	NGDC
	Procure of GIS and RS	Upgrade GIS & RS	Geospatial equipment	Ongoing	NGDC

	equipment	equipment	purchased and available		
5.3 Research and Development	Identify potential research thematic areas	Developed identified thematic areas	Thematic areas updated	Long-Term	NGDC and Government
	Research software and tools			Ongoing	OGCIO

10.6 Implementation Plan for Strategic Area –6: Geospatial Infrastructure

SA-6: Geospatial Infrastructure					
Policy Objective	Action	Targets	Outcome/Indicator	Timeframe	Key Partners
6.1. Geospatial Platforms	Develop standardized geospatial platforms for government agencies that are interoperable.	Internet-based capability providing shared and trusted geospatial data.	Ecosystem of standardized geospatial platforms. A centralized system to deliver trusted nationally consistent data and services.	Medium-Term	NGDC and OGCIO
6.2 Remote Sensing Infrastructure	Strengthen collaboration between government and private sector product suppliers	MOU developed between Vanuatu government and non-government organization	Enhanced collaboration between government and private sector	Long-Term	NGDC, Government, CAAV, Non-Government Organization and the private sector
6.3 Storage	Establish Geospatial Data storage infrastructure	Heterogeneous data storage	An interoperable data[9] Storage is developed	Short-Term	MOL, OGCIO and other relevant agencies

[9] Data interoperability is related to processing and interpretation of received data. Data interoperability deals with issues such as identifiers, formats and the meaning of data (Weerakkody et al, 2009).

Annex 2 Functions of the NGDC Executive

Executive Position	Executive function/ Roles
Chairperson	Maintain and update the NGDP whenever seen necessary as presented in the NGDP Shall identify funding mechanisms Shall be the presiding officer at all general meetings of the Executive. Shall keep a written report outlining the work of the NGDC each year where necessary
Vice Chairperson	The Vice-Chairperson shall, in the absence or resignation of the Chairperson automatically perform the duties of the chairperson
Secretary	Shall have custody of the minute book and other records of the Committee. Shall conduct the correspondence of the Committee as directed by the executive. Shall keep a record of the proceedings of all Committee executive meetings and provide copies of such records to the membership request Shall carry out any other duties assigned by the user group chairman
Vice Secretary	The Vice-secretary shall, in the absence or resignation of the Secretary automatically performs the duties of the secretary as determined by the NGDP.
Project Officer	Shall Works closely with the chairperson to identify funding sources to support VNGDP working group executive and annual group meetings Shall Maintain project calendar and milestones and also keep copies/ backup of all meting minutes Manage, supervise and control multiple projects through project life cycle. Shall identify and liaise with CROP agencies and other relevant partners, projects on training opportunities and capacity building needs for the group Shall carry out any other duties assigned by the NGDC chairman
Vice Project Officer	The Vice-Project Officer shall, in the absence or resignation of the Project officer shall automatically perform the duties of the project Officer.

Data Management Officer	Shall Works closely with the executive to advice on data standards, storage and accessibility as stipulated in the NGDP Shall provide advice to the executive on proposed changes to policy Shall carry our any other duties assigned by the NGDC chairman
Vice Data Management Officer	The Vice-Database officer shall, in the absence or resignation of the Vice data management officer automatically perform the duties of the database Officer

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