



**VANUATU METEOROLOGY  
AND GEO-HAZARDS DEPARTMENT**

**STRATEGIC DEVELOPMENT PLAN  
2014 – 2023**



**World  
Meteorological  
Organization**  
Weather • Climate • Water

**Acknowledgements:**

The Vanuatu Meteorological and Geo-Hazards Department would like to thank the World Meteorological Organisation for the funding and facilitation of this Strategic Plan document. It would also like to acknowledge and thank in particular Mr Henry Taiki, and Mr Dean Solofa for their work with VMGD counterparts in the creation of this document.

**Please refer to this document in citations as:**

Vanuatu Meteorological and Geo-Hazards Department (VMGD), (2014) Vanuatu Meteorological and Geo-Hazards Department Strategic Development Plan 2014-2023. Port Vila, Vanuatu : VMGD Publications.

**For more information contact:**

The Director  
Vanuatu Meteorological and Geo-Hazards Department  
Private Mail Bag 9054,  
Port Vila,  
Vanuatu  
+678 24686  
[www.meteo.gov.vu](http://www.meteo.gov.vu)



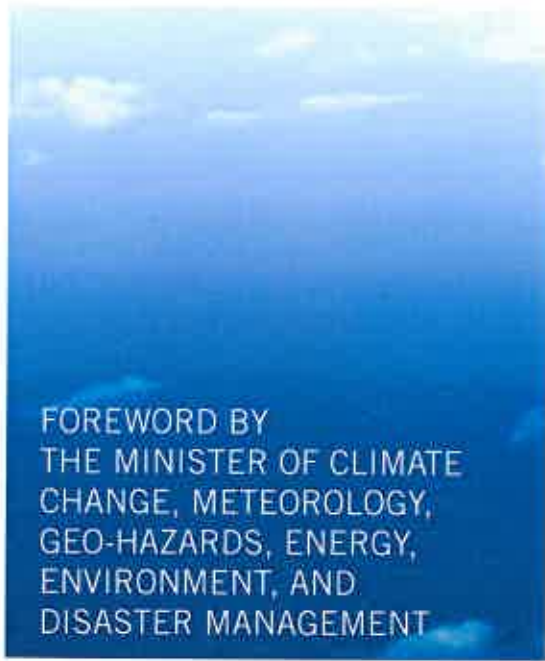
## TABLE OF CONTENTS

Acronyms	4
Foreword by the Minister of Climate Change, Meteorology, Geo-Hazards, Energy, Environment, and Disaster Management	5
Statement by the Director of the Vanuatu Meteorological and Geo-Hazards Department	6
<b>PART 1. STRATEGIC CONTEXT AND DIRECTION</b>	<b>7</b>
Purpose	8
Background	8
Vision	9
Principles	9
Objectives and Priorities	10
Partnerships and Linkages	11
Institutional Arrangements	12
Monitoring and Evaluation	12
Triennial Review	13
<b>PART 2. STRATEGIC GOALS AND OBJECTIVES OF THE VANUATU METEOROLOGICAL AND GEOHAZARDS DEPARTMENT DIVISIONS</b>	<b>15</b>
Administration Division	16
Weather Forecasting and Services Division	16
Climate Division	18
Climate Change and Disaster Risk Reduction Division	18
Geo-Hazards Division	19
Observations Division	20
Information and Communications Technology and Engineering Division	20
Cross Cutting Themes	21
<b>PART 3. MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET</b>	<b>25</b>
Matrix of VMGD Strategic Outputs and Activities	25
Regional and International aligned Outputs of the Vanuatu Meteorological and Geo-Hazards Department	56



## ACRONYMS

CC	Climate Change
CCA	Climate Change Adaptation
DRR	Disaster Risk Reduction
ENSO	El Nino Southern Oscillation
GFCS	Global Framework for Climate Services
GTS	Global Telecommunication System
ICT	Information Communications Technology
MP	Member of Parliament
NAB	National Advisory Board on Climate Change and Disaster Risk Reduction
NACCC	National Advisory Committee on Climate Change
NDMO	National Disaster Management Office
PAA	Priorities and Action Agenda
PIFACC	Pacific Islands Framework for Action on Climate Change
PIMS	Pacific Islands Meteorology Strategy
PMU	Project Management Unit
QMS	Quality Management System
RA V	Regional Association Five
RSMC	Regional Specialised Meteorological Centre
SDP	Strategic Development Plan
SOP	Strategic Operating Plan
SPREP	Secretariat of the Pacific Environment Programme
TCC	Tropical Cyclone Committee
VMGD	Vanuatu Meteorological and Geo-Hazards Department
VMS	Vanuatu Meteorological Service
WMO	World Meteorological Organization



**Honourable Thomas Lakin, MP**  
*Minister of Climate Change, Meteorology,  
Geo-Hazards, Energy, Environment and Disaster  
Management*

As Minister responsible, I am pleased to present the Vanuatu Meteorological and Geo-Hazards Department Strategic Development Plan 2014 - 2023. The Plan sets out the key strategies for development for each of the five Divisions that make up the Department.

The current Plan builds on the old 2000 - 2009 Strategic Plan, which has directed major developments within the Department, the most visible achievement being the construction of the new Headquarters, fully funded by the National Government. The Headquarters also currently houses the National Disaster Management Office (NDMO) which allows for close coordination with the Department Divisions of concern during natural disasters.

Climate change and natural disasters (earthquakes, tsunamis, cyclones, and volcanic eruptions) are major threats to Vanuatu's economic development. The Government of the day recognizes this, and has created a Ministry of Climate Change. The new Ministry comprises of Climate Change, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management. The creation of the new Ministry will enable Vanuatu to build sound policy and national plans to tackle challenges that natural hazards impose on Vanuatu.

The Vanuatu Meteorological and Geo-Hazards Department Strategic Development Plan 2014-2023 shows a clear linkage with the Millennium Development Goals, the national Priorities and Action Agenda (PAA), Plan Long Act Short and the 100 Day Plan. The Strategic Development Plan will allow VMGD to work towards providing timely scientific and technical information to enable Vanuatu to build a sustainable environment, and help build Vanuatu's economy.



STATEMENT BY THE  
DIRECTOR OF THE VANUATU  
METEOROLOGICAL AND  
GEO-HAZARDS DEPARTMENT



Prior to 2011, the Vanuatu Meteorology and Geo-hazards Department was known as the Vanuatu Meteorological Service, as the Geo-Hazards Division was not part of the Department. In 1998, there was a need to develop a Strategic Development Plan for the then Vanuatu Meteorological Services to outline development strategies that were to be carried out for the next ten years (2000-2009). A request was then made to the World Meteorological Organization to develop a Strategic Plan for 2000-2009. The Plan was developed in the year 2000 and it outlined the weaknesses and the main areas that needed strengthening.

One of the main areas that have seen major development was the strengthening of human resources, as Ni-Vanuatu science graduates were scarce back then, with expatriates taking up scientific positions within the Department. There has since been an increase in the number of science graduates, both with graduate and post graduate qualifications, being employed by the Department, showing a success of the implementation of the old Vanuatu Meteorological Service Strategic Plan 2000-2009. The old Vanuatu Meteorological Service organizational structure was revised twice to reflect the recommendations for additional human resources, and furthermore a training unit was established to coordinate training opportunities and ensure that there is continuous capacity building.

Prior to 2013, the Vanuatu Meteorological and Geo-Hazards Department was a department under the Ministry of Infrastructure and Public Utilities including the Public Works Department, Ports and Harbour Department and Civil Aviation Authority. As in other ministries, each department operates within the bounds of the National Sustainable Development Plan, called the Priorities and Actions Agenda and its Ministry Corporate Plan. Departmental Business Plans are developed to reflect the Corporate Plans and the National

Priorities and Actions Agenda. The then Vanuatu Meteorological Service Strategic Plan 2000-2009 also reflected these national priorities, and it provided the bases for developing the Department's annual Business Plan. The increase in budget of more than two folds during the last ten years also allowed the Department to implement new developments mentioned in the old Vanuatu Meteorological Service Strategic Plan 2000-2009, such as infrastructure (new Department premises), purchase of new equipment and mass recruitment.

The Department is now under the newly created Ministry of Climate Change, which includes Climate Change, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management. The Vanuatu Meteorological and Geo-Hazards Department itself has grown immensely, with the amalgamation of Geo-Hazards Division and the creation of Project Management Unit/Climate Change. Despite these developments, there are a lot of areas that needed development and improvement. The creation of the new Strategic Development Plan 2014 - 2023, fully funded by the World Meteorological Organization, will provide strategies for developments within the Vanuatu Meteorological and Geo-Hazards Department for the next ten years 2014 - 2023.

I look forward to ensuring that our annual Departmental Business Plans in the coming years, which directs development on an annual basis, reflects the priorities indicated in the new Strategic Development Plan 2014 - 2023 for the Department, which links directly to the Ministry's Corporate Plan, the national Priorities and Actions Agenda, Plan Long Act Short, and 100 Days Plan.

**David Gibson**  
*Acting Director*



# PART 1

STRATEGIC CONTEXT AND  
DIRECTION



### PURPOSE

The purpose of this Vanuatu Meteorological and Geo-Hazards Department Strategic Development Plan 2014–2023 (VMGD SDP 2014-2023) is to set out the strategic context and direction for strengthening the capacity of the VMGD to have and operate state of the art technical services to achieve the highest standards to deliver its core quality services.

This VMGD SDP 2014-2023 provides a guiding framework for the development and support of the services of VMGD's Divisions while seeking to promote development through capacity building. It also ensures that support is coordinated and delivered effectively in partnership with national government, regional and international agencies, development partners and technical counterpart agencies.

The VMGD SDP 2014-2023 builds upon the Vanuatu Meteorological Service Strategic Development Plan 2000–2009 (VMS SDP 2000-2009). Under the latter Plan, the VMGD has achieved many of its goals to develop quality services and products.

The VMGD SDP 2014-2023 is arranged in three parts:

- **Part 1** sets out the overall strategic direction and national and regional context of the VMGD set of operations. It provides the identified strategic drivers and goals of the VMGD, and finally the relevant institutional and governance arrangements, including the roles of key national, regional, and international partners.
- **Part 2** sets out the strategic visions of the individual Divisions of the VMGD and their goals and objectives for the 10 year strategic period (2014- 2023).
- **Part 3** sets out the VMGD set of strategic goals and objectives implemented through a Matrix of Key Outcomes and Indicators for implementation by Division.

### BACKGROUND

This Strategic Plan follows the successful implementation and completion of the Strategic Development Plan 2000-2009 for the then named VMS SDP 2000-2009. The previous plan was developed by the VMS with the assistance of the World Meteorological Organization (WMO) and the Australian Bureau of Meteorology in 2000. While in part linked to the Secretariat of the

Pacific Regional Environment Programme (SPREP) Strategic Development for Meteorology Plan 2000-2009 (SDMP 2000-2009), the VMS' SDP 2000-2009 was very much a development plan prioritising the VMS' end goals and objectives for its internal development.

A report<sup>1</sup> produced by the VMS in 2009 assessed its achievements the period 2000 to 2009 and found overall positive progress against the original goals and objectives. It also found achievements in areas not originally planned for, such as the expansion of the work of what is now the Climate Change Division. Importantly, it was noted that while gains were made in technical capacity (such as the installation of the Global Telecommunications System (GTS)) more costly and capital heavy technical objectives were not attained (for example, the installation of Weather Surveillance Radar and Automatic Weather Stations) due to their high costs and VMS' limited budgetary means. However, infrastructure-wise, the construction of a new Headquarters was a major achievement for the VMGD. Another significant area of achievement has been the development of VMS' human resources, described as above average in performance for this goal and resulting in what is now a collective of staff of high technical calibre distributed amongst the various Divisions. Overall, it noted that since 2000, the VMGD has made significant gains in all of its areas of programmes, including national and regional level fiscal support to its restructuring, recruitment and infrastructural development activities.

Of significant note by the review report is the recognized commitment, ownership, and leadership given toward the implementation of the VMS SDP 2000-2009 by the Director and senior management as both drivers and as leaders for strategic planning and implementation of the goals and objectives of the Plan. This continued support for the need of, and renewal of a strategic vision and plan for the VMGD, has resulted in the creation of this new Plan, underscoring the continued commitment of the Director and senior management of the VMGD to continue to develop and strengthen its services for the people of Vanuatu to the highest possible standard.

The desire of the Director and senior staff is for the VMGD SDP 2014-2023 to continue to build upon the achievements made and to discover and create new opportunities afforded in the current institutional and development context of Vanuatu for the continued growth of the Department as an expert technical institution.

<sup>1</sup> 2009 draft report: *Vanuatu Meteorological Service: Achievements under the SDP 00-09*



The preparation of this VMGD SDP 2014 – 2023 was driven by the Director, Managers and staff of the VMGD in their desire to continue to have a strategic and guiding overview plan for the continued development of the VMGD with focus on its strategic areas of priorities. The WMO provided support to the VMGD in the development of this new Strategy.

#### VISION

The vision of the VMGD is:

***To be a world class meteorological and geo-hazards institution that contributes to the sustainable development of Vanuatu, and the Pacific region.***

#### MISSION

The VMGD will achieve its Vision by being:

***A fully professional institution comprising skilled and motivated staff using updated and state of the art science and technology within an efficient and effective organization, providing high quality meteorological and geo-hazards services that are widely available and accessible, effectively applied, beneficial and highly valued by all sections of the community in Vanuatu.***

Specifically, this will be achieved through excelling in the following areas:

- Excellence in weather and climate forecasting processes;
- Leader in climate change adaptation and mitigation implementation, monitoring and negotiations;
- Active monitoring and state of the art implementation of early warning systems for geo-hazards;
- Accessing and supporting international and regional observation networks;
- Research and innovation targeting improved products and services to all stakeholders;
- Facilitating cooperation with respect to its monitoring networks;
- Implementation and use of cutting edge technology; and
- Quality control systems in place with supporting administrative and financial resources in place.

#### PRINCIPLES

The guiding principles of the VMGD as set out below apply to the implementation of this Strategy.

##### 1. Vanuatu focus:

The work of the VMGD is primarily focused on the effective delivery of meteorological and geo-hazards services for the benefit of the people and communities of Vanuatu, with its focus of development consistent with the priorities of the Vanuatu Priorities and Action Agenda (PAA), Plan Long Act Short and 100 Days Plan.

##### 2. Partnerships:

Partnerships with the WMO, regional and other inter-governmental agencies and organizations, and technical partners are critical to the successful implementation of this Strategy. The participation of the VMGD within a national and regional coordinated approach enhances effectiveness in increasing resources, while managing effort and potential overlap between agencies, organizations and development partners, especially where these are managed through national, bilateral and multilateral arrangements. Partnerships between the VMGD and its counterparts in other Pacific Island Countries and Territories (PICTs) have an important role in ensuring cooperation and sharing of lessons-learned within the region. At the national level, it is recognized that VMGD needs to link with government departments and agencies, the private sector, civil society organizations, non-government organizations and communities through formal and informal partnerships.

##### 3. Supporting gender equality and the most vulnerable in society:

The VMGD accepts the need to operate and deliver services in ways that address and promote the principles of gender equality and the needs, both internally of the Department and in the development and delivery of the VMGD services, to the most vulnerable in Vanuatu society.

##### 4. Cost effectiveness:

Services should be delivered in an efficient, cost-effective way. The VMGD's ability to deliver the actions in this Strategy is critically dependant on the resources available to it. The VMGD will endeavour to be strategic in the alignment of the development and delivery of VMGD services in ways that maximize the development support from national government and from regional partners.

**5. Sharing information:**

The VMGD is committed to sharing data in line with national obligations and international policies; in particular, the WMO commitment to free and unrestricted exchange of meteorological and related data and products (WMO Resolutions 40 and 25).

**6. Regional and global contribution:**

The VMGD recognizes the regional and global character of weather, climate, and geo-hazards, and the need for an international approach that is consistent with relevant guiding international and regional frameworks such as the WMO Strategy Operation Plan (WMO SOP), WMO Regional Association (South-West Pacific) Strategy Operation Plan (WMO RA V SOP), the Pacific Islands Meteorological Strategy (PIMS), the Pacific Disaster Risk Reduction and Disaster Management Framework, the Pacific Islands Framework for Action on Climate Change (PIFACC), and the Pacific Plan amongst others.

**OVERALL OBJECTIVES**

The overall objective of this Strategy is to provide a strategic framework for building and strengthening the capacity and services of the VMGD; through direct and coordinated, coherent, and sustained national and regional support.

With added resources and support, the VMGD will be able to meet the growing demands of the Government of Vanuatu and all Ni-Vanuatu for improved meteorological and geo-hazards services that:

- Ensure the safety, security and wellbeing of the people and communities of Vanuatu;
- Contribute to achieving national sustainable development; and
- Fulfil Vanuatu's commitments and obligations under relevant regional and international agreements and conventions.

Within this overall context, the specific objectives of this Strategy are to:

- i. Provide the guiding framework for VMGD's development priorities;
- ii. Guide national planners, donors and partners to focus on priority capacity building activities and transfer of technology identified by the VMGD that may be delivered either through national budgetary mechanisms, bilaterally and/or through regional and international approaches;

- iii. Guide the VMGD towards critical activities aimed at building or strengthening capacity, planning; and
- iv. Guide the VMGD with respect to supporting priority actions at the regional level.

**FOCUS**

This Strategy focuses on the following areas for priority action:

- i. Improved weather services, in particular, aviation, marine and public weather services;
- ii. Improved climate services, in particular, seasonal forecasting, ENSO advisory services, and public climate outreach services;
- iii. Improved climate change services, in particular the development of national policies and framework for national coordination and implementation;
- iv. Improved geo-hazards services, in particular the strengthening of the current geo-hazards monitoring network and systems, and public outreach services;
- v. Improved observations monitoring networks, in particular the maintenance of current stations and their further enhancement to capture additional environmental parameters, and the expansion of current networks to areas of low coverage, and the enhancement of associated infrastructure;
- vi. Enhanced capacity of the VMGD Administration Division, in particular, to provide timely administrative and finance in support of the Divisions and external stakeholders and customers, and to facilitate the implementation of national level projects implemented through VMGD and project partners;
- vii. Enhanced capacity of the VMGD to undertake research and development, extend outreach and communications and deliver technological developments that are sustainable.

## PART 1: STRATEGIC CONTEXT AND DIRECTION

The goals and objectives associated with these priorities of the VMGD's individual Divisions are set out in Part 2 of this Strategy.



**Figure 1. Strategic levels for national priority setting and alignment of VMGD SDP 2014 - 2023**

### PARTNERSHIPS AND ALIGNMENTS

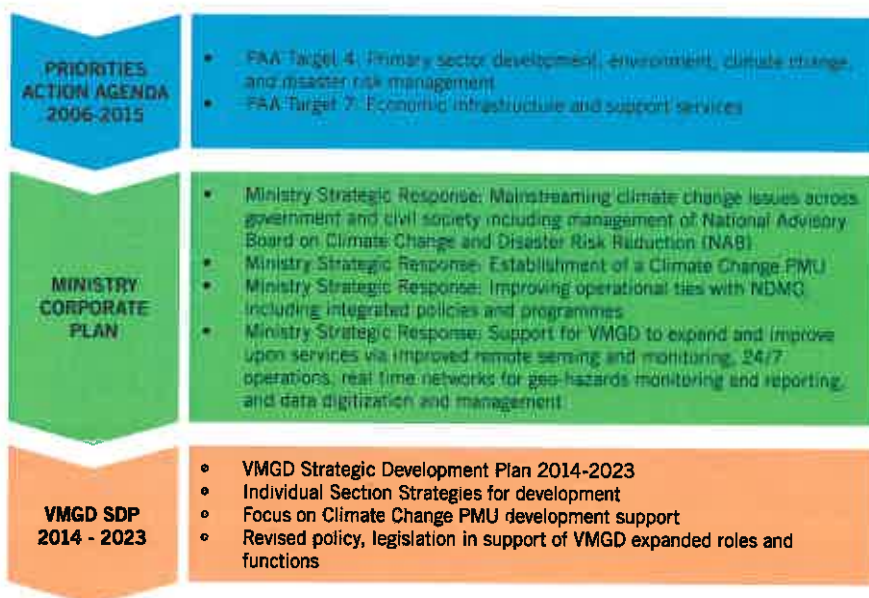
The VMGD recognizes and places great value on partnerships, and is highly aware of their critical role in the successful implementation of this Strategy. To be effective, the Strategy must be clearly linked with the work of other government departments and agencies, the private sector, civil society and non-government organizations and communities, and also with the work of relevant international and regional frameworks.

At the regional level, the VMGD has aligned the Strategy with the goals and objectives the WMO SOP, the WMO RA V SOP, the PIMS, the PIFACC, the Pacific Disaster Risk Reduction and Disaster

Management Framework for Action, the Pacific Plan and other relevant regional and international initiatives.

At the national level, the VMGD acknowledges the importance of aligning actions under this Strategy with the national PAA, and the Corporate Plan of its parent Ministry. Emerging national level policies and legislation on climate change and disaster management will be considered and accounted for and aligned with institutionally. The VMGD also acknowledges and is aware of the national level actions and commitment of the Government of Vanuatu to the Millennium Development Goals (MDGs).

Currently, the VMGD is aware that while a national water resource management framework has yet to be established, its services in water resources related hazards such as flash flood warnings, drought advisories shall continue to be supported in consideration of past costly impacts of their occurrence. However, the VMGD also recognizes that to further develop these services it may require additional support for their continuation and improvement. The VMGD will continue to seek partnerships and linkages with those agencies more directly identified with the roles in hydrological and water catchment monitoring in the spirit of implementing its professional services in an integrated and collaborative approach with all partners and stakeholders.



**Figure 2. Examples of the detailed linkages between the updated PAA Strategic Priorities, the parent Ministry responses according to its annual Business Plan, and the alignment of VMGD's strategies and priorities accordingly. Note that these are not exhaustive but are examples of how VMGD's responsibilities and future planning corresponds with the larger national level initiatives key to the economic growth and sustainable development of Vanuatu.**

### INSTITUTIONAL ARRANGEMENTS

The VMGD is a government department of the Ministry of Climate Change, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management. The implementation of this Strategy shall be in alignment with the priorities and strategies of its parent Ministry. Accordingly, it shall also be VMGD's contribution for the implementation and reporting of its parent Ministry's activities via its defined goals and objectives made known to it.

The Director of the VMGD shall take leadership on the Plan's implementation and monitoring, and the lead on the adjustment of the Strategy if warranted, within the identified lifetime of the Strategy. As the Director will also be guided by the parent Ministry's Corporate and Strategic Plans, future triennial reviews of this Strategy, and the Strategy itself, this requires being flexible to incorporate future changes to the priorities and strategic direction of the parent Ministry, and indeed that of the national PAA. As such, this Strategy is a living document that shall be updated and improved upon within its lifetime; a proposed review scheduled is described further below.

A number of key frameworks and policies are anticipated that may provide the VMGD with the appropriate directives to accommodate additional responsibilities in the future. As such, the Director may wish to make the appropriate adjustments within the Strategy for these to be made effective in delivery, in line with identified contexts of the relevant Division(s) and Manager(s) assigned to these works. Listed below are existing national and local level policy frameworks and strategies that the VMGD Strategic Plan 2014 – 2023 would be aligned with.

### IMPLEMENTATION

The Strategy shall be led in implementation by the VMGD, and managed in its relevant parts by the respective Divisions of the VMGD. The VMGD Director and the Management team shall take the lead in sharing the Strategy and in its alignment to reference frameworks, in particular the PAA and the parent Ministry Strategy, and identify the collaborative efforts of other contributing partners toward the Strategy implementation. The Strategy becomes effective, in governance of VMGD's strategic development and direction, upon its launch.

### THEMATIC AREAS OF SERVICE

While the Strategy is primarily a guiding development plan for the VMGD and its Divisions, the VMGD is aware of the role of its services in contributing to the wider thematic areas of Climate Change Adaptation and Mitigation, Disaster Risk Reduction and Disaster Management, Food Security, Water Resource Management, Coastal Resource Monitoring and Management, amongst others. As such, a separate matrix by thematic area will be included in future revisions of the Strategy defined by, and to show the contributing activities of the VMGD and its respective Divisions.

### MONITORING AND EVALUATION

The VMGD has primary responsibility for monitoring progress towards the outcomes set out in this Strategy. The VMGD Director will be supported by the parent Ministry, and if desired, to be assisted by its development partners to inform the respective government Ministries and agencies, stakeholders, communities, and collaborating regional and global partners on the progress towards the achievements of the objectives of this Strategy.

The individual Divisions and their Managers shall be directed with the responsibility of regularly monitoring the Divisional goals and objectives for reporting to the Director of the VMGD. To enable the VMGD to carry out its monitoring role, the VMGD will develop a Monitoring and Evaluation framework for the Strategy to which the Divisions will provide **Progress Reports** covering:

1. A summary of the work and achievements of the Division during the previous three months. This report is to be circulated electronically to the VMGD Director and all VMGD Managers and staff;
2. A summary of progress and assessment of issues shall be reported to the Ministry every six months, and to relevant regional partners. This falls in line with the biannual reporting requirement of all Ministry Departments and thus the reporting against the Strategy shall provide the core report of the VMGD to the parent Ministry;
3. On the basis of these reports and other information available to it, the VMGD will provide feedback and guidance where necessary on implementation of the Strategy to its partners and stakeholders, in the view that the Strategy priorities, goals and objectives need readjustment; and
4. The Strategy updates may be used by the Director to represent VMGD progress to the meetings of the Pacific Meteorological Council.



**TRIENNIAL REVIEW**

The VMGD will conduct triennial reviews of the implementation of this Strategy at an appropriate timing to ensure that it remains current and focused on the appropriate priority areas of the relevant national and regional frameworks it is aligned with. The Strategy notes a 3 year cycle of the parent Ministry Corporate Plan possibly beginning in 2014, and the approaching review of the PAA in 2015. The Review of the progress of Strategy shall be led by the VMGD Director and the management team, and shall be slotted to these proposed dates accordingly:

**Proposed Strategic Plan Review timeline**

Date	Note
First Review: June/July 2014	Review should be coordinated with the timing of the review and renewal of its parent Ministry Corporate Plan
Second Review: June/July 2015	Review should be coordinated with the timing of the review and renewal of the national PAA
Third Review: June/July 2017	Review is a mid-term assessment of the progress made by the VMGD of the implementation of the Strategy Review should be coordinated also with the mid-term review of the PIMS
Fourth Review: June/July 2019	Review should be coordinated with any reviews and renewals associated with the parent Ministry's Corporate Plan, and the national PAA
Final Review: June/July 2022	Final review of the Strategy and achievements of the VMGD









## **PART 2**

STRATEGIC GOALS AND  
OBJECTIVES OF THE  
VANUATU METEOROLOGICAL  
AND GEO-HAZARDS  
DEPARTMENT DIVISIONS

## 1. ADMINISTRATION AND CORPORATE SERVICES DIVISION

The Administration Division provides for the VMGD leadership and management structures for the operations of the Department. Given the relatively rapid development of the Department in the past decade, it is desirable for the Administration Division to have the appropriate and relevant capacity building and resource support for the increasingly wide array of services that it provides, and the resources supporting those services that go with it. As such, this particular Division will naturally be more engaged with its parent Ministry in the support of this Strategic Plan, and annual Business Plans developed from it, to ensure that appropriate levels of resourcing are given to the Department's operation.

A key requirement of the Division's capacity will be in its ability to manage its financial and human resources effectively and efficiently. The Division, as a priority, will need to ensure that it has the necessary and appropriately skilled staff in these fields (finance, administrative and human resources) to have an effective administrative component to assure the operations of the various Divisions, and to also acquit the Department to the highest possible degree, of all resources allocated to it for operations. The Division, in close follow up, needs to have the appropriate policy documentation to cover the management and operation of the Department, and an early exercise will be to inventory existing documents and establish a quality management system for the administration of the VMGD.

### VISION:

The vision of the Administration Division is to contribute to the VMGD's overall Vision by way of a highly effective and efficiently managed Department making available appropriate resources to all Divisions.

### MISSION:

The mission of the Directorship, Corporate Management and Administration Services Division is to contribute to the VMGD this Vision overall mission by way of securing, and making available, appropriate and sufficient resources through effective communication and appropriate advance planning with its parent Ministry, and by effective management and deployment of qualified, skilled and motivated staff to deliver effective human resources, administrative functions, and a strong directorship and management.

### OVERALL OBJECTIVE:

The overall objective of the Administration Division is to contribute to the VMGD by way of improving efficiency and effectiveness of the VMGD in provision and delivery of weather, climate, climate change, hydrology and geo-hazard information, forecasts, services, warnings and alerts.

### KEY OUTCOMES:

The following are key outcomes identified for the Administration Division:

1. Establishment of effective enabling environment for quality production of technical products and services<sup>2</sup> of all Divisions;
2. VMGD's institutional setting is appropriate, maintained, and relevant institutional instruments are updated and available, and referenced in its operations;
3. VMGD's Human Resources and Administration management is updated with appropriate and relevant policies and guidelines, and staff are qualified, skilled, and experienced in strategic contribution to the development and implementation of VMGD future development plans;
4. VMGD's human resources and administration development and training programme in place and staff meeting Department standards on skills and qualifications;
5. Communication systems developed for key management information outputs for the Ministry requirements, and VMGD staff awareness;
6. Education and awareness on VMGD and its portfolio developed and implemented;
7. A cross cutting research and development programme developed together with external partners of the VMGD such as those in health, water resources and disaster management;
8. VMGD's governance structures are routinely reviewed and improved; and
9. Maintain and refurbish/renovate as needed existing and / or construct new offices and staff accommodation buildings in all provinces.

<sup>2</sup> weather, climate, climate change, water, volcano, earthquake and other related environment and geo-hazards information, forecasts, services and warnings

## 2. WEATHER FORECASTING AND SERVICES DIVISION

### CURRENT SITUATION

During the early establishment of the then VMS, its operations were then run under the Postal Services. Local employees of the Postal Services were trained to look after and report weather observations. In some areas, these observations are still under expatriate plantation owners. In the late 1940's and early 1950's there was a move to establish permanent stations and a Weather Forecasting section.

Secondary school students were selected from Years 9 - 10 to operate many of the early weather stations. The early Weather Forecasting Section was mostly under experienced forecasters from England and Australia, and similarly the Engineering section. The transition involving Ni-Vanuatu in the Weather Forecasting and Engineering Section occurred in the late 1980's and the early 1990's. In 2000, Scientific Officer positions for the climate and the forecasting section were advertised and new science graduates were recruited, and began the shift to reform the then VMS. In 2001, the organizational structure was reviewed to reflect the recommendations for additional human resources through improved recruitments.

The Weather and Forecasting Services Division has since grown to nine staff, with three positions on contract. Of the nine (9) staff, seven (7) have obtained either a Bachelor's Degree or higher, and four (4) are Meteorologists. In the immediate term, two staff will further their meteorologist studies next year and, pending funding success, the number of Meteorologists will increase to six (6) by the end of 2014. For the medium term outlook, the number of Weather Forecasting Services Division staff will grow to twelve (12) in the next three (3) to four (4) years. VMGD aims to have all forecasters as certified meteorologists within the next 5 years. Services to the aviation and marine industries, the public and other business sectors continue to grow, including the all-important warning services. VMGD, in the Thirteenth Session of the WMO RA V Tropical Cyclone Committee for the South Pacific and South-East Indian Ocean (WMO RA V TCC) (Bali, Indonesia 26 – 29 April 2009), requested for the WMO designated Regional Specialized Meteorological Centre – specializing in tropical cyclones, in Nadi, Fiji (RSMC Nadi) to cease issuance of tropical cyclones advisories for Vanuatu. This service has since ceased, and the VMGD now issues its own tropical cyclone warnings, advisories and warnings. It has created a

Boundary Area, which is 12S to 23S and 160E to 175E for its tropical cyclone information and High Seas Area.

VMGD has been certified by the Vanuatu Civil Aviation Authority based on Part 174, for a period of six months. This allows the Department to provide aviation services to the Aviation Sector in Vanuatu. The Meteo FranceSynergie forecasting system has been installed at the Forecasting Centre to improve the preparation of weather forecasts and warnings.

### FUTURE VIEW

Pending a need for one, a Cost Recovery Programme may be a future consideration for the Division, to allow for more effective recovery of costs of the Department's products and services rendered. This could potentially improve the development process of those products and services and the effectiveness and efficiency in the presentation of products and services to the VMGD's stakeholders and clients. Such a view for a programme would also need to ensure that it is in line with the cost recovery policies of the respective offices of VMGD's parent ministry, Finance, Revenue, and Treasury.

### VISION:

The Weather Forecasting and Services Division vision is to provide timely and quality weather services and products to the general public, mariners, the aviation sector, and commercial end users, via qualified meteorologists deploying the appropriate and state of the art weather forecasting systems.

### MISSION:

To achieve its vision by continuously monitoring and ensuring that all the Division's products and services are delivered in a timely manner. To further ensure quality services and products by way of recruiting the best qualified science graduates for deployment as qualified meteorologists. As well, the Division will regularly assess and evaluate its weather forecasting systems to ensure the state of the art and most appropriate technologies are being deployed to produce quality services. And finally, that the Division will also be responsible for implementation of a Quality Management System (QMS) to monitor, evaluate and improve the Division's products and services standards.

## PART 2: STRATEGIC GOALS AND OBJECTIVES OF VMGD DIVISIONS

### KEY OUTCOMES:

The following are key outcomes identified by the Weather Forecasting and Services Division.

1. Improve weather information, forecasts, services and warnings for air navigation.
2. Improve weather information, forecasts, services and warnings for mariners.
3. Improve weather information, forecasts, services and warnings for the public and communities.
4. Improve tropical cyclones warning system, information, forecasts, services and warnings
5. Develop and provide information, forecasts, services and warnings for storm surges, swells and high waves.
6. Develop, establish and operate an early warning system for floods.

## 3. CLIMATE DIVISION

### CURRENT SITUATION

From the humble beginnings as found in the above Weather Forecasting and Services Division, the Climate Division has made a lot of progress in areas of research, data management, and seasonal forecast and agro-meteorology services. Such activities reflect the growing demand for climate related services in Vanuatu as value is increasingly realized in connecting strong climate science based information to effective decision making. The government recognition of the potential for applications from this service has resulted in the increase in number of recruited graduate level staff within the Climate Division. The WMO's Global Framework for Climate Services (GFCS) is shaping the development path for the focus of the Climate Services on climate related products and services serving the needs of the people of Vanuatu.

### FUTURE VIEW

The Climate Division's growth in service in recent years has been driven by the increasing demand of end users for climate specific information, and the resultant capacity built around the new services it has developed. The scope for more climate services continues to grow as the Division grows its information baseline of the needs of end users, and the methodologies and tools available to it to develop more nuanced consultations, particularly with vulnerable rural community groups. While the Vanuatu government has correctly placed a lot of emphasis historically on climate change adaptation, it will also need to focus specific attention to climate science, and research and development, to better inform climate change adaptation and disaster risk reduction and management.

### VISION:

The vision of the Climate Division is to provide timely and quality climate services and products by way of skilled and motivated staff, using modern and sound technology and techniques.

### MISSION:

Contributes to Climate Division Vision by way of a highly proficient Division with qualified staff using modern and sound technology for management and analysis of climatological and related environmental data, to monitor, predict, and provide climatological, and related environmental information, forecasts, advisories and warnings.

### KEY OUTCOMES:

The following are key outcomes identified by the Climate Division:

1. Improved management of historical meteorological, hydrologic and other related environmental data;
2. Improved and sustained quality of meteorological, hydrologic and other related environmental datasets on the VMGD Headquarter's server;
3. Climate databases such as CLIDE are maintained and operationalized;
4. Monthly to seasonal climate information, forecasts, services and warnings are continually developed and routinely improved;
5. Drought information, forecasts, services and warnings are developed and routinely improved;
6. Agro-meteorology services are established and routinely improved;
7. Climate Division is provided access to relevant external datasets;
8. Climate services related research capacity and priorities are developed; and
9. Partnerships formed with regional and international institutions on climate issues.



## 4. CLIMATE CHANGE AND DISASTER RISK REDUCTION DIVISION

### CURRENT SITUATION

The integration of the climate change and Disaster Risk Reduction (DRR) streams in Vanuatu has to a large extent been brought to the forefront by the formation of the National Advisory Board on Climate Change and Disaster Risk Reduction (NAB). The NAB and PMU (Secretariat) creation was driven by the need to improve upon the coordination of the previous bodies responsible for climate change and disaster at the various levels of governance and community, and to assist also in the coordination of the increasing number of actors and resources, including those of international and regional donor and partner efforts.

Prior to the NAB, the National Advisory Committee on Climate Change (NACCC) and National Task Force (NTF) were two inter-agency bodies that had separate responsibilities for matters related to either climate change or DRR. Members to both NACCC and NTF were to a large extent similar in composition of assigned personnel. Moreover, with growing resources and actors in both streams and lack of activity or program coordination, it made sense to consolidate resources.

With NAB and PMU in its first year of establishment in 2012 the focus has been primarily to develop process and strengthen the coordination between CC and DRR actors. With the PMU being project funded has provided some challenges and taken priority away from the more strategic function of the PMU into more project focused.

### FUTURE VIEW

The path to climate change and disaster risk reduction and disaster management integration for Vanuatu has been challenging especially with issues related to leadership, NAB Secretariat establishment, sectoral buy in, stakeholder communications, clarity of roles and flexibility to demands. Accordingly sectoral buy-in in that regard has meant that a considerable number of stakeholders, especially from the government, are not fully engaged with the NAB or its meetings. This is likely due to limited resources at the sectoral agencies level, views held of the relevance of attending NAB meetings or participating in NAB processes by these agencies and limited sense of ownership in the whole process. PMU's key priority in the coming years are to strengthen the ownership within the NAB through building the capacity of the sector in understanding their role in Climate Change (Adaptation and Mitigation) and Disaster

Risk Reduction.

Integration of climate change adaptation and DRR/ DRM has also meant a re-orientation of traditional jurisdictions hence there is some expectant uncertainties around roles and responsibilities for the short term. This is particularly true of the roles of PMU and other Divisions within the VMGD and NDMO departments relative to both Climate Change Adaptation (CCA) and DRR. Additionally, having a single focal or coordination point means high demand from partners relative to limited and time constrained NAB Secretariat staff. Improved coordination with donors, partners, sectors and civil society will allow PMU to support and build the capacity within these areas to manage and implement projects as well as providing technical assistance to planning within government budgeting process to mainstream CC and DRR into programs.

### VISION:

The vision of the Climate Change and Disaster Risk Reduction Division is to be an effective Division in the management, operation and integration of climate change and disaster risk reduction activities and projects, by way of qualified, skilled and motivated staff appropriately trained and participating actively in national, regional, and international climate change programmes, and working effectively with local, regional and international partners.

### MISSION:

The Climate Change and Disaster Risk Reduction Division will meet this vision by the implementation and operation of an effective and efficient Climate Change Project Management Unit deploying qualified, skilled and motivated staff with appropriate access to sufficient resources, to manage and operate the implementation and integration of climate change and disaster risk reduction programmes and projects to support national level commitments to Climate Change and Disaster Risk Management multilateral agreements.

### KEY OUTCOMES:

The following are key outcomes identified by the Climate Change and Disaster Risk Reduction Division:

1. Develop integrated climate change and disaster risk reduction action plan(s);
2. Updated governance for climate change and disaster risk reduction;

## PART 2: STRATEGIC GOALS AND OBJECTIVES OF VMGD DIVISIONS

3. Ownership of climate change and disaster reduction integration; and
4. Contribute to regional and global integrated climate change and disaster risk reduction agenda.

### 5. GEO-HAZARDS DIVISION

#### VISION:

The vision of the Geo-Hazards Division is to be a highly effective Division delivering quality services and products on geo-hazards and related phenomena by way of qualified, skilled and motivated staff using modern science and technology to mitigate against potential impacts of geological hazards (earthquakes, tsunamis and volcanic eruptions) preventing disastrous consequences on the people, environment, and economy of Vanuatu.

#### MISSION:

The Geo-Hazards Division will achieve its vision by way of providing services in terms of the relevant information, advisories and warnings related to geo-hazards, through the deployment of appropriately trained and skilled staff, using and implementing the appropriate monitoring systems and scientific information to improve understanding of the earth's processes within and surrounding areas of Vanuatu, including implementation and maintenance of early warning systems for volcanic eruptions, earthquakes and tsunami generation.

#### KEY OUTCOMES:

The key outcomes of the Geo-Hazards Division are as follows:

1. Early warning system for tsunami maintained and routinely improved;
2. Warning systems for earthquakes are established in communities;
3. A warning and monitoring system for volcanic activities is developed for communities at risk; and
4. A national geo-hazards database is established and updated with geo-hazards mapping for Vanuatu.

### 6. OBSERVATIONS DIVISION

#### VISION:

The vision of the Observations Division is to be an effective Division maintaining optimal observational networks in meeting the data and information needs of the VMGD Divisions and other national, regional, and international users and networks.

#### MISSION:

The Observations Division will meet its vision by way of deploying skilled and motivated staff, using modern and sound technology and techniques, to install, maintain and update observational networks that provide adequate coverage, real-time, accurate and high quality observation data for weather, climate and water. The Division will also work closely with regional and international technical partners to meet VMGD's network data and information reporting obligations.

#### KEY OUTCOMES:

The key outcomes of the Observations Division are as follows:

1. Restore, expand and sustain observation data networks, stations, systems, sensors and equipment;
2. Quality of real-time observations from all observing networks of VMGD Divisions is effectively maintained;
3. The VMGD Headquarters and Divisions have consistent and reliable access to real time observation data; and;
4. Increased number of observation data for existing, new and additional networks, stations, systems, sensors and equipment.



## 7. INFORMATION COMMUNICATIONS AND TECHNOLOGY (ICT) AND ENGINEERING DIVISION

### VISION:

The vision of the ICT and Engineering Division is to be a highly effective Division delivering quality ICT and engineering services by way of qualified, skilled and motivated staff using state of the art tools and technology thereby enabling VMGD to evolve and adapt to changing infrastructure and ICT and the needs of VMGD Divisions in the field.

### MISSION:

The ICT and Engineering Division will achieve this vision by deploying qualified, skilled and motivated staff using up-to-date modern and sound ICT equipment and all necessary assets, for data processing and required interfaces for all Divisional requirements, including support for corporate and administrative functions.

### KEY OUTCOMES:

The key outcomes for the ICT and Engineering Division are as follows:

1. VMGD's e-communications and office productivity and operating systems are up to date and maintained;
2. Observation data networks, stations, systems, sensors and equipment are automated and providing VMGD Divisions with updated data and information for various products and services;
3. Verification schemes for aviation weather forecasts and tropical cyclone products and services and warnings are established and automated where possible;
4. Automated and centralized points for in-coming weather, climate, water, volcano, seismic and other related environment and geo-hazard observation data and information are developed;
5. Automated access to and use of Vanuatu real-time observations data and information by each VMGD Division;
6. Databases of climate, volcano, seismic / earthquake data and information and other related databases including historical tropical cyclone data, forecasting systems, platforms and applications are updated and maintained;
7. A VMGD documentation management system is developed and established;
8. An on-line request system for VMGD Divisional information, forecasts, services and warnings is established and maintained effectively with Divisions having access to incoming requests and to respond accordingly;
9. VMGD website is routinely updated and improved;
10. VMGD communication network throughout the country is improved;
11. Automated delivery of VMGD's weather, climate, flood, volcano, seismic / earthquake and related environment and geo-hazard information, forecasts, services and warnings;
12. Electronic infrastructure is supported and expanded accordingly; and
13. Automate redundancy / back-up systems are active and in place for all VMGD Divisions.

## 8. OVERARCHING THEMES

There are common threads and overarching themes to the work of the Divisions of the VMGD. VMGD is in a unique and exciting position thus to approach these themes jointly across all Divisions to develop the appropriate integrated responses for the development of new and innovative products and services targeting specific audiences and specialist demands. To underpin these joint efforts however will require the support of the VMGD in the following new areas of development.

### 8.1. RESEARCH AND DEVELOPMENT

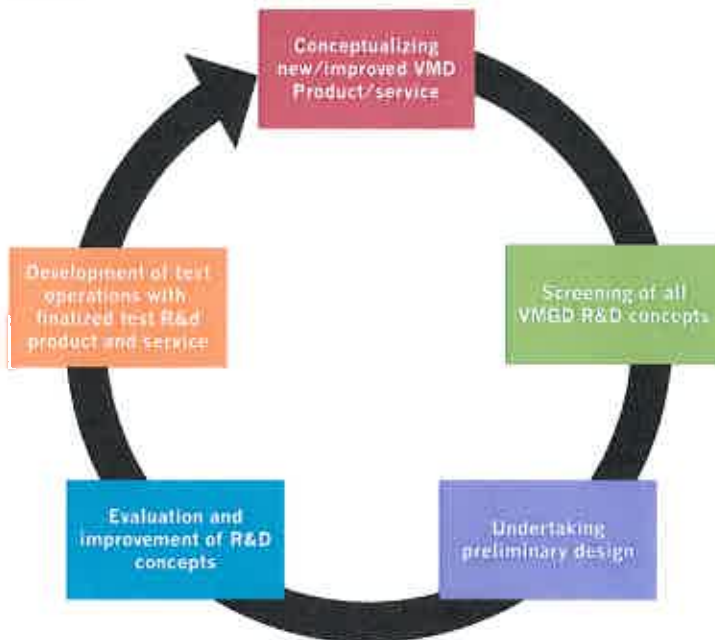
The VMGD recognizes the need to be innovative to continuously improve and adapt its existing products and services with new science information and the evolving demands of its end users. It

believes that in the face of climate change and increasing climate variability and potential future disasters, that more accurate and appropriate products and services from the VMGD will be highly beneficial for the adaptation, mitigation, and economic livelihood activities and decisions of the people of Vanuatu.

As research and development (R&D) will be a new area of focus for the VMGD, it additionally recognises the need to begin this phase internally with a view to evaluate the appropriateness of the establishment of a fully-fledged R&D Division, which would need its measure of value adding and costs for operation before approved establishment. As such an R&D Internal Working Group consisting

## PART 2: STRATEGIC GOALS AND OBJECTIVES OF VMGD DIVISIONS

of assigned staff from all Divisions will lead with the identified first steps outlined in the following section.



**Figure 3.**  
*Workflow chart illustrating a typical continuous cycle R&D process for VMGD*

In establishing a Research and Development (R&D) Internal Working Group across the Divisions, the VMGD recognizes that an appropriate model for its implementation and use must be developed in the first instance, and the relevant resources allocated to it by the Administration Division. It also recognizes and appreciates efforts in this area must also be in line with the wider interests at the ministerial and national levels. As such, the first intent of this Strategy is to provide a pathway towards the development and establishment of the R&D function for the VMGD as follows:

### RESEARCH AND DEVELOPMENT INTERNAL WORKING GROUP

#### VISION:

The vision of the Research and Development Internal Working Group is to develop and implement R&D focused goals and outcomes that are aligned with the VMGD vision, and which reflect the identified priority R&D requests of the VMGD Divisions.

#### MISSION:

The Research and Development Working Group will achieve this vision by deploying qualified, skilled and motivated staff nominated to it by the VMGD Divisions, using updated modern and sound science and all necessary assets, for conducting

research, experiments and field work for priority R&D activities of the VMGD.

#### KEY OUTCOMES:

The key outcomes for the Research Internal Working Group in its initiation are as follows:

1. Identify and prioritize strategic R&D initiatives of VMGD and Divisions;
2. Define an appropriate implementation model for the R&D Internal Working Group;
3. Analyze the appropriate and relevant national level policies and bodies for alignment of VMGD R&D operation, including models and rules for cooperation with regional and international technical and academic partners; and,
4. Devise an innovation R&D strategy and implementation plan including a timeline for implementation of a future VMGD R&D Division.

## 8.2. OUTREACH AND COMMUNICATIONS INTERNAL WORKING GROUP

To ensure the efficacy of the use of VMGD products and services, outreach and communications will be a default cornerstone to the work of the Department and its Divisions. As such a VMGD Outreach and Communications Strategy will be needed to help Divisions streamline outreach and communications activities while ensuring all products and services meet the established standards and guidelines of the Strategy. As this activity again cuts across the Divisions, a similar arrangement to the function of the Research and Development Working Group shall be established.

### OUTREACH AND COMMUNICATIONS INTERNAL WORKING GROUP

#### VISION:

The vision of the Outreach and Communications Internal Working Group is to develop and implement a VMGD Outreach and Communications Strategy that encapsulates the goals and outcomes that are aligned with the VMGD vision, and which ensures the capture of the identified priorities of the VMGD Divisions.

Key to the improvement of the services of VMGD, the Outreach and Communications Internal Working Group forms an integral partnership to the R&D Internal Working Group function in assisting Divisions with its outreach to key stakeholders over products and services used, and how these can be improved.

#### MISSION:

The Outreach and Communications Internal Working Group will achieve this vision by deploying qualified, skilled and motivated staff nominated to it by the VMGD Divisions, using updated modern and sound science and all necessary assets, for conducting research, experiments and field work for priority R&D activities of the VMGD.

#### KEY OUTCOMES:

The key outcomes for the Outreach and Communications Internal Working Group in its initiation are as follows:

1. Identify and prioritize outreach and communications requirements of VMGD and Divisions;
2. Define an appropriate implementation model for the Outreach and Communications Internal Working Group; and
3. Devise an Outreach and Communications Strategy including a timeline for implementation.

## 8.3. TECHNOLOGICAL DEVELOPMENT AND SUSTAINABILITY

The VMGD, by the nature of its core technical work functions, will continue its heavy orientation around technological capacity and its development. Consistently then throughout its existence and continual operation, the VMGD will need supported operation and maintenance of high-capacity/speed computer facilities to process weather, climate, geo-hazards, climate change data from a number of sources, to carry out analysis of the data, and to provide Division specific outputs which are then used in preparing the products and services of the various Divisions. It should be noted that this issue is covered separately from the two technical Divisions of VMGD (Observations and ICT) as this issue requires some significant attention for the long term planning of the Department.

The VMGD will also require high-speed communication links to general and specialized information centres. Further, it needs satellite reception and computing facilities, among other equipment, for accessing high-resolution satellite data from meteorological satellites, and geo-technical monitoring networks serving the region. These functions are often integrated into one computer facility. A high level of redundancy needs to be built into the facility to avoid the risk of interruption of essential services.

The identified lead Division on this issue is the Administration Division of the VMGD with the identified key outputs listed below:

#### Technological Development Sustainability key outputs:

1. Establish a Long Term Capital Plan inclusive of a detailed maintenance plan component; and
2. Develop a long term strategic implementation plan with the parent Ministry on VMGD infrastructure, hardware, and telecommunications.



PART 2: STRATEGIC GOALS AND OBJECTIVES OF VMGD DIVISIONS



PART 2: STRATEGIC GOALS AND OBJECTIVES OF VMGD DIVISIONS









# PART 3

MATRIX OF THE VANUATU  
METEOORLOGICAL AND  
GEO-HAZARDS DEPARTMENT  
KEY OUTCOMES AND  
ACTIVITIES AND BUDGET

**PART 3: MATRIX OF THE VANUATU METEOOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

**ADMINISTRATION DIVISION**

**Vision:**

The vision of the Administration Division is to contribute to the VMGD's overall Vision by way of a highly effective and efficiently managed Department making available appropriate resources to all Divisions.

The

1.

2.

**Mission:**

The mission of the Directorship, Corporate Management and Administration Services Division is to contribute to the VMGD this Vision overall mission by way of securing, and making available, appropriate and sufficient resources through effective communication and appropriate advance planning with the parent Ministry, and by effective management and deployment of qualified, skilled and motivated staff to deliver effective human resources, administrative functions, and a strong directorship and management.

3.

4.

5.

6.

7.

8.

9.

**KEY OUTCOMES**

**STRATEGIC OUTPUT**

1 VMGD has an enabling environment for sustained development and improvement of core technical services.

1.1 VMGD Institutional legislation is reviewed and revised when necessary to reflect and assure its external partnerships and commitments, and supportive of VMGD technical Divisions.

1.2 Appropriate partnerships are established with relevant agencies of Government of Vanuatu and other national and regional agencies.

1.3 Appropriate VMGD policies developed and implemented, and a policy listing established and reflecting of VMGD core functions.

2 VMGD services have sound institutional arrangements

2.1 All VMGD Divisions.

3 VMGD has a well function Human Resources and Administration function ensuring technical Divisions have appropriate resources.

3.1 Work with VMGD Human Resources and Administration to acquire adequate resources to actively recruit and deploy required positions of VMGD technical Divisions.

## ADMINISTRATION DIVISION

The following are key outcomes identified for the Administration Division:

1. Establishment of effective enabling environment for quality production of technical products and services<sup>2</sup> of all Divisions;
2. VMGD's institutional setting is appropriate, maintained, and relevant institutional instruments are updated and available, and referenced in its operations;
3. VMGD's Human Resources and Administration management is updated with appropriate and relevant policies and guidelines, and staff are qualified, skilled, and experienced in strategic contribution to the development and implementation of VMGD future development plans;
4. VMGD's human resources and administration development and training programme in place and staff meeting Department standards on skills and qualifications;
5. Communication systems developed for key management information outputs for the Ministry requirements, and VMGD staff awareness;
6. Education and awareness on VMGD and its portfolio developed and implemented;
7. A cross cutting research and development programme developed together with external partners of the VMGD such as those in health, water resources and disaster management;
8. VMGD's governance structures are routinely reviewed and improved; and
9. Maintain and refurbish/renovate as needed existing and / or construct new offices and staff accommodation buildings in all provinces.

### KEY PERFORMANCE INDICATORS

### BUDGET ESTIMATE (VATU)

KEY PERFORMANCE INDICATORS	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-D01. Key VMGD private and public stakeholders identified and initial meeting held on VMGD draft legislation.	2,000,000	2,000,000
KPI-D02. Existing Legislation updated and submitted to Council of Ministers.		
KPI-D03. Appropriate MOUs and LOAs with national aviation and marine sector authorities established.	86,000,000	17,000,000
KPI-D04. Appropriate MOUs and LOAs between Governments Vanuatu and Fiji relating to technical meteorological and geo-hazards services established.		
KPI-D05. Appropriate MOUs and LOAs with national communication agencies established.		
KPI-D06. Relevant national Disaster and Early Warning Systems are updated with appropriate suite of warnings from VMGD Divisions.		
KPI-D07. An appropriate VMGD Quality Management System framework developed for hosting and management of relevant VMGD policies governing operational services of Divisions.	2,00,000	10,000,000
KPI-D08. Appropriate policies developed for all VMGD services and products.		
KPI-D09. Develop national policy on early warning systems and related services as contributed to and led by VMGD.		
KPI-D10. Internal policy documentation produced on services of all VMGD Divisions including hydrology related services.		
KPI-D11. Internal policy documentation developed for all official communications including email, website (including online social networks), radio stations, local newspapers and, television station(s).		
KPI-D12. Established dedicated unit within weather services section for meteorological information, forecasts, services and warnings for air navigation.	47,000,000	1,000,000
KPI-D13. Flood forecasting unit is established.		
KPI-D14. Agro-meteorology unit is established.		
KPI-D15. Meteorological Offices established in all provinces.		
KPI-D16. 10 meteorologists recruited.	400,000,000	
KPI-D17. 2-3 climatologists recruited.		
KPI-D18. 2-3 agro-meteorologists recruited		
KPI-D19. 2-3 local hydrologists recruited.		
KPI-D20. 2-3 geophysicist engineers recruited.		
KPI-D21. 2-3 volcanologists recruited.		
KPI-D22. 2-3 seismologists recruited.		
KPI-D23. 2-3 volcano analysts recruited.		
KPI-D24. 2-3 oceanographers recruited.		
KPI-D25. Database specialist recruited.		
KPI-D26. Computer software / application programmer recruited.		
KPI-D27. Electronic engineer recruited.		
KPI-D28. Communication engineer recruited.		
KPI-D29. Seismology technician recruited.		
KPI-D30. Climate change adaptation / disaster risk reduction officer recruited.		
KPI-D31. Climate change mitigation officer recruited.		
KPI-D32. Volcano technician recruited.		
KPI-D33. A QMS officer recruited.		
KPI-D34. Procurement officer recruited.		
KPI-D35. Monitoring and evaluation officer recruited.		
KPI-D36. Full-time communication and public relations officer recruited.		
KPI-D37. Training and Community Liaison officer recruited.		

**PART 3: MATRIX OF THE VANUATU METEOORLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

KEY OUTCOMES	STRATEGIC OUTPUT
<p><b>4</b> VMGD's human resources and administration development and training programme in place and staff meeting Department standards skills and qualifications.</p>	
<p><b>5</b> Communications systems developed for key management information outputs for the Ministry's requirements and VMGD staff awareness.</p>	<p><b>5.1</b> Key management information systems integrated for Ministry and Department reporting requirements.</p>

## ADMINISTRATION DIVISION

### KEY PERFORMANCE INDICATORS

### BUDGET ESTIMATE (VATU)

		INTERNAL	EXTERNAL
KPI-D38	Training programme for weather observers developed and implemented.	44,000,000	55,000,000
KPI-D39	AMO competency assessment manual developed.		
KPI-D40	Training of AMO competency assessment provided to staff.		
KPI-D41	Weather observers assessed using AMO competency assessment manual.		
KPI-D42	Weather observers are trained to WMO Meteorological Technicians level in weather observations, forecasting and instrument maintenance.		
KPI-D43	Training programme on competency assessment for AMF developed.		
KPI-D44	Training provided to on competency assessment of AMF.		
KPI-D45	Number of professional meteorologists increased.		
KPI-D46	Professional meteorologists trained in tropical cyclone forecasting.		
KPI-D47	Professional meteorologists / tropical cyclone forecasters trained in flood forecasting.		
KPI-D48	2-3 local students trained in oceanography either at university undergraduate or post-graduate level.		
KPI-D49	2-3 local students trained in agro-meteorology either at university undergraduate or post-graduate level.		
KPI-D50	2-3 local students trained in hydrology either at university undergraduate or post-graduate level.		
KPI-D51	2-3 local students trained in geophysics engineering at either university undergraduate or post-graduate level.		
KPI-D52	2-3 local students trained in volcano at either university undergraduate or post-graduate level.		
KPI-D53	2-3 local students trained in seismology at either university undergraduate or post-graduate level.		
KPI-D54	2-3 local students trained in volcano data and information analysis and development at either university undergraduate or post-graduate level.		
KPI-D55	2-3 local students trained as seismology technicians.		
KPI-D56	2-3 local students trained as volcano technicians.		
KPI-D57	Training events in ICT for all VMGD's staff members organized and/ or conducted.		
KPI-D58	Programmes to communicate, present and deliver meteorological information for air navigation developed and implemented.	41,000,000	14,000,000
KPI-D59	Programmes to communicate, present and deliver tropical cyclones forecasts, information, services developed and implemented.		
KPI-D60	Programmes to communicate, present and deliver weather forecasts, information, warnings and services developed and implemented.		
KPI-D61	Programmes to communicate, present and deliver flood forecasts, information, warnings and services developed and implemented.		
KPI-D62	Programmes to communicate, present and deliver weather forecasts, information, warnings and services developed and implemented.		
KPI-D63	Programmes to communicate, present and deliver weather forecasts, information, warnings and services to specific clients developed and implemented.		
KPI-D64	Programmes to communicate, present and deliver flood forecasts, information, warnings and services to specific clients developed and implemented.		
KPI-D65	Programmes to communicate, present and deliver tropical cyclone forecasts, information, warnings and services to specific clients developed and implemented.		
KPI-D66	Strategy to communicate, present and deliver climate, hydrology and drought products, information services and warnings developed and implemented.		
KPI-D67	Music and songs produced in English, French and Bislama languages.		
KPI-D68	Cartoon(s) illustrations produced in English, French and Bislama languages.		
KPI-D69	Documentary produced in English, French and Bislama languages.		
KPI-D70	(a) Calendars on traditional cropping produced and published in English, French and Bislama languages.		
KPI-D71	VMGD products and services exhibited or displayed (i) during Vanuatu Science Week's events; (ii) at CFS and other schools throughout the country, (iii) at government's agencies and during related events, (iii) regional and international events hosted by the government and, (iv) other regional and international events.		
KPI-D72	Technology / techniques / methodology / format for improving quality, content, timeliness and presentation formats of weather forecasts, information, services and warnings on radio and TV stations, newspapers, for clients and centres accessed to, and used.		
KPI-D73	Weather forecasts, information, services and warnings presented on TV.		
KPI-D74	Cartoon(s) illustrations are produced.		

**PART 3: MATRIX OF THE VANUATU METEOOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

KEY OUTCOMES	STRATEGIC OUTPUT
<p><b>6</b> Communication and outreach programmes for VMGD and its portfolio developed and delivered.</p>	
<p><b>7</b> Education and awareness on VMGD and portfolio developed and implemented.</p>	
<p><b>8</b> A cross cutting research and development programme developed together with external partners of the VMGD such as those in health, water resources, and disaster management.</p>	
<p><b>9</b> Maintain and refurbish/renovate as needed and/or construct new offices and staff accommodation buildings in all provinces.</p>	



## ADMINISTRATION DIVISION

### KEY PERFORMANCE INDICATORS

### BUDGET ESTIMATE (VATU)

#### INTERNAL

#### EXTERNAL

		INTERNAL	EXTERNAL
KPI-D75.	Communications system developed to integrate annual, bi-annual, and quarterly reporting against plans, outputs and KPIs for Ministry and Departmental Strategy, Corporate and Annual Business Plan and incorporate activity, financial and human resources aspects.		
KPI-D76.	Systems for reviewing Department structure and roles against Corporate Plan strengthened.		
KPI-D77.	Improved staff performance appraisal to align with strategic, corporate and annual business plan and identify and develop capacity required for their delivery.		
KPI-D78.	Education and awareness programmes on meteorological services for air navigation developed and conducted.	13,000,000	28,000,000
KPI-D79.	Public education and awareness programmes on tropical cyclones and warnings developed and conducted.		
KPI-D80.	Public education and awareness programmes on weather forecasts, information, services and warnings for marine sectors developed and conducted.		
KPI-D81.	Education and awareness programmes on flood forecasts, information, services and warnings developed and conducted.		
KPI-D82.	Strategy for education and awareness on climate, hydrology and drought products, information, services and warnings developed and implemented.		
KPI-D83.	CFSs established and operational.		
KPI-D84.	Climate services / sciences symposium organized.		
KPI-D85.	Teaching materials developed.		
KPI-D86.	Public education and awareness activities on tsunami developed and implemented.		
KPI-D87.	Public education and awareness activities on earthquakes developed and implemented.		
KPI-D88.	Public education and awareness activities on volcano developed and implemented.		
KPI-D89.	Research in areas of weather, climate, climate change, water, volcano, earthquake and other related environment and geo-hazards established and conducted.	20,000,000	-
KPI-D90.	Science and technology for sustainable development promoted.		
KPI-D91.	VMGD's participatory monitoring and evaluation established and implemented.	30,000,000	-
KPI-D92.	Independent management audit organized and conducted each year.		
KPI-D93.	Independent financial audit organized and conducted each year.		
KPI-D94.	Existing and / or new offices buildings renovated and constructed respectively, in all provinces.	36,000,000	15,000,000
KPI-D95.	Existing and / or new staff accommodation buildings renovated and constructed respectively, in all provinces.		
<b>TOTAL BUDGET</b>		<b>721,000,000</b>	<b>132,000,000</b>

**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

**WEATHER FORECASTING AND SERVICES DIVISION**

**Vision:**

The Weather Forecasting and Services Division vision is to provide timely and quality weather services and products to the general public, mariners, the aviation sector, and commercial end users, via qualified meteorologists deploying the appropriate and state of the art weather forecasting systems.

**Mission:**

To achieve its vision by continuously monitoring and ensuring that all the Division's products and services are delivered in a timely manner. To further ensure quality services and products by way of recruiting the best qualified science graduates for deployment as qualified meteorologists. As well, the Division will regularly assess and evaluate its weather forecasting systems to ensure the state of the art and most appropriate technologies are being deployed to produce quality services. And finally, that the Division will also be responsible for implementation of a Quality Management System (QMS) to monitor, evaluate and improve the Division's products and services standards.

KEY OUTCOMES	STRATEGIC OUTPUT
1 Improve weather information, forecasts, services and warnings for air navigation.	1.1. A Quality Monitoring System covering all services and operations of the Division is in place with relevant policy documents developed.
2 Improve weather information, forecasts, services and warnings for mariners.	2.1. Information communication systems for data and information reception and transmission covering all ocean and wave services and products and operations of the Division are developed and maintained.
3 Improve weather information, forecasts, services and warnings for the public and communities.	3.1. Information communication systems for data and information reception and transmission covering all public and community services and products and operations of the Division are developed and maintained.
4 Improve tropical cyclones warning system, information, forecasts, services and warnings	4.1. Weather Forecasting and Services Division's tropical cyclone related technical products and services are achieving defined quality standards, with state of the art facilities installed to service required operational needs, and fulfilling requirements of WMO RA V TCOP.
5 Develop and provide information, forecasts, services and warnings for storm surges, swells and high waves.	5.1. Weather Forecasting and Services Division's technical products and services on storm surges, swells, high waves are achieving defined quality standards, with state of the art facilities installed to service required operational needs.

## WEATHER FORECASTING AND SERVICES DIVISION

The following are key outcomes identified by the Weather Forecasting and Services Division.

1. Improve weather information, forecasts, services and warnings for air navigation.
2. Improve weather information, forecasts, services and warnings for mariners.
3. Improve weather information, forecasts, services and warnings for the public and communities.
4. Improve tropical cyclones warning system, information, forecasts, services and warnings
5. Develop and provide information, forecasts, services and warnings for storm surges, swells and high waves.
6. Develop, establish and operate an early warning system for floods.

KEY PERFORMANCE INDICATORS	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-W01. Verification scheme for TAF established and operated by weather services section.	32,000,000	30,000,000
KPI-W02. Quality control scheme for METAR and SPECI established and operational.		
KPI-W03. MetiCAO QMS requirements for meteorological services air navigation safety		
KPI-W04. Cost recovery policy and / or other related documents developed.		
KPI-W05. Communications system for meteorological observation data and information entry and transmission to OPMET databases established and operational.		
KPI-W06. Mechanism(s) / system(s) established, operated and / or accessed to for monitoring and displaying real-time observation data and information on volcanoes in Vanuatu.		
KPI-W07. Relevant existing ocean wave models accessed to, and used.	40,000,000	10,000,000
KPI-W08. Existing techniques to estimate sea swells and waves' heights accessed to, and used.		
KPI-W09. Mechanism(s) for regular dialogues established between VMGD and mariners		
KPI-W10. Established one-stop national mechanism for marine meteorology and oceanography.		
KPI-W11. Quality, content and timeliness of weather information, forecasts, services and warnings for each province improved.	25,000,000	5,000,000
KPI-W12. Improved quality, content and timeliness of weather information, forecasts, services and warnings for each focused-client.		
KPI-W13. Improved quality, content and timeliness of weather information, forecasts, services and warnings for selected centres within Vanuatu.		
KPI-W14. Improved quality, content, timeliness and presentation in appropriate formats of weather information, forecasts, services and warnings for local and regional newspapers.		
KPI-W15. Regular networks or mechanisms for consultations or discussions are established and conducted with communities, mariners, aviation sector, provincial governments, newspapers and radio stations, on improving services.		
KPI-W16. Quality, content, timeliness and presentation formats of tropical cyclone information, forecasts, services, advisories and warnings improved	36,000,000	18,000,000
KPI-W17. Quality, content, lead time and presentation formats of tropical cyclone outlook improved.		
KPI-W18. Techniques and technology for improving quality, content, timeliness and presentation formats of tropical cyclone information, forecasts, services and warnings accessed to, and used.		
KPI-W19. VMGD as an additional or alternative backup service for RSMC Nadi approved		
KPI-W20. Back-up / redundant systems for Vanuatu's TCWC established		
KPI-W21. Database for tropical cyclones and associated impacts established and operational.		
KPI-W22. Mechanism for monitoring and provision of information, forecasts, services and warnings on storm surges, swells and high waves established and operational.	20,000,000	6,000,000
KPI-W23. Technology / techniques / methodologies / formats to improve timeliness and presentation of information, forecast services and warnings on storm surges, swells and high waves accessed to, and used.		
KPI-W24. Quality, timeliness and appropriate presentation formats of information, forecasts, services and warnings on storm surges, swells and high waves provided.		

**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

KEY OUTCOMES	STRATEGIC OUTPUT
6 Develop, establish and operate an early warning system for floods.	6.1. Weather Forecasting and Services Division's flood warning system and related technical products and services are achieving set quality standards, with state of the art facilities installed to service required operational needs.

## WEATHER FORECASTING AND SERVICES DIVISION

### KEY PERFORMANCE INDICATORS

### BUDGET ESTIMATE (VATU)

		INTERNAL	EXTERNAL
KPI-W25	Early warning system for floods developed and established.	20,000,000	4,000,000
KPI-W26	Flood forecasting desk operated within the Weather Forecasting and Services Division		
KPI-W27	Technology, systems, techniques, methodologies and information for floods' warnings accessed to, used and operational.		
KPI-W28	Mechanism / system for delivery and presentation of flood information, forecasts, services and warnings established and operational.		
<b>TOTAL BUDGET</b>		<b>173,000,000</b>	<b>73,000,000</b>



## PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET

### CLIMATE DIVISION

#### Vision:

The vision of the Climate Division is to provide timely and quality climate services and products by way of skilled and motivated staff, using modern and sound technology and techniques.

#### Mission:

Contributes to Climate Division Vision by way of a highly proficient Division with qualified staff using modern and sound technology for management and analysis of climatological and related environmental data, to monitor, predict, and provide climatological, and related environmental information, forecasts, advisories and warnings.

KEY OUTCOMES	STRATEGIC OUTPUT
1 Improved management of historical meteorological, hydrologic and other related environmental data.	1.1. The Climate Division is routinely digitizing historical data for weather, climate, agrometeorology, and CBRN stations and has all paper based records archived and stored according to the VMGD data management and quality policy, including the archival of data in back-up sites.
2 Improved and sustained quality of meteorological, hydrologic and other related environmental datasets on the VMGD Headquarter's server.	2.1. The Climate Division has an established quality management system in accordance with the VMGD quality standards and is applying quality management standards to all observation data and information collected.
3 Climate databases such as CliDE are maintained and operationalized.	3.1. Relevant climate database systems are established for the archival, management, and analysis of all observational datasets, and with all necessary tools for their operation.
4 Monthly to seasonal climate information, forecasts, services and warnings are continually developed and routinely improved.	4.1. An established set of quality management standard manuals is developed and produced (in line with WMO Operational Standards Manuals) for reference for climate services development and engagement with end users, including the capture of traditional knowledge and development of new indicators where needed.
5 Drought information, forecasts, services and warnings are developed and routinely improved.	5.1. Information and communications products and services from the Climate Division are routinely produced according to VMGD policy guidelines and quality management standards.
6 Agro-meteorology services are established and routinely improved.	6.1. Climate Division, in partnership with national agencies, regional, and international partners, has a strategic development plan for the development of agro-meteorology together with the DARD with a view to produce quality agro-meteorological products and services to the agriculture sectors including farmers.
7 Climate Division is provided access to relevant external datasets.	7.1. VMGD has agreements and partnerships with other government agencies in place to enable the Climate Division with access to external holdings of relevant climate and hydrology data.

## CLIMATE DIVISION

The following are key outcomes identified by the Climate Division:

1. Improved management of historical meteorological, hydrologic and other related environmental data;
2. Improved and sustained quality of meteorological, hydrologic and other related environmental datasets on the VMGD Headquarter's server;
3. Climate databases such as CliIDE are maintained and operationalized;
4. Monthly to seasonal climate information, forecasts, services and warnings are continually developed and routinely improved;
5. Drought information, forecasts, services and warnings are developed and routinely improved;
6. Agro-meteorology services are established and routinely improved;
7. Climate Division is provided access to relevant external datasets;
8. Climate services related research capacity and priorities are developed; and
9. Partnerships formed with regional and international institutions on climate issues.

KEY PERFORMANCE INDICATORS	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-CS01. Historical meteorological, hydrologic, agro-meteorological and other related environment datasets from synoptic weather stations are preserved.	9,000,000	5,000,000
KPI-CS02. Historical meteorological, hydrologic, agro-meteorological and other related environment datasets from climate stations are preserved.		
KPI-CS03. Historical meteorological, hydrologic, agro-meteorological and other related environment datasets for agro-meteorology stations are preserved.		
KPI-CS04. Historical meteorological, hydrologic, agro-meteorological and other related environment datasets for the CBRN gauges' sites are preserved.		
KPI-CS05. Copies of paper records of data stored in acid free boxes archived at backup site(s).		
KPI-CS06. Climate quality management system set of procedures is developed, established, documented, implemented and maintained for quality control of real-time observations data on the VMGD Headquarters server(s)	20,000,000	
KPI-CS07. Procedures developed, established, documented, implemented and maintained for quality control of real-time observations data on the CliIDE database.		
KPI-CS08. CliIDE, as a long-term database is operational.	26,000,000	5,000,000
KPI-CS09. Upgrading of, and / or additional to, climate database such as CliIDE's hardware and software is coordinated.		
KPI-CS10. All VMGD's section had easy access to climate database such as CliIDE.		
KPI-CS11. Easy and regular access to climate database such as the CliIDE by other government agencies.		
KPI-CS12. Backup for climate database such as CliIDE at different site is operational.		
KPI-CS13. A manual is developed, implemented, reviewed and updated	23,000,000	8,000,000
KPI-CS14. Monthly to Seasonal climate information, forecasts, services and warnings for Vanuatu developed and produced		
KPI-CS15. Mechanism(s) for easy and regular access to climate information, forecasts, services and warnings developed and operational		
KPI-CS16. Early warning system for ENSO developed, established, implemented and maintained / sustained.		
KPI-CS17. Traditional information / indicators collected and integrated with modern climate sciences, forecasts, information, services and warnings		
KPI-CS18. Validation on monthly to seasonal climate prediction for all weather and climate observation stations conducted		
KPI-CS19. Climate summary for Vanuatu produced for each year.	9,000,000	8,000,000
KPI-CS20. Publication on Vanuatu national rainfall network strategy produced.		
KPI-CS21. Early warning system for droughts developed, implemented and maintained / sustained.		
KPI-CS22. UNELCO is assisted by the VMGD to integrate climate information, services and warnings in its operations and services.		
KPI-CS23. Agriculture Department working together with VMGD to develop a national agro-meteorology programme; and to assisting agriculture sectors and farmers to integrate and use climate information, forecasts, services and warnings in their operations.	1,000,000	
KPI-CS24. Preservation of historical rainfall data coordinated with the DGMH.	20,000,000	
KPI-CS25. VMGD had access to DGMH's real-time rainfall and other hydrology information and vice-versa.		

**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

KEY OUTCOMES	STRATEGIC OUTPUT
8 Climate services related research capacity and priorities are developed.	8.1. Climate Division has prioritized a set of research topics annually to deliver results on annually.
9 Partnerships formed with regional and international institutions on climate issues.	9.1. VMGD has external national, regional, and international partnerships that enable the Climate Division to participate fully to contribute to and receive new tools, knowledge, and partnerships for further development of the Division.

CLIMATE DIVISION

KEY PERFORMANCE INDICATORS	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-CS26. New research proposal develop and available funding for new research activities	20,000,000	-
KPI-CS27. New project proposals develop and available funding for new projects		
KPI-CS28. Engage with projects funded by regional government and project activity implemented on ground.	20,000,000	-
KPI-CS29. Engage with projects funded by regional government and project activity implemented on ground.		
<b>TOTAL BUDGET</b>	<b>145,000,000</b>	<b>26,000,000</b>

**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

**CLIMATE CHANGE AND DISASTER RISK REDUCTION DIVISION**

**Vision:**

The vision of the Climate Change and Disaster Risk Reduction Division is to be an effective Division in the management, operation and integration of climate change and disaster risk reduction activities and projects, by way of qualified, skilled and motivated staff appropriately trained and participating actively in national, regional, and international climate change programmes, and working effectively with local, regional and international partners.

**Mission:**

The Climate Change and Disaster Risk Reduction Division will meet this vision by the implementation and operation of an effective and efficient Climate Change Project Management Unit deploying qualified, skilled and motivated staff with appropriate access to sufficient resources, to manage and operate the implementation and integration of climate change and disaster risk reduction programmes and projects to support national level commitments to Climate Change and Disaster Risk Management multilateral agreements.

**KEY OUTCOMES**

**STRATEGIC OUTPUT**

<p><b>1</b> Develop integrated climate change and disaster risk reduction action plan(s).</p>	<p><b>1.1</b> Joint climate change and disaster risk reduction plans are developed and implemented at the community, provincial, council, and national levels.</p>
<p><b>2</b> Updated governance for climate change and disaster risk reduction</p>	<p><b>2.1</b> Appropriate governance and institutional arrangements to facilitate joint climate change and disaster risk plans at all levels are updated and implemented.</p>
<p><b>3</b> Ownership of climate change and disaster reduction integration.</p>	<p><b>3.1</b> Government plans, policies, and communication strategies have joint climate change and disaster risk reduction mainstreamed and utilized in current activities, in partnership also with external development partners.</p>
<p><b>4</b> Contribute to regional and global integrated climate change and disaster risk reduction agenda.</p>	<p><b>4.1</b> Vanuatu actively participating in regional and international joint framework development on CC and DRR works, as well as in international fora of both areas of work.</p>



## CLIMATE CHANGE AND DISASTER RISK REDUCTION DIVISION

The following are key outcomes identified by the Climate Change and Disaster Risk Reduction Division:

1. Develop integrated climate change and disaster risk reduction action plan(s);
2. Updated governance for climate change and disaster risk reduction;
3. Ownership of climate change and disaster reduction integration; and
4. Contribute to regional and global integrated climate change and disaster risk reduction agenda.

KEY PERFORMANCE INDICATORS	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-CC01. Joint climate change and disaster risk reduction national action plan developed, implemented, reviewed and updated.	11,000,000	25,000,000
KPI-CC02. Joint climate change and disaster risk reduction action plan for each province developed, implemented, reviewed and updated.		
KPI-CC03. Joint climate change and disaster risk reduction action plan for each Area Council and communities developed, implemented, reviewed and updated.		
KPI-CC04. Governance, structure and processes for climate change and disaster risk reduction at national government level developed. Operationalized, reviewed and updated.	20,000,000	4,000,000
KPI-CC05. Governance, structure and processes for climate change and disaster risk reduction at each provincial government level developed, operationalized, reviewed and updated.		
KPI-CC06. Governance, structure and processes for climate change and disaster risk reduction developed, operationalized, reviewed and updated for each Area Council and communities		
KPI-CC07. NDMO re-organized, reviewed and updated.		
KPI-CC08. Government ownership and leadership on climate change and disaster risk agenda reflected in updated sector policies, plans and strategies being used	2,000,000	10,000,000
KPI-CC09. Communication and partnership strategies for national government, each provincial government and each Area Council and communities' levels, on climate and disaster risk agenda developed, implemented, reviewed and updated.		
KPI-CC10. Communication and partnership strategies with external development partners on climate and disaster risk agenda developed, implemented, reviewed and updated.		
KPI-CC11. Vanuatu contributed to development of an integrated regional strategy for climate change and disaster risk reduction by 2015	20,000,000	
KPI-CC12. Vanuatu contributed to new global framework for disaster risk reduction.		
<b>TOTAL BUDGET</b>	<b>53,000,000</b>	<b>39,000,000</b>

**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

**GEO-HAZARDS DIVISION**

**Vision:**

The vision of the Geo-Hazards Division is to be a highly effective Division delivering quality services and products on geo-hazards and related phenomena by way of qualified, skilled and motivated staff using modern science and technology to mitigate against potential impacts of geological hazards (earthquakes, tsunamis and volcanic eruptions) preventing disastrous consequences on the people, environment, and economy of Vanuatu.

**Mission:**

The Geo-Hazards Division will achieve its vision by way of providing services in terms of the relevant information, advisories and warnings related to geo-hazards, through the deployment of appropriately trained and skilled staff, using and implementing the appropriate monitoring systems and scientific information to improve understanding of the earth's processes within and surrounding areas of Vanuatu, including implementation and maintenance of early warning systems for volcanic eruptions, earthquakes and tsunami generation.

**KEY OUTCOMES**

**STRATEGIC OUTPUT**

<p>1 Early warning system for tsunami maintained and routinely improved.</p>	<p>1.1. Tsunami warning plans at community, provincial, council, and national levels are reviewed and updated, with all plans updated with international partners in meeting with international obligations.</p>
	<p>1.2. Improve accuracy, timeliness and quality of tsunami information and alerts.</p>
<p>2 Warning systems for earthquakes are established in communities</p>	<p>2.1. Earthquake warning plans at community, provincial, council, and national levels are reviewed and updated, with all plans updated with international partners in meeting with international obligations.</p>
	<p>2.2. Improve accuracy, timeliness and quality of earthquake / seismicity information and alerts.</p>
<p>3 A warning and monitoring system for volcanic activities is developed for communities at risk.</p>	<p>3.1. Volcano warning plans at community, provincial, council, and national levels are reviewed and updated, with all plans updated with international partners in meeting with international obligations, including appropriate monitoring systems for those identified active volcanoes.</p>
	<p>3.2. Improve accuracy, timeliness and quality of volcanic information and alerts.</p>

## GEO-HAZARDS DIVISION

The key outcomes of the Geo-Hazards Division are as follows:

1. Early warning system for tsunami maintained and routinely improved;
2. Warning systems for earthquakes are established in communities;
3. A warning and monitoring system for volcanic activities is developed for communities at risk; and
4. A national geo-hazards database is established and updated with geo-hazards mapping for Vanuatu.

KEY PERFORMANCE INDICATORS	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-G01. Needs for tsunami warning system at national government, each provincial government and Area Councils and communities' levels reviewed and updated.	30,000,000	35,000,000
KPI-G02. Tsunami warning system developed, implemented, reviewed and updated at national government level.		
KPI-G03. Tsunami warning system developed, implemented, reviewed and updated at each provincial government level.		
KPI-G04. Tsunami warning system developed, implemented, reviewed and updated at Area Councils and communities' levels.		
KPI-G05. VMGD collaborated with regional and international partners on early warning system for tsunami.		
KPI-G12. Bathymetry data for shorelines throughout the country collected.	-	55,000,000
KPI-G13. Bathymetry data for shorelines for Port Vila and Luganville collected.		
KPI-G14. Tsunami risk mapping for Vanuatu utilized.		
KPI-G15. Tsunami risk mapping for Port Vila and Luganville utilized.		
KPI-G16. Tsunami modelling system for the whole country in operation.		
KPI-G17. Tsunami modelling systems for Port Vila and Luganville in operation.		
KPI-G18. Advisories to local authorities on level of risk associated with tsunami improved.		
KPI-G19. VMGD collaborated with regional and international partners on tsunami monitoring / observation data networks.		
KPI-G06. Needs analysis for earthquake's early warning system at national government, each provincial government and Area Councils and communities' levels conducted.	10,000,000	15,000,000
KPI-G07. Early warning system for earthquake developed, implemented, reviewed and updated at national government, each provincial government and Area Councils and communities' levels.		
KPI-G08. VMGD collaborated with regional and international partners on early warning system for earthquakes.		
KPI-G20. Earthquake risk mapping for Vanuatu is utilized.		25,000,000
KPI-G21. Earthquake risk mapping for Port Vila and Luganville utilized.		
KPI-G22. Earthquake risk mapping for each relevant island in Vanuatu utilized.		
KPI-G23. Advisories to local authorities on level of risk associated with earthquake improved.		
KPI-G24. VMGD collaborated with regional and international partners on earthquake / seismic monitoring / observation data networks.		
KPI-G09. Needs analysis for active volcano monitoring and early warning system at national government, each provincial government and Area Councils and communities' levels conducted.	10,000,000	15,000,000
KPI-G10. A monitoring and early warning system for active volcanoes is developed, implemented, reviewed and updated at national government, each relevant provincial government and Area Councils and communities' levels.		
KPI-G11. VMGD collaborated with regional and international partners on monitoring and early warning systems for volcanoes.		
KPI-G25. Volcanohazard / risk mapping for Ambae, Ambrym, Gaua, Lopevi and Tanna utilized.		20,000,000
KPI-G26. Volcanorisk mapping Vanuatu utilized.		
KPI-G27. KPI-G27: Advisories to local authorities on level of risk associated with volcano improved.		
KPI-G28. VMGD collaborated with regional and international partners on volcano monitoring / observation data networks with Vanuatu and vice-versa.		

**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

<b>KEY OUTCOMES</b>	<b>STRATEGIC OUTPUT</b>
<p>4 A national geo-hazards database is established and updated with geo-hazards mapping for Vanuatu.</p>	<p>4.1. Hazard risk mapping for identified risk centres for volcanoes, earthquakes, and tsunami developed.</p> <hr/> <p>4.2. Volcano database established and operational.</p> <hr/> <p>4.3. Earthquake / seismic database established and operational.</p>

## GEO-HAZARDS DIVISION

KEY PERFORMANCE INDICATORS	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-G29. Volcanohazard / risk mapping for Ambae, Ambrym, Gaua, Lopevi and Tanna developed.	-	35,000,000
KPI-G30. Volcano hazard / risk mapping for Vanuatu's land area developed.		
KPI-G31. Volcano hazard / risk mapping for domestic air navigation developed.		
KPI-G32. Earthquake hazard / risk mapping for Vanuatu is established and developed.		
KPI-G33. Earthquake hazard / risk mappings for Port Vila and Luganville are established and developed.		
KPI-G34. Tsunami hazard / risk mapping for Port Vila and Luganville are established and developed.		
KPI-G35. Tsunami hazard / risk mapping for Vanuatu is established and developed.		
KPI-G36. Volcan Tool: Volcanic Activity Analysis Tools operated and managed by geo-hazard section.	26,000,000	-
KPI-G37. Upgrading of, and / or additional to, Volcan Tool: Volcanic Activity Analysis Tools hardware and software coordinated.		
KPI-G38. All VMGD Divisions have easy access to Volcan Tool: Volcanic Activity Analysis Tools.		
KPI-G39. Easy and regular access to Volcano Tool: Volcanic Activity Analysis Tools by other government agencies.		
KPI-G40. Backup for Volcano Tool: Volcanic Activity Analysis Tools operated and managed by geo-hazard section.		
KPI-G41. Seisan – Vanuatu Seismic Data Analysis Tools operated and managed by geo-hazard section.	26,000,000	10,000,000
KPI-G42. Upgrading of, and / or additional to, Seisan – Vanuatu Seismic Data Analysis Tools hardware and software coordinated.		
KPI-G43. All VMGD's Divisions had easy access to Seisan – Vanuatu Seismic Data Analysis Tools.		
KPI-G44. Easy and regular access to Seisan – Vanuatu Seismic Data Analysis Tools by other government agencies.		
KPI-G45. Backup for Seisan – Vanuatu Seismic Data Analysis Tools operated and managed by geo-hazard section.		
KPI-G46. Research on effect(s) of volcano on agriculture, livestock and fisheries conducted.		
<b>TOTAL BUDGET</b>	<b>102,000,000</b>	<b>210,000,000</b>



**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

**OBSERVATIONS DIVISION**

**Vision:**

The vision of the Observations Division is to be an effective Division maintaining optimal observational networks in meeting the data and information needs of the VMGD Divisions and other national, regional, and international users and networks.

**Mission:**

The Observations Division will meet its vision by way of deploying skilled and motivated staff, using modern and sound technology and techniques, to install, maintain and update observational networks that provide adequate coverage, real-time, accurate and high quality observation data for weather, climate and water. The Division will also work closely with regional and international technical partners to meet VMGD's network data and information reporting obligations.

**KEY OUTCOMES**

**STRATEGIC OUTPUT**

<p><b>1</b> Restore, expand and sustain observation data networks, stations, systems, sensors and equipment.</p>	<p>1.1. All VMGD observing systems have strategic plans for routine frequent reviews, inspection, and meet international standards, and expanded to meet VMGD strategic coverage to ensure best coverage of monitoring with quality data and information observed and received at VMGD headquarters.</p>
<p><b>2</b> Quality of real-time observations from all observing networks of VMGD Divisions is effectively maintained.</p>	<p>2.1. The Observations Division has an established quality management pertaining to each observing system under its responsibility, with all observing networks meeting the quality management standards.</p>
<p><b>3</b> The VMGD Headquarters and Divisions have consistent and reliable access to real time observation data.</p>	<p>3.1. VMGD has a central real-time display system supported and maintained by the Observations Division and the Information, Technology and and Engineering Division.</p>

## OBSERVATIONS DIVISION

The key outcomes of the Observations Division are as follows:

1. Restore, expand and sustain observation data networks, stations, systems, sensors and equipment;
2. Quality of real-time observations from all observing networks of VMGD Divisions is effectively maintained;
3. The VMGD Headquarters and Divisions have consistent and reliable access to real time observation data; and;
4. Increased number of observation data for existing, new and additional networks, stations, systems, sensors and equipment.

KEY PERFORMANCE INDICATORS	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-DO01. Strategy for meteorological observations data stations, networks, systems, sensors and equipment to meet domestic and international air navigation requirements developed, implemented, reviewed and updated.	143,000,000	113,000,000
KPI-DO02. Meteorological stations, networks, systems, sensors and equipment at Bauerfield, Pekoia and, Whitegrass aerodromes developed, upgraded and meeting requirements as described in Sections 3.4 and 3.7 of ICAO Annex 3.		
KPI-DO03. Reference points updated.		
KPI-DO04. AWSs operational at domestic airports.		
KPI-DO05. CBRN expanded and operational.		
KPI-DO06. ARGs established and operational at major rivers.		
KPI-DO07. ARFGs expanded and operational at major rivers.		
KPI-DO08. NRN established and operational.		
KPI-DO09. Synoptic weather observation stations, network, systems, sensors and equipment expanded and operational.		
KPI-DO10. Climate observation stations, network, systems, sensors and equipment expanded and operational.		
KPI-DO11. Agro-meteorology observation data stations, network, systems, sensors and equipment expanded and operational.		
KPI-DO12. AWMSs' established and operational.		
KPI-DO13. ASRMS established and operational.		
KPI-DO14. SSWHMS established and operational.		
KPI-DO15. AWSs for inter-island shippings and ports established and operational.		
KPI-DO16. AAQMS established and operational.		
KPI-DO17. Upper air station operational.		
KPI-DO18. Implementation Plan for real-time seismic / earthquake monitoring network developed, implemented, reviewed and updated.		
KPI-DO19. Real-time seismic / earthquake monitoring network, systems, sensors and equipment established and operational.		
KPI-DO20. Implementation Plan for real-time volcano monitoring network, stations, sensors and equipment developed, implemented, reviewed and updated.		
KPI-DO21. Real-time volcano monitoring network, stations, systems, sensors and equipment established and operational.		
KPI-DO22. Quality management systems and procedures for the operation, maintenance and inspection of weather, climate, rainfall, agro-meteorology observations data networks, stations, systems, sensors and equipment, are developed and implemented.	80,000,000	40,000,000
KPI-DO23. Quality management systems and procedures for operation, maintenance and inspection of real-time hydrological observation data networks, stations, systems, sensors and equipment developed and implemented.		
KPI-DO24. Quality management systems and procedures for operation, maintenance and inspection of real-time earthquake / seismic observation data networks, stations, systems, sensors and equipment developed and implemented.		
KPI-DO25. Quality management systems and procedures for operation, maintenance and inspection of real-time volcano observation data networks, stations, systems, sensors and equipment developed and implemented.		
KPI-DO26. Liaise and work with the Information, Technology and Engineering Division to support systems for enabling a central real-time display and access to data and information from all relevant observing systems, for easy viewing and monitoring.	50,000,000	20,000,000

**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

<b>KEY OUTCOMES</b>	<b>STRATEGIC OUTPUT</b>
4 A national geo-hazards database is established and updated with geo-hazards mapping for Vanuatu.	4.1. The Observations Division has developed an strategic implementation or action plan for the expansion of existing networks and acquisition of new systems and technologies to support expanded observational datasets.

## OBSERVATIONS DIVISION

### KEY PERFORMANCE INDICATORS

### BUDGET ESTIMATE (VATU)

	INTERNAL	EXTERNAL
KPI-DO27 Strategy for NIGOS developed, implemented, reviewed and updated.	30,000,000	10,000,000
KPI-DO28. New and additional observation data collected at existing networks, stations, systems and equipment		
KPI-DO29 New and additional observation data collected at new and additional networks, stations, systems, sensors and equipment.		
<b>TOTAL BUDGET</b>	<b>313,000,000</b>	<b>183,000,000</b>

**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

**INFORMATION, COMMUNICATION TECHNOLOGY AND ENGINEERING DIVISION**

**Vision:**

The vision of the ICT and Engineering Division is to be a highly effective Division delivering quality ICT and engineering services by way of qualified, skilled and motivated staff using state of the art tools and technology thereby enabling VMGD to evolve and adapt to changing infrastructure and ICT and the needs of VMGD Divisions in the field.

**Mission:**

The ICT and Engineering Division will achieve this vision by deploying qualified, skilled and motivated staff using up-to-date modern and sound ICT equipment and all necessary assets, for data processing and required interfaces for all Divisional requirements, including support for corporate and administrative functions.

**KEY OUTCOMES**

**STRATEGIC OUTPUT**

<p>1 VMGD's e-communications and office productivity and operating systems are up to date and maintained.</p>	<p>1.1. ICT and Engineering Division servicing, maintaining and updating VMGD's ICT requirements.</p>
<p>2 Observation data networks, stations, systems, sensors and equipment are automated and providing VMGD Divisions with updated data and information for various products and services</p>	<p>2.1. ICT and Engineering Division developing and maintaining support for VMGD Divisions requirements for automated observational data systems and networks.</p> <p>2.2. Established seismic and volcano monitoring network (national and regional) providing VMGD with updated information with priority focus on Efate.</p>
<p>3 Verification schemes for aviation weather forecasts and tropical cyclone products and services and warnings are established and automated where possible.</p>	<p>3.1. Support provided to Weather Services Division for verification schemes for aviation weather and tropical cyclone products and services.</p>
<p>4 Automated and centralized points for in-coming weather, climate, water, volcano, seismic and other related environment and geo-hazard observation data and information are developed.</p>	<p>4.1. A feasibility assessment for automated centralized data collection points for incoming observational data is undertaken, and an ICT solution formed and operationalized.</p>



## INFORMATION, COMMUNICATION TECHNOLOGY AND ENGINEERING DIVISION

The key outcomes for the ICT and Engineering Division are as follows:

1. VMGD's e-communications and office productivity and operating systems are up to date and maintained;
2. Observation data networks, stations, systems, sensors and equipment are automated and providing VMGD Divisions with updated data and information for various products and services;
3. Verification schemes for aviation weather forecasts and tropical cyclone products and services and warnings are established and automated where possible;
4. Automated and centralized points for in-coming weather, climate, water, volcano, seismic and other related environment and geo-hazard observation data and information are developed;
5. Automated access to and use of Vanuatu real-time observations data and information by each VMGD Division;
6. Databases of climate, volcano, seismic / earthquake data and information and other related databases including historical tropical cyclone data, forecasting systems, platforms and applications are updated and maintained;
7. A VMGD documentation management system is developed and established;
8. An on-line request system for VMGD Divisional information, forecasts, services and warnings is established and maintained effectively with Divisions having access to incoming requests and to respond accordingly;
9. VMGD website is routinely updated and improved;
10. VMGD communication network throughout the country is improved;
11. Automated delivery of VMGD's weather, climate, flood, volcano, seismic / earthquake and related environment and geo-hazard information, forecasts, services and warnings;
12. Electronic infrastructure is supported and expanded accordingly; and
13. Automate redundancy / back-up systems are active and in place for all VMGD Divisions.

### KEY PERFORMANCE INDICATORS

### BUDGET ESTIMATE (VATU)

	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-ICT01. Server for VMGD e-communication installed, maintained and sustained and with relevant policies and documentation developed.	20,000,000	-
KPI-ICT02. Office productivity software maintained, improved / upgraded, sustained and backup established.		
KPI-ICT03. Automated systems / platforms / databases / applications for real-time weather, climate and rainfall observation data stations, sensors, equipment gauges and networks developed and / or identified, installed, maintained and sustained.	32,000,000	-
KPI-ICT04. Automated systems / platforms / databases / applications for real-time river levels and flows and other related observation data stations, sensors, equipment gauges and networks developed and / or identified, installed, maintained and sustained.		
KPI-ICT05. Automated systems / platforms / databases / applications for earthquake / seismic observation data stations, sensors, equipment gauges and networks developed and / or identified, installed, maintained and sustained.		
KPI-ICT06. Automated systems / platforms / databases / applications for volcano and other related observation data stations, sensors, equipment gauges and networks for Ambae, Ambrym, Gaua, Lopevi and Tanna are developed and / or identified, installed, maintained and sustained.		
KPI-ICT07. Efate's earthquakes / seismic monitoring / observation data stations, system(s), sensors, equipment and network(s) are maintained, upgraded and sustained.	20,000,000	20,000,000
KPI-ICT08. Geoscope station for global earthquakes / seismic monitoring / observation data network is maintained, upgraded and sustained.		
KPI-ICT09. Real-time seismic monitoring network technology is installed, maintained, upgraded and sustained.		
KPI-ICT10. Real-time volcano monitoring network technology is installed, maintained, upgraded and sustained.		
KPI-ICT11. Verification scheme for TAF is installed, maintained, improved, automated and sustained.	5,000,000	10,000,000
KPI-ICT12. Verification scheme for tropical cyclone forecasting is installed, maintained, improved, automated and sustained.		
KPI-ICT13. Automate systems / platforms / databases / applications for "centralize point" to manage in-coming data and information is developed and / or identified, installed, maintained and sustained.	15,000,000	25,000,000
KPI-ICT14. Automate systems / platforms / databases / applications for quality control of real-time observations data at "centralize point" is developed, established, maintained and sustained.		
KPI-ICT15. Automate systems / platforms / databases / applications to relay real-time observations data from "centralize point" to each VMGD section is developed, established, maintained and sustained.		

**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

KEY OUTCOMES	STRATEGIC OUTPUT
<p>5 Automated access to and use of Vanuatu real-time observations data and information by each VMGD Division.</p>	<p>5.1. Include in the 4.1 feasibility study, the assessment of an ICT solution to have all Divisions have real time access to, and use of, incoming observation and other data sources.</p>
<p>6 Databases of climate, volcano, seismic / earthquake data and information and other related databases including historical tropical cyclone data, forecasting systems, platforms and applications are updated and maintained.</p>	<p>6.1. Database management systems of the VMGD Divisions are routinely maintained and managed, and upgraded where necessary.</p>
<p>7 A VMGD documentation management system is developed and established.</p>	<p>7.1. A VMGD wide consultation with Divisions to agree and establish a documentation management system will be undertaken and led by the ICT and Engineering Division, including the implementation of the resulting solution.</p>
<p>8 An on-line request system for VMGD Divisional information, forecasts, services and warnings is established and maintained effectively with Divisions having access to incoming requests and to respond accordingly</p>	<p>8.1. Evaluation of existing requests system and formalization of such a system to a possible online system to mainstream the requests by users for VMGD services and assistance.</p>
<p>9 VMGD website is routinely updated and improved.</p>	<p>9.1. Establish a long-term plan for the continual online presence of the VMGD in assurance of its information services, products, and online requests system to online users.</p>
<p>10 VMGD communication network throughout the country is improved.</p>	<p>10.1. Undertake a feasibility study to find solutions to improving the communication of network nodes of VMGD outside of headquarters so as to improve the exchange of information and data, and to receive on request updates.</p>

INFORMATION, COMMUNICATION TECHNOLOGY AND ENGINEERING DIVISION

KEY PERFORMANCE INDICATORS	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-ICT16. Automated systems / platforms / databases / applications for easy and regular access to, and use of, Vanuatu real-time observation data and information VMGD Divisions are developed / identified, installed, maintained and sustained.	40,000,000	60,000,000
KPI-ICT17. Automated systems / platforms / databases / applications to display Vanuatu's real-time observation data and information in formats according to each VMGD Divisions are developed / identified, installed, maintained and sustained.		
KPI-ICT18. Weather Services Division software (e.g. SATAID, GMSLPDW, Digital Atmosphere, SYNERGIE, TideTool etc.) is maintained, improved / upgraded, operational, its backup location / site is identified and established and automated public on-line request system is developed.	5,000,000	10,000,000
KPI-ICT19. Climate Division software (e.g. CLIMSOFT, CLIDE, SCOPIC, SIMCLIM etc.) is maintained, improved / upgraded, operational, its backup location / site is identified and established and automated public on-line request system is developed.		
KPI-ICT20. Geohazards Division software (e.g. Seiscom3, Geotools, VolcanTools, Seisan, CISON Maps etc.) is maintained, improved / upgraded, operational, its backup location / site is identified and established and automated public on-line request system is developed, including support for volcano risk mapping for all at-risk Vanuatu sites.		
KPI-ICT21. GIS (Map) Applications maintained, improved / upgraded, sustained and its backup location / site is identified and established.		
KPI-ICT22. Database, platform and application for historical data and information on tropical cyclones and associated impacts developed or / and identified, installed, maintained, improved and sustained.		
KPI-ICT23. Techniques and technology for improving quality, content, timeliness and presentation formats of weather forecasts, information, services and warnings on radio and TV stations, newspapers, for clients and centres accessed to, and used.		
KPI-ICT24. Automate systems / platforms / databases / applications for documentation developed and / or identified, maintained, improved and sustained.	5,000,000	5,000,000
KPI-ICT26. Automate systems / platforms / databases / applications for on-line requests developed, maintained, improved and sustained.	5,000,000	
KPI-ICT27. VMGD website – <a href="http://www.meteo.gov.vu">www.meteo.gov.vu</a> re-designed.	10,000,000	
KPI-ICT28. VMGD website – <a href="http://www.meteo.gov.vu">www.meteo.gov.vu</a> intranet / portal for staff members enhanced, maintained, upgraded and sustained.		
KPI-ICT29. VMGD website – <a href="http://www.meteo.gov.vu">www.meteo.gov.vu</a> extranet / portal for public enhanced, maintained, upgraded and sustained.		
KPI-ICT30. website (intranet and extranet) – <a href="http://www.meteo.gov.vu">www.meteo.gov.vu</a> maintained, improved / upgraded, sustained, its backup established and automate on-line request is developed.		
KPI-ICT22. Graphic design maintained, improved / upgraded, sustained and its backup established.		
KPI-ICT46. 7 main weather (synoptic) stations in provinces connected to internet.	50,000,000	25,000,000
KPI-ICT47. Observation data stations, sensors, equipment, gauges and networks connected to internet and e-government systems.		
KPI-ICT48. Real-time transmission of data from observation stations, sensors, equipment, gauges and networks established.		
KPI-ICT49. Wireless access point for WIFI communication from Bauerfield weather (synoptic) station to VMDG Headquarters installed, maintained, upgraded and sustained.		
KPI-ICT50. Internet communication system for Pekoa international airport weather (synoptic) station installed, maintained, upgraded and sustained.		
KPI-ICT51. HF Radio systems for weather and climate stations upgraded and maintained.		
KPI-ICT52. Communication system for meteorological data and information entry and transmission to OPMET databases installed, maintained, improved and sustained.		
KPI-ICT53. Common automate communication systems / platforms / databases / applications for observation data stations and networks developed and / or identified, installed, maintained and sustained.		

**PART 3: MATRIX OF THE VANUATU METEOROLOGICAL AND GEO-HAZARDS DEPARTMENT KEY OUTCOMES AND ACTIVITIES AND BUDGET**

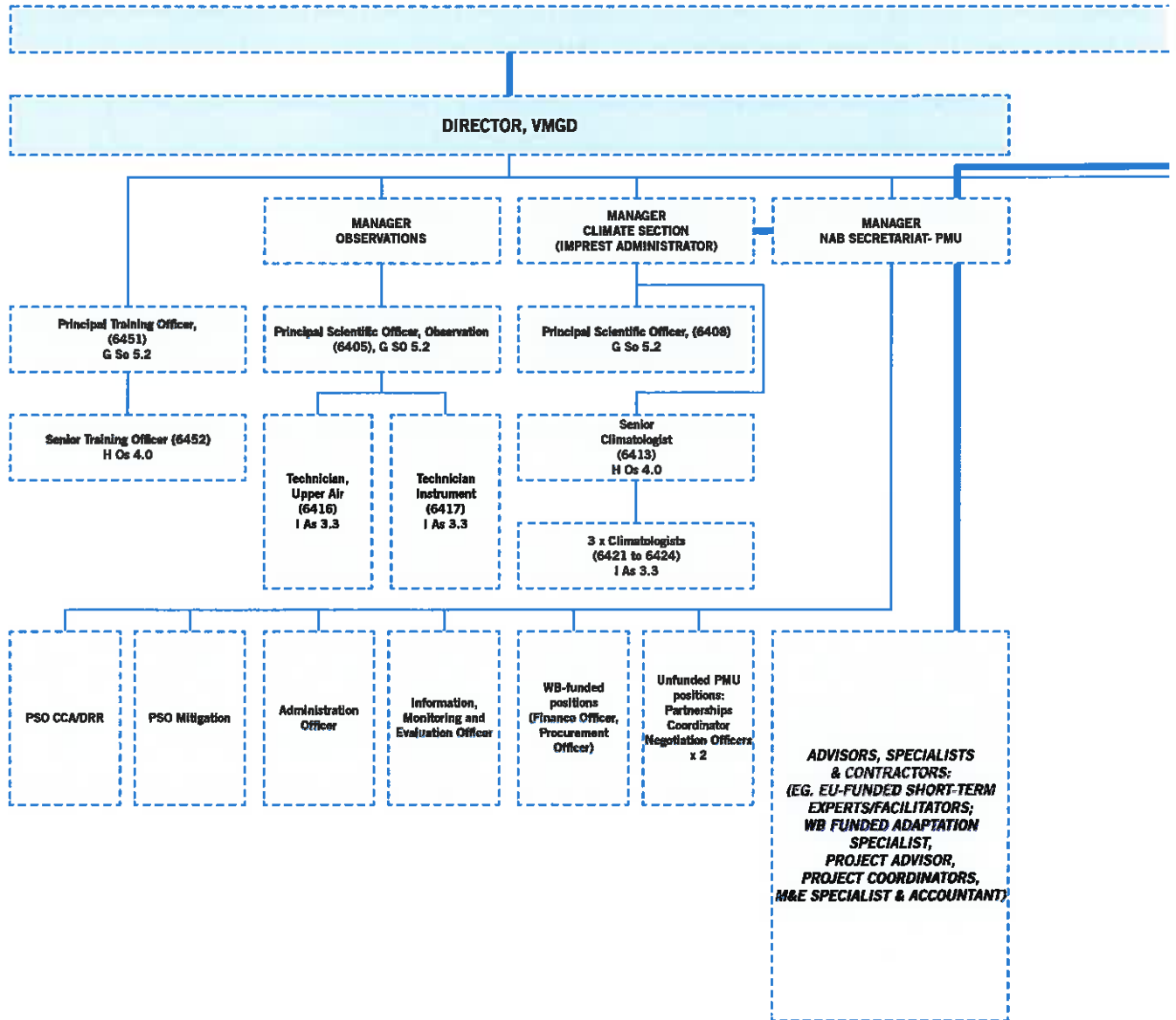
KEY OUTCOMES	STRATEGIC OUTPUT
<p><b>11</b> Automated delivery of VMGD's weather, climate, flood, volcano, seismic / earthquake and related environment and geo-hazard information, forecasts, services and warnings.</p>	<p>11.1. Review existing delivery methods of current VMGD products and services, and assess solutions for automated deliveries of future products and services.</p>
<p><b>12</b> Electronic infrastructure is supported and expanded accordingly.</p>	<p>12.1. In support of the existing and future expansions of VMGD networks and demands for ICT, to have the ICT and Engineering Division have the necessary tools and support systems to maintain and develop strategic support for the medium to long term future demands of VMGD Divisions.</p>
<p><b>13</b> Automate redundancy / back-up systems are active and in place for all VMGD Divisions.</p>	<p>13.1. Develop the necessary redundancy systems to ensure VMGD Divisions have back up access to their data and other electronic based infrastructures.</p>

INFORMATION, COMMUNICATION TECHNOLOGY AND ENGINEERING DIVISION

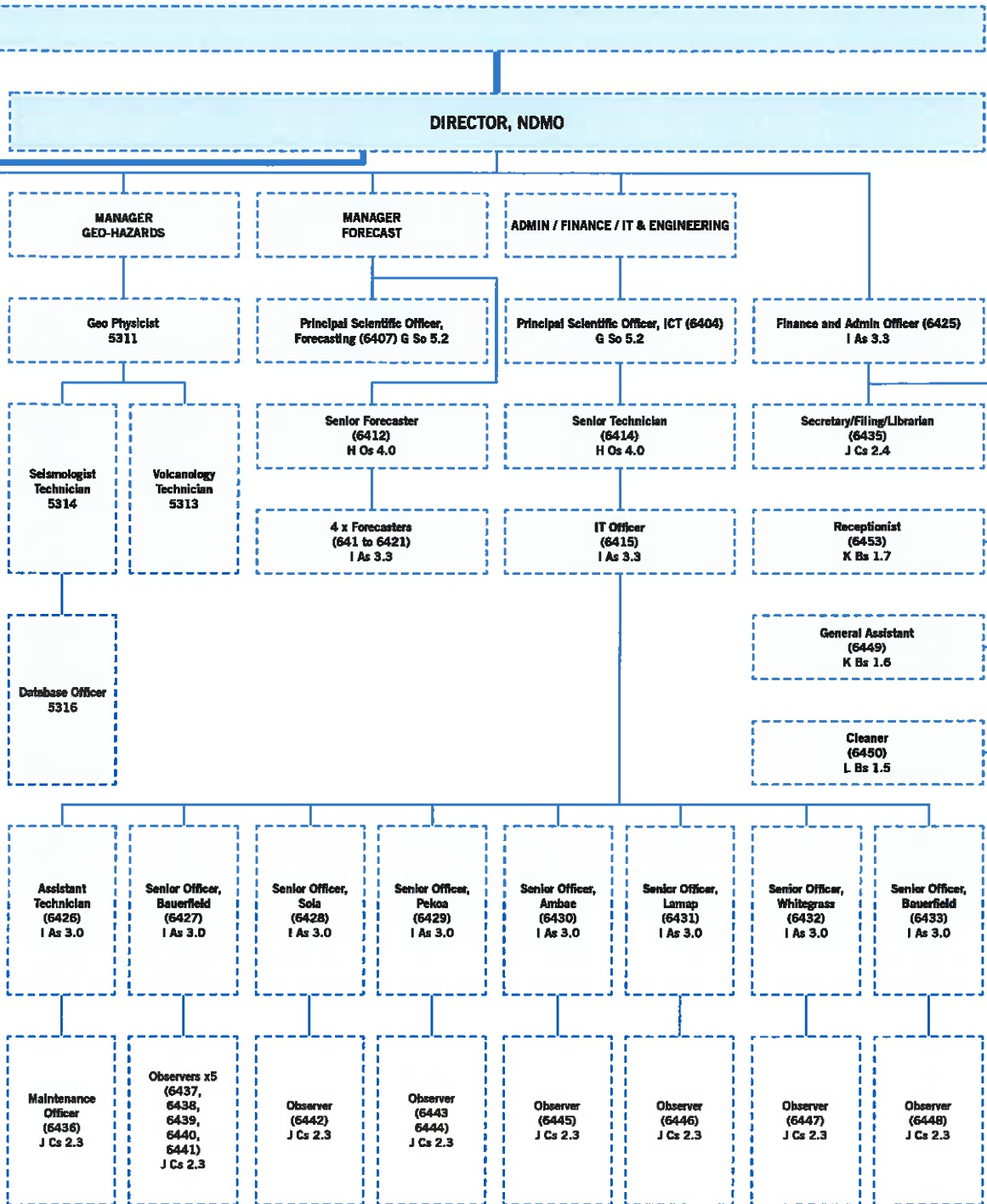
KEY PERFORMANCE INDICATORS	BUDGET ESTIMATE (VATU)	
	INTERNAL	EXTERNAL
KPI-ICT54. Automate delivery and disseminating of weather, climate, geo-hazard information, forecasts, services and warnings via SMS is organized.	15,000,000	5,000,000
KPI-ICT55. Automate delivery and disseminating of weather, climate, geo-hazard information, forecasts, services and warnings via facsimile is organized.		
KPI-ICT56. Automate delivery and disseminating of weather, climate, geo-hazard information, forecasts, services and warnings via answering phone machine(s) is organized.		
KPI-ICT57. ICT / engineering workshop established within VMGD Headquarters building or a new building is constructed.	20,000,000	-
KPI-ICT58. Equipment for ICT and engineering workshop acquired, installed, maintained, upgraded and sustained.		
KPI-ICT59. ICT and engineering management system established, maintained, upgraded and sustained.		
KPI-ICT60. Technology for the VMGD installed, maintained, improved and sustained.		
KPI-ICT61. Redundancy and backup VMGD servers and UPS system installed, maintained, upgraded and sustained.	15,000,000	5,000,000
KPI-ICT62. Technology to support back-up / redundant system for Vanuatu's TCWC identified, installed and maintained.		
	<b>TOTAL BUDGET</b>	
	<b>257,000,000</b>	<b>165,000,000</b>



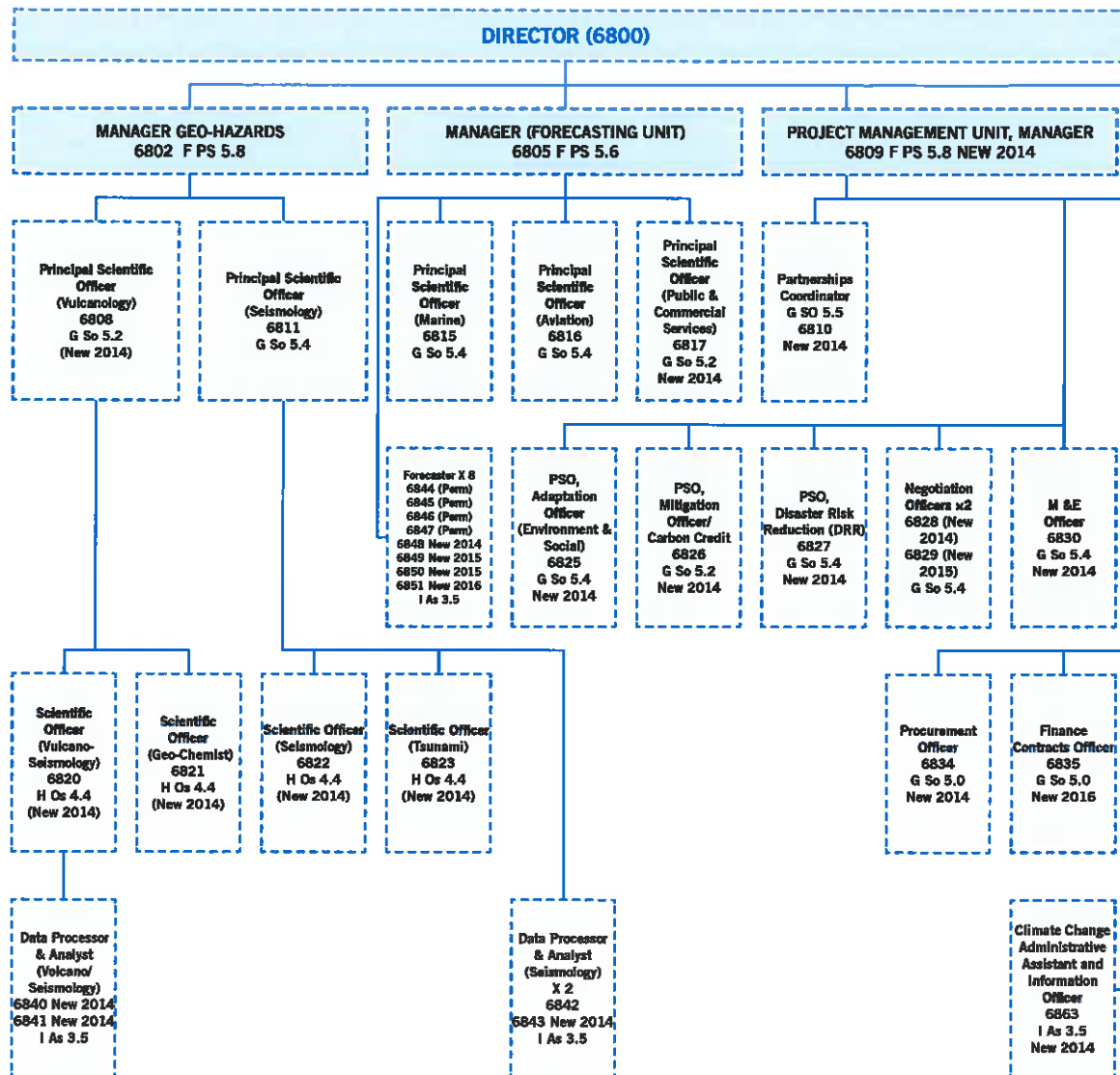
## CURRENT VMGD STRUCTURE



CURRENT VMGD STRUCTURE



**PROPOSED VMGD STRUCTURE**



PROPOSED VMGD STRUCTURE

