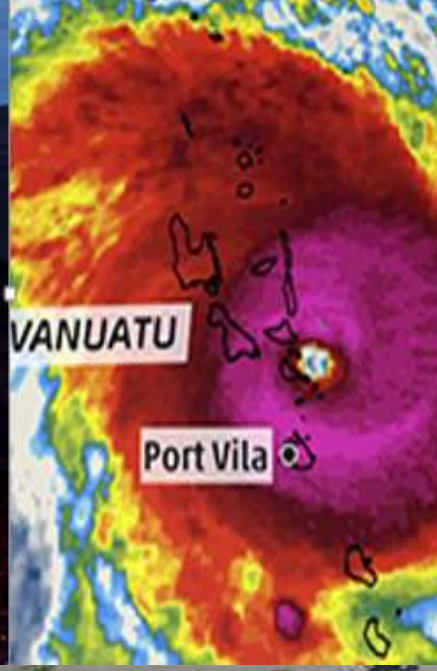

Ministry Of Climate Change

Government of Vanuatu

2015

Annual Report

Vision

"Promote a resilient, sustainable, safe & informed Vanuatu."

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Office of
Minister of Climate Change & Adaptation
PMB 9054
Port Vila, Vanuatu

Honourable Minister Ham LINI VANUAROROA, MP
Minister for Climate Change & Adaptation

The 2015 Annual Report of the Ministry of Climate Change Adaptation, Meteorology and Geo-Hazards, Energy, Environment and National Disaster Management Office

It is with pleasure that I hereby submit to Parliament the 2015 Annual Report of the Ministry of Climate Change Adaptation (MCCA), Meteorology & Geo-Hazards, Energy, Environment and National Disaster Management Office.

The process of preparing the 2015 Annual Report has provided a very valuable opportunity for the Ministry team to look back to the year that has passed, reflect on achievements and challenges but also analyse issues so as to be better prepared and resourced to pre-position the Ministry and Vanuatu for the challenges that will no doubt arise in the new year of 2016.

In 2015 the nation of Vanuatu faced two extreme events: the Category 5 Cyclone Pam and then the strongest El Nino since 1952. These two occurrences tested the capacity of a new Ministry established in December 2013. Government of Vanuatu Ministries and agencies worked together with international and regional partners, donors and Non-Government Organisations to provide critically important expertise. The strong support of the public and private sectors in Vanuatu and internationally must be recognised. A world-wide FLASH Appeal provided valuable financial assistance to response and later, Recovery and Reconstruction Programs.

Cyclone Pam provided valuable lessons for all stakeholders – particularly the natural resilience and knowledge of our people who over hundreds of years developed traditional coping mechanisms to face natural disasters. We realised that the National Disaster Management Office needed better resourcing and operational frameworks – human, legal, policy, technical and budgetary – so that this office is more strongly positioned to carry out its critically important coordination role. As the world's most vulnerable nation to natural disasters, we must ensure we are better prepared for future emergencies.

At this point, I would like to recognise the contribution by Mr Jotham Napat who as Director General of the Ministry guided its amalgamation and led legislative, policy and budgetary measures to establish and grow the Ministry. We wish him well in future endeavours.

Yours sincerely,

Honourable Minister Ham Lini Vanuroroa (MP)

Director General's Introduction

Jesse Benjamin
Director General, MCCA

The preparation of an Annual Report is a people, time and resource costly exercise that we need to morph into an investment. By using this report strategically, we can celebrate our achievements but to learn from past events to guide the Ministry's future.

"The future depends on how we use the past to respond to what we do in the present."

In years to come, we will look back and remember 2015 as the year in which we faced two hydro-meteorological disasters – Category 5 Cycle Pam and one of the strongest El Nino events since the 1950's.

However, every cloud has a silver lining. The focus of the world on Vanuatu highlighted the important role played by our young Ministry and its Departments. Despite our strong collaborative response to these two emergencies, our Government, Development Partners and our sector stakeholders realised that we are severely under-resourced - staffing, financially and technically. Strong support has emerged for restructures and additional resourcing to better prepare us for the next disaster. Department Reports will detail these initiatives and proposed plans to strengthen the Ministry.

It is with pleasure that I hereby submit to Parliament the 2015 Annual Report of our Ministry. The 2015 Annual Report of the Ministry of Climate Change Adaptation, Meteorology and Geo-Hazards, Energy, Environment and the National Disasters Management Office has been prepared under Sub-Section 20 (1) (h) of the Public Service Act 1998 and the Public Finance and Economic Management Act 1998 (Section 30 (3)) in accordance with guidelines of the Public Service Commission.

Yours sincerely

Jesse BENJAMIN
Director General
Ministry of Climate Change

ACRONYMS

ADB	Asian Development Bank
APTC	Australian Pacific Technical College
AVID	Australian Volunteers for International Development
AYA	Australian Youth Ambassadors Program
CBP	Capacity Building Plan
CIPSA	Chartered Institute of Purchasing & Supply Australia
CSO	Civil Society Organisation
CSU	Corporate Services Unit
DEPC	Department of Environmental Protection & Conservation
DFAT	Department of Foreign Affairs & Trade
DG	Director General
DSPPAC	Department of Sector Planning Policy & Aid Coordination
HRM	Human Resource Manager
IFRC	International Federation of the Red Cross
JICA	Japanese International Aid Cooperation Program
OGCIO	Office of the Government's Chief Information Officer
MALAMPA	Malekula, Ambrym, Paama (Province)
M&E	Monitoring and Evaluation
NDMO	National Disaster Management Office
NGO	Non Government Organisation
PAA	Priorities & Action Agenda
Ph D	Doctor of Philosophy
PLAS	Plan Long Act Short
PENAMA	Pentecost, Ambae (Province)
PMS	Performance Management System
PPP	Public Private Partnership
PSC	Public Service Commission
SANMA	Santo Malo Ambrym (Province)
SHEFA	Shepherds Epi Efate (Province)
TAFE	Technical & Further Education
TAFEA	Tanna Aniwa Fortuna Erromango Aneityum (Province)
TA	Technical Advisor
tbc	To Be Confirmed
TNA	Training Needs Analysis
TORBA	Torres Banks (Province)
TVET Program	Technical Vocational Education & Training
USP	University of the South Pacific
VCCI	Vanuatu Chamber of Commerce and Industry
VIPAM	Vanuatu Institute of Public Administration and Management
VMGD	Vanuatu Meteorology & Geo-Hazards Department
VRDTA	Vanuatu Rural Development Training Centre (RTC) Association
VSA	Volunteer Services Abroad (VSA)

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CORPORATE SERVICES UNIT (CSU) REPORT

1.1 Corporate Overview

1.1.1 Functions:

The various functions of the Ministry of Climate Change Adaptation, Meteorology & Geo-Hazards, Energy, Environment and the National Disaster Management Office (NDMO) are implemented through the following:

- Ministry Cabinet, consisting of the Minister and support staff;
- Executive of the Ministry – the Corporate Services Unit – consisting of the Director General, Corporate Services Unit support staff and the Directors of the four Departments constituting the Ministry:
    - Vanuatu Meteorology & Geo-Hazards Department (VMGD);
    - Energy Department;
    - Department of Environmental Protection & Conservation (DEPC);
    - National Disaster Management Office (NDMO).

1.1.2 Vision, Mission, Objectives

Vanuatu Government Vision Statement

"Recommitting to reform to achieve a just, educated, healthy and wealthy Vanuatu"

Ministry Vision Statement

"Promote a resilient, sustainable, safe & informed Vanuatu."

Ministry Mission Statement

"Develop sound policies & legislative frameworks and provide timely, reliable scientific information for service delivery to enable resilient communities, a sustainable environment and economic development."

Corporate Services Objectives

1. Support an enabling framework to develop and promote good governance and resource utilisation through reporting (M&E), provision of sound advice to GoV, Legislative & Policy Frameworks, Planning & Budgeting and Donor harmonisation)

2. Strengthen people to support strategic objectives (restructures & staffing, PMA, capacity building & training, Succession Planning, Retirement)

3. Resource the Ministry to deliver strategic objectives (funding, equipment, infrastructure, Convention & membership fees)

Values

The Values that underpin the work of the Ministry are:

- Service delivery

- High performance against identified priorities
- Team Work
- Positive attitude and action
- Professionalism
- Ethical - honest and transparent
- Equity
    - Gender
    - Geographic
    - Disability
    - Youth
    - Language
    - Ethnicity
- Environmentally responsible
- Reliability, commitment and accountability

1.2 Role

The Office of the Director General constitutes the Corporate Services Unit (CSU) and is primarily responsible for the efficient and effective administration of the overall functions of the Ministry:

- Enhance coordination between the Ministry, Cabinet, other Ministries and the MCCA Departments;
- Coordinate the achievement of the objectives of the Priorities & Action Agenda (PAA) and Plan Long Act Short (PLAS), as well as contribute to operationalising the National Sustainable Development Plan (NSDP);
- Develop and review policies relating to the core activities, especially those relating to Climate Change initiatives;
- Undertake high level reviews/special projects/investigations across the activity areas of the Ministry;
- Provide advice to Directors on matters pertaining to Ministry operations and policy;
- Monitor and review the performance of the Ministry against the agreed objectives and activities provided in the Ministry's Corporate Plan and Departmental Business Plans;
- Manage the human resources of the whole Ministry – including all Departments;
- Manage the budget of the Ministry with regular advice to the Minister, Director General and Directors;
- Ensure the Departments carry out policies within their given budget and forecast revenue is projected;
- Ensure that services are provided to the people of Vanuatu as agreed by the Ministry and Government;
- Facilitate the progression of cross-cutting issues such as the enabling framework of legislation, policy, Convention compliance, donor harmonisation, representation at sector stakeholder meetings as the "public face" of the Ministry.

1.3 Challenges in 2015

The main challenges in 2015 were Tropical Cyclone Pam followed by the slow onset disaster of a major El Nino event. The CSU Report will not overly dwell on these incidents as the Director General's Preface and the reports from the National Disaster Management Office and Vanuatu Meteorology & Geo-Hazards will provide detailed analysis. It is suffice to say the coordination role played by this Ministry for these two events had a considerable negative impact on the absorptive capacity of the Ministry to meet compliance requirements on reporting and planning. In addition, all available resources were re-directed to meet the emergencies.

However, there is always a silver lining behind every cloud. International and national attention was focussed on the Ministry and its response capacity. The Government of Vanuatu acknowledged poor resourcing –

human, financial, technical & infrastructure – for the NDMO. Restructures and additional resourcing were supported and hopefully will strengthen the response capacity of both NDMO and the Ministry in 2016.

1.3.1 Staffing

The Corporate Services Unit structure was approved in 13th December 2013 but was not provided with staffing or operational budget for its activities in 2014 or 2015. Without an adequate Operations Budget for 2015, it was very difficult for the Corporate Services to function effectively. A well-resourced and staffed Corporate Services Unit coordinates the effective functioning of the Ministry to deliver the policies and prioritised activities of the Government to provide effective responsive service delivery. The CSU should provide the enabling framework of planning, budget, policy development and the Human Resource management.

The CSU provides corporate services to four Departments:

i. Vanuatu Meteorology & Geo-Hazards Department (includes Climate Change Project Management Unit),
ii. Department of Energy,
iii. Department of Environmental Protection & Conservation
iv. National Disaster Management Office (NDMO)

However, the Ministry of Climate's Corporate Services Unit has one permanent staff member only. The Director General position has permanent status with the Finance Manager on short contracts and the Human Resources Manager seconded from the Vanuatu Meteorology & Geo-Hazards Department.

Name	Position	Position #	Scale	Employment Status
Jotham Napat	Director General	7000	EL2 8.5	Permanent
Vacant	Executive Officer	7001	F Ps 5.6	Vacant
Blake Napwatt	Finance Manager	7002	G So 5.0	Contract (paid by VMGD)
Mike Waiwai	Human Resource Manager	7003	G So 5.0	Acting (drawn from VMGD)
Jane Kaiapam	Executive Secretary	7004	Cs 2.7	Acting (drawn from VMGD)
Vacant	Administrative Assist.	7005	Cs 2.1	Vacant
Vacant	Driver/Messenger	7006	Bs 1.6	Vacant

1.3.2 Financial Resourcing

There was insufficient Operational Budget approved by the Ministerial Budget Committee for 2015. The Departments contributed by providing *virements* from their own budgets to allow CSU to function. This lack of appropriate resourcing severely hampered the proper function of the CSU office and indeed the entire Ministry. In addition, both the Department of Environmental Protection and Conservation (DEPC) and the National Disaster Management Office (NDMO) have very small operational budgets.

DEPC only has 446,486 vatu a working month with NDMO having 550,140 a month to implement national programs in all six provinces, pay for utilities, stationery, computer & ICT costs and provincial travel for team members. Staff have been forced to buy their own stationery – pens and paper – to continue work. *Cyclone Pam clearly demonstrated having a National Disaster Management Office under resourced and under-staffed places the whole nation at risk.* Having an under-resourced Department of Environmental Protection & Conservation can be said to put Vanuatu's environmental health and future at risk!

Without project and donor support and through the generosity of *virements* from VMGD and Energy, these Departments could not function. New Policy Projects (NPPs) were submitted to the Ministerial Budget Committee to redress this situation in 2016.

The lack of funds has also left Cabinet staff without gratuities or allowances and across all Departments and very serious budget constraints for retirement packages and medical retirements.

All 2015 retirements had to be deferred to 2016 except for one medical retirement paid for out of Cost Centre savings. New Policy Project funding was applied for in the Ministerial Budget Committee process in August 2015 but once again, this was not approved.

MCCA Salary to Operations Analysis for 2015

2015 Budget Allocations				
Department	**Payroll**	**Operations**	**Payroll to Ops (60% to 40% target)**	**Total**
Cabinet	24,473,662	5,947,402	80.4% to 19.6%	30,421,064
CSU	6,839,560	6,367,250	51.8% to 48.2%	13,206,810
VMGD	92,132,213	30,969,193	74.8% to 25.1%	123,101,406
Energy	17,298,856	5,357,836	76.4% to 23.6%	22,656,692
Environment	18,309,742	6,864,107	72.7% to 27.2%	25,173,849
NDMO	16,822,549	6,601,675	71.8% to 28.1%	23,424,224
MCCA Wide	**175,876,582**	**62,107,463**	**74% to 26%**	**237,984,000**

Comment: *60/40 is the world wide "gold standard" benchmark. Even many Western nations struggle to achieve this. The Efalfal Bay Resolution for the PSC in 2011 was for 70% Salary to 30% Operations. MoH and MoE annually run at 82% to 18%.. MCCA needs to improve its Operations Budgets through recurrent NPPs.*

Despite this lack of funding and staff, the Corporate Services Unit was able to facilitate some major initiatives in 2015, largely through strong donor and sector stakeholder support. These will be discussed in full in Department reports following.

1.3.3 Facilities

The Head Office of the Ministry of Climate Change was damaged during Cyclone Pam as were provincial facilities. A request was submitted to the Cyclone Pam Reconstruction Committee for a total of 60 million vatu:

Item	Cost
Head Office (VMGD Building) repairs;	42 million vatu
Bauerfield Weather Observation Office;	8 million vatu
Provincial VMGD Facilities;	4 million vatu
Damaged computer and technical equipment	6 million vatu
TOTAL	60 million vatu

It must be noted that the MCCA building has no Cyclone Shutters and this puts at risk the security of millions of vatu of VMGD's technical equipment and the continued operations of the National Emergency Operations Centre itself.

1.3.3.1 Departmental Facilities

The MCCA building in Port Vila is widely admired by regional organisations throughout the Pacific. However, the creation of the new Ministry with a need for more professional office space for our Minister and his cabinet as well as the amalgamation of Departments previously physically located in other Ministries, has created a need for even more office space.

The Department of Environmental Protection and Conservation continues to be housed in the George Pompidou Building. This pre-Independence hospital converted into office space and largely used by the Ministry of Lands was condemned for use after the earthquake in 2004. Moving the Department of Environment to the MCCA grounds is not only an issue of more effective administration and professional collaboration but also one of organisational justice. We should not be housing our officers in dangerous office quarters.

In 2015, the Department of Energy secured project funding to refurbish a staff house in the grounds of MCCA. The Department of Energy has also secured half of the funding to construct a two storey building on the Ministry grounds to house itself on one floor and the Department of Environment on the second. Further funding support is to be sought from development partners and internal resources.

NDMO intends to provide decentralised services to all six provinces and to this end in 2015 commenced the construction of two Provincial Disaster Centres – one in Torba and one in Tafea. Additional GoV or donor resources will be needed to actualise these infrastructure plans. EDF20 funds may be able to support construction of Provincial Disaster Offices in the remaining provinces and some equipment.

1.4 Policy, Planning and M&E

Despite the detrimental impact of Cyclone Pam on operational capacity and with the lack of an Executive Officer to assist the Director General in preparing reports and plans as required by the Government, the following were completed, reviewed and/or implemented throughout 2015. *Reports and plans are available on request to the CSU in hard or soft copy.*

- MCCA Corporate Plan (2016 – 2018) in draft
- National Disaster Management Office (NDMO) Strategic Plan 2016 – 2020
- VMGD's Strategic Plan 2014 – 2025
- Vanuatu Energy Roadmap
- Department of Environmental Protection & Conservation's Strategic Plan (2014 to 2024)
- 2015 Business Plans
- 2016 Budget Submission
- 2015 Annual Report
- MBC Submission prepared collectively & presented in August 2015;
- Monitoring & Evaluation (M&E) data collected for use in research and by DSPPAC;
    - 2015 Annual Development Report;
    - COM Paper Compliance analysis for DSPPAC;
    - DSPPAC Report on Project progress;
- Digitised data collected by VMGD for internal and regional use and research;
- Briefings for the Minister;
- Discussion Papers;
- Council of Ministers and DCO Papers as needed.

One of the most important developments in policy for 2015 was the approval of the Vanuatu Climate Change and Disaster Risk Reduction Policy. This policy is underpinned by the six principles of accountability, sustainability, equity, community focus, collaboration and innovation.

This Policy aims to be accessible to and will be implemented by a wide range of government agencies and stakeholders. It takes a practical approach in view of Vanuatu's resources, exposure and demographic contexts. It seeks to strengthen existing capacity at national, provincial and area council levels, drawing on our rich heritage, traditional knowledge and lessons learned. *Copy available on request to the CSU, MCCA.*

1.5 Legislative, Convention & Policy Framework

Initial consultations were commenced in 2014 to review, redraft and present to Parliament very important pieces of legislation governing the work of our Departments.

The Ministry progresses compliance to several important Conventions. This has financial ramifications for membership fees and attendance at international seminars. If delegates are not sent and fees lapse, Vanuatu becomes non-compliant. Once signed, legislation and policy needs to be ratified, framed and implemented in Vanuatu to make the Conventions take effect. If this does not occur, signing these Conventions becomes aspirational only. This has an impact on funding made available for project initiatives.

Conventions, Legislation, Policy & Plans

(Version Control 26th January 2016)

CONVENTIONS

- Revised Pacific Platform for Action on Advancement of Women and Gender Equality 2005-2015: A Regional Charter
- SPC and SPREP, Draft Strategy for Climate and Disaster Resilient Development in the Pacific (SRDP)
- SPREP Pacific Islands Framework for Action on Climate Change 2006 – 2015, Apia, Samoa
- SPC, *Pacific Regional Disaster Risk Reduction and Management Framework for Action 2005 – 2015*, Noumea, New Caledonia
- UNDP, Risk Governance Assessment Report: Strengthening Climate and Disaster Risk Governance in Vanuatu, 2014, Port Vila, Vanuatu
- UNDP, Climate Public Expenditure and Institutions Review, Vanuatu Report, March 2014
- SPREP and UNDP (2013) Mainstreaming Climate Change Adaptation in the Pacific: A Practical Guide, Apia, Samoa
- UNISDR, Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters
- United Nations Framework Convention on Climate Change
- Convention on Biological Diversity,
- Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- UN Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa,
- Vienna Convention for the Protection of the Ozone Layer
- Montreal Protocol on Substances that Deplete the Ozone Layer (including amendments in 1992, 1997 and 1999),
- Stockholm Convention on Persistent Organic Pollutants
- Agreement Establishing South Pacific Regional Environment Programme (SPREP),

- The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radio Active Wastes and the Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (Waigani Convention)
- Convention for the Protection of Natural Resources and Environment of the South Pacific (Noumea Convention)
- Convention on Conservation of Nature in the South Pacific (Apia Convention)
- Memorandum of Understanding on the Conservation and Management of Dugongs and their Habitats throughout their Range (Dugong MoU)
- Memorandum of Understanding for the Conservation of Cetaceans and their Habitats in the Pacific Islands Region
- Memorandum of Understanding on the Conservation of Migratory Sharks
- Kyoto Protocol to the UN Framework Convention on Climate Change;
- Sendai Framework for Disaster Risk Reduction (2015 – 2030) and the
- Pacific Island Framework for Action on Climate Change (PIFACC).
- Pacific Regional Solid Waste Management Strategy 2010-2015
- Strengthening Environmental Impact Assessment in the Pacific: Guidelines for Practitioners (SPREP)

RATIFICATION

- Convention on Biological Diversity (Ratification) Act No.23 of 1992
- Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity (Ratification) Act No. 7 of 2014
- Stockholm Convention Persistent Organic Pollutants (Ratification) Act No.12 2005
- Stockholm Convention on Persistent Organic Pollutants Stockholm, 22 May 2001 Adoption of Amendment to Annex A (Ratification) Act No. 5 of 2014
- Stockholm Convention on Persistent Organic Pollutants Stockholm, 22 May 2001 Adoption of Amendments to Annexes A, B and C (Ratification) Act No. 6 of 2014
- Waigani Convention (Ratification) Act No. 16 of 2007
- Vienna Convention for the Protection of the Ozone Layer (Ratification) Act No.3 of 1994
- Montreal Protocol on Substances that Deplete the Ozone Layer (Ratification) Act No.4 of 1994
- The 1997 Montreal Amendment to the Montreal Protocol on substances that deplete the Ozone Layer (Ratification) Act No. 21 of 2010
- The 1999 Beijing Amendment to the Montreal Protocol on substances that deplete the Ozone Layer (Ratification) Act No. 20 of 2010
- The Agreement Establishing the South Pacific Regional Environment Programme (SPREP) (Ratification) Act No. 21 of 2005
- Framework Convention on Climate Change (Ratification) Act [Cap 218]
- Statute of the International Renewable Energy Agency (IRENA) (Ratification) Act No. 15 of 2012.

LEGISLATION

- Environmental Protection and Conservation Act of 2010.
- Ozone Layer Protection Act No. Of 2010 and its Regulations
- Pollution Control Act No. 2013
- Waste Management Act No. 2014
- Electricity Supply Act
- Petroleum (Exploration and Production) Act 1997
- Two Ratification Acts/Bills on Montreal Protocol (Montreal Amendment & Beijing Amendment)
- New Environmental regulations still in development:

- Community Conservation Areas,
- Mangrove Protection,
- Specific Endemic Species Regulation; and
- Waste and Pollution Control regulations.

PROPOSED LEGISLATION:

- Vanuatu Appliance and Labelling Standards - Ready to be passed in the first parliament session.
- Accession to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
- Accession to the Rotterdam Convention on Prior Informed Consent
- Ratification of the Minamata Convention on Mercury
- Ratification of the Cartagena Protocol on Biosafety
- NDM Act (to be revised)

PLANS & POLICIES

- Vanuatu Disaster Risk Reduction and Disaster Management National Action Plan 2006-2016
- Vanuatu Government Climate Change Strategy 2007 (Draft)
- Vanuatu Government National Sustainable Development Plan (Draft)
- Vanuatu Government Priorities and Action Agenda 2006 - 2015
- Vanuatu Government Plan Long Act Short 2013 – 2016
- Vanuatu National Adaptation Plan for Action (NAPA) 2006
- Vanuatu National Climate Change Adaptation Strategy 2011 (Draft)
- Vanuatu National Energy Road Map 2013-2020
- MCCA Human Resources Development Plan 2016 – 2018 (draft)
- MCCA Corporate Plan (2016 – 2018)
- NDMO Strategic Plan 2016 – 2020
- VMGD Strategic Plan 2014 – 2025
- National Biodiversity Conservation Strategy
- National Invasive Species Strategy and Action Plan 2014 – 2020
- National Energy Road Map (2013- 2020) – Currently being reviewed.
- National Energy Policy 2007
- Rural Electrification Policy 2003

1.6 Project/Program Funding & Volunteer Support

Under the strong leadership of the CSU and MCCA Directors, project funding was negotiated and secured in 2015 for several important initiatives across the Ministry Departments.

We would like to take this opportunity to thank our donor & sector partners for their on-going support for these major programs and also for the funding support for the provision of technical support through volunteer programs ie Japanese International Cooperation Agency (JICA), Australian Volunteers for International Development (AVID), Map Action, Overseas Development International (ODI), Australian Youth Ambassadors (AYA), International Federation of the Red Cross (IFRC), Registered Engineers for Disaster Relief (REDR) and New Zealand's Volunteers Services Abroad (VS) as well as identification and funding support for mobilisation of specialist Technical Advisors.

Detailed reports on donor funded project initiatives will be provided in the relevant Department Reports. This invaluable support provided significant opportunities for peer networking and mentoring for MCCA counterparts, contributing to capacity building opportunities across the Ministry.

The Project Management Unit was supported by the CSU in implementing several major programs. Reports on these will be provided in the relevant Department Reports.

1.7 Restructures

Several restructures were undertaken in 2015.

Department	Date Submitted to PSC	Approval Status
Department of Energy	25th May, 2015	Approved 13/08/2015
NDMO	26th June, 2015	Approved 24/09/2015
DEPC	9th September, 2015	Awaiting PSC approval

Implementation Planning was undertaken awaiting confirmation of Financial Visa in 2016.

In addition, the initial consultations took place for a new Department of Climate Change, removing the Project Management Unit from VMGD and the establishment of a National Advisory Board Secretariat within the Corporate Services Unit.

These will be progressed in 2016.

1.8 Capacity Building

Support through the Corporate Services Unit saw many of the Ministry staff secure international scholarships and access to training seminars in the region and overseas, details of which will be provided in the Department reports.

However, in 2015 the Ministry operated without a Human Resource Development Strategy, a gap needing to be redressed to remedy several major concerns such as:

- Performance Management System bi-annual reporting;
- Scholarship & Study Support Policy;
- Retirement Planning;
- Succession Planning;
- Equity & Gender Issues
- Leave Accruals

Drafting of the MCCA HRD Strategy commenced in December 2015 and should be complete by 1st Quarter 2016.

1.9 Public Awareness

As always, public awareness and access to information generated by the Ministry remains a strong focus. Weekly articles appear in the local newspapers "The Daily Post" and "The Independent" with radio and television following many of the stories.

The VMGD Communication and Engagement Strategy, although focussed on public awareness and communication within the VMGD Department, provided strategies replicated by other MCCA Departments.

World Meteorological Day, MCCA Open Day, Energy Week, ICT Week, National Environment Week, World Ocean's Day, Waste Management Awareness and participation in Careers or Schools Awareness Programs continue to positively raise the Ministry's public profile.

1.10 Challenges:

2015 was a challenging year for the entire Ministry for which the Corporate Services Unit provides oversight administrative assistance, policy development, budget and staffing

Challenge	Background	Status
Cyclone Pam and El Nino	These two major events challenged the response and coordination capacity of the new Ministry	Full Report in NDMO Section
Vulnerability	Vanuatu is deemed the most vulnerable nation in the word to natural disasters	CC and DRM being mainstreamed across whole of GoV
Leadership Instability	Frequent changes in Government & leadership changes causes lack of continuity in leadership and operational priorities	On-going
Insufficient budget	MCCCA set up Dec 2013, budget issues for Cabinet, CSU, and operations budgets for Energy DEPC and NDMO insufficient	NPPs applied for in Aug 2015 BC to address financial shortfalls
Restructures	In 2015, 3 restructures were progressed but these remain to be staffed fully and Operations budget provided commensurate with staffing & activities	Energy – Approved NDMO – Approved DEPC – Submitted but not yet approved
Legislation	VMGD Bill drafted NDM Bill legislative drafter short listed	Awaiting Parliament To be drafted 1st Quarter 2016
Reporting	New Ministry non-compliant in some reporting but reports being prepared	2016 full compliance (Refer section on reporting)
HRD Strategy	MCCA has no HRD Strategy to guide staffing issues & planning	Redress by 1st Quarter 2016
Convention & Membership Payments	Backlog of unpaid dues sees MCCA threatened with loss of membership ie WMO	GIZ and VMGD assists with some back payment & NPP requested for dues
Leave Accruals	Significant Leave Accruals – some staff with over 400 days accrued leave – created longitudinal liability	DG instructs Directors to better manage leave of staff
Retirement	No funds available All retirements postponed to 2016	NPP submitted for 2016 of 72,788,661 VT
Medical Retirement	Funds sourced from Cost Centre underspending to accommodate Medical Retirement recommendation	David Nakedau (Geo-Hazards Unit) retires
NIE	Accreditation to become a National Implementing Entity to manage in country CC funding	NIE Status Audit undertaken and Working Group set up to progress issues

Vacancy rates	Across the ministry vacancy rates of 38.9% affect delivery of Ministry initiatives	Analysis of vacancies – refer HR Section
Absorptive Capacity	MCCA has small highly effective Departments with significantly high funding and projects that challenges absorptive capacity – Energy & DEPC	Restructures should ameliorate this problem

2. Conclusion:

The Corporate Services Unit can look back to 2015 not just as the year we faced Cyclone Pam and the strongest El Nino event since the 1950's but also as the year of successful restructures, legislation and policy development pre-positioning up the Ministry for the future.

Ministry Of Climate Change Achievements In 2015 Against PAA & PLAS KPI Matrices

Strategy 3.1.5: Promote political stability through constitutional changes, political parties legislation, and other changes to support stability	*Indicators:* - *Reallocation of Ministries' portfolios implemented.*	2011-2015	13th Dec, 2013: Creation of new Ministry of Climate Change: • Cabinet • CSU • VMGD • Energy • DEPC & • NDMO
PO 3.4: To promote gender equality and empower women			
Strategy 3.4.2: Increase the number of women in decision-making roles in government	*Indicators:* - *Percentage of Women in positions of DGs, SGs, Clerks and Directors in the Public Service;* - *Percentage of women in Parliament, Provincial and Municipal Councils.*	2011 - 2015	• Gender Focal Point Officer Appointed: Patricia Mawa • Women in Senior positions at MCCA tracked & reported
Strategy 3.4.3: Mainstream gender throughout all Government policy development and implementation	*Indicator:* - *Number of gender programs in Government ministries.* - *Number of programs in Line Ministries* - *Gender responsive budget- GRB allocated* - *Inclusion of the GRB in national budget statement* *Baseline: 3 programs in 2013.*	2015	• Gender % tracked and reported • Women@Work@MCCA support group established to advocate for workplace gender issues
Strategy 4.1.3 Improve and strengthen access to high yield and pest and climate change resistant crops, vegetables and fruit varieties and seedlings	*Indicators:* - *Number of high yield & pest & climate change resistant crops, vegetables, fruits and seedlings introduced;* - *Number of hectares of high yield & pest & climate change resistant crops cultivated*	2011-2015	Food Security Cluster established for Disaster Response CC intiatives promote awareness of traditional resilience & coping mechanisms – need to plant resistant crops

Environment and Climate Change			
PO 4.5: Ensure the protection and conservation of Vanuatu's natural resources and biodiversity, taking climate change issues inconsideration.	*Indicator:* - *Develop and implement environmental policies;* - *Number of resource management plans developed.*	2011-2015	DEPC has developed several pieces of legislation The Environmental Protection and Conservation Act 2002; and amendments made to the Act in 2010. Ozone Layer Protection Act No. 27 came into effect in 2010 including the Ozone Layer Protection (Fees & Penalty Notices) Regulation No.100 of 2011. There was also the development of an EIA regulation and amendment order 175 of 2011. The Pollution Control Act and Waste management Act developed and gazetted in 2014. A draft National Environment Policy (NEP) is already in place.. DEPC has developed 3 Regulations 1. CITES Regulation 2. ODS Regulation 3. EIA Regulation
Strategy 4.5.1 Ensure the full implementation of the Environmental Management and Conservation Act 2002 through the development and enforcement of related regulations, and the establishment of the EIA Trust fund.	*Indicators:* - *Number of regulations developed and enforced;* - *EIA Trust Fund Established;* - *Number of EIAs conducted;* - *Number of stop-working notices issued.*	2011-2015	Since 2008, DEPC has conducted about 180+ EIA on development projects around the country. DEPC has also prepared about 250+ PEAs (Preliminary Environment Assessment) for development projects around the country.

			DEPC has issued 40+ 'Stop Work' notices since 2008. In relation to this, we have issued 35+ penalty notices for non-compliances. DEPC generated collected solid revenue streams through EIAs for the Government in 2015. EIA Trust Fund not established The EIA Trust Fund will be part of an overall Environment Trust Fund as per Environmental Management & Conservation Act 2002 once implemented
Strategy 4.5.2 Encourage the development of protected areas.	*Indicator:* - *Number and size of protected areas with a map, survey, management plan and management committee.*	2011-2015	DEPC has assisted with the creation of over 20 protected areas. Currently there is a total of 37 protected areas recognised by the Vanuatu Government covering 10,000 hectares DEPC assisted several community conservation areas (CCAs) to develop the resource management plans in particular those CCAs that are interested in registering their CCAs. At the moment DEPC has developed over 10 resource management plans. As required by the Environmental Protection and Conservation Act, DEPC registered a total of 4 Community Conservation Areas (CCAs)

Strategy 4.5.3 Establish the Biodiversity Advisory Council	*Indicator:* - *Biodiversity Advisory Council established.*	2011-2015	Not established
Strategy 4.5.4 Minimize coastal water and reef pollution associated with sewage, oil and industrial chemicals spills and contamination through strengthened monitoring and enforcement	*Indicator:* - *Public sewage system in Port-Vila and Luganville designed (Plan).*	2011-2015	Port Vila Urban Development Project designed incorporating waste and sewerage treatment
Strategy 4.5.5 Finalize and implement the Vanuatu climate change policy including its integration in the PAA, sector plans and ministry corporate plans.	*Indicators:* - *Vanuatu climate change policy finalized;* - *Number of sector plans that take climate change issues into consideration* *Baseline: Vanuatu climate change policy still in draft (2011)*	2011-2015	Friday 30th October 2015, Vanuatu's Climate Change & Disaster Risk Reduction Policy was launched by the Prime Minister Hon Sato Kilman Litvunvanu # Sector Plans • Ministry of Infrastructure • Ministry of Health • Ministry of Education • Ministry of Agriculture, Livestock Fisheries & Forests • Ministry of Climate Change
Strategy 4.5.6 Review the Vanuatu Meteorological Act to reflect climate change issues and use of the GISM technology for Geo-Hazards.	*Indicators:* *Vanuatu Meteorological Act reviewed to include the relevant changes* *Baseline: Meteorological Act not reviewed* *Target: Done by 2013*	2011 - 2015	VMG Act revised July 2015 ready for presentation Parliament in 2016
PO 4.6 Prepare the people of Vanuatu to face disasters.	*Indicator:*	2011-2015	Resources planned for financial & human resources in

	Allocation of financial and human resources for DRR&DM plans across all sectors of Government		• Ministry of Infrastructure • Ministry of Health • Ministry of Education • Ministry of Agriculture, Livestock Fisheries & Forests • Ministry of Climate Change • All Provincial Governments (6)
Strategy 4.6.1 Strengthen planning and decision-making processes at national and provincial level for DRR and DRM.	*Indicator:* *Number of Ministerial / Sectoral / Provincial / Corporate Plans and annual budgets that explicitly reflect DRR and DM considerations.*	2011 - 2015	• Ministry of Infrastructure • Ministry of Health • Ministry of Education • Ministry of Agriculture, Livestock Fisheries & Forests • Ministry of Climate Change • All Provincial Governments (6)
Strategy 4.6.2 Empower communities to design and implement their strategies for DRR and DRM.	Indicator: Number of communities with their disaster risk reduction and management plans.	2011-2015	Community Disaster Committees established & training delivered
		2015 • Shefa x 2 • Sanma X 8 • Penama X 10 • Torba X 38 • Tafea X 47 • Malampa X 3	2016 • Shefa x 2 • Sanma X 8 • Penama X 10 • Torba X 38 • Tafea X 47 • Malampa X 3
		2015: 108	**2016 - 124**
Strategy 7.4.4: Promote the use of bio-fuels and other alternative energy sources where economically feasible. (Land Transport)	Indicator: - Total volume of biofuel produced and used for transport and electricity generation.	2011 - 2015	
PLAS MATRIX & KPIs (additional to PAA above)			
Infrastructure	. Vanuatu Energy for Rural Development Project (AusAID);	2015	Electricity Connections currently

7.1.4. Promote, explore expand and invest on the use of potential renewable energy, especially where these can be used effectively in remote locations. (Energy) . Proportion of rural population with access to electricity; . Proportion of rural population with access to electricity generated from renewable and non-renewable energy	. Amend URA Act to allow the Minister responsible for Geothermal Act to issue minimum tariff for geothermal electricity; . Takara geothermal project operational; . Talise (Maewo) and Wampu (Santo) hydro; . Solar desalinisation Ambae and Aniwa; . Extend grids Efate, Santo, Malekula; . Global Partnership on Output-Based Aid (GPOBA)		27% (16.7% rural homes, 25% health facilities, 42% schools) Solar Desalination: • Aniwa – 3 communities • Ambae – Lolowai including hospital • Efate Sato and Malekula Grids extended
7.1.8. Improve solid waste management in towns.	Port Vila and Luganville dump site; . Lenakel town dump site.	2015	Waste Management Act passed
7.1.9. Maintain and upgrade the basic meteorological and geo-hazard infrastructure and operations.	. Set up provincial meteorological sub-stations; . Upgrade and maintain the meteorological and geohazard infrastructure. . Percentage of seismic and volcanic stations established and maintained; . Percentage of forecasting and warning issued by the VMS which are timely and accurate.	2015	
P.O 7.4 Respond to Natural Disasters	7.4.1 Maintaining and upgrading the basic meteorological and geo-hazard infrastructure and operations (Meteo). . Establish a tsunami warning system for Port Vila and Luganville	2015	Tsunami Warning System in place, SOP written Simulation Exercises planned early 2016

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Vanuatu Meteorology and Geo-Hazards Department

Annual Report 2015

Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management.

This document comprises of a collection of reports submitted by heads of different Divisions within the Vanuatu Meteorology and Geo-Hazards Department and compiled by the Director. These reports are against the 2014 Business Plans as required by PSC through the Director General's office of the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management.

Acknowledgements:

The Vanuatu Meteorology and Geo-Hazards Department would like to acknowledge and thank the Divisional Managers and their staff for their work in the creation of this document.

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OVERVIEW

REVIEW OF 2015 BY THE DIRECTOR

2015 was a year where Vanuatu was at the receiving end of one of the most severe cyclone to have affected the southern hemisphere. TC Pam was christened on the 09th of March 2015, when it was 600 kilometres northeast of Banks. The monster cyclone took an initial south southeast track to central Vanuatu, and then turns south southwest as it causes havoc through the central and southern islands on the 13th of March 2015.

Tropical cyclone Pam (category 5) was the most severe and strongest cyclone to come very close as well as make landfall over Vanuatu's islands. It tested, to the very core, Vanuatu's tropical cyclone warning system. Despite its severity, the people of Vanuatu were warned well in advance on the projected forecast tack and the severity of the category five system. The VMGD executed the warning system with perfection, using every communication medium available to transmit vital information. Because of the severity of the cyclone and its very close proximity to the islands of Vanuatu, the VMGD, for the first time, issued hourly warnings to the public. And for the first time, Vanuatu used an SMS warning system to alert people of the approaching cyclone. Pam caused severe damage to most of the central and southern islands of Vanuatu. Sadly, a total of 11 lives were lost.

One month after TC Pam, when Vanuatu was starting to rebuild, the country experienced one of the strongest El Nino event on record. The Vanuatu Meteorology and Geo-Hazards Department had informed communities through Vanuatu well in advance before the onset of the event and had used every medium of communication available, including SMS, to transmit vital messages to Vanuatu's population. Despite these timely messages, a lot of sectors, particularly agriculture and water, were severely affected.

Despite the setback, the Vanuatu Meteorology and Geo-Hazards Department (VMGD) has implemented a comprehensive number of the activities laid out in the Business Plan. At the core front, the new structure approved by the Public Service Commission in 2014 continues to be implemented, and near completion. Additionally, the department continues to build a robust multi-hazard early warning system, as well as maintaining a 24/7 weather watch.

The VMGD SDP (2014 – 2023), together with the Annual Business Plan (2015) drives development within the VMGD. These two plans are in line with the Corporate Plan and the National Plan (Priority Action Agenda), and will continue to direct developments within the VMGD over the next 10 years. The department continues to strengthen its human resource capacity. This year, a good number of staff have attended short, medium and long term courses, either locally or overseas. Most of these courses were funded from external sources. The VMGD continues to modernize its way of work. The highlight of the beginning of the modernization process was the installation of two automatic weather stations, two tide gauges and three seismic stations. The project "Improvement of equipment for Disaster management" was generously funded by the Japanese Government.

The establishment of the Project Management Unit/Climate Change and Disaster Risk Reduction Division allows the VMGD to manage a number of climate change and disaster risk reduction projects to assist sectors to adapt and become resilient to climate variability and climate change. Two projects, namely the Mainstreaming Disaster Risk Reduction Project and the Increasing Resilience to Climate Change and Natural Hazards Project will all continue to modernize as well as strengthen VMGD's early warning system.

I would like to take this opportunity to thank the Director-General of the Ministry, the line Departments and their Directors for the support given to enable 2015 to be a successful one. I would also like to thank the Divisional Heads within the VMGD and their staff for their tremendous efforts in making 2015 a very successful year.

David Gibson
Director

ABOUT VANUATU METEOROLOGY AND GEO-HAZARDS DEPARTMENT

The Vanuatu Meteorology and Geo-Hazards Department (VMGD) is a Department within the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management. The VMGD consists of seven Divisions, being: Administration, Weather Forecasting and Services, Climate; Climate Change/Project Management Unit, Geo-Hazards, Observations, and ICT/Engineering. These Divisions work together to ensure the core functions are carried out as indicated in the annual Business Plans, the Corporate Plan, and Vanuatu Priorities and Action Agenda.

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 works to 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 organisation, 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 is achieved through the excellence in the following areas:

- Excellence in weather and climate forecasting processes/products.
- Leading 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.
- Quality control systems in place with supporting administrative and financial resources in place.

Principles

The guiding principles of the VMGD are:

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.
2. **Partnerships:** Partnerships with the WMO, regional inter-governmental agencies and organisations, and technical partners are critical to the success of this Strategy. The participation of VMGD within a national and regional coordinated approach enhances effectiveness in increasing resources, while managing effort and potential overlap between agencies, organisations and development partners, especially where these are managed through national, bilateral and multilateral arrangements. Partnerships between VMGD and its counterparts in other Pacific Island countries have an important role in ensuring cooperation and sharing of lessons-learned within the region.
3. **Supporting gender equality and the most vulnerable in society**: 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 VMGD and in the development and delivery of VMGD services, to the most vulnerable in Vanuatu's society.

4. **Cost effectiveness:** Services should be delivered in an efficient, cost-effective way. The VMGD will endeavor 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, respectively).
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 regional frameworks amongst others, such as the Pacific Islands Meteorological Strategy, the Disaster Risk Management Framework and the Pacific Islands Framework for Action on Climate Change.

Objectives

VMGD aims to meet the growing demands of the Government of Vanuatu and all Ni-Vanuatu for improved meteorological and geo-hazards services that will:

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

The objective of the VMGD is to meet the needs of all people living in Vanuatu for meteorological and geo-hazards information, understanding and services that are essential for their safety, security, and general well-being, and to ensure that meteorological and geophysical data and knowledge are effectively applied to Vanuatu's National Goals.

Areas of Responsibility

The VMGD provides short, medium and long term forecasts and warnings to Vanuatu's public. Its area of responsibility for meteorological and geo-hazard warnings includes 12^{o}S to 23^{o}S and 160^{o}E to 175^{o}E.

Locations

The VMGD has a total of seven observation stations throughout the country, with each weather station strategically located in each province. Sola Station is located in TORBA Province, Saratamata in PENAMA Province, Lamap in MALAMPA province, Pekoa in SANMA Province and Bauerfield in SHEFA Province. TAFEA Province has two observation stations, one on the island of Tanna and one on Aneityum. The head office of the VMGD is located at Nambatu, Port Vila, and houses all Divisions, including the Ministry of Climate Change, Corporate Service unit and the National Disaster Management Office (NDMO).

Outreach within Vanuatu

The VMGD continues to engage in outreach programs throughout the country. Establishing VMGD Communication and Outreach Partnership (COP) working group during 2014 was a strategic achievement for VMGD. VMGD COP working group which is made up of at least one rep form the 7 divisions within VMGD is Co-chaired by PSO Training and Community Liaison Officer and Information and Communication Officer within PMU. The group's main focus during 2015 was on Outreach activities such as community and schools awareness, Exhibitions, community group visits and schools careers talks. However due to funding limitations most of the Outreach activities were done around communities of Efate.

Regional and International Connections

The VMGD relies on regional and international partners to implement some of its core and planned activities, as the recurrent budget is not sufficient to carry out all activities stated in the Departmental Annual Business Plan. The VMGD is thankful for such assistance, and will continue to seek funding from these organisations now and into the future.

PROGRAMS, FUNCTIONS AND SECTORS SERVED

The VMGD has seven major Divisions to carry out its programs and functions (see table below), they are: Administration Division, Weather Forecasting and Services Division, Climate Division, Climate Change and Disaster Risk Reduction/Project Management Unit Division, Observation Division, Geo-Hazards Division, and ICT and Engineering Division.

Table: VMGD Programs & Functions

Programs							
Administration	**Observation**	**Weather Forecasting and Services**	**Climate**	**Geo-Hazards**	**ICT and Engineering**	**Climate Change & DRR PMU**	**Programs**
Provides the VMGD leadership and management structures for the operations of the VMGD.	Maintains adequate observational networks, providing the required data and information needs of the VMGD Divisions and other national, regional, and international users and networks.	Provides timely and quality weather services and products to the general public, mariners, and commercial end-users Provides timely warnings on severe weather events	Provides climate data and information, long term forecast and ENSO information	Delivers quality services and products on geo-hazards and related phenomena to mitigate against potential impacts of geological hazards (earthquakes, tsunamis and volcanic eruptions)	Enables the VMGD to adapt to technological changes and use up-to-date, modern and sound infrastructure and ICT to support all VMGD's services.	Manages and operates the implementation and integration of climate change and disaster risk reduction programs and projects to support national level commitments to Climate Change and Disaster Risk Management multilateral agreements.	**Functions**

VMGD Management Team, All VMGD staff, Line Departments, WMO and other regional organisations	VMGD, Other National Meteorological Services	All sectors	All sectors	All sectors	VMGD, Line Departments	All sectors	Sectors

STRUCTURE AND STAFF

Structure

The new structure to reflect the amalgamation of Meteorology and Geo-Hazards was approved on the 29th January 2014. In the new structure a total of 89 positions and Job descriptions were created and approved by the PSC for VMGD. The Structure consist of six Divisional Managers, a Deputy Director and a Director.

Staff

The table below shows the number staff per divisions and against their employments and gender.

Divisions	Male Staff		Female Staff		Total Staff	Remarks
	Permanent	**Temporary**	**Permanent**	**Temporary**		
Administration	3	1	4	0	**8**	
Weather Forecasting	7		2	0	**9**	
Climate Serves	4	0	2	3	**9**	1 officer on Study Leave and one officer acting in the HRM position of the Ministry of MCCND I AVID volunteer
Geo-Hazards	3	3	3	1	**10**	1 World Bank Support Staff. One officer retired before the end year
Weather Observation	17	2	2		**21**	1 AVID Volunteer
Climate change (PMU)	1	4		3	**8**	Almost 10 Project Consultants
ICT & Engineering	4	1	2		**7**	4 Geo-Hazards Technicians have moved back to Geo-Hazards division
Totals	**39**	**11**	**15**	**7**	**72**	

FUNDING BASIS

The total budget allocated and appropriated by Parliament to cover operations of VMGD for 2015 was 125,492,904 vatu, of which 102,849,013 vatu went to Salary/Personnel Expenses and 22,643,891 vatu went to operations.

The establishment of the Project Management Unit allows the VMGD to manage a number of aid projects, mostly in the area of climate change adaptation and disaster risk reduction. The two main large-scale projects are: Increasing Resilience to Climate Change and Natural Hazards (US $ 11,100,000) and Mainstreaming Disaster Risk Reduction (US $ 7,200,000). Most of the components of the two major projects are executed in other sectors, with the management of the project within the Project Management Unit.

SECTION TWO - PERFORMANCE 2015

DEPARTMENT PERFORMANCE OVERVIEW

The VMGD's performance in of 2015 was above average, with more than 80% of the planned activities carried out.

An overview of VMGD's performance for 2015 is given in the table below.

VMGD Department Performance	
Key Area	**Key Results and Highlights**
Amalgamation	Eighty percent of vacant positions within VMGD structure filled
QMS	Documents reviewed
Policy and Legislation	Climate Change and Disaster Risk Reduction Policy has been launched Concept note on the transfer of Hydrology (science) has been developed and submitted to CSU. Concept note on setting a Melanesian Meteorological Society/Body is being developed and submitted to the MSG Draft legislation completed, and submitted to State Law Office, for enactment in parliament
Operational Procedures	Operational procedures have been updated
Outreach	The VMGD has set up a working group named Communication and Outreach (COP) to oversee outreach activities.
Research and Development	The VMGD has set up a working group named Research and Development Working Group, to oversee research and development activities within VMGD
Infrastructure	The Improvement of Instruments for Disaster Risk Management Project, funded by JICA, Japan has been completed. Two automatic weather stations, two tide gauges and three seismic stations have been build and installed. The VMGD office at Bauerfield Airport has been renovated
People	The staff are one of the main assets of the VMGD. VMGD continues to ensure staff attended short, medium and long-term courses.

Finances	The annual budget for 2015 has seen a 10% reduction compared to the previous year.
Capacity Building	A good number of staff have attended short term training. One staff is currently attending a meteorologist course at PAGASA, completing his WMO Class one qualification in Philippines. Two are currently completing their post graduate qualifications.

PERFORMANCE BY DIVISION

1. ADMINISTRATION DIVISION

DIVISION PURPOSE AND KEY OUTCOMES

The Administration Division provides the VMGD leadership and management structures for the operations of the VMGD. Given the relatively rapid development of the VMGD in the past decade, the Directorship and Corporate Division have sought the appropriate and relevant capacity building and resource support for the increasingly wide array of services the Administration Division provides, as well as building the resources to support those services that go with it.

The Administration Division continues to ensure that it has the necessary and appropriately skilled staff in relevant fields (finance, administrative and human resources) to have an effective administrative component which assures the operation of the various Divisions. The Division also strives to equip the VMGD with the highest possible degree of all resources allocated to it for its operations. The Division, in close consultation, continues to develop appropriate policy documentation to cover the management and operation of the VMGD.

2015 PRIORITY ACTIVITIES AND RESULTS – ADMINISTRATION DIVISION

Programs and Objectives required by the 2015 Business Plan are summarized in the table below with results and commentary provided.

Table: Programs, Objectives and Results – Administration Division (Business Plan)

Programs	**Objective (Targets)**	**Result** ✓✖	**Result Summary**
Amalgamation	Continue the amalgamation process Implement approved structure	✓	More than 80% of vacant positions have been filled
Amalgamation	Transfer of Flood Forecasting to VMGD	✓	Concept Paper on the transfer of hydrology (Science) to VMGD has been developed and submitted to the Minister
Quality Management System	Quality Management system for all services	✓	Two policies were developed within the VMGD: Internal Policy on Quality Management System and Climate Change Policy. The latter has been approved and launched.
Strengthening Operations	Deliver services more effectively	✓	Directives are reviewed yearly to be in line with all changes.

Policies and Directive	Review implications for all VMGD Units	✓	The operational procedures for the Forecasting Division, the Climate Division and the Observations Division were completed, and are continuously reviewed each year. Some procedures for the ICT Division have been completed. Geo-Hazards Division procedures are currently in draft format.
Policy and Legislation	Develop policy and legislation for organizational operations and decision making	✓	VMGD assisted the Ministry of Climate Change complete the Climate Change Policy. The new Legislation draft bill has been completed, and forwarded to the state law office. It will be enacted in parliament by the middle of 2016
Operational Procedures	Review and Develop new operational Procedures if the need arise	✓	This has since been completed
VMGD Strategic Plan	Develop MOUs	✓	MoU agreements have been signed with the following organisations: 1. Department of Agriculture 2. NDMO 3. VBTC 4. Vanuatu Red Cross Society 5. Vanuatu Cultural Centre 6. GIZ
Quarterly, Bi-Annual and Annual Reports	Develop appropriate monitoring and reporting systems to meet the required public service standard	✓	The VMGD continues to prepare Annual reports as per the requirements of the PSC.
Business Plans and Budgeting	Complete all reports, plans and budgeting	✓	Business plans and budget for 2016 was completed on time
Building of office for outer island stations	Maintain VMGD's presence at provincial level	✖	The department was not able to source additional funds to build offices for outer island stations. It however source funds for refurbishment.
Opening of New Building		✖	The opening of the new building did not eventuate
Continuation of Working Groups	Working groups function according to their terms of reference	✓	The COP and the Research working group have developed their terms of reference and

Strategic Development Plan 2014-2023

The VMGD has launched its Strategic Development Plan (SDP) 2014-2023. The plan is in line with the Ministry's Corporate Plan and the National Plan (PAA), and is also reflected in the Annual Departmental Plan. The plan will be reviewed in 2016.

VMGD FINANCES

The total budget allocated and appropriated by Parliament to cover operations of VMGD for 2015 was 125,492,904 vatu, of which 102,849,013 vatu went to Salary/Personnel Expenses and 22,643,891 vatu went to operations.

Expenses Detail Report — Government of Vanuatu

For transactions between 1 January 2015 and 31 December 2015 — **Extracted on 27/01/16 09:55**

Filters Applied to this Report	
Fund	2-Recurrent Fund
Ministry	M20-Ministry of Climate Change Adaptation, Geohazards, Meteorology and Energy
Dept	75-Vanuatu Meteorological Services
Cost Centre	
Activity	
Job Code	From 750004-Administration to 750015-Geohazards
Currency	Vatu
Book	Primary Book (vatu)

Account	Description	Actual	Commitment	Total	Budget	Under/(Over)
	Personnel Expenses					
8ASP	Provident Fund	268,543	-	268,543	-	(268,543)
8AWD	Daily Rated Wages	2,613,126	-	2,613,126	-	(2,613,126)
8AWL	Leave expense	379,112	-	379,112	-	(379,112)
8AWO	Overtime Wages	1,022,188	-	1,022,188	-	(1,022,188)
8AWP	Permanent Wages	4,295,372	-	4,295,372	-	(4,295,372)
	Personnel Expenses	**8,578,341**	**-**	**8,578,341**	**-**	**(8,578,341)**
	Operating Expenses					
8CAB	Subsistence Allowances	1,700,000	-	1,700,000	1,960,000	260,000
8CBI	International Accommodation	75,000	-	75,000	100,000	25,000
8CCL	Local Courses	-	-	-	280,000	280,000
8CET	Other Fees	273,807	-	273,807	280,000	6,193
8CFV	Vehicles Fuel	663,111	-	663,111	1,200,000	536,889
8CGM	Mail Carriage Freight	-	-	-	200,000	200,000
8CGO	Other Charges - Freight	67,814	-	67,814	280,000	212,186
8CGR	Transport - Freight	-	-	-	400,000	400,000
8CGS	Storage - Freight	-	-	-	188,000	188,000
8CIE	Equipment Hire	-	-	-	210,000	210,000
8CIF	Facilities Hire	-	-	-	30,000	30,000
8CIV	Vehicles Hire	154,223	-	154,223	20,000	(134,223)
8CJO	Office Cleaning	691,551	-	691,551	400,000	(291,551)
8CKD	Advertising - Communications	372,914	-	372,914	260,000	(112,914)
8CKP	Postage - Communications	69,540	-	69,540	100,000	30,460
8CKR	Printing - Communications	954,374	-	954,374	521,163	(433,211)
8CKS	Stationery - Communications	826,335	-	826,335	1,070,000	243,665

8CKT	Telephone / Fax - Communications	2,853,707	-	2,853,707	1,030,000	(1,823,707)
8CMG	General - Materials	1,876,206	-	1,876,206	220,000	(1,656,206)
8CMO	Office - Materials	20,174	-	20,174	20,000	(174)
8COF	Refunds	8,501	-	8,501	-	(8,501)
8COI	Incidentals	1,367,269	-	1,367,269	400,000	(967,269)
8COP	Official Entertainment	488,814	-	488,814	600,000	111,186
8COT	Termination Payment	3,889,620	-	3,889,620	-	(3,889,620)
8CRB	Buildings Repairs & Maintenance	1,753,635	-	1,753,635	1,070,000	(683,635)
8CRE	Equipment Repairs & Maintenance	208,433	-	208,433	1,111,000	902,567
8CRH	Houses Repairs & Maintenance	160,000	-	160,000	586,000	426,000
8CRV	Vehicles Repairs & Maintenance	876,001	-	876,001	1,020,000	143,999
8CTI	International Travel	276,823	-	276,823	360,000	83,177
8CTL	Local Travel	827,356	-	827,356	1,510,542	683,186
8CUE	Electricity Utilities	1,561,156	-	1,561,156	2,000,000	438,844
8CUW	Water Utilities	78,353	-	78,353	400,000	321,647
8CWL	Local Workshops	-	-	-	1,477,294	1,477,294
8CZV	Value Added Tax	2,191,120	-	2,191,120	200,000	(1,991,120)
8EBR	Buildings - Renovation	-	-	-	700,000	700,000
8EEA	Equipment - Additional General	12,445	-	12,445	200,000	187,555
8EEC	Equipment - Computer	696,973	-	696,973	1,060,000	363,027
8EER	Equipment - Replacement General	100,000	-	100,000	250,000	150,000
8EFO	Furniture - Office Furniture	37,333	-	37,333	220,000	182,667
8EHR	Houses - Renovation	-	-	-	80,000	80,000
8EVR	Vehicle - Replacement	3,777,780	-	3,777,780	1,629,892	(2,147,888)
8FCB	Bank Charges	12,500	-	12,500	-	(12,500)
	Operating Expenses	**28,922,868**	**-**	**28,922,868**	**23,643,891**	**(5,278,977)**
	Total Expenditure	**37,501,209**	**-**	**37,501,209**	**23,643,891**	**(13,857,318)**

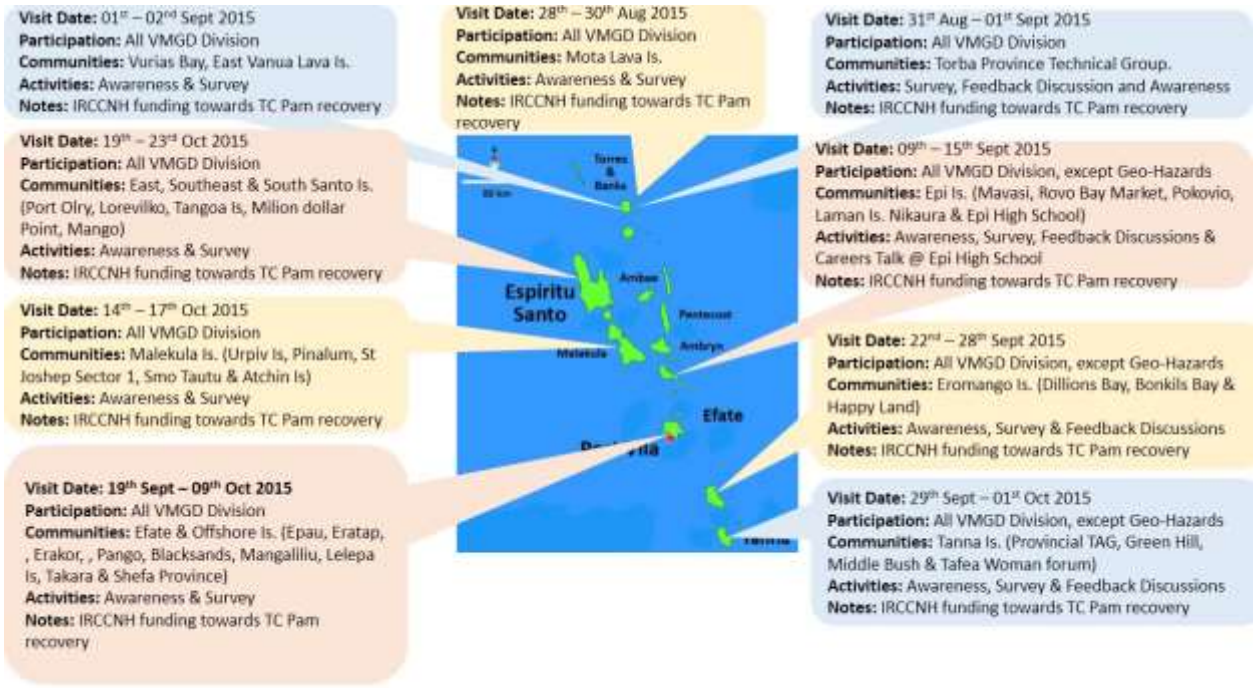
COMMUNICATION, OUTREACH AND PARTNERSHIP (COP) STRATEGY 2014 - 2017

After the launching of the initial Communication and Engagement & Partnership (CEP) Strategy in 2012, the review in 2014 links the strategy to the VMGD Strategic Development Plan for the 2014 - 2023 which alluded to the activities as the COP. In line with the COP strategy, VMGD used its communication channels and those established by other Government Departments, NGOs and Civil Society to share and receive information, knowledge and actions on meteorological and geo-hazard issues.

In 2014 the VMGD Communication, Outreach and Partnership Internal Working Group (COPIWG) including the terms of reference (TOR) for the group was established. The chairmanship was co-chaired by PSO-Training and Community Liaison officer and the PMU information and communication officer and the group composed of at least one rep form all VMGD 7 Divisions. Since 2012 AVID has been supporting VMGD COPIWG and in 2015 the COPIWG was very fortunate to have the invaluable contributions and expert guidance from Ms. Imogen Aitken. The monthly meetings of the COPIWG was the main avenue where all division reps brought in their

COP related activities to the table and the COPIWG made proposals to the management on strategies and options on how to carry out the activities.

One main activity during 2015 after TC PAM was the IRCCNH funded Survey and awareness activities for Post Cyclone PAM. Below is an image of the coverage area including the dates and details of the communities that were visited:



VMGD Team talking to a fully pack Forum "Tafea woman yumi toktok", Lenakel Tanna

ACHIEVEMENTS COMMENT

There were many developments within the VMGD in 2015. More than 80% of activities stipulated in the Division Business Plans were implemented across all Divisions, funded either through the recurrent budget or through regional funding and/or bilateral aid.

A high number of trainings were conducted over the course of the year thanks to donor funding. Most trainings were short term, but one staff member from the Forecasting Division and one staff member from the Climate Division completed longer term training, WMO Class 1 and PHD studies respectively.

At the national level, the creation of the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management is seen as a huge success for the VMGD, as it reflects that the National Government sees the importance of the role played by the VMGD on the issues of weather, climate variability, climate change, disaster risk reduction, mitigation and early warning systems. Vanuatu is an island nation that is very vulnerable to natural hazards[1]. In light of that fact, the establishment of the Ministry by the current government reflects an important mandate; to save lives and property, as well as reduce the risk of these natural hazards in the short, medium and long term, through better planning.

In general, 2015 saw many achievements from each Division, each reflected in this annual report. At the Directorship level, the implementation of 80% the current approved structure, the continuous weather watch 24 hours a day/7 days a week, and the continued modernization of VMGD through various projects that will be implemented within the next two to three years.

The success of a Government organisation is measured on the services it provides to Vanuatu's population; importantly the number of services provided by the VMGD continues to grow. The VMGD continues to find ways deliver these services to the 'the last mile', and this includes building partnerships with various organisations, both government and non-government organisations.

CHALLENGES COMMENT

The VMGD faced many challenges when trying to implement its plan in 2015. One primary challenge is the recurrent budget, which at times proves insufficient to assist Divisions in implementing all of their activities described in the business plan. The devastation caused by TC Pam has disrupted the VMGD's communication system, as well as damaged most of its infrastructure. The Head Office was also damaged during TC Pam, and is yet to be repaired.

Communicating products and services, particularly warnings, to remote communities in Vanuatu is also a challenge. This report below will detail each of the unique challenges specific to each Division in greater detail.

2. WEATHER FORECASTING & SERVICES DIVISION (WFSD)

BACKGROUND INFORMATION

The Weather Forecasting & Services Division (WFSD) is one of the seven divisions within the Vanuatu Meteorology & Geo-Hazards Department (VMGD). WFSD has a total of nine weather forecasters which comprises of the Divisional Manager, two Principal Scientific Officers (PSO's) and six senior and junior forecasters. Out of the nine forecasters, there are five WMO Class I which adds the number to six with the current Director of the Department, Mr. David Gibson. Currently, two are on study leave at which Moirah

[1] Highest World Risk Index to Natural disasters; http://en.wikipedia.org/wiki/List_of_countries_by_natural_disaster_risk

Matou is doing Masters in Environmental Science at Monash University in Australia, while Levu Antfalo is undertaking his WMO Class I Meteorology at the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) in the Philippines. Once Levu Antfalo returns, the number of WMO Class I forecasters will increase to seven by end of 2016.

The primary function of the WFSD is to provide short to medium range weather forecasts targeting mostly the Aviation, Marine, Tourism, Agriculture, fisheries, Government, nongovernment organizations and the public at large. WFSD also provides warnings for Severe Weather, such as heavy rainfall, flash flooding and inland winds, High Seas warnings for Vanuatu area during the Tropical Lows and Tropical Cyclones and Marine wind warnings for Vanuatu coastal waters. WFSD is also responsible for the Tsunami Advisories whenever an earthquake triggering a tsunami and posing a threat to Vanuatu Islands. WFSD also involved in a survey to improve the products and services and case studies (research) and other specifically tailored services.

DIVISION'S PURPOSE AND KEY OUTCOMES

The WFSD contributes significantly to VMGD's purpose by providing timely and quality weather services and products to the general public, mariners and commercial end-users, via qualified meteorologists deploying the appropriate and state-of-the-art weather forecasting systems.

The WFSD continuously monitors and ensures that all Division products and services are delivered in a timely manner. To further ensure quality services and products by way of recruiting the highest qualified science graduates for deployment as qualified meteorologists. As well as that, the Division regularly assesses and evaluates its weather forecasting systems to ensure the state-of-the-art and most appropriate technologies are being deployed to produce quality services. Finally, the Division is also responsible for the implementation of the Quality Management System (QMS) to monitor, evaluate and improve the Division's products and services standards.

PRIORITY ACTIVISTS AND RESULTS 2015

Weather Forecasting & Services Division (Business Plan)			
Programs	**Objective (Targets)**	**Result ✓ or ✖**	**Result Summary**
24-hours Operations	Provide 24-hour weather watch forecast	✓	24/7 operations sustained
Weather on TV	Provide weather presentation on TV	✖	TV Weather Presentation, available daily on National TV and uploaded on Website
Services from the National Forecasting Center	Maintain all current forecast services, strive for improvement as well as add additional services	✓	Maintenance of the current forecasting services, continuous improvement and integration of additional services
Quality Management System	Attain ISO 9001:2008 Certification	✖	Continuous Quality Management System implemented for aviation Services, continuous customer feedback ISO 9001: 2008 Certification by November 2014
All Forecasters to be graduated	Upgrade Human Resources	✓	Services improved to meet national and international standards
Improve forecast preparation and dissemination	Develop forecasting automated software - Integrated Weather Forecasting System (IWFS)	✖ ✖	Software to be used by end of 2015. Improve VMGD Website, automated product/service upload by end of 2015

Prepare Annual Report	Monitor and evaluate the overall work of the division	✓	Annual Report draft

ACHIEVEMENTS

The 24/7 shift continued to be managed throughout the year generally well. The WFSD maintained the service delivery in terms of its quality weather forecasting products and continued to improve on all the current products, whilst endeavoring to meet the needs of the end users. As far as the human resources capability is concerned, WFSD is manned with 3 WMO class I Forecasters, with one female staff on WMO fellowship at BoM. Nonetheless, there are always areas with room for improvement which include: Weather TV production, development of an Integrated Weather Forecasting System (IWFS), improvement of the website and attaining the ISO standards for Aviation forecasters.

CHALLENGES

One of the most challenging tasks for the WFSD was to get both the junior and the senior forecasters ready for the severe TC Pam Category 5. It was a real practical test for the entire operation. A real test for our human capacity, a test for the TC SOP's and Directives, a test in the Scientific know-how, a test in the network connectivity, communication and the backup system.

The WFSD has also faced a number of other challenges apart from the actually monitoring and tracking of TC Pam. One of which was to obtain permanent employment status for the three contracted staff from the PSC in order to be compatible with the workload and shortage of staff. Another challenge was after TC Pam, the Manager received instruction from the PM's Office and the Office of the DG to coordinate the Disaster Relief Distribution in the urban and semi-urban areas within Port Vila. He spent five months from assessment, second, third and fourth food distribution. The temporary management of the forecast operation was managed by the PSO commercial & Public Weather with the cooperation from the senior forecasters.

The annual internal TC training had not been conducted as a preparation for the 2015/2016 TC season. As this is an important training that is usually being conducted by both the Director, Mr. David Gibson, and the Manager of the Forecasting Division Mr. Fred Jockley. Unfortunately, it was not possible since the Manager was still busy with the food distribution and finalizing the reports.

PRODUCTS & SERVICES PROVIDED BY WFSD

There are no additional forecast products or service introduced this year, 2015. The usual services and products are Public Weather Forecasts, Marine Weather Forecasts, Aviation Weather Forecasts Weather Warnings and Tsunami Advisories and they are as follow:

Public Weather Services

1) Forecast Policy is prepared and uploaded on website and accessible on:
   http://www.meteo.gov.vu/Forecasts/ForecastPolicy/tabid/126/Default.aspx

2) 7-Day forecast for six provincial centres, issued twice a day via client email list and uploaded on:
   http://www.meteo.gov.vu/Forecasts/7DayForecastforSelectedCentres/tabid/192/Default.aspx

3) Public Forecast is prepared and sent to the national Radio, FM stations every four to five hours a day, and uploaded on website which is accessible on: http://www.meteo.gov.vu/Forecasts/MediaForecast/tabid/283/Default.aspx

4) Media forecast for Weekly IPV, Independent Newspaper and daily forecast for Daily Post Newspaper which is accessible on: http://www.meteo.gov.vu/Forecasts/MediaForecast/tabid/283/Default.aspx

5) Hourly images are uploaded on the VMGD's website:

http://www.meteo.gov.vu/MapsandCharts/LatestSatelliteImage/tabid/82/Default.aspx

6) Vanuatu Cities forecast is prepared and sent via email to the World Cities Forecast of the WMO every 24 hours

Marine Weather Services

1) 7. 4-Day coastal Marine forecast including wave and swell heights, issued twice a day. The marine forecast covers six boundaries: The Northern, Central, Channel between Efate and Erromango and the Southern waters including Port Vila and Luganville Harbours is uploaded on: http://www.meteo.gov.vu/Marine/tabid/65/Default.aspx

2) High Seas forecast for Vanuatu's Area (from 12°S to 23°S and from 160°E to 175°E) is prepared and uploaded on website every twelve hours. This can be accessed on: http://www.meteo.gov.vu/Marine/HighSeasForecast/tabid/293/Default.aspx

Aviation Weather Services

1) Terminal Aerodrome Forecast (TAF) for all seven aerodromes (Sola NVSC, Pekoa NVSS, Saratamata NVSG, Lamap NVSL, Bauerfield NVVV, Whitegrass NVVW and Aneityum NVVA) are prepared and sent six hourly through GTS, to pilots email group and also uploaded on: http://www.meteo.gov.vu/AviationServices/TerminalAerodromeForecasts/tabid/222/Default.aspx

2) ARFOR – Area Forecast for the whole Vanuatu group is prepared and sent through GTS, to pilots email group and also uploaded on: http://www.meteo.gov.vu/AviationServices/AreaForecast/tabid/223/Default.aspx

3) TTFs are prepared and issued only for international aerodromes (NVSS, NVVV and NVVW) when weather warranted. This uploaded in website and can be access on: http://www.meteo.gov.vu/AviationForecasts/TrendForecast/tabid/127/Default.aspx

4) ROFOR-Route Forecast is prepared and issued to Air Vanuatu for its international flights as per its International weekly flight schedules.

Weather Warnings

1) Marine wind warning or strong wind warning issued six hourly only when weather warranted

2) High Seas wind warning issued only during tropical cyclones and or during a tropical low for Vanuatu area

3) Tropical Cyclone three Day outlook is prepared and uploaded on website twice a day only during cyclone season from the beginning of November 2013 till end of April 2014.

4) Tropical Cyclone Information, Advisories and Warnings are prepared and sent to tropical cyclone subscribers for any system which may be formed within Vanuatu's area of responsibility from the beginning of November 2013 January till end of April 2014.

5) Tropical Cyclone Forecast Track Map is prepared and sent to tropical cyclone subscribers only during a cyclone event affecting Vanuatu. This map indicates the past track and the next 48 hours forecast track.

6) Severe weather warnings issued for heavy rainfall ≥100mm/24hr and inland winds of ≥40km/hr.

7) Tsunami Information and Advisory are prepared and issued with three hours validity only when there is an earthquake triggering a tsunami and posing a threat to Vanuatu.

Tsunami Information & Advisory

The Tsunami Information or Tsunami Advisory will be prepared and issued only during the events when earthquakes occurred and triggered potential tsunami threat to Vanuatu. There are basically two thresholds: (1) one for local or regional tsunami and (2) the other is for the Pacific wide or international tsunami. The Tsunami operation are stipulated under the Tsunami Directive or SOP. In any tsunami instances, the Tsunami Information or Tsunami Advisory will be issued with three hours validity only when there is an earthquake triggering a tsunami and posing a threat to Vanuatu. However, VMGD had no major tsunami during 2015, although it had recorded a few events:

1) A Tsunami Information was issued for an earthquake which occurred on the 20th March 2015 at 12:54 am local time. Its magnitude was 6.0 with epicenter near 18.6°S and 168.4°E. This was about 96 Km SSE of Efate Island and about 57 Km WNW of Erromango Island. No destructive Tsunami expected within Vanuatu.

2) A Tsunami Advisory was issued for an earthquake which occurred on the 30th of March 2015 at 10.49 am local time. Its magnitude was 7.6 with epicenter near 4.7°S and 152.7°E. This was about 1,800 Km NW of TORBA province. No significant destructive tsunami was expected within Vanuatu.

3) A Tsunami Information was issued for an earthquake which occurred on the 21st of May 2015 at 09:48 am local time. Its magnitude was 6.9, depth of 10 Km with epicenter near 10.9°S and 164.1°E near Santa Cruz Island. This was about 363 Km NW of Torres Group. No destructive tsunami expected within Vanuatu.

4) A Tsunami Information was issued for an earthquake which occurred on the 18th of July 2015 at 1:28 pm local time. Its magnitude was 7.5 with epicenter near 10.3°S and 165.2°E. This was about 613 Km north of TORBA. No destructive tsunami expected within Vanuatu.

RECORDS OF TC'S DURING 2014-2015 SEASON

Following the release of the TC Seasonal forecast for 2014-2015 for Vanuatu's Area (12°S to 13°S and 160°E to 175°E), the Vanuatu Meteorology & Geo-Hazards Department through the Climate & Services Division (CSD), indicated that Vanuatu-New Caledonia region will experience the greatest cyclonic activity with at least 2 to 3 cyclones passing close to the countries. Given the ENSO neutral conditions observed to be existing over the Equatorial Pacific, with a weak El Nino developing in the following months. The forecast also indicated that there will be at least one or more cyclones with category 3 or higher. With the climate TC Outlook in perspective for the 2014/2015 TC season, at the end of the season, VMGD officially recorded three cyclones: (1) Tropical Cyclone Ola occurred on the 30th of January and lasted until 01st of February 2015 (2) The next was Severe Tropical Cyclone Pam from 9th till 14th March 2015 and finally (3) Severe Tropical Cyclone Solo which occurred from the 10th till the 12th of April 2015.

(i). TC Ola Category 2 (30 Jan – 01 Feb 2015)

TC Ola started as a tropical low pressure on the 30th of January 2015 with central pressure estimated at 1000 hPa about 740 Km west of Malekula. The first TC Information was issued although the system was still outside of Vanuatu's Area of Responsibility. The low pressure headed east-southeast with potentially developing. It then finally moved into Vanuatu's Area of Responsibility at 11:00 am. At that stage, there was no significant threat yet to any of the islands of Vanuatu. On the 31st of January, the tropical low was about approaching at 580 Km west southwest of Santo and continued to develop with central pressure decreasing to 998 hPa. At this time, a severe weather warning for heavy rainfall was issued for Northern and Central Vanuatu.

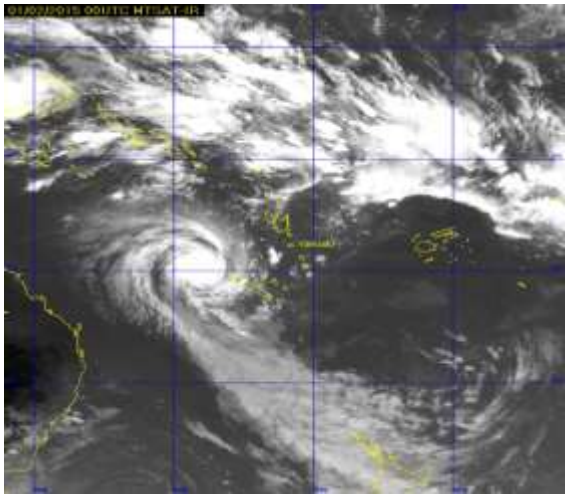
The Information bulletin was later upgraded to Advisory at 11:00am on the 31st of February 2015. That was when the Tropical Low met the criteria of becoming a Tropical Cyclone and was named Tropical Cyclone Ola with it central decreasing to 990 hPa, a Category 1. It arrived at 620 Km west southwest of Santo and continued to move south-southeast well away from the Vanuatu Islands. There were no direct threat of winds felt in Vanuatu islands however, High Seas Wind Warning was issued for open waters west of Vanuatu near the system. Severe weather warning for heavy rainfall and possible flooding was also issued for Northern and Central Vanuatu.

Tropical Cyclone Ola moved in a southeast direction and continued to intensify when it was 770 Km west of Erromango Island. By 11:00 pm, TC Ola was upgrade to Category 2 and continued to move south-southeast well away from southern Vanuatu. At 5:00 am on the 01st of February 2015, the final information was issued as Cat 2 TC Ola (984 hPa) moving away from Vanuatu Area of Responsibility.

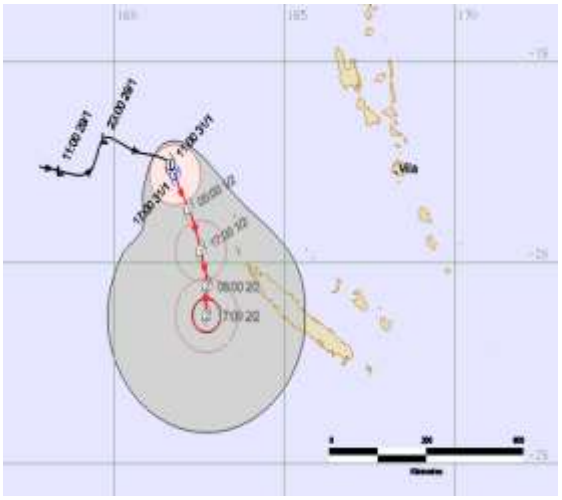
Based on the track of Tropical Cyclone Ola, there were no physical damages done to any islands of Vanuatu. However, marine strong wind and high seas wind warning were issued during the duration of TC Ola in Vanuatu area.

Number of TC Bulletins issued for TC Ola

Tropical Cyclone	Information Bulletins	Advisory Bulletins	Warning Bulletins	Forecast Track Maps
TC Ola	6	3	Nil	9



TC Ola at 11:00 am Sunday 01 February 2015



VMGD's Forecast track map

(ii). Severe TC Pam Category 5 (09 - 14 March 2015)

TC Pam began as a tropical Low on the 06th March 2015, some 800 Km northeast of Torres Group. At that time, its central pressure was 997hPa with winds near the center estimated at 30 knots.

Favorable environmental conditions near the surface and at upper level, allowed the system to develop and intensify and was named as TC Pam at 6:00 pm on the 09th of March 2015. At that time, the system was 600 Km northeast of the Banks group with winds increasing to 40 knots and its central pressure decreased to 990hPa.

The first TC Information on Pam was issued by VMGD on the 10th of March 2015 when Pam was somewhat 600 Km northeast of the Banks group but still outside of the Vanuatu Tropical Cyclone Tracking Map and of course outside of the Vanuatu's Area of Responsibility (12°S to 23°S and 160°E to 175°E).

The first TC Advisory was then issued at 6:00 pm on the 10th of March when Pam was 560 Km northeast of the Banks Group. The first TC Warning was issued at 9:00 am on the 11th of March when it was 425 Km northeast of Gaua. At that time, TC Pam had moved into the Vanuatu Tropical Cyclone Tracking Map. With a steady decline, the system quickly dropped its central pressure to 966hPa, with winds estimated at 130 km/hr.

Pam rapidly intensified into a Category 4 system towards 11:00 am on the 12th of March, as it moved closer to the northern islands of Vanuatu in the TORBA province. It then took a south-southwest direction, moving very close to Vanuatu. Within an hour, Pam quickly intensified and made history for VMGD for reaching the highest Category 5 on the 13th of March, as it took a south-southwesterly path to the east of PENAMA province.

The VTCWC at that stage began to issue hourly warnings from an original three hourly warnings as of midday on Friday the 13th of March 2015. During that time, the system was moving closer to the eastern parts of MALAMPA and PENMA provinces. It moved with great momentum past the Shepherds group. Severe TC Pam at that instant, was heading south and intending to make a south-southeast curve as it was moving past the island of Efate within the eastern close proximity the island where capital Port Vila is. During that time, it was approaching midnight. The closest distance where the Cat 5 Pam passed within SHEFA province was 30 Km east-northeast of the Shepherds group and 45 Km east of Port Vila.

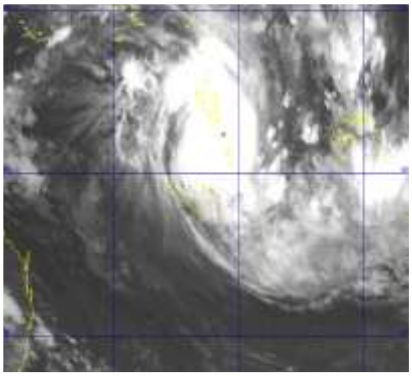
As Cat 5 TC Pam was leaving Efate Island, it took a south-southeast direction. It then made landfall on the island of Erromango in the TAFEA province at 5:00 am on the 14th of March. Towards 8:00 am, it picked up speed and was approximately 20 Km west of Tanna. It maintained a south-southeast direction of movement

away from TAFEA province the whole day on Saturday. The last warning which was warning number 47 with the final Forecast Track map number 48 were last issued at 8:00 pm that evening on Saturday the 14th of March 2015.

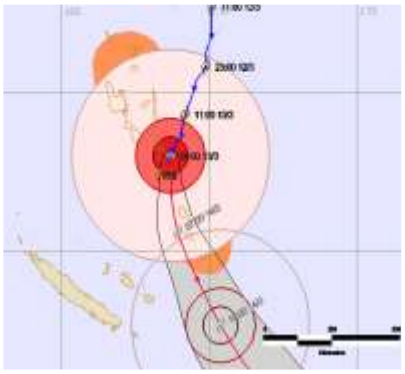
Tropical cyclone warnings from the Vanuatu Meteorology and Geo-Hazards Department were issued at least 24 hours before the onset of Gales. Warnings were issued every three hours, and then every one hour as the system moved closer to Vanuatu islands. Although the system came very close to Port Vila and caused a lot of damages to VMGD building, warnings continued to be issued interrupted given the backup generator that was immediately turned on to supply power to the VMGD building on the 13th of March 2015 toward 11:00 pm. Internet connection was also unaffected during the passage of the Severe Tropical Cyclone Pam.

Number of TC Bulletins issued for Severe TC Pam

Name of TC	Information Bulletins	Advisory Bulletins	Warning Bulletins	Forecast Track Maps	SMS to both Digicel & TVL
Severe TC Pam	1	3	48	47	38



MTSAT IR image of TC Pam at 11:00 pm 13 March 2015



VMGD's 30th Forecast track map issued at 7:55 pm

VMGD's Analysis track

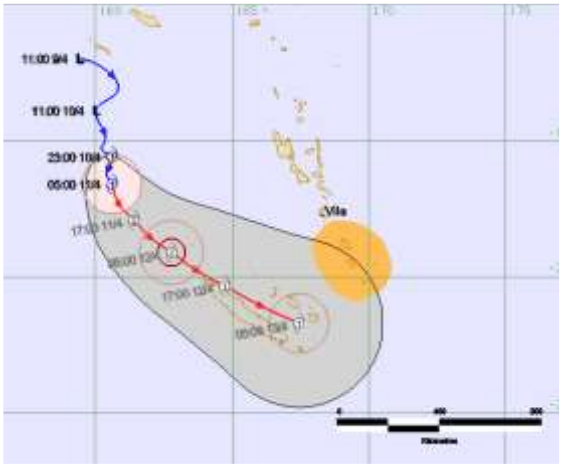
(iii). TC Solo Category 2 (10 – 12 April 2015)

Tropical cyclone Solo is a unique systems as it is a hybrid of two low pressure systems. This was formed north of the Coral Seas between Papua New Guinea and the Solomon Islands. It had redeveloped into a cyclonic system with its central pressure at 996 hPa on the 10th of April 2015. The system was still outside of the Vanuatu Tropical Cyclone Tracking Map and was about 730 Km southwest of Torres islands in the TORBA province. TC Solo entered into Vanuatu's Area on the 11th of April 2015 and was somewhat 630 Km further west southwest of Santo.

At 0600UTC on the 10th of April, the system had reached Category 1. In the evening toward 2100UTC on the same day, the system intensified further and reached Category 2. Then, it tracked southeast and headed towards New Caledonia on the 11th of April. It was believed to be making landfall near the northern tip of the New Caledonia around 4:00pm on the same day.

It was observed and analyzed with the guidance from most of the global and regional TC forecast models not to be much of the concern to the southern parts of Vanuatu. As it was tracking through the channel between the main island of New Caledonia and the two islands of Lifu and Mare, it gradually lost energy because of the cooler sea surface area south of 22°S and so, it sheared and weakened down to low pressure towards 6:00am on the 12th of April 2015.

VMGD's Analysis track



VMGD's Forecast Track Map no 7 issued on Saturday 11 April 2015

Number of Tropical Cyclone Bulletins issued for TC Solo

Name of TC	Information Bulletins	Advisory Bulletins	Warning Bulletins	Forecast Track Maps
TC Solo	4	15	Nil	19

TSUNAMI GENERATED AND EXPECTED THREAT TO VANUATU ISLANDS DURING 2015

The VMGD through WFSD is mandated to issue Tsunami Information and Advisories if any earthquake triggering Tsunami and become a potential threat to Vanuatu Islands. During 2015, WFSD had issued Tsunami Information and Advisories for four Tsunami events. Given below in the table, the tsunami event.

Tsunami Event	Information Bulletins	Advisory Bulletins	Warning Bulletins
20 March 2015	1	Nil	Nil
30 March 2015	1	1	Nil
21 May 2015	1	Nil	Nil
18 July 2015	1	Nil	Nil

A total of 4 Tsunami Information bulletin, 1 Tsunami Advisory bulletin and no Tsumani Warning.

OTHER NOTABLE DEVELOPMENT

- WFSD fully engaged in the annual events of ICT & WMO Day activities as part of panel discussions, giving out presentations and brochures to students and the general public.
- Three senior contracted weather forecasters became permanent under the Public Service.
- JICA project and completed and live transmission of data from the two AWS at Pekoa and Bauerfield and two tidal gauges from Lenakel and Litzlitz were displayed in the WFSD operation room.
- VMGD through WFSD co-authored two research papers from the two separate research findings conducted by a team from the Kyoto University in Japan and a combined research Team by the Canadian and the United States research team.

TRAINING AND HUMAN RESOURCE DEVELOPMENT

- Levu Antfalo attended Training at the Pacific Desk in Hawaii from 01 – 23 May 2015.
- Levu Antfalo took part in the Awareness workshop in Malekula from 02 – 03 July 2015.
- Levu Antfalo attended FINPAC training course from 17 – 20 August 2015.
- Tom Natick attended Training Course in Palau from 01 – 7 May 2015.
- Abel Kalo took part in the COP Awareness/Outreach program in Tanna from 15 – 28 September 2015.
- Abel Kalo took part in the COP Awareness/Outreach in Malekula and Santo from 13 – 25 October 2015.
- Fred Jockley Coordinated the Disaster Relief Distribution after TC Pam from April to October 2015.
- Fred Jockley attended CAAV stakeholders Training workshop at Onesua Presbyterian College from 01 – 07 August 2015.
- Yan Nelson took part in the COP Awareness/Outreach program in Vanua Lava in TORBA province from 28 – 31 August 2015.
- Yan Nelson took part in the COP Awareness/Outreach program in Epi and Erromango islands from 01 – 04 September; from 09 – 16 September and from 22 – 31 September 2015.
- Yam Nelson took part in the COP Awareness/Outreach program on Tanna from 01 – 04 October 2015.
- Jerry Timothy attended TC Training Course at the Bureau of Meteorology in Melbourne Australia from 03 – 18 October 2015.
- Jerry Timothy attended Oceanography/Marine Training course in the Solomon Islands from 07 – 14 November 2015.

3. CLIMATE DIVISION

PERFORMANCE OVERVIEW

The climate division's performance in 2015 has been above average, as more than ninety percent of the planned activities were carried out.

SEASONAL FORECAST

Program Purpose and Key Outcomes

The seasonal forecasting program contributes to climates purpose by providing timely and quality seasonal outlook services and products by way of skilled and motivated staff, using modern and sound technology and techniques.

The seasonal forecast activity is a highly scientific activity that's requires qualified staff using modern and sound technology for management and analysis of climate and related environmental data to monitor, predict and provide climate and other related environment information, forecasts, advisories and warnings.

The following are key outcomes identified by the seasonal forecast program:

1. Providing relevant information to aid decision making with regards to climate natural hazards
2. Expansion of climate services to other sectors

2015 Priority Activities and Results

Seasonal Forecasting (Business Plan)			
Programs	**Objective (Targets)**	**Result ✓✖**	**Result Summary**

National Climate Centre **Monthly Bulletins**	To produce, issue and circulate monthly bulletins to all government and relevant agencies 1. Teleconference preparation 2. Participate in monthly/quarterly teleconference 3. Publish rainfall outlook 4. Publish monthly VCU 5. Stakeholders meeting 6. Monthly briefing 7. Update provincial boards 8. Produce agro-met bulletins 9. Include Bislama language into SCOPIC	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✖ ✓	12 VCU bulletins were produced and circulated Preparation of OCOF tables Participate in teleconference Outlook upload on webpage VCU produce 1 Stakeholder meeting 6 monthly briefings Update of provincial boards NO agro-met bulletin Will be included in the new version of SCOPIC
ENSO	1. Review of ENSO Directive 2. Integrate crop threshold into SCOPIC 3. ENSO timeline and stories for Vanuatu completed 4. Run an internal ENSO training for VMGD	✓ ✖ ✓ ✖	Review of ENSO Directive Initial research by VARTC NOAA help to develop this No ENSO internal training
Climate Early Warning System	1. Purchase and install equipment 2. Run stakeholders workshop 3. Build CliDE Desk (Interface) 4. Training on how to use the Dash Board	✖ ✖ ✖ ✖	EU-GIZ project not implemented yet. Funding approved. Activities will are included in the project activities to be implemented
Agro-Met	1. Produce 12 agro-met bulletins 2. Manage Vanuatu rainfall and agro-met face book for dissemination of information on line 3. Attachment of agriculture officers to climate section and vice versa 4. Conduct climate field schools 5. Review VMGD and DARD MOA 6. Implement recommendation from Tanna workshop 7. Talk with Agriculture department to set up Agro-Met stations	✖ ✖ ✓ ✖ ✓ ✓ ✓	Officer on study leave Officer on study leave Officer attend join trainings Cover under the new FAO funding Cover under the new FAO funding Discussions to fund this under EDF11 or GCF funding
Hydrology	1. Run workshop on climate dialogue in hydrology sector 2. Amend VMGD structure to include a post for Climate and Hydrology	✖ ✓	EU-GIZ project not implemented yet Draft structure in place to be presented to Management team
Marine	1. Run workshop on climate dialogue in Marine sector in Marine sector 2. Amend VMGD structure to include a post for Climate and Marine	✖ ✓	EU-GIZ project not implemented yet Draft structure in place to be presented to Management team

Health	1. Run workshop on climate dialogue Health sector 2. Amend VMGD structure to include a post for Climate and Health	✖ ✓	EU-GIZ project not implemented yet Draft structure in place to be presented to Management team

One of the ongoing activities carried out within the climate division is the monthly seasonal forecasting. This requires the climate division to produce SCOPIC outlook table and send it to the Bureau of Meteorology. Once finalized a briefing is organized to update the officers of VMGD on the ENSO statues and situation. There were 3 teleconferences on the following dates: 20th Jan, 17th Feb and 17th March. The climate division was only able to participate in 2 of this teleconferences as on the 17th March the State of Emergency for Cyclone Pam was still on.

The departments partnership with the Bureau of Meteorology Australia in the Climate and Oceans Monitoring and Predication (COMP) project helps strengthen and facilitate the production of information that we provide to our stakeholders and the publish.

BOM teleconference

Date	**Time**	**Teleconference Summary**
20th/01/15 	1200Z	The El Nino–like conditions in the tropical Pacific Ocean both in the atmosphere and ocean have weakened in recent weeks. Most of the surveyed models forecast tropical Pacific Ocean SSTs to remain above average, but within the neutral range, until at least April. Hence ENSO tracker remains at NEUTRAL unless observations and model outlooks indicate a heightened risk of either La Niña or El Niño developing later this year. *Report: prepared by Melinda Natapei and submitted* *Attendance: Melinda Natapei, Daphne Nalawas and Shanna Joseph*
17th/02/15	1200Z	The borderline El Niño patterns in the tropical Pacific Ocean and atmosphere have continued to weaken during 2015. Sea Surface temperatures across the tropical Pacific Ocean have eased away from the near El Niño levels observed late last year. Models surveyed indicate tropical Pacific Ocean SSTs are likely to remain above average, but within the Neutral range, until May. By July, six of the eight models suggest a renewed warming with the NINO3.4 index likely to reach El Niño thresholds *Report: prepared and submitted by Daphne, checked by Manager* *Attendance: Daphne Nalawas and Shanna Joseph*
17th/03/15	1200Z	We were not able to participate in this teleconference as during this time, there was a state of emergency for the whole country due to cyclone Pam damage. *Report: Prepared by Daphne and checked by Manager. Submit to BoM a week later*

		Attendance: None
14th/04/15	1200Z	The trade winds have continued to weaken over the Western and central Pacific. Models indicate Sea Surface Temperatures continue to warm towards the eastern pacific, but still in the Neutral Range *Report: prepared and submitted by Daphne, checked by Manager* *Attendance: Daphne Nalawas and Shanna Joseph*
12th/05/15 	1200Z	All models have indicated Sea surface temperatures to have reach the El Niño thresholds. South easterly trades continue to weaken across the Eastern Pacific and westerly's gaining more strength. SST anomalies continue to warm towards the Eastern Pacific. *Report: Prepared and submitted by Daphne, checked by Manager* *Attendance: Daphne Nalawas and Shanna Joseph*
16th/06/15 	1200Z	The 2015 El Niño continues to develop. Most oceanic and atmospheric indicators are consistent with El Niño. Sea surface temperatures in the tropical Pacific have continued to warm. However, the Southern Oscillation Index (SOI) is currently rising with this due to local weather, not climate factors. Cloudiness near the Date Line has also eased towards more normal levels, but this shift may only be short-lived. *Report: Prepared and submitted by Daphne, checked by Manager* *Attendance: Daphne Nalawas and Shanna Joseph*
14/07/15 	1200Z	The 2015 El Niño has strengthened during early July, largely due to recent tropical cyclone activity which caused strong westerly wind anomalies in the western and central Pacific. Sea surface temperatures in the central and western Pacific have continued to warm and cool anomalies in the western Pacific sub-surface have eroded during July. *Report: Prepared and Submitted by Daphne, checked by Manager* *Attendance: Daphne Nalawas and Shanna Joseph*
12/08/15	1200Z	The 2015 El Niño is now well-established. Sea surface temperatures in the central and western Pacific have continued to warm and cool anomalies in the western Pacific sub-surface eroded during July. In the coming weeks, the central tropical Pacific Ocean (i.e. the NINO3.4 region) may exceed the peak values reached during the 2002 and 2009 El Niño events, but current anomalies remain well short of the 1982 and 1997 peaks. Trade winds remain weak; a situation likely to contribute to more warming of the tropical Pacific Ocean. *Report: prepared and Submitted by Daphne, checked by Manager*

		Attendance: Daphne Nalawas (in BoM) & Shanna Joseph (VMGD)
15th/09/15	1200Z	The El Niño is likely to peak by December 2015. All models are suggesting a very strong El Niño and so far the warming in the east have exceeded the 1997/2998 thresholds. *Report: Prepared and submitted by Daphne, checked by Manager* *Attendance: Mercy Nalawas (I was in Tanna in the COPIWG Outreach to communities)*
20th/10/15 	1200Z	The 2015 El Niño is now the strongest since the 1997-98 event. The strong El Niño is expected to last until at least the end of the year before declining in the first year of 2016. Sea surface temperatures (SSTs) in the central to eastern tropical Pacific continue to warm, further entrenching El Niño. *Report: Prepared and submitted by Daphne, checked by Manager* *Attendance: Daphne Nalawas*
10th/11/15 	1200Z	The El Niño is still developing to its final stages and models are indicating for it to peak by December 2015. *Report: Prepared by Daphne, checked by Manager and submitted by Shanna* *Attendance: Shanna Joseph (I was in Tanna on the Climate/VRCS El Niño Workshop)*
08th/12/15	1200Z	The strong 2015 El Niño event is near its peak. While sea surface temperatures remain close to record-high values, some El Niño indicators are now showing signs of easing. However, the current El Niño is likely to persist well into 2016. *Report: Prepared and submitted by Daphne* *Attendance: Shanna Joseph (I was in Fiji on Enhancing Climate Indices and Sector Applications workshop)*

NIWA teleconference

Another partnership that helps facilitate our services is with the National Institute of Water and Atmospheric Research (NIWA) based in New Zealand. NIWA also holds monthly teleconferences that the department through climate division participates in. This year the Climate Division has participated in all the Teleconferences.

Date	**Time**	**Teleconference Summary**
January	10:30am	• Sea surface temperatures across the equatorial Pacific Ocean are borderline between neutral and weak El Niño conditions. However - as was the case over the past few months – the atmospheric patterns are still inconsistent with El Niño.

		• International guidance indicates that the probability of El Niño conditions developing the next three months (February – April 2015) is about 60%.
February 04th 2015	10:30am	• Tropical Pacific oceanic conditions near the equator are just below El Nino thresholds. • Sea surface temperatures across the equatorial Pacific Ocean continued to reflect conditions between neutral and weak El Niño states during February 2015. • Atmospheric patterns were also indicative of weak El Niño-like conditions. • International guidance indicates that the probability of El Niño developing over the next three months (March – May 2015) is about 45%. This probability increases to ~60% in June – August 2015.
March 04th 2015	10:30am	• The equatorial Pacific remains in a neutral ENSO state. • Sea surface temperatures (SSTs) remain higher than normal in the central south Pacific. • The atmospheric patterns are also generally consistent with weak El Niño conditions. • International guidance indicates that the probability for conventional El Niño thresholds being crossed over the next three months (April – June 2015) is about 70%.
April 01st 2015 	10:30am	• The SST's continue to warm towards the eastern Pacific and the TRMM continues to show anomaly conditions of drier than normal rainfall.
May 01st 2015	10:30am	• The El Nino Southern Oscillation has shown greater chances of meeting the El Nino thresholds. With SSTs warming further into the eastern pacific and cooler temperatures are moving in towards the western pacific.
June 03rd 2015 	10:30am	• El Nino thresholds have been reached towards the end of last month and all climate models have shown a positive sign for the El Nino to continue to develop further this month and to the year.
July 01st 2015	10:30am	• With SPCZ moving further North East, countries in the South western Pacific are facing drier than normal conditions and a drop in the rainfall patterns in the western pacific particularly over Papua New Guinea, Solomon Islands, Vanuatu, Fiji, Tonga and New Caledonia
August 04th 2015	10:30am	• The El Nino southern Oscillation index has shown a greater positive El Nino. SOI has continued to drop well below the

		threshold and SSTs continue to warm further east of the Pacific while Cooler anomalies continue to move in over the western pacific.
September 03rd 2015	10:30am	• Still well inside the El Nino thresholds and all climate models continue to show an increase in the strength of the El Nino.
October 01st 2015	10:30am	• The current El Nino is getting stronger still, although models have forecasted for it to peak around the end of December 2015. Forecasts is for the El Nino to go on further into 2016.
November 04th 2015	10:30am	• Ocean conditions are still in responsive to El Nino like conditions.
December 03rd 2015	10:30am	• Most of the ENSO conditions are still within the El Nino thresholds although the Southern Oscillation Index has fallen back into normal conditions in the last weeks. El Nino is forecasted to still take it through until mid-next year 2016.

Briefings

The Climate Division conducted 5 briefings with the Stakeholders. These includes 2 regional stakeholder's briefing through video conferencing and 3 briefings with National Stakeholders.

2.0 DATA MANAGEMENT

Program Purpose and Key Outcomes

The Data Management program contributes to climate's purpose by providing Vanuatu historical climate data by way of skilled and motivated staff using robust climate database skilled using modern and sound technology and techniques.

The data management activities require qualified staff using modern and sound technology for management and analysis of climate and related environmental data to monitor, predict and provide climate and other related environment information, forecasts, advisories and warnings.

The following are key outcomes identified by the seasonal forecast program:

1. Safeguard historical and current climate data to aid national development in Vanuatu

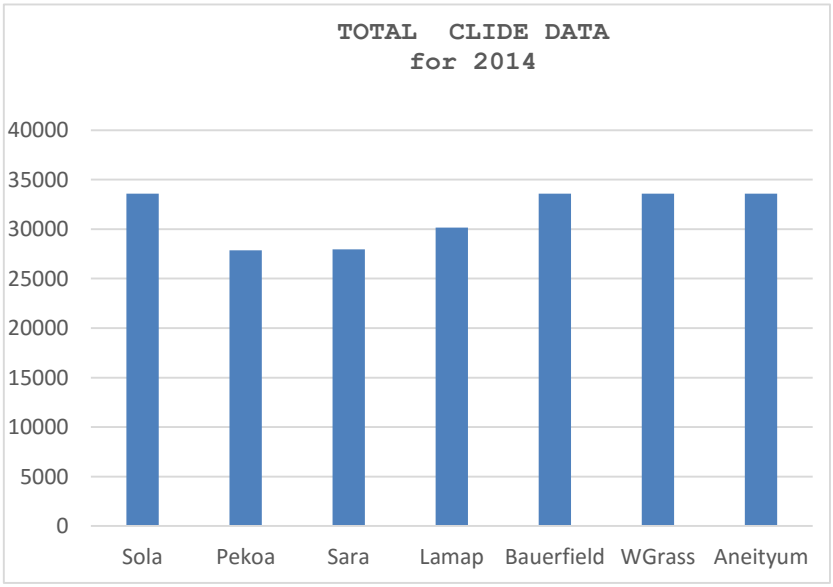
2015 Priority Activities and Results

Data Management (Business Plan)			
Programs	**Objective (Targets)**	**Result ✓✖**	**Result Summary**
Data Digitization	1. Digitise 3 hourly data for Bauerfield, Port Vila, Lamap 2. Validate climate data 2 days per week 3. Finalise synoptic sites meta data and new rainfall sites into CliDE	✓ ✖ ✓	Done Discussion started and agreed

Data Archive	1. Produce a spreadsheet of monthly data in hard and soft copy. 2. Discuss with Ann Naupa about the possibility of National Archive to host VMGD back-up climate data server: 3. Store all 2014 climate data in excel in massive storage device provided	✓ ✓ ✓	Discussion completed Data stored in external hard drive

Data in CliDE

Sola	Pekoa	Sara	Lamap	Bauerfield	WGrass	Aneityum
33580	27876	27968	30161	33580	33580	33580



Data in Excel

				Data in Excel 2014								
	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec
Sola	√	√	√	√	√	√	√	√	√	√	√	√
Pekoa	M	√	√	√	√	√	M	√	√	√	√	√
Saratamatam	M	√	√	√	√	√	√	√	M	√	√	√
Lamap	√	√	√	√	√	√	√	√	√	√	√	√
Bauerfield	√	√	√	√	√	√	√	√	√	√	√	√
Wgrass	√	√	√	√	√	√	√	√	√	√	√	√
Aneityum	√	√	√	√	√	√	√	√	√	√	√	√
M	Missing Fieldbooks											
	A lot of missing observation -											

Sub-daily digitization

Climate officers entering Aneityum sub-daily data from 2008 to 2000 into CliDE database and Excel Spreadsheet.

Data validation

This is a time consuming process when validation the two database of which the value from each database has to be the same as the other. However, the first year saw the completion of Rainfall data validation of Bauerfield from 1972 to 2013.

Examples of digitised data from CliDe with errors that were validated

"VAN31001";"1999-01-04 00:00:00";2.0 31.0
"VAN31001";"1977-07-21 00:00:00";0.0 30.0
"VAN31001";"2005-07-16 00:00:00";11.0 29.0
"VAN31001";"1999-11-05 00:00:00";2.0 30.5
"VAN26003";"2010-07-18 00:00:00";12.8 27.0
"VAN01001";"2008-07-01 00:00:00";-2.5 27.5
"VAN01001";"2008-07-02 00:00:00";-2.5 27.5
"VAN25001";"1988-09-03 00:00:00";-2.7 21.7
""VAN25001";"1988-09-05 00:00:00";-2.1 28.

VANUATU RAINFALL NETWORK (VRN)

Program Purpose and Key Outcomes

The Vanuatu Rainfall network program contributes to climates purpose by providing timely and quality rainfall data, services and products by way of skilled and motivated staff, using modern and sound technology and techniques.

The VRN activity is a community base activity that requires qualified staff using modern and sound technology for management and analysis of rainfall data to monitor, predict and provide climate and other related environment information, forecasts, advisories and warnings.

The following are key outcomes identified by the seasonal forecast program:

1. Expansion and collection of timely observation data

2015 Priority Activities and Results

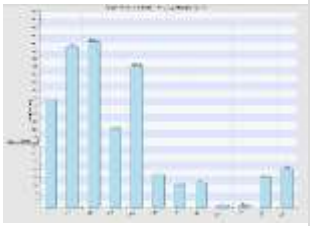
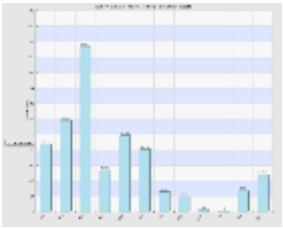
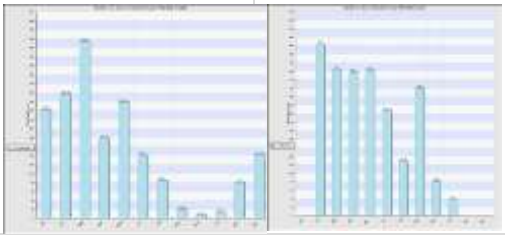
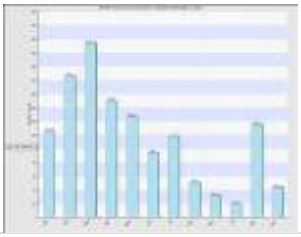
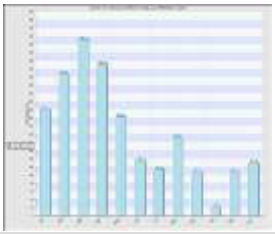
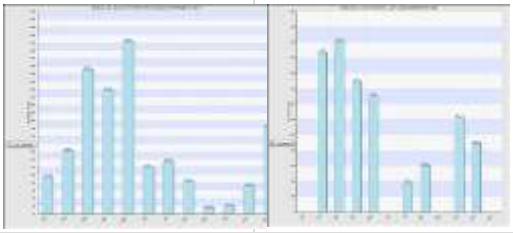
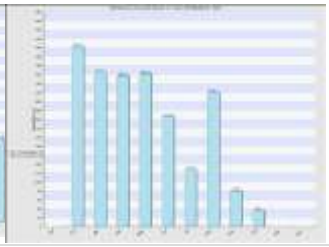
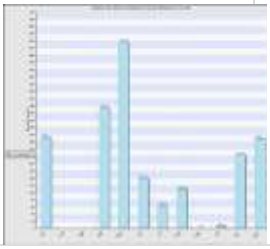
Vanuatu Rainfall Network(Business Plan)			
Programs	**Objective (Targets)**	**Result ✓✖**	**Result Summary**
Vanuatu Rainfall Network (VRN)	1. Install 9 automatic rain gauge g with the 9 AWS set up by V-CAP and JICA project	✓	Only two automatic rain gauge for under the JICA project

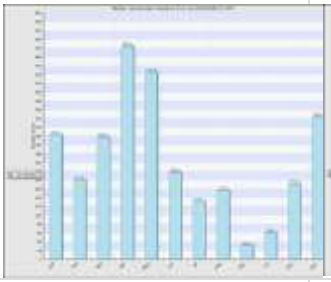
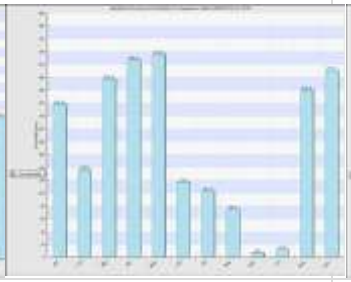
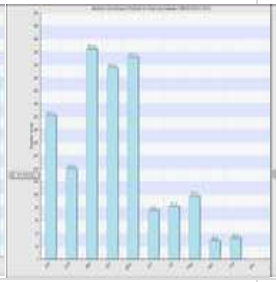
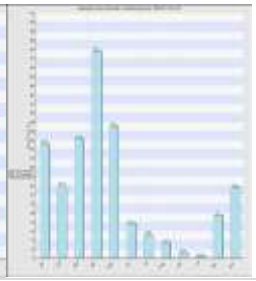
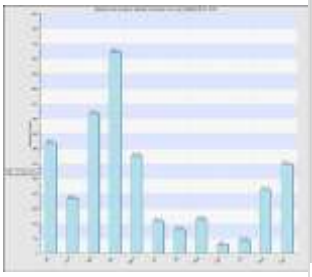
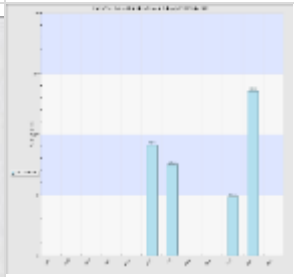
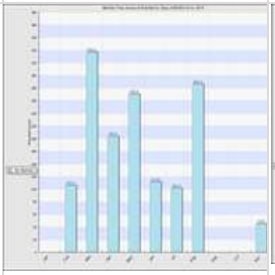
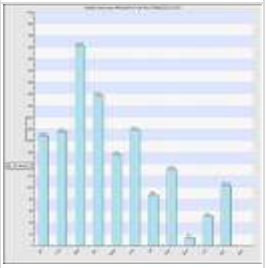
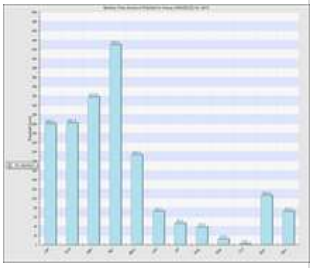
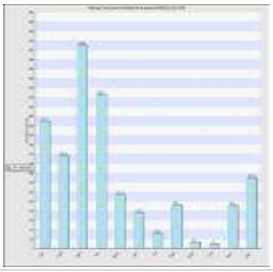
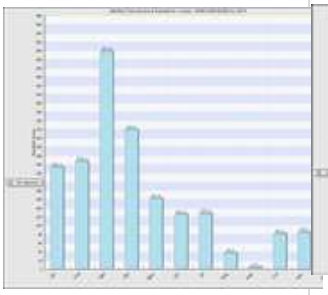
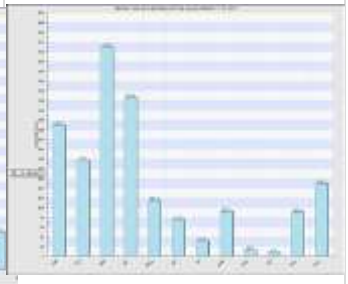
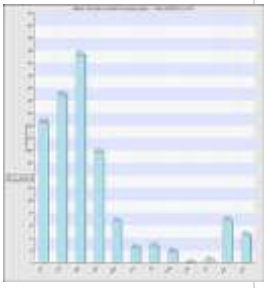
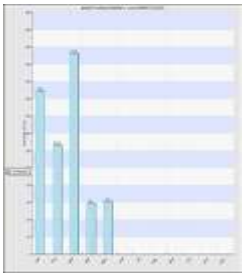
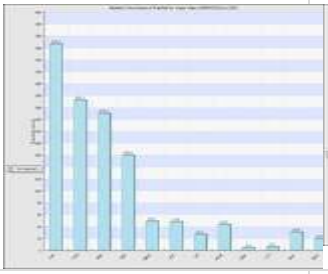
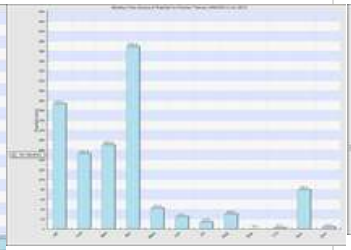
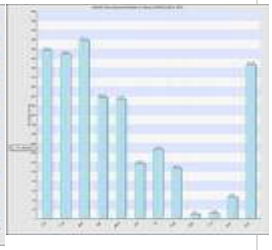
	2. Live streaming of rainfall data into data centre at VMGD 3. Display of rainfall data on CLEWS 4. Visit of rainfall sites in Malampa province 5. Commit LPO for payment for ANZ, NBV, BRED and WESPAC bank 6. Purchase a laptop computer to down rainfall data from automatic rain gauge	✓ ✘ ✓ ✘	Done under JICA project btu into different database and not CliDE CLEWS not yet develop under the EU-GIZ project Visit rain gauge around Efate Payment for 2015 done

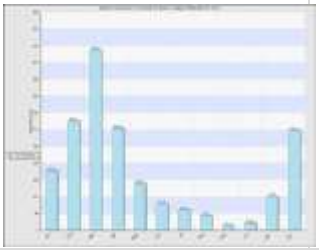
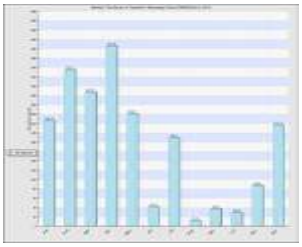
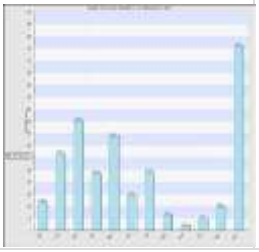
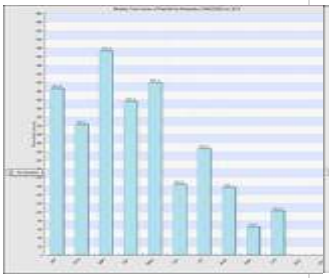
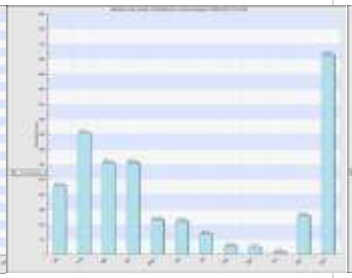
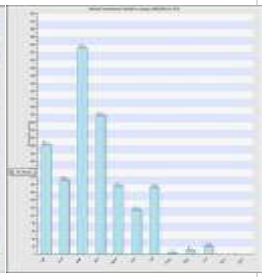
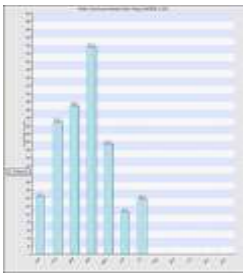
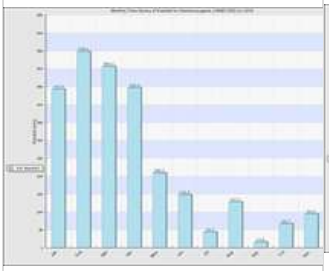
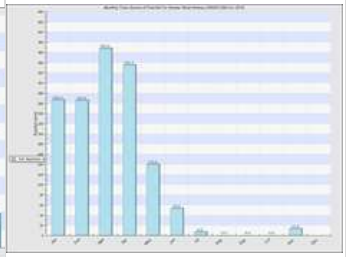
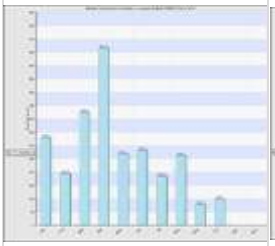
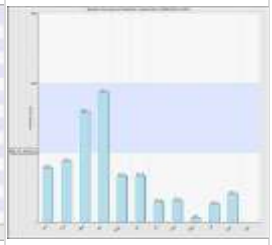
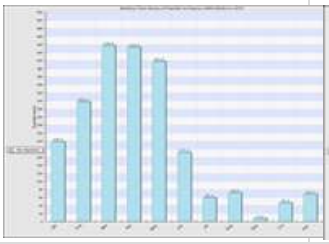
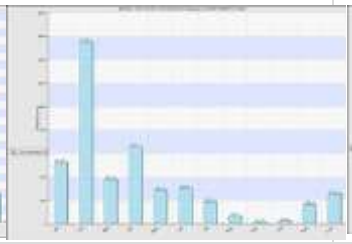
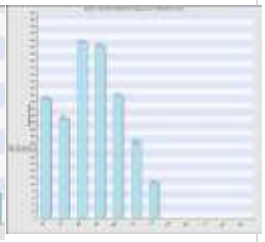
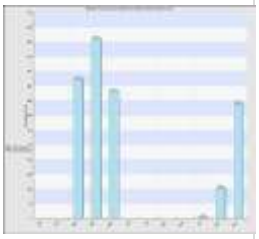
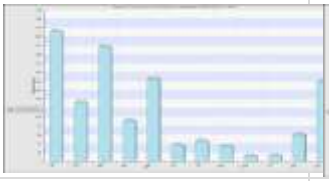
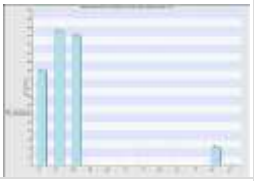
A total of 84 rainfall stations were around the country from 2005 to 2014. 20 were installed in Shefa province, 12 were installed in Malampa province, 12 were installed in Penama province, 14 were installed in Sanma Province, 12 were installed in Torba province, and 15 were installed in Tafea province.

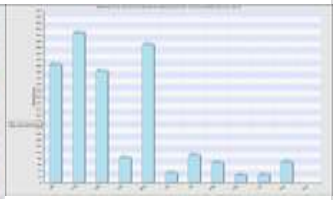
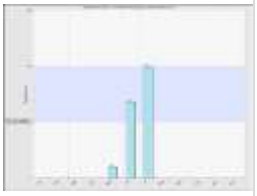
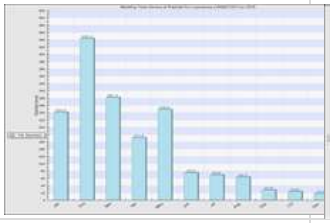
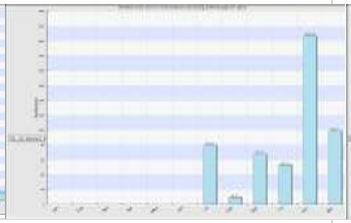
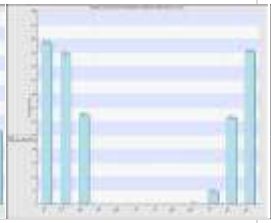
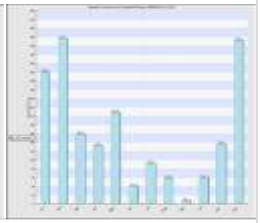
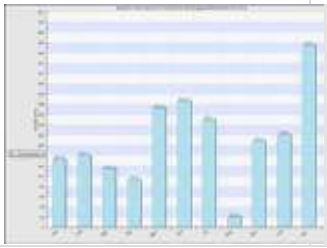
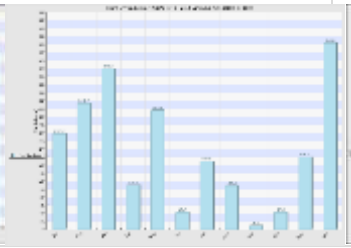
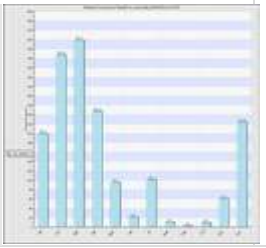
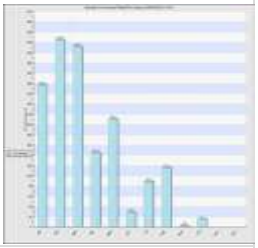
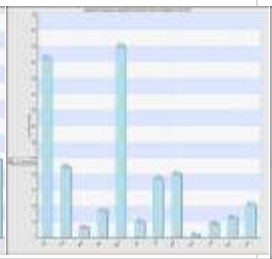
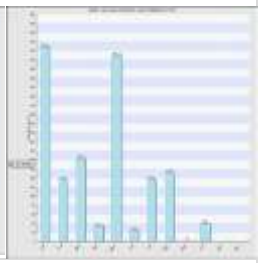
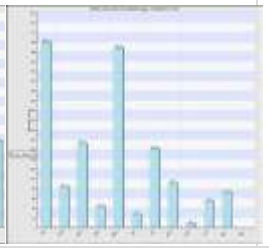
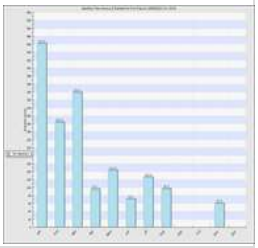
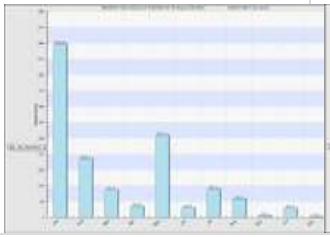
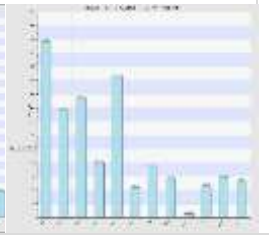
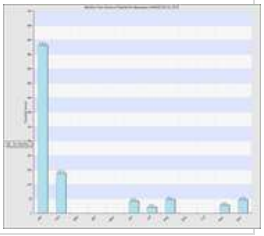
1. Digitization of Rainfall data into CliDE

Rainfall sites – 2015

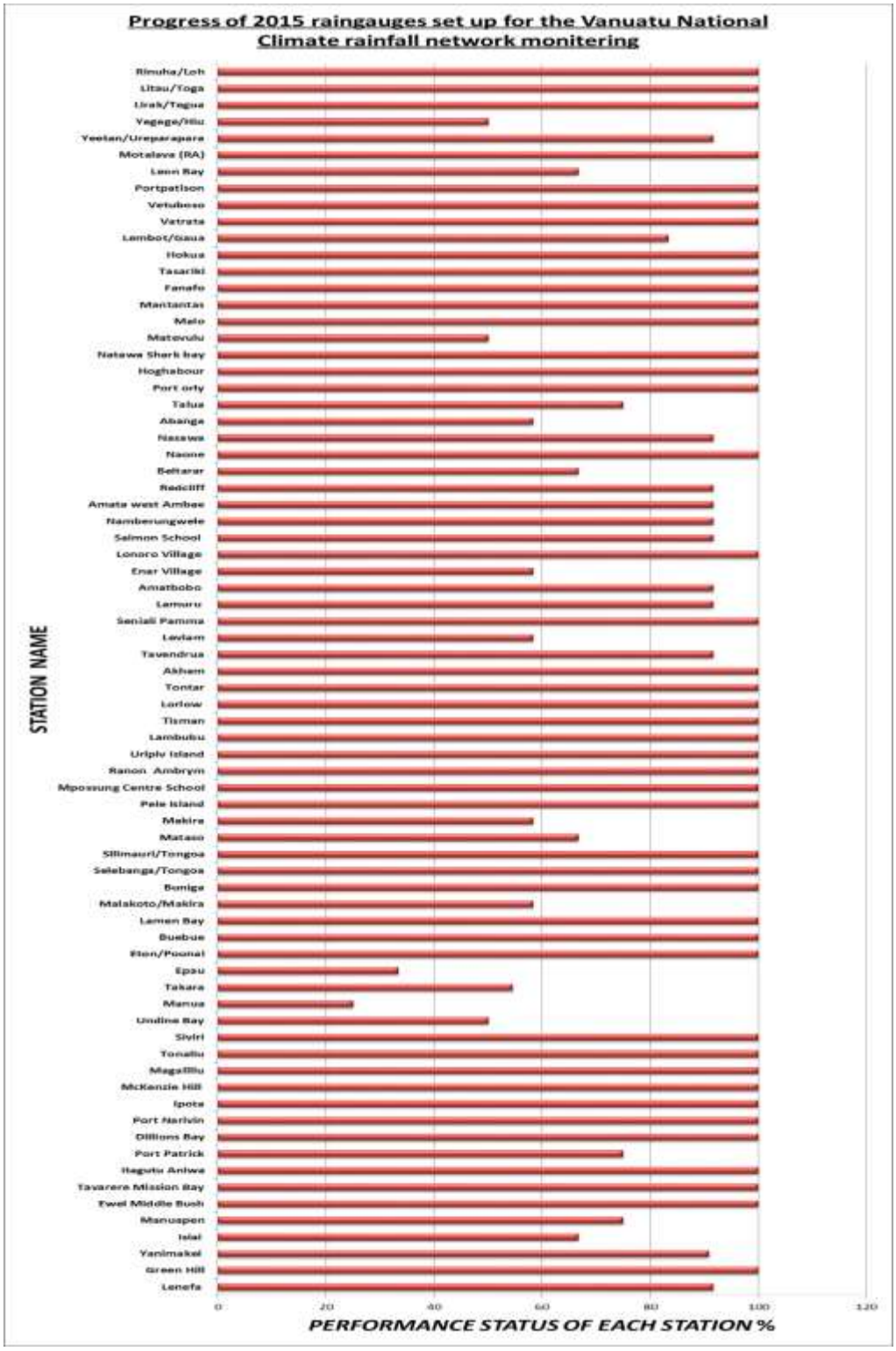
TORBA PROVINCE			
Toga	Loh	Tegua	Hiu
			
Vanualava			
Vatrata	Vetuboso	Portpatison	Leon bay
			
Motalava	Ureparapara	Gaua	
			
SANMA PROVINCE			
Port Orly	Hogabour	Shark Bay	Matantas

			
Fanafo	Matevulu	Talua	Tasariki
			
Hokua	Malo		
			
MALAMPA PROVINCE			
Lorlow Southwest bay	Dixion Reef	Lambubu	Leviam
			
Uripiv	Tisman	Ahkam	
			
Ranon Ambrym	Mbossung Ambrym	Liro Pamma	

			
PENAMA PROVINCE			
Amatbobo Penticost	Lonororo	Lamoru	Enar
			
Namberungwele	Amata	Lolovele	Saimon School.
			
Naone	Nasawa	Abanga	Beitarara
			
SHEFA PROVINCE			
Magaliliu	Tonaliu	Siviri	Undine Bay
			
Takara	Mackenzie Hills	Epau	Pangpang

			
Pele Lounamua	Mataso	Makira	Buniga
			
Selebanga	Silimauri	Lamen Bay Epi	Buebue Epi
			
TAFEA PROVINCE			
Yanimakel	Middle Bush Ewel	Green Hills	Lenefa
			
Isiai	Futuna	Aniwa	Portbatrick Anatom
			
Dillions bay	Ipota	Port Narivin	Manuapen
			

2. Performance



3. Rain gauge damage during Pam

Province	Island	Station Name	Type of Raingauge
Sanma	Santo	Agriculture College	Nylex 100 mm

Malampa	Malekula	Leviam	Nylex 100 mm
Shefa	Togariki	Tongariki	daone
Shefa	Tongoa	Selebanga	done
Shefa	Makira	Malokoto	done
Shefa	Emae	Marae	
Shefa	Mataso	Na'asang	
Shefa	Efate	Manua	
Shefa	Efate	Undine Bay	
Shefa	Efate	Takara	

Shefa	Efate	Epau	
Shefa	Efate	Lelepa	No raingauge
Shefa	Epi	Buebue	Revived
Tafea	Tanna	Yanimakel	Revived
Tafea	Tanna	Isiai	Revived
Tafea	Tanna	Middle Bush	Revived
Tafea	Tanna	Burtonfield	Not yet
Tafea	Tanna	Lenefa	Revived
Tafea	Tanna	Hapilan	Revived
Tafea	Erromango	Ipota	Revived
Tafea	Erromango	Dillons bay	Revived
Tafea	Aneityum	Umetch	Revived

21 rain gauges were damaged during tropical cyclone Pam. 11 were damaged on Efate, 9 were damaged on Tafea, 1 was damaged on Malampa, and 1 was damaged on Sanma we province.

3.1. Installation of new rain gauge.

Date	Station	Pictures
1/8/15	Mataso	
1/9/15	Makira	
20/10/15	Undine Bay	
20/10/15	Manua pounagisu	

20/10/15	Takara	
20/10/15	Epau	
1/11/15	Hapilan	
1/12/15	Agromet Santo	

4. Sea water data collection

Since 2011 sea water was collected and sent to the University of USA for experimental testing. In 2015 sea water was collected for the month of May through to November.

5. Payment

Payment for rainfall collectors were submitted to the finance officer during May of 2015. The first payment amount to 1.056,700 VT, and the final payment was 1,128,000 VT. Sixty-two rainfall collectors were eligible for payment.

Description	**Yearly payment**	**Total amount**
First and second year	1,056,700	1,056,700
Third and Fourth year	1,128,000	1,128,000
Annual Balance		**2,184,700**

DATA REQUEST

Program Purpose and Key Outcomes

The data request program contributes to climate's purpose by providing timely and quality climate data, products and information by way of skilled and motivated staff, using modern and sound technology and techniques.

The data request activity is a scientific activity that's requires qualified staff using modern and sound technology for management and analysis of climate and related environmental data to meet request of clients.

The following are key outcomes identified by the seasonal forecast program:

1. Reporting and proving data request facility to client using up to date technology and mode of communication

2015 Priority Activities and Results

Data Request (Business Plan)			
Programs	**Objective (Targets)**	**Result** ✓ ✘	**Result Summary**
	1. Input of interactive request form to new VMGD website with request database. 2. Request database build in VMGD new website 3. Analysis of in-coming request		

Name of Client	Organization	Types of Elements Requested	Comments
January			
Chris	VMGD	Temperature and Relative Humidity for Nambatu	Data use for comparison to AWS data
February			
Dominik Raab	University of Applied life science Vienna, Austria/Lincoln University, New Zealand	Average monthly Rainfall for all Stations from 2004-2014	Data use for master thesis about a sustainable sanitation solution for coastal communication of Vanuatu in collaboration with Oxfam NZ
Judy Bule	USP Student	Cyclones occurred in Vanuatu from 2009-2013	Data use for statistics project
Jason Mokoroi Peter		Total Cloud Cover/Rainfall & Relative Humidity– Jan 2015	
Tim	VMGD	Monthly Rainfall for Tanna	Data use do undertake risk assessment mapping
March			
Graem	NIWA	Daily Rainfall for Pekoa/Bauerfield/Port Vila	Data use for the inundation modelling and hazards risk mapping of Port Vila & Luganville
Brian		Port Vila yearly average Rainfall for 2005-2015	Data use for yearly quantity (5-10yrs) and Heaviest rainfall quantity.
Ben Gido	IsraAID Organization, Water Engineer	Monthly Rainfall for Shepherds Island	Data use for assess impact of rainwater harvesting
April			

Bob Nikaih	Ministry of youth and Sports	Pressure, Wind speed/direction and thunderstorm for port vila	Data use for demolishing of Korman
David Gibson	VMGD	Wind speed/direction, and pressure 3 hourly data	Passage of tropical cyclone PAM
May			
Lazarus Aising	Department of Industry	Monthly rainfall for Port Vila & Bauerfield	Data use in a survey jointly carried out by the department if Industry and Queensland University Australian.
Patricia Abbock	Student	Rainfall & Mena temperature for Port Vila	For year 12 Math's Statistics project
Christiane Crowby	Student	Rainfall, thunder & Mean temperature	For year 12 math's statistics project
Silas Tigona	Laucala Campus, USP, suva	Rainfall for all stations	
June			
Anna cumming	Care International	Rainfall for Erromango	Calculation of rainfall catchment areas for water security for communities on erromango
Feng Yuzi	China harbor engineering company	Rainfall, Max/Min/Mean temperature, pressure, wind speed/direction, sunshine hours, Humidity, Cloud Cover, Thunderstorm for all station	For project construction in Vanuatu. To construct wharves in Vanuatu
Jean-Luc Bador	The medical centre	Monthly rainfall for Pekoa, Bauerfield and Whitegrass	Daily rainfall-study of this year's rainfall
Francisca Miller	Student	Monthly rainfall for Port Vila	For year 12 math's statistics project
July			
August			
Yoko ASANA	JICA Vanuatu Office	Monthly Rainfall for Ebooka (Teuma area)	Data use to design the repairing work of teuma bridge more appropriate to reflect the change of climate along the river
September			
Ronald COUPRIE	French Red Cross	Monthly Rainfall for Gaua	Project of Rain water harvesting system implementation. In order to sizing water tanks
October			
Siobhan Talty	CARE International	Daily Rainfall for Whitegrass & Aneityum_2015	Data use for strategy development of El Nino activities
Marines Fonseca	NDMO/MCCA	Monthly Rainfall for all (VRN) Locations_2010-2015	Data use for Disaster Risk Reduction and Response for El Nino Event

Rashm Rita	NDMO	Monthly Rainfall for all Stations_2005-2015	Create a critical response area map for El Nino
Kaltack	Unelco	Daily Rainfall for Bauerfield	Analysis of El Nino
November			
Andrew Smith		Monthly Rainfall & Temperature_2014-2015	VAN HEMP
December			
Yoko Asano	Jica Office	3 Hourly Rainfall for Bauerfield and Port Vila.2000-2015	The data will be used to evaluate water flow of Teouma river for the purpose of maintenance of the current Teouma bridge.

- Below is the summary of the request done by different people, institution, Government and private sectors

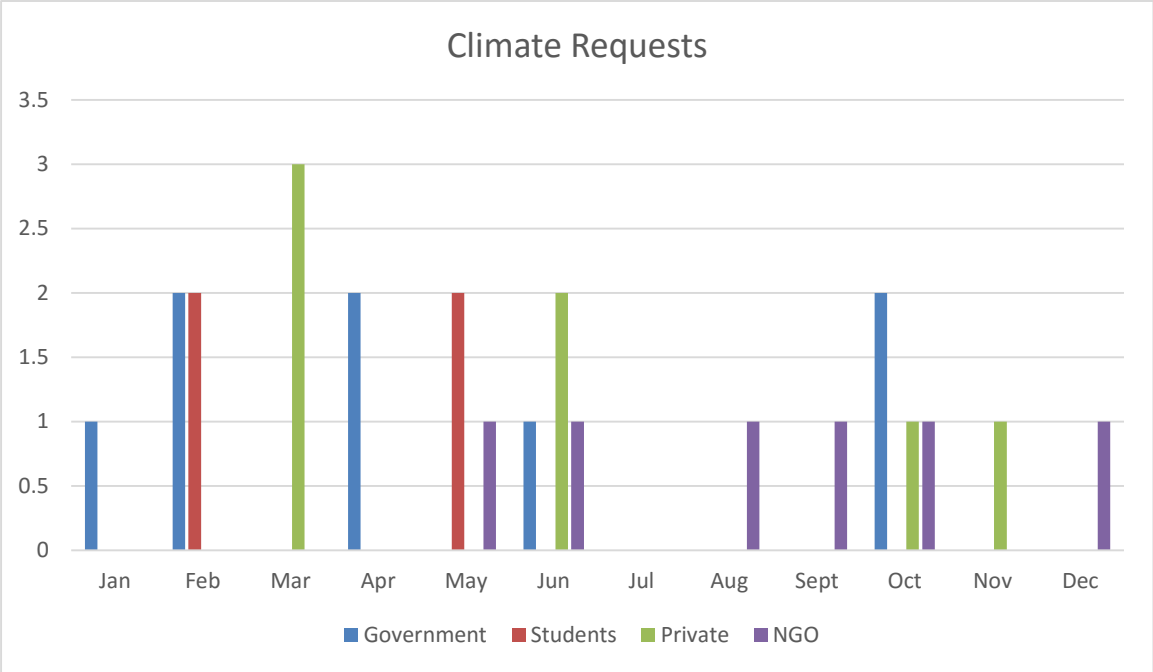
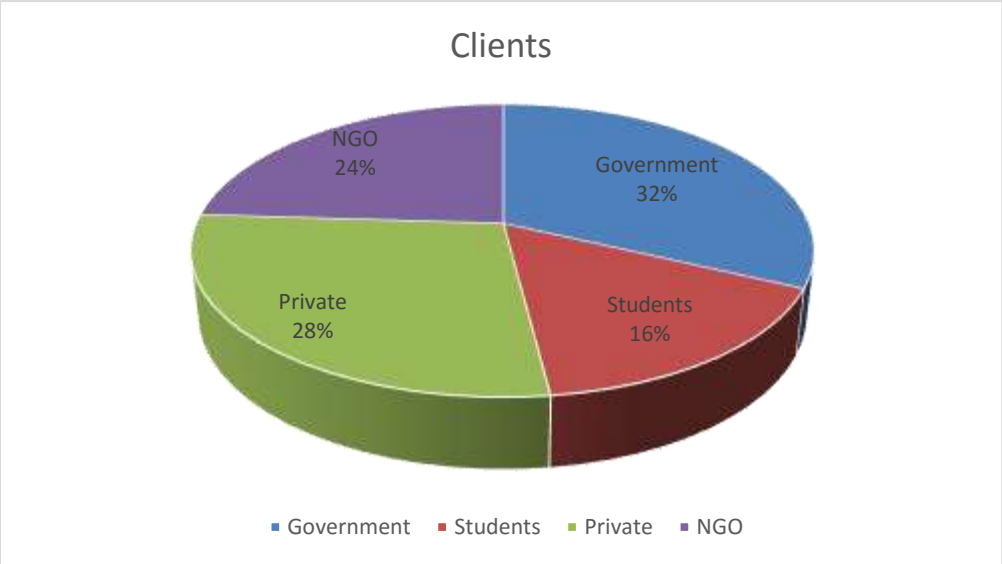


Fig 1.1 – Graph showing Climate Request Clients for Jan – Mar 2015



TRADITIONAL KNOWLEDGE

Program Purpose and Key Outcomes

The traditional Knowledge (TK) program is a project base activity that contributes to climates purpose by collecting traditional weather and climate Indicators. This will be useful in provide timely and quality seasonal outlook services and products to the communities for decision making.

The TK activity is a scientific activity that's requires qualified staff using modern and sound technology for management and analysis of traditional climate and related environmental data to monitor, predict and provide climate and other related environment information, forecasts, advisories and warnings.

The following are key outcomes identified by the seasonal forecast program:

1. To provide easy and relevant information to aid decision making in the communities

2015 Priority Activities and Results

Traditional Knowledge (Business Plan)			
Programs	**Objective (Targets)**	**Result ✓✖**	**Result Summary**
1.	2. Pilot site visit to Tanna 3. Enter TK information collected to TK database 4. Pilot Visit to Pentecost 5. Enter TK information collected to TK database 6. Pilot visit to Malekula 7. Enter TK information collected to TK database 8. Pilot visit to Ureparapara 9. Enter TK information collected to TK database	✖ ✖ ✖ ✖ ✖ ✖ ✖	The TK project is on hold until a contract basis TK officer is recruited in 2016

HUMAN RESOURCE, POLICY, COMMUNICATIONS AND IMPROVEMENT

Program Purpose and Key Outcomes

The Climate Division contributes to VMGD purpose by providing timely and quality climate services and products by way of skilled and motivated staff, using modern and sound technology and techniques.

The Climate Division is a highly technical section with qualified staff using modern and sound technology for management and analysis of climate and related environmental data to monitor, predict and provide climate and other related environment information, forecasts, advisories and warnings.

The following are key outcomes identified by the Climate Division:

1. To upgrade skills of climate officers and others to perform effectively and raise the profile of VMGD.
2. Establish mechanism to enable new initiatives in VMGD.
3. New initiatives to further enhance the work of Climate Services in Vanuatu.
4. Accessible climate information using modern technology that benefits all citizens of Vanuatu.
5. Increase VMGD's Outreach Activities.
6. Improvement of climate working environment and information.
7. Updated working procedures and environment to enable high productivity within Climate Division.
8. Appreciate hardworking officers.

2015 Priority Activities and Results

Human resource, Policy, communications (Business Plan)			
Programs	**Objective (Targets)**	**Result ✓✖**	**Result Summary**
Training	1. Attend COP 21 in Paris	✓	Participations funded by COSPPac project and Vanuatu Government
	2. Run FINPAC workshop in Epau Village	✓	Run workshop in Epau with Red Cross and SPREP
	3. Attend COSPPac annual planning and steering committee meeting	✓	Attended by Director
Policy	1. Develop Research Policy	✓	Include in the research policy of VMGD
	2. Guidance document on National Climate and Climate Change Field Schools in Melanesia	✓	Paper submitted to environmental division of MSG and Agriculture department to take lead
Research	1. VRN paper publish and uploaded in webpage and intranet	✓	A paper not develop but a VRN poster was develop instead
Communication	1. Participate in Talk back shows	✓	More than 4 talkback shows
	2. Update latest seasonal forecast on VMGD provincial notice board	✓	Done monthly
	3. Provide latest seasonal outlook to VNSO for display	✖	VNSO screen not function anymore
	4. Provide climate seasonal forecast (SMS)through Digicel network	✓	Done during El Niño event
	5. Improvement of Climate website and Intranet	✓	Funded under MDRR project and COSPPac
	6. Climate officers to use travel board prior to local travel	✓	Emails are used instead
		✓	Funded under MDRR project

	7. Semi automation of updating climate information to email, webpage, intranet 8. Develop communication strategy 9. Participate in One-Day World Malaria Day Outreach Activity	✓ ✓	Develop under COSPPac
Improvement	1. Purchase of new computers 2. Purchase of server 3. Purchase of new AWS 4. Produce Climate documentary-climate services and products 5. Develop Traditional knowledge value added products such as pull down banner, seasonal calendar 6. Automate SCOPIC and CliDE-automate rainfall data into SCOPIC	✖ ✖ ✖ ✓ ✖ ✖	V-CAP project not implemented V-CAP project not implemented V-CAP project not implemented Funding available and discussions are underway to find a producer TK project on hold There is no agreement on this since different organization take leading role in this two software. Internal copyright issues needs to be solve to get this achieved
Reporting	1. Write up quarterly report for Climate Division	✓	Done
Review	1. Review climate SOP with QMS criteria	✖	Move to 2016
Retirement	1. Inform HR about retirement of Peter Feke and Mercy Nalawas	✓	Officers to retire in 2016

This year the COPIWG Team conducted a survey/awareness program that took us through many of the main islands in each provinces in the second half of the year. There were two teams that carried out the assessments and conducted the survey. The main purpose of the survey is to find out how much the last mile is using VMGD services and products that is put out through the different divisions within the Department.

The outreach/Awareness went as far as from Banks down to Tanna. The table below shows the time and places where survey was carried out as well as awareness on different VMGD products and some feedbacks from people in the communities.

Date	Province/Island	Area/Village	Access to climate Info	Remarks
28th/08/15 to 30th/09/15	Mota Lava	RA, Kurrmante, Ngereniuman, Totoulag	Through radio, but they have reception problems when connecting to radio	Almost all communities hardly have access to Climate Information but they really want to know what the VCU is made up of.

31st/08/15 – 03rd/09/15	Vanua Lava	Sola and Vureas Bay	Through Rainfall collector only, sms when mobile networks permit.	the
	Epi	Malvasi, Market-Rovo Bay, Bonkovio, Lamen Island, Nikaura and Epi High School	Sms, Radio, Area secretary	
	Erromango	Dillon's Bay (North West Erro), Ponkil's bay, Happy Land (South Erromango)	Get information through mobile phone SMS, Rainfall Collector-CDC members, and direct phone call to VMGD during severe weather	
	Tanna	Lawital, Lamlu, Laminu Stadium (Women's conference)	Mobile phones-sms, NGO's, Peter Korisa-NDMO,	

1. COPIWG awareness & survey mission

The climate division was also involved heavily on the communication, Outreach and Partnership working group (COPIWG) activities. The group was divided into two (2) teams tasked for this mission. Climate division was chose to be part of Team 2 to carry out awareness and survey around Efate mainland/Offshore Island, Paama, Ambrym, Santo and Malekula. The main reason behind this is to help communities to understand the functions and activities of VMGD and how the department can help them by accessing, understanding and using the information

The Paama-Southeast Ambrym awareness and survey mission scheduled for 15th – 22nd September 2015 could not convened as planned due severe weather. The team had a short meeting on 16th September and decided to cancel the Paama-Southeast Ambrym trip.

The materials for Paama & Southeast Ambrym mission have been utilized to conduct the Efate awareness and survey. This mission involved visiting some communities on Efate and the Offshore Island of Lelepa. The Efate campaign commenced on the 19th September to 8th October 2015. Eight communities were visited during the Efate awareness and survey mission. Communities visited were:

- Erakor
- Pango
- Eratap
- Blacksand
- Mangaliliu
- Lelepa
- Takara
- Epau

The Malekula and Santo awareness and survey mission was conducted from 13th to the 25th October 2015.The Malekula mission starts from 13th to 18th October. A total of 5 communities were visited on Malekula including:

- St Joseph (Vao)
- Atchin Island
- Pinalum
- Smol Tautu
- Uripiv Island

The Santo awareness and survey mission starts from 18th to 25th October with a total of 5 communities visited:

- Port Olry
- Lorevilko
- Million Dollar Point
- Mango
- Tangoa Island

These are some pictures below taken during awareness and survey mission in the communities:

2. Provincial stakeholder - Tanna workshop

VMGD through Climate Division in partnership Vanuatu Red Cross Society conducted a very successful 3days workshop from the 11th-13th November 2015 on Lenakel, Tanna Island. The main objective for the workshop is to teach and equip the VRN collectors as well as the Red Cross volunteers to understand more on Climate particularly El Niño and see ways of how these two organization can work together to minimize the impacts of natural disasters mainly El Niño in the islands.

The workshop was facilitated by Red Cross VMGD representatives including the regional provincial officers from Agriculture, Health and Water Supply that were also present that time. There were 24 participants altogether from the Western and Northern part of Tanna and also Area Secretaries from East and South Tanna were also part of the training/workshop.

The first day (Tuesday afternoon) ended with the Monthly updated November Climate Update.
The second day activities kick off with the weather and Climate game. A run through the workshop programs was the first part of the morning session followed by the run through on the Ready-Set-Go process. The day ended with participants discussing together some awareness techniques to prepare for awareness on Thursday evenings and Friday mornings before the Vila team departure on Friday afternoon. The participants were also fortunate to hear some coping mechanisms from the other climate specific sectors, with Peter Iesul giving a presentation on Agriculture and also some words from the regional Health Team and the water supply representative.

Thursday started off with games and brief discussions on how, when, where and what to do and say during awareness in communities in the evening. There were three communities identified; Loukatai, Bethel and Lowiniou. The participants divided into three groups; North Tanna, West Tanna and a mix combination of East/Middle Bush and South Tanna formed the third group in which they work together to prepare themselves for the awareness on El Niño in the afternoon.

Friday was awareness all morning at the Market house before all assembled back at the meeting room for summary of everything.

Trainings and Workshops Attended

1. Australia Bureau of Meteorology (BOM) attachment

One climate officer has participated in the COSPPac's Climate, Ocean's and Communications Mentoring and Attachment Program in Melbourne.

The training focused on developing skills and sharing knowledge to better understand, apply and communicate Climate and Oceans information to stakeholders. The training has also allowed the climate officer to work alongside colleagues from other Met Services in the Pacific.

2. Information Management and Control

Information systems (IS) play a vital role in today's organizations and information is considered a valuable asset. Rapidly changing information technology (IT) is increasing the complexity of information management, while concerns about the confidentiality, privacy, validity, and accuracy of the data stored have been heightened. As a result, there is a growing need for both IS users and IS professionals to be aware of issues concerning information management and control and to develop appropriate practical skill in this area. This course introduces: managing, controlling and auditing complex information in modern organizations. The course also builds upon knowledge gained through previous studies in the area of information systems.

The objectives of the course are to be aware of the importance of Information Management and Control and its role in today's organizations. Issues to be addressed include: actions that an organization can take minimize

the threats to its information assets: the major strategies available and how can these approaches to be successfully implemented: how an organization can ensure quality IS that will support operations and decision-making are developed and implemented: the role of risk and quality management in the context of Information Management and Control: and the legal quality management in the context Information Management and Control strategies and tools.

The training starts from 27th September to 10 October 2015.

Training in progress (Group discussion) inside the ICT Lab Laucala Campus USP

3. Inter-Governmental Panel on Climate Change meeting (IPCC)

The Forty-Second Session of the IPCC took place at the Valamar Lacroma Hotel in Dubrovnik, Croatia, from 5 to 8 October 2015. The main agenda item of the Forty-second Session of the IPCC was the election of the IPCC Chair, members of the IPCC Bureau and the Task Force Bureau (TFB). The Panel also addressed other items that require consideration and decision by the Panel. World Meteorology Organization (WMO) Region V (RAV) held side meetings to choose candidates to run for the different task force.

4. Pacific Island Climate Outlook Forum (PI-COF)

The First session of the Pacific Islands Climate Outlook Forum (PICOF-1), with a special focus on the Water Sector is co-organized and co-supported by the Secretariat of Pacific Regional Environment Programme (SPREP), World Meteorological Organization (WMO), the Global Framework for Climate Services (GFCS), University of the South Pacific (USP), the Government of Canada, the Government of Finland, the Secretariat of the Pacific Community (SPC), National Oceanic and Atmospheric Administration (NOAA) Pacific ENSO Application Climate (PEAC) Centre, Australian Bureau of Meteorology (BoM), the New Zealand National Institute for Water and Atmospheric Research (NIWA), Asia-Pacific Economic Cooperation Climate Centre (APCC) and the European Union-Global Climate Change Alliance (EU-GCCA).

The PICOF was hosted by USP at the Laucala Campus in Suva, Fiji Islands from 12 to 16 October 2015.The forum brought together national, regional and international experts on climate services and the water sector.

The main purpose and overarching objectives of the forum were (a) to bring together national, regional and international experts on climate services and water sector; (b) to discuss seasonal climate forecast guidance for the Pacific Islands (PI) region (e.g. SCOPIC, ICU, PEAC, APCC), (c) to discuss application of climate

information to the water sector; and (d) to co-explore common approaches and best practices for climate services that can be extended throughout the PI Region.

5. COSPPac Write-shop

The write-shop was organised for the Pacific national meteorological services. It will be hosted in Nadi, Fiji Islands from 7 -11 September, 2015 at the Fiji Meteorological Service.

The write-shop was co-organized and co-supported by the Secretariat of Pacific Regional Environment Programme (SPREP), the Government of Finland, the Finnish Meteorological Institute (FMI), World Meteorology Organization (WMO), Environment Canada and the Pacific Islands Climate Services (PICS) Panel.

The main objectives of the write-shop was to compile lessons-learned and best practices on climate services in the Pacific region. The write-shop brought together national experts on climate services from the NMSs, selected climate service using sectors, mentors and resource personnel's for 5 days of discussion, writing, mentoring and compiling a document.

Emphasis at the write-shop was placed on looking for common approaches and best practices that can be extended throughout the Pacific Region and shared with other regions through publications and on networks managed by SPREP. Vanuatu submitted 3 stories to be published.

6. COSPPac Tides and Oceans Conversation

Since 2013, COSPPac has been delivering training and development programs in our 14 partner countries in the South Pacific. So far the training has focussed mainly on climate variability and change. In the second part of COSPPac will focus more on oceans and tides.

Before commence design of the oceans/tides capacity development program for each partner country – the program would like to get a better understanding of what has already happened in this field, and to this end, there were 3 sub-regional meetings, with participants from 14 partner countries in the Pacific, to discuss the capacity in oceans and tides in each country. Including:

- The key agencies involved with oceans in each country
- What each agency does
- Issues and challenges in this field
- What development activities might help to address or mitigate the issues
- What information the community and key stakeholders might need

The first meeting was held in Hawaii with the northern Pacific partners from 2-6 February. The second meeting was held in Apia including participants from Niue, Cook Islands, Tonga and Samoa. The final meeting in Fiji will include participants from Fiji, Papua New Guinea, Solomon Islands, Vanuatu, and Tuvalu.

The participants from each country participate in discussions, group activities and information gathering sessions, and share expertise on oceans and tides capacity. Participants came from a range of industries including meteorology, ports, infrastructure, climate change and environment. Vanuatu was represented by Philip Malsale.

7. Pacific Meteorology Council meeting and 1st Pacific Ministerial meeting

The First Pacific Ministerial Meeting on Meteorology (PMMM-1) and the Third Pacific Meteorological Council Meeting (PMC-3) convened at the Fa'onelua Convention Centre in Nuku'alofa, Tonga on the 20 to 24 July, 2015. A total of a hundred and sixty eight (168) participants including ministers, associated ministers, directors from National Meteorological and Hydrological Services (NMHS) and government officials from the following countries: American Samoa, Australia, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Kiribati, Marshall Islands, Nauru, New Caledonia, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, United States of America and Vanuatu plus development partners, media, regional institutions, regional and international organisations and donors.

The meeting adopted the theme: "Sustainable Weather and Climate Services for a Resilient Pacific"; underpinning the important role of NMHSs in the sustainable development context of Pacific Island Countries and Territories (PICTs).

The main objectives of the PMMM-1 was to engage ministers in the development of meteorological (weather and climate) and hydrological services in the Pacific; to discuss gaps and opportunities for strengthening the operations and provision of services by the NMHS and their role in contributing to resilient development; and to provide political support and direction for the development of the NMHSs. The meeting concluded with the endorsement of the Nuku'alofa Declaration by Ministers which promulgated that NMHSs must be given equal priority to build the necessary capacity to support national efforts towards sustainable development. Vanuatu was represented by Director David Gibson, Philip Malsale and Thomas lakin: Climate Change Minister.

8. Pi-CLIM workshop

The Regional Training and Inception Workshop for the ROK-PI Climate Prediction Services Project, was co-hosted and co-organized by the Government of Tonga, Tonga Meteorological and Coastal Radio Services, the Secretariat of the Pacific Regional Environment Programme (SPREP), and the APEC Climate Centre (APCC). It was held in the DMO Conference Room, Nukualofa, Kingdom of Tonga on 15 to 17 July 2015.

The workshop was part of the new Pacific Climate Prediction Services (CliPS) Project funded by the Government of the Republic of Korea (RoK) through the Pacific Islands Forum Secretariat (PIFS) and implemented by SPREP and the (APCC). The workshop focus on enhancing capacity of Pacific Island Meteorological Services in seasonal climate prediction specifically the use of dynamical models provided by APCC's real-time global climate prediction information.

9. COP 21

The Republic of Vanuatu saw COP21, and the possibility of the Paris Agreement, as a critical milestone in our national and global struggle to cope with and overcome the adverse effects of climate change on our people, our islands, or environment, our culture and our development pathway. In this context, at COP21 the Vanuatu delegation aspired to many aspects of climate change. The meeting was held in Paris, France from the 30th November – 10 December 2015. The Paris agreement was beneficial to Vanuatu as many of the National stand was raised as a nation or as a group during the meeting which was reflected in the agreement.

10. Enhancing Climate Indices and Sector Applications Workshop

WMO organized a one-week workshop on Enhancing Climate Indices for Sector Applications involving 10 different Pacific Island Countries including American Samoa, Samoa, Cook Islands, Fiji, Marshall Islands, Papua New Guinea, Tonga, Tuvalu, Solomon Islands and Vanuatu. All participating countries were represented by 2 participants, one from the Met Service and the other from a climate sector, in Vanuatu's case- it was the water sector/hydrology Department.

We worked together alongside our sector representative to calculate the correlations between rainfall and using the sector data. The first day of the workshop was more into a brief about the ET-SCI team, Introduction to the ET-SCI pilot workshop held in Ecuador and outcomes. What outcomes can we expect from this workshop as well as Climate information for Agriculture and Food Security Climate and information for Water Resources Climate information for Health. Second day was more hands-on CLIMPACT 2 software program. Downloading and using the software program to Quality Control Data from a weather station and then homogenizing the data. Errors and faults were identified and marked out for correction.

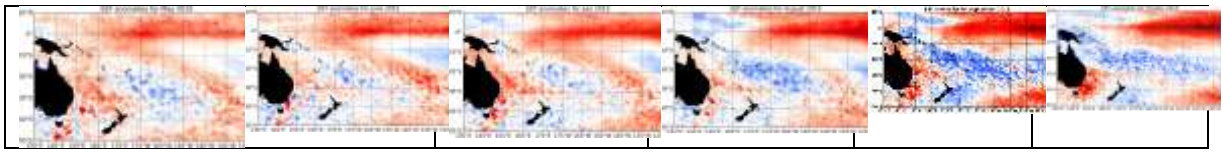
ET-SCI workshop group photo, Tanoa International Hotel, Nadi, Fiji, 7 Dec 2015.

The week ended with another presentation from all countries based on the results we have obtained from calculating the different correlations between the climate and sector data and also on what we have find out from quality controlling the different stations data.

The rest of the other information can be found on the following website:
http://www.wmo.int/pages/prog/wcp/ccl/opace/opace4/meetings/ET-SCI-fiji2015.php
http://www.wmo.int/pages/prog/wcp/ccl/opace/opace4/documents/ClimPACT_workshop_PICT-2015_report_final.pdf

2015 EL NIÑO

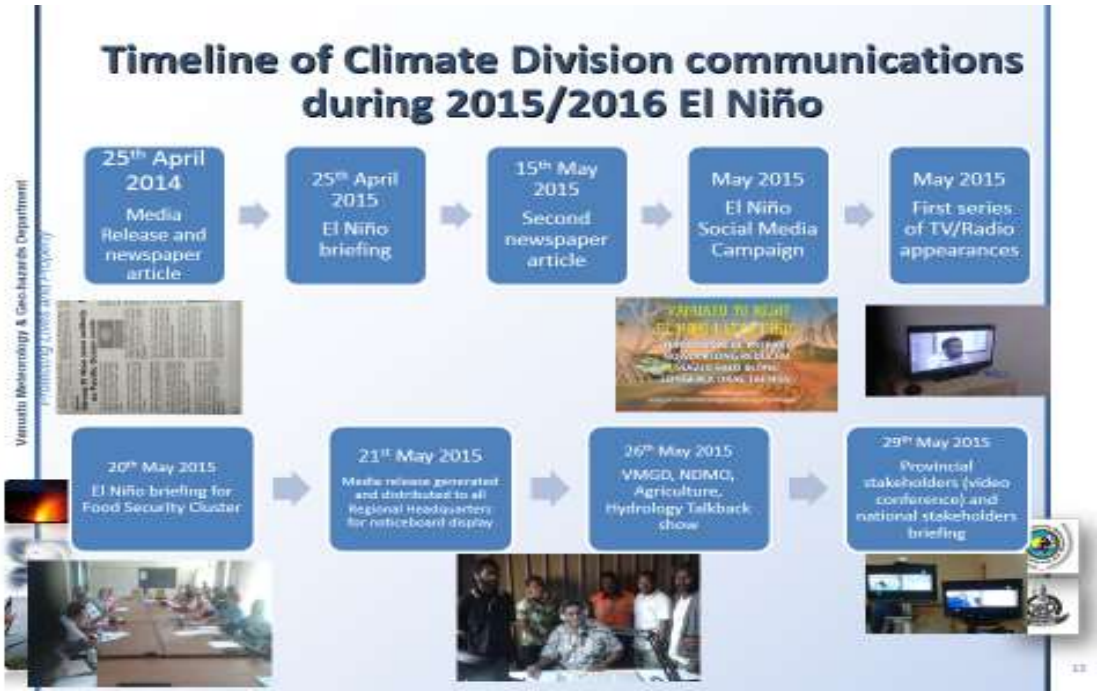
March 2015 the 2015/16 El Niño onset in the Pacific region. Initial media release from VMGD for this event was release way back in 2014. There were continuous monitoring of the event with regular monthly updates till March 2015. During that month, VMGD released another media release on El Niño onset in the Pacific in which during that time Vanuatu experienced a lot of rainfall. The impacts were felt three months later impacting all sectors particularly water, agriculture and health affecting socioeconomic livelihood of people.



The mode of communication to get the information to the public were

- Vanuatu Climate Update (VCU)
- 3-month rainfall outlook (included within VCU)
- Vanuatu Monthly Climate Briefing (/regional video conference)
- Media briefing and press release
- Radio talkback/general radio appearances
- SMS
- 'One-off' Climate Briefings (e.g. to Govt. Departments, clusters etc.)
- Social media
- Klaod Nasara toolkit including animation

Below is a summary of timeframe of the communications the division had concerning the event.


Timeline of Climate Division communications during 2015/2016 El Niño
25th April 2014
Media Release and newspaper article
25th April 2015
El Niño briefing
15th May 2015
Second newspaper article
May 2015
El Niño Social Media Campaign
May 2015
First series of TV/Radio appearances
20th May 2015
El Niño briefing for Food Security Cluster
21st May 2015
Media release generated and distributed to all Regional Headquarters for noticeboard display
26th May 2015
VMGD, NDMO, Agriculture, Hydrology Talkback show
29th May 2015
Provincial stakeholders (video conference) and national stakeholders briefing


2nd June 2015
First whole of country SMS sent (TVL/Digicel)
June
Provincial El Niño Briefings continue
22nd June
Talkback show with NDMO
6th August
Cluster briefing
21st August
Media release and front page news
26th August
Education sector briefing
31st August
Radio interview – Radio NZ
1st September
Radio interview – ABC Pacific Beat
1st September
Australian High Commission Briefing
16th September
NDMO El Niño scenario-building exercise
September
El Niño information appears alongside daily weather in newspaper

2015-2016 TROPICAL CYCLONE SEASON

The 2015/16 Vanuatu tropical cyclone seasonal forecast was release on the 16th October 2016. The media release stated that Vanuatu is expected to have 2 to 6 Tropical Cyclones (TC) in 2015/2016 cyclone season. Possible impacts coupled with current El Niño event have adverse impacts on the livelihood of our people. Vanuatu is located in the hotspot of tropical cyclone activity in the region. Each year Vanuatu and New Caledonia experience the greatest cyclone activity with at least 2-3 cyclones passing close to the countries. The Pacific region is forecast to have 11-13 named tropical cyclones from November 2015 to April 2016. TC activity for Vanuatu is anticipated to be above average this season which means more than two events.

The current El Niño conditions are forecast to last until early 2016. In the past, these conditions existed in Vanuatu and have influenced higher probability of experiencing Category 3 cyclones or above such as Fran and Susan.

The conditions forecasted for the 2015/16 tropical cyclone season were similar to the seasons of 5 analog years of 1972/1973: 1982/83; 1987/88; 1991/92 and 1997/98. With the El Niño event, Sea surface temperatures have increased in the Pacific region and can influence the occurrence of TC events outside of the normal season (that is before and/or after the cyclone season). During El Niño events, there is high possibility of tropical cyclones to follow tracks that maneuver around the islands and last longer and this is shown by TC Ula. This will mean that an event can cause a lot of damage if it survive in an area for a long time. The same impact if a severe event transverse an island for a shorter period.

The 2015/16 season has not ended and Vanuatu has experienced 3 events of which all are category 4. Detail of these events are in the forecast division report. People are advised to continue undertake preparedness actions for the remainder of the season knowing that any tropical cyclone impact coupled with the current El Niño will have great effect on the socio-economic livelihood of people living in Vanuatu.

Below is a snapshot of the tropical cyclone tracks during the 5 analog years used for analysis

				
1972/73	1982/83	1987/88	1991/92	1997/98

PROJECTS

1. V-CAP

The V-CAP project will also address needs of the climate division under the component 2 of the project cost around 100,000,000vt of which about 70% will be targeting climate early warning system components. The project has started and roll out for the next 5 years and will complement the EU-GIZ project.

2. EU-GIZ

The project title 'Solar and Biogas based Rural Electrification with the implementation of a sector-specific Climate Early Warning System (CLEWS) 'Dashboard'. It involves 3 year program with an approximately 25,000,000vt for the climate division. This will set up the basis for climate early warning system known as CLEWS. This project will purchase 2 AWS, a vehicle, setting of the CLEWS (products and information) and computers for climate division. All of these will help with providing services and products that will target specific sector and in this project is the energy sector. The main problem facing Vanuatu currently is high vulnerability to climate change and variability, exacerbated by a low capacity to address and adapt. A major barrier limiting the capacity to address climate related events is the inability to effectively predict climate extreme events, assess potential impacts and deliver short-term alerts or long term warnings. This is due to a number of infrastructural constraints (such as lack of early warning systems) and human capacity limitations including inadequate tools and equipment for data processing and analysis and a shortage of qualified personnel who can process information into a suitable format for those who most need it.

The project is now at its financial agreement and now this is finalise and signed off by the donors and Vanuatu Government, the project will start implement its activities

3. AVID Red Cross Volunteer Imogen Aitken

Imogen Aitken has been volunteering at the VMGD since April 2015. She is based in the Climate Division and her work focusses on communications, community engagement and outreach. Within Climate, Imogen has worked with the team on stakeholder Climate briefings, an engagement workshop for key regional stakeholders in TAFEA in collaboration with the Vanuatu Red Cross, applications for funding and review of products and services and outreach materials. Cross-Divisionally, she has worked with the Communications, Outreach and Partnerships Internal Working Group (COPIWG) to conduct a regional survey of access and understanding of VMGD products and services, and provide awareness about the VMGD throughout Vanuatu to the last mile. The results of the survey, along with the results of focus groups conducted with community members and key stakeholders will help to shape communications, outreach and engagement planning for the VMGD from 2016 onwards. The COPIWG has also worked to align Divisional outreach materials and define key messages. Imogen has also been involved in the content design and planning process for the upcoming VMGD website development, and has given general project and administration support where necessary. Imogen will leave Vanuatu in April 2016 having had a wonderful learning experience at VMGD.

Traditional Knowledge Project

VMGD through the climate division work closely with COSPPac to implement the traditional knowledge project in Vanuatu. Climate division coordinate the arrangements with local institutions such as the Vanuatu Kaljural Senta (VKS), EU-GIZ and Vanuatu Red Cross Society for documenting and integrating traditional knowledge of weather and climate forecasts with 'modern' scientific methods. Traditional knowledge on weather and climate indicators is fast becoming a popular topic in the region and there is a need for better coordination at this early stage.

The implementation of activities for this project has stopped for more than a year due to officer responsible for this project transfer to the ministry of climate change. Funds are available to implement the activities and an option of recruit a TK officer for six months is an option the division is working on now. Upon getting the new officer then activities for the project will be implemented in 2016.

ACHIEVEMENTS COMMENT

The overall report for year 2015 shows or indicates that most activities for this year for the climate division have been well achieved. This is because of the good team work amongst officers within the Climate Division, other VMGD divisions, stakeholders (Vanuatu Government and NGOs) and donor partners.

CHALLENGES COMMENT

Compare 2015 with the previous year, the climate division has done extremely well though there were many challenges and one in particular is lack of human resource (one officer was transferred to the CSU of the Ministry of Climate Change, and one is on study leave). This has hindered the progress of the division, particularly in agro-met service.

Last and foremost, some activities were delayed or not carried out during timeframe indicated in the 2015 business plan because of funding availability, weather related issues, sickness and the unavailability of officers.

4. GEO-HAZARDS DIVISION

DIVISION PURPOSE AND KEY OUTCOMES

The Geo-Hazards Division contributes to the Department's purpose 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).

The Geo-Hazards Division Contributes to VMGD Overall Objective (High Level) by way of Improving accuracy, timelines, quality of Geo-hazards' information, alerts, warnings and services.

2015 PRIORITY ACTIVITIES AND RESULTS

Programs and Objectives required by the 2015 Business Plan and results are summarized in the table below and commentary provided in the following text.

Geo-Hazards Division (Business Plan)

Programs	Objective (Targets)	Result ✓✖	Result Summary
Research and scientific collaborations	Improve current knowledge, and responses to volcanism, Seismicity and Tsunami	✓	1.1. Engage in research activities with local and international scientists on earthquakes and volcanoes of Gaua, Ambae , Ambrym, Lopevi, and Tanna 1.2. Carry out scientific assessment and research activities after major earthquake and tsunami events 1.3. Training workshop on volcano-seismic data processing & analyze 1.4. Coordinate & facilitate training workshop and attachment with other counterparts in Geo-Hazards field 1.5. Participate in regional and international conferences and seminars 1.6. Facilitate Internal technical trainings relevant to Geo-Hazards areas of work for Geo-Hazards staff 1.7. Retrieve Lidar data and training on using data for tsunami modelling/hazard mapping

Scientific collaborations and partnership for data sharing	Enhance collaboration with regional institutes to promote the regional geophysical network		2.1 Establish Trilateral and multilateral agreements with ORSNET communities, DASE, , GEOSCOPE, MVN/MSG, To address Geo-Hazards Observations and data sharing 2.2. Share seismic data with other Earthquake Information centre's to encourage research and to re-enforce monitoring system in Vanuatu 2.3. Collaborate with Regional Partners in strengthening the Regional seismic network Vanuatu/New Caledonia with other observatories in the region
Crisis response	Undertake responses to volcanism, Seismicity and Tsunami	✓ ✓	3.1. Liaise with NDMO, and other stake holders for disaster response plan and action in times of volcanic eruptions, earthquake and tsunami 3.2. Carry out hazard assessment in response to major volcano activity events 3.3. Carry out earthquake intensity survey and hazards assessment in response to major earthquake events 3.4. Carry out tsunami run up and hazards assessment in response to a major tsunami event
Geo-hazards Warning System	To improve Geo-Hazards warning systems in Vanuatu		4.1. Ensure Geo-Hazards Warning centre operations up and running. 4.2. Contribute to the development of tsunami risk map for Port Vila and Luganville 4.3. Contribute in the development of the tsunami warning signage project

			4.4. Contribute to the Development of the reviewed Hazard map and contingency planning for Tanna and Ambrym 4.5. Finalize the Vanuatu Volcano Alert System review 4.6. Maintain Geo Hazards warning centre operations g. Ensure 24H/7 on call services for Geo-Hazards Early Warning systems 4.7 Carry out the observations of earthquakes and volcanoes in real-time 24H/7 for tsunami and volcanic eruptions early warning
Earthquakes and volcano monitoring	Improve seismic and volcano monitoring systems to prevent disastrous consequences of natural disasters to humans and the environment	✓ ✓	5.1. Establish agreements with provinces Malampa /Shefa/ Tafea and/ or customary landowners for the use of rural lands for Geohazards monitoring systems 5.2. Upgrade the national seismic network by extending the network to Tanna , Malekula and Port Vila 5.3. Upgrade the Efate seismic network 5.4. Maintain the Efate seismic network 5.5. Maintain the Geoscope station for global earthquake monitoring network 5.6. Continue Installation of Real-time seismic monitoring system on Tanna, Lopevi, Paama, Ambrym, ,Ambae, Gaua and Vanua lava 5.7 Improvement of Sea Level Monitoring in Vanuatu

			5.8. Volcanic hazards Assessment on Ambrym, Tanna, Ambae, Lopevi and Gaua
Geo-hazards data/products and services	Organise Geo-hazards information into the hazards database and issue the corresponding hazards information to reduce Geohazards risks to local communities, the general public and the tourism industry	✓	6.1. Issue earthquake occurrence bulletins for local communities 6.2. Issue monthly and annual earthquake bulletins for scientific communities
		✓	6.3. Issue volcano Alert Bulletins for tourism industry, local communities and general public 6.3. Issue monthly and annual volcano activity bulletins for scientific communities 6.4 Issue monthly volcano activity update bulletins for general public 6.5. Issue weekly report of Geo-hazards monitoring systems and operations 6.6. Review and develop specific education and awareness materials for specific audience using specific software 6.7. Participate in education and outreach missions in schools and during global events as WMO/WW day, sciences week, environment week 6.8. Prepare outreach/awareness materials based on thesis findings North Malekula/South Santo seismic gap 6.9. Conduct outreach awareness based on thesis findings – North Malekula/South Santo

Geo-hazards management and operating procedures	To ensure a high standard operation of the Vanuatu Geo-Hazards Observatory and a proper management of Geo-Hazards staffs and assets	✓	7.1. Update Draft SOPs for Admin response/Geo-Hazards response, emergency response, Issuance of Geo-Hazards products 7.2. Review Tsunami detection and operation procedures 7.3. Finalise Geo-Hazards operating manual/Geo-Hazards Directive including all hazards/Geo-Hazards Monitoring Systems Manual 7.4 Engage in the VMGD Business/corporate planning and annual budgeting for 2014/2015 7.5 Report annually and bi-annually on the Geo-hazards operations and achievements 2013 7.6. Assess staffs through staff appraisal 7.7 Control the Geo-Hazards assets 7.8. Ensure the Geo-Hazards business plan is well implemented within means and timeframe
Project Management	To ensure that all Go-Hazards projects are well implemented and that project targets are reached in a timely manner.	✓	8.1 Mainstreaming Disaster Risk Management (MDRR) Project 8.2. Increasing Resilience to Climate Change and Natural Hazards (IRCCNH) project 8.3. Project of cooperation through the Government of New Caledonia 8.4. Oceania Regional Seismic Network (ORSNET) Project

Extra responsibility due to Cyclone PAM	To assist in the distribution of relieve supply		8.5 Other small project 9.1 Tropical cyclone warning 9.2 Distribution of relief supply

(I). RESEARCH AND DEVELOPMENT TO IMPROVE CURRENT KNOWLEDGE, AND RESPONSES TO VOLCANISM, SEISMICITY AND TSUNAMI

I.1. Engage in research activities with local and international scientists on earthquakes and volcanoes of Gaua, Ambae , Ambrym, Lopevi, and Tanna

Few research projects have been discussed with the international communities during the year 2015. Some of the projects have been finalized and implemented in 2015, some others have been proposed to seek funding in 2015 to be implemented in 2016. Among the proposed projects implemented in 2015, the post Cyclone PAM assessment that have been received through the Geo-Hazards Division and transferred to the rightful Divisions of Forecast and observations for implementation. The Research project proposal that have been received approved and started to be implemented in 2015 include:

- "Factors influencing short term and long term explosive variability at steady-state volcanoes, yasur volcano, Tanna, Vanuatu", a project funded by Auckland University and managed by Professor Shane Cronin for his student leading the project implementation Ben Kennedy of Auckland University, one year project 2015-2016.

Within the number of projects that were in discussion during the year 2015 to be implemented in 2016, there are some projects in different areas:

- "Volcanic aerosols characterization, survey and forecast of volcanic plusmes applied to Ambrym volcano" a project funded by IRD managed by Dr. Jerome Lefevre from GOPS/IRD and Joe Mala from VMGD a one year project.
- "The first attempt to sample the directional infrasonic wavefield for volcanic micro-eruptions by using microphone payloads on teathered weather balloons", a research project funded by GNS Sciences and NIWA of New Zealand, led by Dr. Arthur Jolly and team, a two years project that aim to understand volcanic eruption processes in the subsurface.

Some others were under discussion but the dates of implementation is still not clear, depending on funding support. These includes:

- "The Drilling the late Quaternary coral record of climate on a subsiding reef at Sabine Bank, Vanuatu" project proposed by Texas Univeristy and partners including several researchers of various nationalities, managed by Dr. Fred Taylor of Texas University.
- "Reactive plume impacts of the tropical troposphere from the powerful magma degassing in the Vanuatu Arc", the research project proposed to the National Agency for Research in France to seek funding. The project is led by Dr. Sylvie Vergniol and includes a dozen French scientists from the Institut Physique du Globe in Paris and others, it is a 2 years research project,

I.2. Carry out scientific assessment and research activities after major earthquake and tsunami events

1.2.1 Earthquake crisis

Two major earthquake sequences occurred in 2015; the February Northeast Paama earthquake crisis, the October Northeast Santo crisis and the December Northeast Erromango crisis.

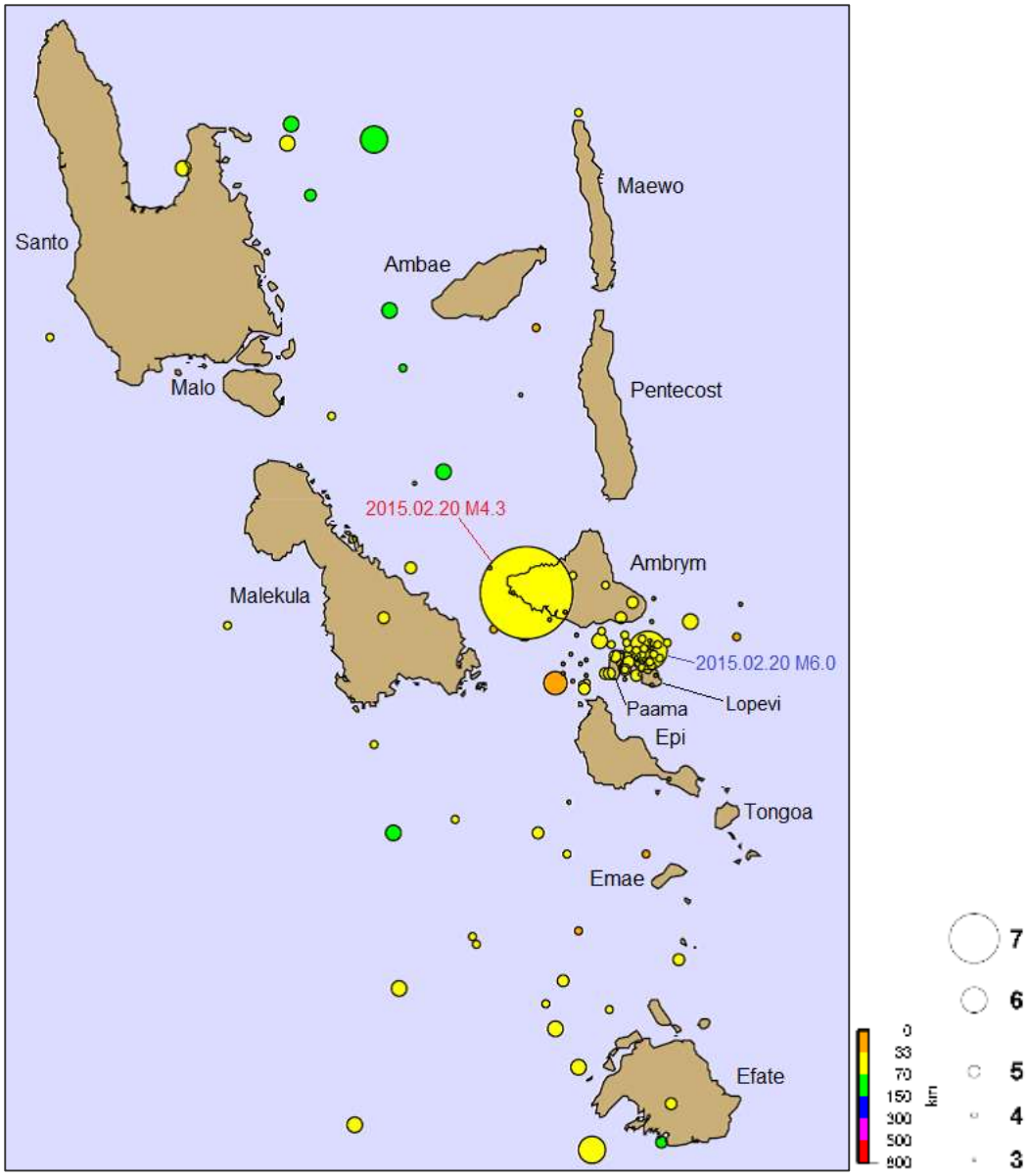
North-East Paama Earthquake – February 2015

On the 20th of February 2015, a magnitude 6.0 earthquake struck off the Northeast Coast of Paama [Figure 3]. The quake triggered a local tsunami that struck the northern coast line of Paama 10 minutes after. The earthquake sequence of this rupture was well constrained despite delay of seismic data from the seismograph station on Lopevi. The Lopevi station clipped upon impact from the mainshock. Within 6 days after the mainshock, a total of 38 aftershocks were computed from Seiscomp and 77 were computed from Seisan [Table 1]

Date	Events seiscomp	Events Seisan	Location Area
2015/02/19	26	56	Paama_Lopevi_Ambrym
2015/02/20	6	11	Paama_Lopevi_Ambrym
2015/02/21	2	3	Paama_Lopevi_Ambrym
2015/02/22	2	3	Paama_Lopevi_Ambrym
2015/02/23	1	3	Paama_Lopevi_Ambrym
2015/02/24	0	0	Paama_Lopevi_Ambrym
2015/02/25	1	1	Paama_Lopevi_Ambrym
Total	38	77	Paama_Lopevi_Ambrym

Aftershocks computed from 2 different seismic data software; Seiscomp and Seisan

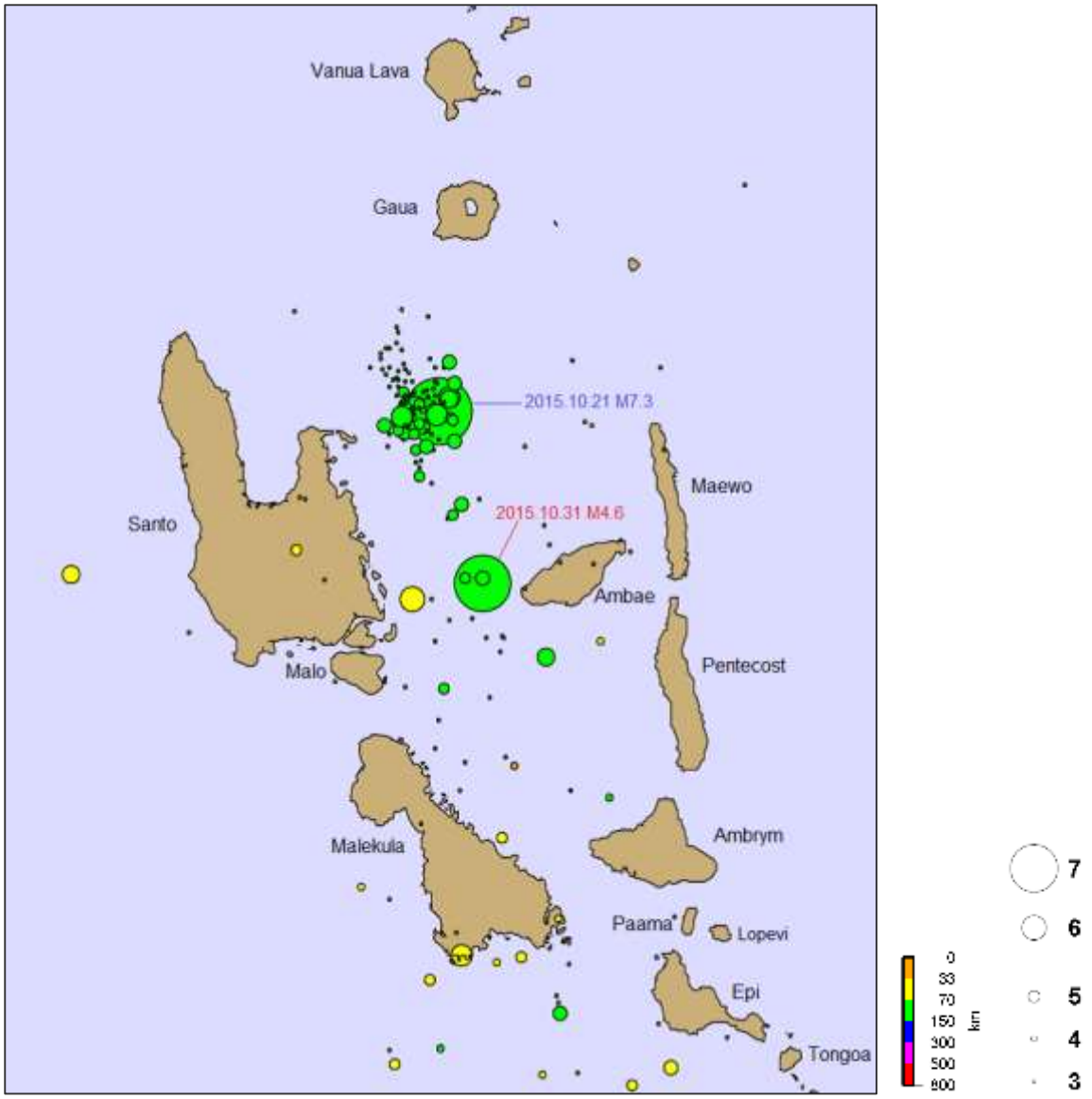
Seismic effects observed on Paama include landslides, rock fall and deep cracks on pathways and tracks. Structural damage is restricted to building foundations mainly residential dwellings and water wells. An intensity of VI (6) was inferred corresponding to strong shaking and light damage.



The 20th February 2015 Northeast Paama M6.0 Earthquake and aftershock events. Notice the magnitude 4.3 event (yellow circle) in red; an aftershock of the principal event but highly related to the fracture zone of Ambrym volcanic center. Hence, a highly localised event for Ambrym; off-setting the normal size representation of tectonic earthquakes within such magnitude range.

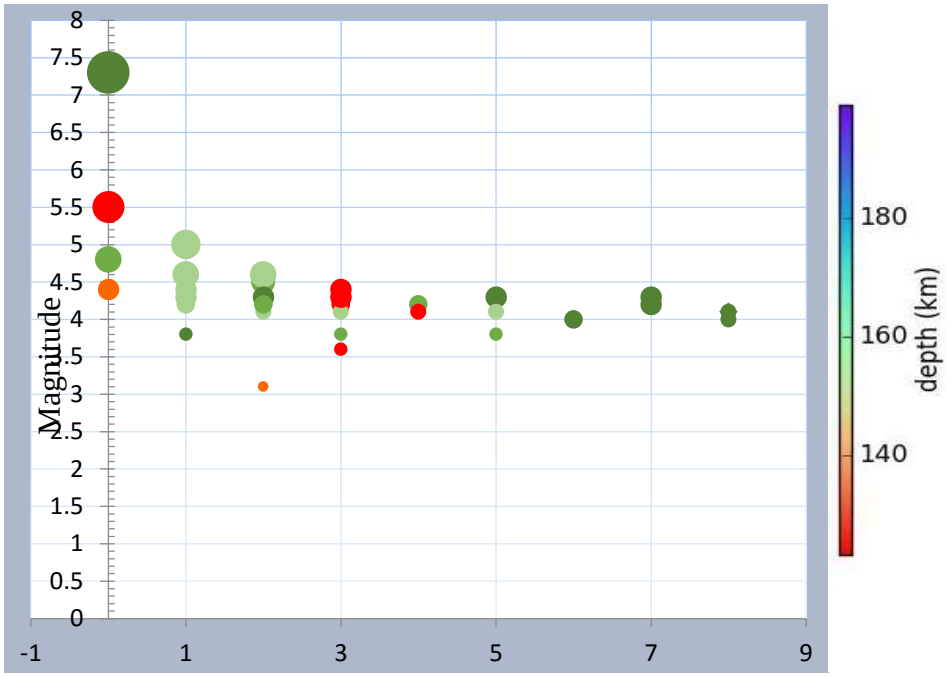
Northeast Santo Earthquake Crisis – October 2015

A major earthquake struck off northeast Santo at about 8:52 am local time Wednesday October 21st 2015. The regional seismic network located the event at 15.01 ˚S and 167.21˚E or 35 km east northeast of Port Olry, Santo [Figure 4] at a depth of 119 km with a magnitude of 7.3.



The 21st October Northeast Santo M7.3 Earthquake and aftershock events. Notice the magnitude 4.6 event (green circle) off West of Ambae in red; a highly localised event for Ambae; off-setting the normal size representation of tectonic earthquakes within such magnitude range.

Eastern Santo and Malo experienced strong to very strong shaking (VI – VII) as well as Gaua and Maewo. The shaking was also felt as far as Efate about 330 km away from the epicenter. The regional seismic network managed to locate approximately 39 aftershocks events within 7 days after the principal event. The Local seismic network [Efate Network] manages to relocate the principal earthquake epicenter and the subsequent aftershock events. The aftershock events ranged from magnitude 3.1 to 5.5 with at least 6 shallow focus events ranging from magnitude 3.6 to 5.5 [Figure 5].

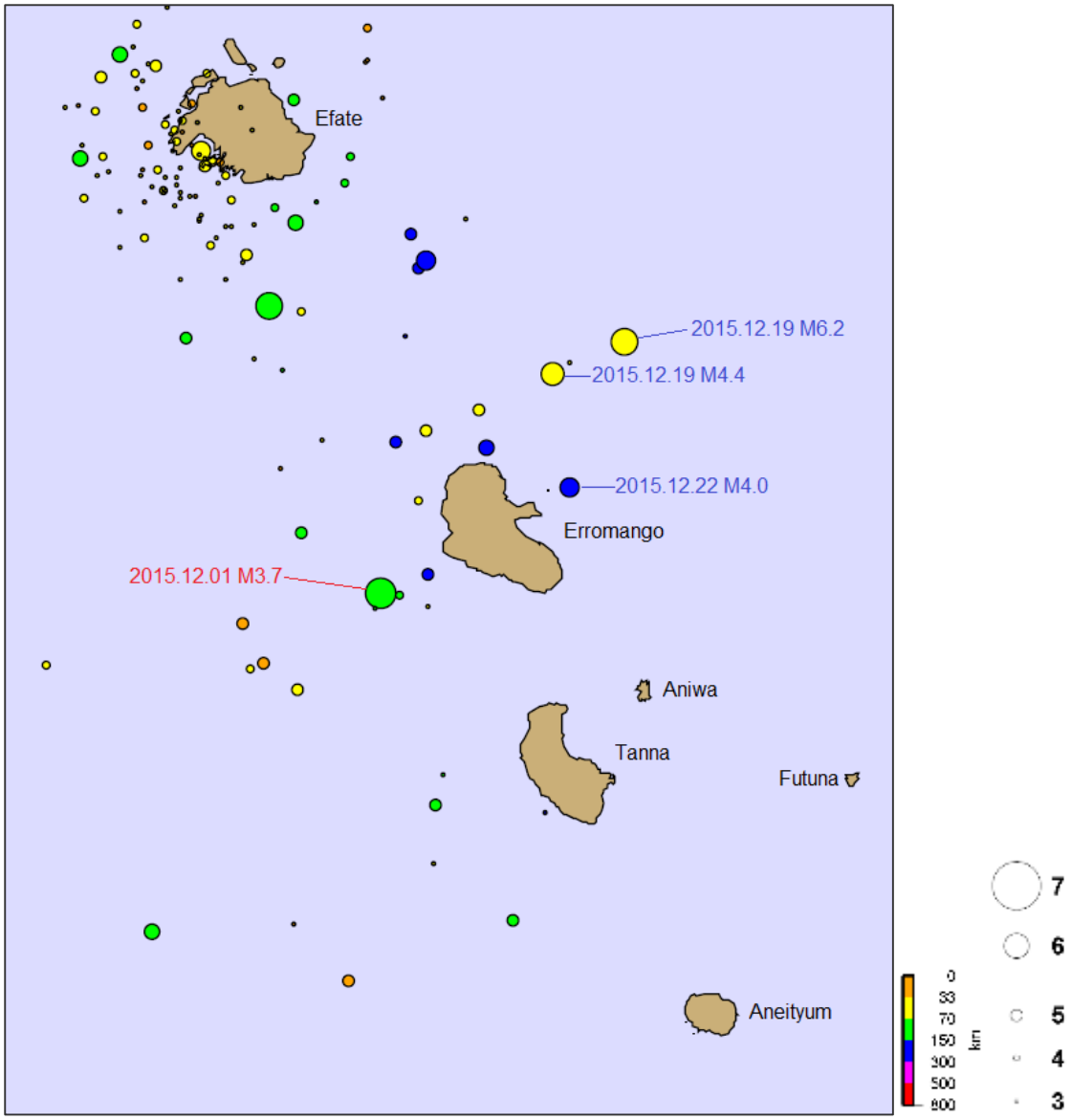


Aftershocks recorded by the regional seismic network within 7 days after the main shock on 21st October 2015. These aftershocks ranged from magnitude 3.1 to 5.5 with at least 6 shallow focus events ranging from magnitude 3.6 to 5.5.

The October 21st, 2015 M 7.3 Vanuatu earthquake occurred as a result of oblique-reverse faulting at an intermediate depth, approximately 119 km beneath the Pacific Ocean and 100 km to the east of the New Hebrides Trench [Vanuatu Trench], within the lithosphere of the sub ducting Australian plate. It is an intermediate-depth earthquake, representing deformation within the sub ducting Australian plate slab. Thus it is felt at great distance from it's epicenter. Focal mechanisms indicate oblique rupture occurred on either a west-northwest or south-southeast-striking, moderately-dipping fault. At the latitude of the earthquake, the Australian plate moves east-northeast relative to the Pacific plate, subducting beneath the New Hebrides arc [Vanuatu archipelago] and the North Fiji Basin at a velocity of about 88 $mm.yr^{-1}$. The subducted Australian plate is seismically active to a depth of about 300 km in the region of this earthquake.

Other notable earthquakes in 2015

Other notable events include the M6.5 earthquake located about 84 km North-northeast of Port Vila, Efate that occurred at a depth of 201 km on the 23rd January and the M6.2 earthquake that struck off northeast Erromango [Figure 6] about 13:10 [1:10 pm] local time on December 19th 2015. Interestingly, the Northeast Erromango event show virtual no aftershocks or very few if any at all. The vast area between Efate and Tanna lacks seismograph stations. A station on Erromango would improve seismic data in this part of Vanuatu.



The Northeast Erromango M6.2 Earthquake that occurred on 19 December 2015. The event triggered virtually no aftershocks or if any very few. Notice the magnitude 3.7 event (green circle) in red; off-setting normal size representation of event of that size.

I.3. Training on volcano-seismic data processing & analyze

The Scientific officer volcano-Seismology provided an internal training to the newly recruited volcano data Analyst, Mrs. Melinda Aru in the system of volcano-seismic data analysis. She provided a brief presentation about the department, Geohazards division and volcanology section with more explanation about the volcano monitoring system, operation system (Linux and windows), process and analysis operation system and type of volcano seismic event during her first day at work. More than 3 reading books (Vol_sismo-Training, Dog_Training and volcanic seismicity books) were made available to to Melinda to know more about volcano seismicity such as identification of volcano seismic event, type of waveforms and types of volcano seismic event.

I.4. Coordinate & facilitate training workshop and attachment with other counterparts in Geohazards field

1.4.1. Oceania Regional Seismic Network training

The Seismic data analyst and Processor, Sophie Turere participated in the Seismic Data Sharing Task Team and Oceania Regional Seismic Network (ORSNET) Training in Suva, Fiji from 2nd to 6th November 2015. The training was sponsored by ORSNET Project funds. The ORSNET training was provided by Sylvain Todman, the Geo-Hazards adviser. The training focused mainly on the basics in LINUX as the main operating system for seismic data analysis and SEISCOMP3 and include all Seismic observatories in the region (PNG, Solomon Islands, Vanuatu, New Caledonia, Fiji, and Tonga) including Geosciences Australia.

1.4.2 Student attachment

A Ni-Vanuatu second year student from the University of New Caledonia (UNC), Amanda Koroka spent about 3 weeks with the seismology team from December 1st to 23rd as part of her applied Geoscience credit (DEUST GEOSCIENCES APPLIQUEES) toward her program of study. She worked closely with the 2 Data Processor and Analysts Seismology, Sophie Turere and Juanita Laga during her short attachment.

1.5. Participate in regional and international conferences and seminars

1.5.1 26th Session of the ICG/PTWS

The PSO Seismology, Morris Harrison attended the 26th Session of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS-XXVI) from 22 to 24 April in Honolulu, Hawaii, USA. He presented the National Progress Report for Vanuatu and voted on behalf of Vanuatu in the elections of officers in the ICG/PTWS. The meeting elected Miss Filomena Nelson from Samoa's Disaster Management Office Chairlady of ICG/PTWS replacing Dr. Ken Gledhill from New Zealand's GNS who was at the helm for the last 3 years. Mr Ofa Fa'anunu from the Tonga's Meteorology Department elected the chair of Working Group for the South West Pacific. The PSO Seismology, Morris Harrison was nominated as a member of Working Group 2 Tsunami Detection, Warning and Dissemination.

1.5.2 4th meeting of the ICG/PTWS seismic data sharing task team of the South west Pacific

The Seismic data analyst and Processor, Sophie Turere participated in the Seismic Data Sharing Task Team of the Intergovernmental Coordination Group for the Pacific Tsunami Warning System (ICG/PTWS). She also attended the Oceania Regional Seismic Network (ORSNET) Training in Suva, Fiji from 2nd to 6th November 2015. The training and meeting were both sponsored by UNESCO and the ORSNET Project funds. The Task team meeting was chaired by Esline Garaebiti, Manager Geo-Hazards of Vanuatu.

Group photo of the ICG/PTWS training and meeting participants

1.5.3 Capacity Building Training workshop on "E-Government Development in Pacific Small Island Developing states"

The Geo-Hazards Manager attended this workshop in response to the OGCIO request for VMGD participation in this workshop. This workshop is held at Suvavou house in Suva, Fiji, from 5th to 7th November 2015. It is co-funded by the United Nation Project Office in Governance (UNPOG) and the Ministry of Communication of Fiji for the participants from Asia and Pacific region, particularly those who use E-Government for Disaster Risk Management.

1.6. Facilitate internal technical trainings relevant to Geohazards areas of work for Geo-Hazards staff

1.6.1 On the Job training under JICA project

All Geo-Hazards staffs, especially technicians and Seismology team, underwent the on the job training on the installation, and maintenance of the STS2 Broad Band Seismograph and strong motion sensor. This on the Job training run on the 8th, 15th and 17th of June 2015 on the 3 station sites occupied by the JICA funded Seismometer, in Port Vila, Malekula and Tanna.

1.6.2 Tide Observation course

The PSO Seismology, Morris Harrison attended a tide observation course held at the Vanuatu Meteorology and Geo-hazards Department conference room. The course runs for 21 days between the 17th June to 22nd July 2015. It was conducted by Chuji Yamamoto, a consultant from the Yachiyo Engineering Co., Ltd of the Japan Meteorological Business Support Center (JMBSC). The training course is the soft component of "The Project for Improvement of Equipment for Disaster Risk Management" Tide Observation Systems for Vanuatu funded by the Japanese government through the World Bank. A certificate of participation was awarded after the training.

1.6.3 Website construction training

This training was provided under the JICA "Project for Improvement for Disaster Risk Management" as the soft component to the equipment that was installed on remote sites. This training intended to teach VMGD staffs on how to display the information collected by the JICA project to the general Public. Sandrine Cevuard, the Volcanology Scientific Officer was the Geo-Hazards participant in this training. The training run for 21 days from 17th June to 22 July 2015. Sandrine was selected at the end of the training to demonstrate the Geo-Hazards web page she created during the training she got from Mr. Koji Mitsuhashi, a consultant of the Japan Meteorological Business Support Center (JMBSC).

1.6.4 WMO's Common Alerting Protocol (CAP) Workshop

Sandrine Cevuard, Scientific Officer Volcanology, attended the training workshop funded by WMO and provided by Dr. Christian Eliot who is the WMO CAP's expert. The training intended to initiate the VMGD staffs on the international standard format for emergency alerting and Public warning. The training was held in the VMGD conference from 2nd to 3rd December 2015.

1.6.5 VMGD Website Design using Joomla - training

The PSO Seismology, Morris Harrison and SO Volcano-Seismic, Sandrine Cevuard attended a Website design training conducted by Thanh Phan, a volunteer with the Information, Communication and Technology (ICT) Division on the 14 and 15 December 2015. It is an in-house training for preparing officers on the development of a new Vanuatu Meteorology and Geo-Hazards Department website.

1.7. Retrieve Lidar data and training on using data for tsunami modelling/hazard mapping

1.7.1 QGIS Introduction and refresher course

The Seismic data analyst and Processor, Sophie Turere participated in the Increasing Resilience to Climate Change and Natural Hazards (IRCCNH) project free and open source Geographic Information System (QGIS) training course held at the Office of the Government Chief Information Officer (OGCIO) Training Room in Port Vila. The course runs over 2 days, 23rd and 24th November 2015. A certificate of Participation was offered after the training. The Training was conducted by Tim Gusten, a GIS consultant under the IRCCNH project.

2. SCIENTIFIC COLLABORATION AND PARTNERSHIP FOR DATA SHARING

2.1 Establish Trilateral and multilateral agreements with ORSNET communities, GEOSCOPE, to address Geohazards Observations and data sharing

The Geo-Hazards Division contributed in the discussions and development of a number of agreements/MOUs, for the interest of partnership and collaboration with VMGD through the Geo-hazards Division in the exchange of scientific and technical expertise, data and resources. Some of these agreements are already signed.

- An MoU has been discussed and signed in February 2015 between the Director of VMGD and the Director of the Institute of Research and Development (IRD) based in New Caledonia regarding the partnership of the two organization in the hosting and running of the regional server of the Oceanai Regional Seismic network to facilitate seismic data sharing in the region.

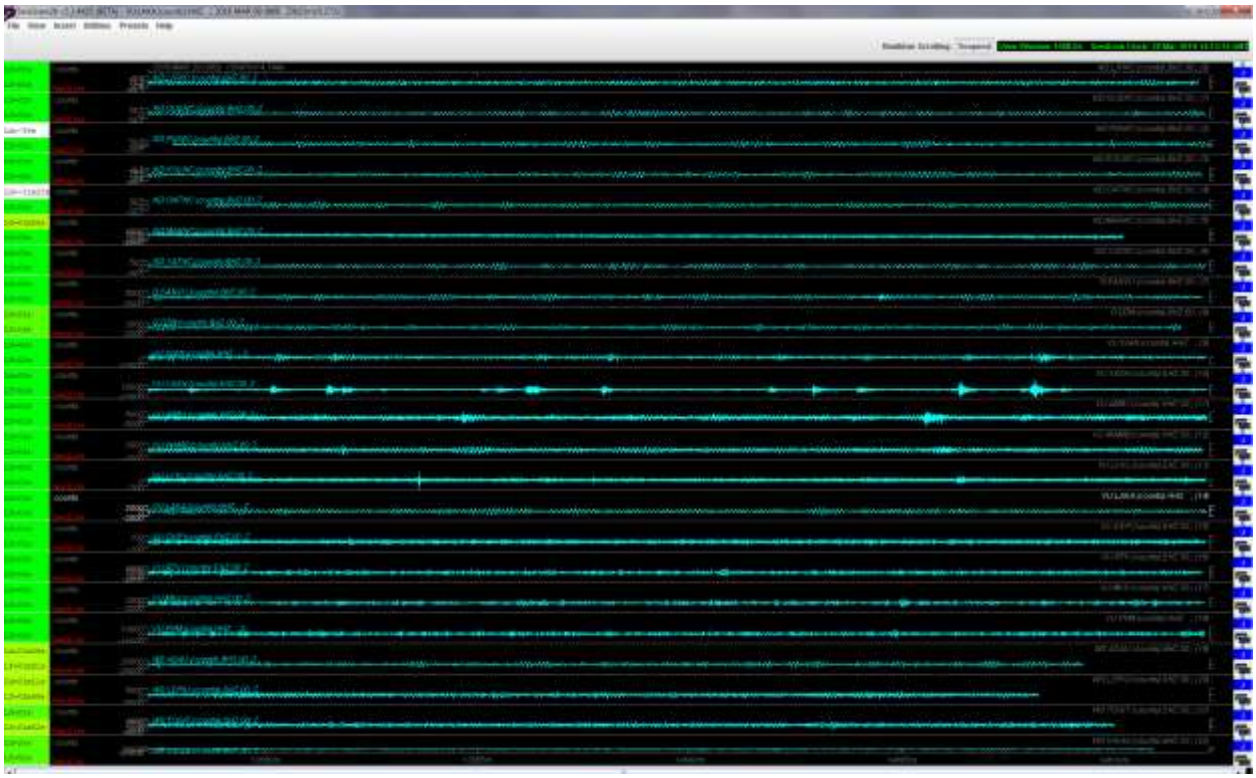
- An MoU being signed between the Director of the Institute of Physics of the Globe based in Paris (IPGP) based in France, the then Acting Director of VMGD and the acting Director of the Vanuatu Agricultural Research and Technical Center (VRTC) in May 2015. This MOU is regarding the "Maintenance of the SANVU Seismic station" located in the premises of the VRTC on Espiritu Santo and funded by IPGP. This station is simultaneously providing seismic data to IPGP and VMGD for global earthquake detection.

- An MoU has been discussed and finalized in April 2015 between the Vanuatu and French Red Cross, VMGD and NDMO regarding the Red Cross support in Volcanic Hazards and Safety mapping design for Ambrym Volcano.

- An MOU regarding "Procedures for Broadcasting of official emergency Information" between Vanuatu Broadcasting and Television Corporation, NDMO and VMGD.

2.2. Share seismic data with other Earthquake Information centre's to encourage research and to re-enforce monitoring system in Vanuatu

The Vanuatu Meteorology and Geo-Hazards Department through Geo-Hazards division is sharing data with 7 Pacific Island countries under the agreement of the Oceania regional Seismic network. Other global stations of other countries in the region are also integrated in this data sharing efforts. More than 20 stations of the region are contributing their seismic data to the national seismic data center of VMGD to contribute in the rapid earthquake detection for Tsunami early warning.



Seismograms showing the streams of seismic data from the flowing from other countries to the VMGD data center; each line represents one station in one country

2.3. Collaborate with Regional Partners in strengthening the Regional seismic network Vanuatu/New Caledonia with other observatories in the region.

2.3.1 Oceania regionl Seismic network

The manager Geo-Hazards, Esline Garaebiti, and the Geo-Hazards Engineer, Sylvain Todman provided 2 technical visit to the national Seismic observatories of Fiji and Tonga to assist them in their connection to the Oceania Regional Seismic Network (ORSNET).

The Fiji visit in April 2015 allowed the team to establish cooperation between Fiji Telecom Company and the Seismic Observatory in their earthquake detection and information dissemination. This visit also allowed them to share their expertise with the Fiji seismic observatories in a form of refresher training in SEISCOMP3.

Training in progress on how to use SEISCOMP3 in the Fiji Seismic observatory

The visit to Tonga occurred at the end of October 2015 to expand the ORSNET to Tonga by connecting the Tonga national seismic network server to the regional seismic server of ORSNET. This visit was also including on the job training of the Tonga Seismology team in SEISCOMP3 and in manual earthquake detection review.

2.3.2 South-South exchange between Vanuatu and Solomon Islands under CRISP project

VMGD through Geo-hazards Division has been supporting the Solomon Islands Geo-hazards team in the establishment of the Solomon Islands volcano-Seismic monitoring network. After the design of the network, the VMGD technicians have been deployed to the Solomon Islands in September 2015 to conduct and train the Geo-Hazards counterpart in the technics of volcano-seismic monitoring site survey. Two technicians, Janvion cevuard and Athanas Worwor, and the Geo-hazards technical adviser, Sylvain Todman, have undertaken this mission. The training sessions in generalities occurred in Honiara and the Site survey and on the job training occurred on Isabelle and Makira Islands. This mission is funded by the Solomon Islands CRISP project.

III- CRISIS RESPONSES TO VOLCANISM, SEISMICITY AND TSUNAMI

3.1. Liaise with NDMO, and other stake holders for disaster response plan and action in times of volcanic eruptions, earthquake and tsunami

The Geo-Hazards Manager provided a briefing to the National Disaster Management Office in February 21st 2015 to provide the update on the Ambrym volcano activity and to guide the NDMO in their decision making in response to the Ambrym Minor eruption. A brief update report has been circulated to the NDMo and stakeholders for their information. The principal Scientific Officer in Seismology, Morris Harrison, provided a briefing to the NDMO and stakeholders after the Paama tsunami in February 2015.

3.2. Carry out hazard assessment in response to major volcano activity events

The Ambrym volcanic eruption

Observation and seismic data analysis show that from September 2014 to February 2015 Ambrym volcano maintained continuing major unrest phase.

On 19th February 2015 at 24:18 am VUT a local earthquake of 7.2 Magnitude with 10 Km depth located at North of Paama Island generated a sudden increase number of volcanic earthquake (Vol.EQ) and volcano-tectonic earthquake (VT).

On the 20th February 2015 local tour guide from Endu village (South East Ambrym) reported an observation of a dense emission of very dark volcanic plume around 9:00am. Seismic data confirmed that Ambrym volcanic activity has quite changed from 20th February 2015 after the earthquake. The minor eruption phase commenced on 20th February 2015 around 02:00 am.

1st aerial survey of Ambrym eruption on 21st February 2015:
Photo_bottom_Left: Lava fountain and lava flow from fissure vents in the caldera area;

Photo_bottom_Right: Lava fountain, lava flow from fissure vents and lava bench in the caldera area;

2nd aerial survey of Ambrym eruption on 23rd February 2015:
Photo_Top_Left: Volcanic activity observed from new scoria cones formed along the fissure during the eruption
Photo_Top_Right: Lava bench view at the South East direction of the caldera area

Early morning around 5:45am of 21st February 2015, local observer from Indu village reported a huge ash column observed and heard explosions.

On 21st February 2015, the Alert Level was raised from Level 1 to Level 2 and few hours later it was increased to Level 3. Two aerial survey was done during the eruption phase; on the day of 21st February 2015 around 14:30pm the first aerial survey and observation done reported an observation of dense emission of very dark plume and gas, flank eruption accompanied with lava flow towards the South East area of edge of the caldera and lava fountain with explosions occurred from fissures vents;

The second are aerial survey and observation done on 23rd February 2015 at 11:00am reported that there is a continuing dark ash plume and gas emission, deposit of pumice and scoria at the South East area of the caldera in which lava flow occurred, absence of lava fountain and lava flow but formation of new scoria cone along the fissure and continuing explosion; This minor eruption phase was ended on 28th February 2015.

On 2nd March 2015, its Volcanic Alert Level was dropped from Level 3 to Level 2.

3.3. Carry out tsunami run up and hazards assessment in response to a major tsunami event

3.3.1 Post Tsunami Survey

Of all the major earthquakes in the Vanuatu region in 2015 only the 20th February M6.0 earthquake off Northeast Paama generated a significant tsunami. The PSO Seismology Morris and an Observer from the Observations Division, Grace Johnalson were deployed to Paama a day after the tsunami to conduct a post-tsunami survey [Figure 7.].

Viong, a locality on Northwest Paama used for landing by sea vessel. Notice tsunami debris depicting inundation line, yet visible few days after the event. An inundation distance of 27.0 m (above high water) was measured here. Inferring for reef flat at time of tsunami attack it will be about double that distance.

Generally, the tsunami struck about 10 minutes after the principal earthquake or 10 minutes after 00:18 am or 00:28 am. There were 3 main waves separated about 10 minutes apart. The second wave is the biggest. Observation on the tsunami wave and flow direction along the North Paama coast strongly suggests that the epicentral region is off Northeast of Paama consistent with instrumental location when more data become available.

Tsunami runup heights, inundation heights and distances are high on the Northwest of the island, from Tavie to Liro Nessa. A tsunami flow depth of up to 2.0 m and a runup height of at least 6.0 m were measured [Figure 8]. Inundation distances of up to 120 m were observed on Northwest Paama. The tsunami struck at a time of abnormally very low tide conditions; lowest tide for the month of February 2015. The lowest tide as per the Luganville tide observation was 0.06 m at 23:31 pm (19th February) and for the Port Vila tide observations it was 0.18 at 00:22 am (20th February).

The coast at a locality on Northwest Paama; cobbles being displaced and shrubs stripped as result of tsunami waves. The sea Oak tree (Casuarina equisetfolia) shows strong resistance toward tsunami waves. Notice the scouring of the Sea Oak's stem and roots, and scars on the tree; provides insights on the tsunami strength. The measuring rod in this photo is about 2 meters high.

The abnormally low tidal condition at the time of tsunami attack had a significant impact on runup heights and inundation distances observed. The beach Sea Oak (Casuarina equisetfolia) displayed huge resistant to the tsunami waves hence a very good tsunami breaker. However lowering and scattering of cobbles along the North Paama coasts greatly exposes these coastlines to more severe erosion. No fatality or serious injury occurred during the tsunami; possibly due to the odd hour the event occurred [00:28 am] when everybody else was in bed or very few people were on the beach.

4. GEO-HAZARDS WARNING SYSTEMS IN VANUATU

4.1. Ensure Geohazards Warning centre operations up and running.

Technicians are rostered to do regular checks of the Geo-Hazards monitoring system every day. The Geo-Hazards Division is operating Xymon, a system that automatically display the status of all the systems both inhouse and remote in the field to assistst the techncians in their reaction.

4.2. Contribute to the development of tsunami risk map for Port Vila and Luganville

The Manager Geo-Hazards Division is part of the executive responsible to advise in the implementation of the Mainstreaming Disaster Risk reduction project. Her contribution contributed to the establishement of different Hazard maps for the department:

- The 1:300,000 scale peak ground acceleration map for the hole Vanuatu with 100 years return period.
- The 1:300,000 scale peak ground acceleration map for the hole Vanuatu with 500 years return period.
- The 1:300,000 scale peak ground acceleration map for the hole Vanuatu with 2,500 years return period.
- The 1:90,000 scale Inferred Site class Port Vila study area
- The 1:30,000 scale Inferred Site class Luganville study area
- The 1:90,000 scale Inferred Liquefaction susceptibility, Port Vila study area
- The 1:30,000 scale Inferred Liquefaction susceptibility, Luganville study area
- The 1:90,000 scale Inferred landslide susceptibility, Port Vila study area
- The 1:90,000 scale Inferred Landslide susceptibility, Luganville study area
-The 1:90,000 scale Flood depth Mele catchment 10 year return period, Port Vila study area
- The 1:90,000 scale Flood depth Mele catchment 50 year return period, Port Vila study area
- The 1:90,000 scale Flood depth Mele catchment 100 year return period, Port Vila study area
-The 1:90,000 scale Flood depth Sarakata catchment 10 year return period, Luganville study area
-The 1:30,000 scale Flood depth Sarakata catchment 50 year return period, Luganville study area
-The 1:30,000 scale Flood depth Sarakata catchment 100 year return period, Luganville study area

- The 1:90,000 scale Flood velocity Mele catchment 10 year return period, Port Vila study area
- The 1:90,000 scale Flood velocity Mele catchment 50 year return period, Port Vila study area
- The 1:90,000 scale Flood velocity Mele catchment 100 year return period, Port Vila study area
- The 1:30,000 scale Flood velocity Sarakata catchment 10 year return period, Luganville area
- The 1:30,000 scale Flood velocity Sarakata catchment 50 year return period, Luganville study area
- The 1:30,000 scale Flood velocity Sarakata catchment 100 year return period, Luganville study area
- The 1:90,000 Scale tsunami evacuation zone for Port Vila
- The 1:30,000 Scale tsunami evacuation zone

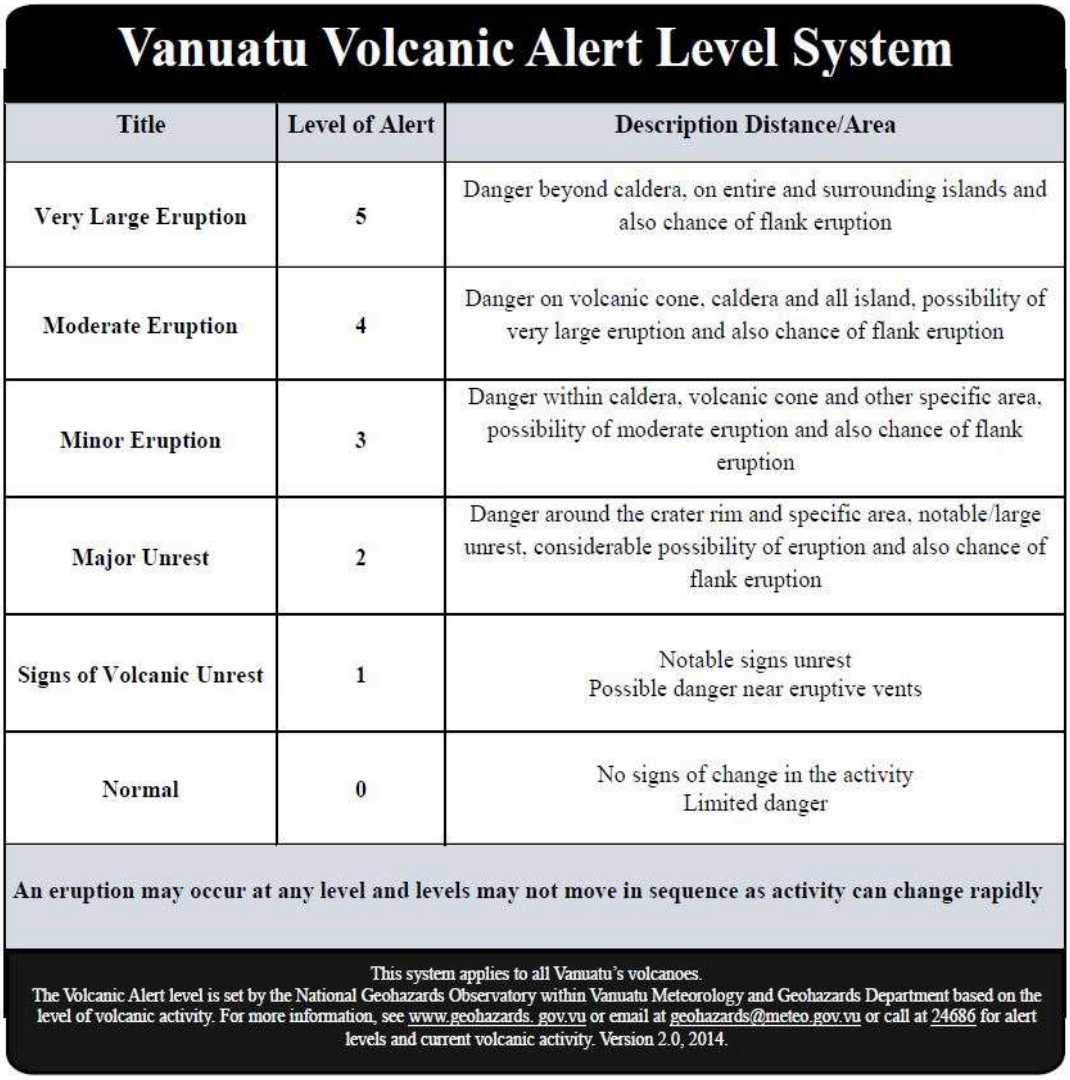
4.3. Contribute in the development of the tsunami warning signage project

4.3.1. Contribute to the Development of the reviewed Hazard map and contingency planning for Tanna and Ambrym

The volcano-Seismology Scientific Officer finalized the draft copies of the Ambrym volcano Bckground map, the Ambrym volcano Safety maps, the volcanic risk signage for visitors and the exclusive zones of Ambrym ready for consultation. These products were translated into the 3 official languages, Bislama, English and French.

4.4. Finalize the Vanuatu Volcano Alert System review

The new version of Vanuatu Volcanic Alert Level (VVAL) was set by Geohazards Observatory on 5th December 2014 and tested during the minor eruption of Ambrym volcano on 20th February 2015 and also along the year. This version of the VVAL is proven to be the best version easily usable by the Geo-Hazards team, more realistic and appropriate than the previous version. This version is then the final version of the VVAL.



Vanuatu Volcanic Alert Level System

Title	Level of Alert	Description Distance/Area
Very Large Eruption	5	Danger beyond caldera, on entire and surrounding islands and also chance of flank eruption
Moderate Eruption	4	Danger on volcanic cone, caldera and all island, possibility of very large eruption and also chance of flank eruption
Minor Eruption	3	Danger within caldera, volcanic cone and other specific area, possibility of moderate eruption and also chance of flank eruption
Major Unrest	2	Danger around the crater rim and specific area, notable/large unrest, considerable possibility of eruption and also chance of flank eruption
Signs of Volcanic Unrest	1	Notable signs unrest Possible danger near eruptive vents
Normal	0	No signs of change in the activity Limited danger

An eruption may occur at any level and levels may not move in sequence as activity can change rapidly

This system applies to all Vanuatu's volcanoes.
The Volcanic Alert level is set by the National Geohazards Observatory within Vanuatu Meteorology and Geohazards Department based on the level of volcanic activity. For more information, see www.geohazards. gov.vu or email at geohazards@meteo.gov.vu or call at 24686 for alert levels and current volcanic activity. Version 2.0, 2014.

New Vanuatu Volcanic Alert Level system

4.5. Maintain Geo Hazards Warning Centre operations and ensure 24H/7 on call services for Geohazards Early Warning systems

Along with scientific officers, the technical team of Geo-Hazards Division were also on duty roster to ensure the monitoring system is always up and running. Various challenges they faced but they successfully conquered. Technicians are using XYMON to check the Health status of all the stations. It is the best system to rapidly detect station faults and respond accordingly to quickly fix the problem.

The Division is using a ticketing system for emergency communication between data analysts and technicians to ensure smooth running of the warning system.

4.6 Carry out the observations of earthquakes and volcanoes in real-time 24H/7 for tsunami and volcanic eruptions early warning

4.6.1 Volcano activity observations and volcano-seismic data availability

The volcano data analyst is tasked to be on duty 7 days a week to ensure that the volcano database is well maintained. This officer has 2 hours of duty each weekend and public holidays. This duty is required to properly monitor volcano data availability and quality.

Calendars showing the seismic data availability in all Vanuatu volcanoes that are equipped with monitoring systems can be found in the **Annexes 1**. Some stations are offline all through the year 2015, most of the data gaps were due to the impact of the tropical Cyclone PAM.

4.6.2 Earthquake activity observations and data availability

The earthquake data analyst is tasked to be on duty 7 days a week, 2 hours every weekend and public holiday to ensure daily update of the earthquake database, and appropriate data availability and quality for tsunami early warning.

Major seismic data gap exists in mid-March to April. However, when data were retrieved from the remote stations and the seismic network up and running this gap has been reduced significantly. A boast in data quality and availability occurred after installation of new permanent seismograph stations and the expansion of the Oceania Regional Seismic network.

5. EARTHQUAKES AND VOLCANO MONITORING SYSTEM

5.1. Establish agreements with provinces Malampa /Shefa/ Tafea and/ or customary landowners for the use of rural lands hosting the Geohazards monitoring systems

Signing of the land agreement for Lopevi volcano monitoring station and Paama relay tower

Land agreements have been signed during the Environment and social safeguard (ESS) screening in the provinces of SHEFA, PENAMA, and MALAMPA.

A meeting was convened in the VMGD Warning Center in April 2015 to officiate the signing of the land agreement after the Environment and Social safeguard screening for the Land hosting the Mont Erskin station (MKV) and Devil's Point station (DVP). The signing was done between Mr. Monvoisin, land lessee, and Chief Andrew Popovi and the Customary Land owner.

In September 2015, a mission to the Penama provins allowed the Geo-Hazards team to get the land agreement by customary land owners and Penama province for the lands that should host the stations of Marino (North Maewo), Ambanga (North Ambae), and Lovuinvilli (East Ambae).

In December 2015, the Geo-Hazards team obtained the land agreement from customary land owners and area secretary for Malampa province responsible for the land hosting the Geo-hazards monitoring station of Lopevi and the relay tower of Paama.

5.2. Upgrade the national seismic network by extending the network to Tanna , Malekula and Port Vila

The Upgrade of the Seismic station of Efate (PVM) and the extension to Tanna (ISAN) Malekula (LAKA) and Efate was funded by JICA under the "Project of improvement of Equipment for Disaster Risk Management".

On June 2015 3 seismograph stations for Vanuatu funded by the Japanese government through JICA were installed. The project sites are Lakatoro, Malekula, Vanuatu Meteorology and Geo-hazards Department premises, Efate and Isangel, Tanna. The hardware component of the project includes seismograph sheds [Figure 1], power supply (solar panel), installation of seismographs both broadband (velocity) and strong motion (acceleration) sensors. The soft component are an On-the Job Training for Solar Power and an On-the-Job Training (OJT) for Strong Motion Accelerator and Broadband Station System provided by Japanese technicians from the OYO Seismic Instrumentation Corp.

The Seismograph Shed at Lakatoro, Malekula funded under "The Project for Improvement of Equipment for Disaster Risk Management" for Vanuatu funded by the Japanese government through the World Bank. A similar shed is located at Isangel, Tanna and there is one in Port Vila. These sheds houses seismic monitoring sensors and instruments.

The PSO Seismology, Morris Harrison accompanied the Japanese technicians to Lakatoro, Malekula for the installations while a technician, Athanase Worwor accompanied the team to Tanna for the installation at Isangel. All the Geo-hazards staff participated in the OJT at the Port Vila Seismograph station at the VMGD premises.

At the moment only the broadband seismographs data from the 3 stations (Lakatoro-LAKA, Port Vila-PVM and Isangel-ISAN) are being transmitted whilst the strong motion (accelerometers) seismographs data are yet to be transmitted. This will need on-going collaboration with the Japanese technicians. Transmission from Lakatoro

and Isangel to Port Vila is via e-government network whilst transmission from the Port Vila Station to the Data Centre is via cable line.

5.3. Upgrade the Efate seismic network

A new seismograph station was installed at Mt. Erskine (Acronym MKV (168° 17'20.8'' E 17° 35'47.6'' S 422 M), north Efate on October 2015. This station is funded by the Government of Japan through World Bank. It includes re-installation of the sensor and transmission connection via e-government network. The seismograph shed was completed in July as a partnership project between VMGD and Tanoliu community. With this seismograph station, there are now four seismograph stations on Efate; namely Rentapao Station (RTV), Port Vila Station (PVM), Devil's Point Station (DVP) and the Mt. Erskine Station (MKV).

The different steps in the installation of the MKV seismograph from 29 June to 10 July 2015 beginning with the construction of the SHED foundation (1) the finishing of the shed (2), the installation of the equipment (3) and the installation of the data transmission system (4)

This station is transmitting to the Observatory via EGOV Network. MKV is hooking up to EGOV Network by setting the Point to Point link form the station to EGOV tower at Kleim's Hill (S 17*38'41.56'' E 168*13'56.05'' 964 M). This station transmitted in real-time to the Vanuatu Geo-Hazards Observatory under VMGD since the 27th October 2015.

5.4. Maintain the Efate seismic network

The Efate network maintenance during the year 2015 occurred several time as for other stations due to the tropical cyclone PAM impacts. The visits on each stations of the Efate seismic network, particularly the remote stations, were done according to the following schedules

Devil's Point (DVP)	Rentapau (RTV)	Mt Erskine (MKV)
25/03/2015	25/03/2015	10/07/2017

<table>
<tr>
<td>Assessment of the station after the passage of the tropical cyclone Pam. Electronics in the shed are safe but the solar panel was broken</td>
<td>Assessment of the station after the passage of the tropical cyclone Pam. Station was safe but the data transmission antenna was moved by the tropical Cyclone from its original direction.</td>
<td>Completion of the seismic station shed and installation of the seismograph running as a standalone station</td>
</tr>
<tr>
<td>10/04/2015
The damaged solar panel is replaced by a new one.
 
The data transmission system is re-installed.
 
The station data is finally streaming in the data center after the installation.</td>
<td>16/06/2015
Due to the damage of power cable of the freeware transmitter the station can't transmit. The cable has been replaced to ensure it is working again</td>
<td>22/10/2015
Visit the station to download seismic data and found that the DM24 and the seismometer are not working properly.</td>
</tr>
<tr>
<td>20/08/2015Due to the station breakdown, the sensor was brought to the Observatory for servicing.</td>
<td>28/08/2015
Cleaning of the station.
 
Upgrade of the short period Sercel L4-3D sensor to the long period CMG-40T sensor
  </td>
<td>23/10/2015
Replace the seismometer and the DM24 with the new ones.</td>
</tr>
<tr>
<td>24/08/2015
The station is re-installed</td>
<td rowspan="2">11/11/2015
Cleaning inside of the station and spray CRC on battery lugs to avoid oxidation.</td>
<td rowspan="2"></td>
</tr>
<tr>
<td>11/11/2015: Cleaning of the station and electronics checks.</td>
</tr>
</table>

5.5. Maintain the Geoscope station for global earthquake monitoring network

With the repeated breakdown of the station due to power supply, the IPGP funded the the installation of solar power system in the station. This installation was done in collaboration with a Greentech technician from 6th to 8th October 2015.

Figure : *The left photo shows the technician's working during the installation and the right photo shows the three (3) batteries installed in the basement.*

This includes three (3) solar panels of 140W and three (3) batteries of 200AH. The plan is to have an independent power source and monitor remotely in real-time in using Studer Variotracker.

5.6. Maintain and continue Installation of Real-time seismic monitoring system on Tanna, Lopevi, Paama,Ambrym, ,Ambae, Gaua and Vanua lava

5.6.1 New installation of volcano monitoring systems

This activity was greatly disturbed by tropical cyclone PAM that slowed down the installation works on these islands. This year's work was limited to the confirmation of sites and the erection of the relay tower in Paama in December 2015.

The Paama relay tower, located at 168° 14' 48.1'' E 16° 26' 21.6'' S Elevation: 451 M, is built successfully on Paama islands. It has a webcam shooting Lopevi for visual observation and an antenna to receive Lopevi seismic data and relays then to EGOV tower on Ambrym. This tower will be one of the main relay that will divert network stations such as South east Ambrym and Epi to EGOV on Ambrym.

Figure : The complete setup of tower on Paama islands and the Webcam pointing to Lopevi for visual monitoring. It was built in the month of December from 15th to 21th

5.6.2 Maintenance of the existing volcano monitoring systems

Tropical Cyclone PAM impact aerial survey

Sylvain Todman, Janvion Cevuard and Morris Harrison conducted an aerial survey and rapid assessment via an Australian aid helicopter few weeks after Tropical Cyclone Pam. The team flew over Paama, Lopevi and Ambrym conducted aerial survey on the seismograph station at Lopevi, the TVL Tower on Paama and the Camera Station on Ambrym. The team landed on the ash plain on Ambrym volcano and visited the seismograph station in the caldera.

Tropical Cyclone PAM impact on site assessment

Technicians have been deployed after the passage of tropical cyclone PAM to quantify the damage on the Geo-hazards monitoring system in order to evaluate the impact and plan for the recovery process of the network.

LOPEVI volcano monitoring system

With the visit on site from 9th to 13 June 2015, the team retrieved all electronic goods to Port Vila for servicing. After all only the Fit PC and the digitizer Q330 can be repaired, all others such as webcam, solar panels and batteries are broken.

Over discharge of batteries

Solar panel blown out by PAM

Fallen TVL tower on which the webcamera for Lopevi was mounted

Broken btteries that were used to power the Station

Tanna volcano monitoring system

The tropical cyclone PAM impact assessment on Tanna from 30 March to 1st April by the Geo-Hazards scientific and technical team shows that all Yasur volcano monitoring stations including the web camera CAMYASUR and the seismic stations YAS and YASH were all destroyed

CAMYASUR Photo taken before cyclone Pam

CAMYASUR Photo taken after Cyclone Pam

YAS station Photo taken before cyclone Pam

YAS station Photo taken after Cyclone Pam

YASH station Photo taken before cyclone Pam

YASH Photo taken after Cyclone Pam

Volcano monitoring station maintenance

The YASH station in Tanna was re-installed in 2 November 2015 with the new solar panels of 140W to charge four existing batteries of 104AH.

Solar panels of 140W installed on the shed

Batteries 0f 104AH in the shed)

The Ambrym station was also visited. From 21 to 27 March 2015 the Ubiquity Nano stations (NMS2) are replaced with Ubiquity Air grid. The idea is to a better link Point to Point as to ease the data flow transmission to Port Vila at the Observatory. It was the link between the station and the relay (AMCR) that is being upgraded.

Existing Nano Station transmitter

Upgrade frosm Nano to Air grid transmitter

The technician is checking the transmission quality of the Air Grid at MANTOWER RELAY (AMCR)

Figure; *Upgrade of the data transmission system for the Ambrym volcano monitoring station*

From 12 to 16 may 2015 due to many weeks of bad weather, it causes the discharge of batteries, the station need to be rebooted manually. It affects the transmission as well. It was reset manually for reconfiguration and worked again.

From 25th to 27th July 2015 the fiberglass cabinet was installed to accommodate electronics equipment and protect against moisture. The power was then upgraded, three (3) new batteries of 100 A/H and 2 new solar panel of 140W were installed to replace old power system to have a good autonomy in the period of bad weather.

Fiberglass cabinet at back ground

New Batteries

New Solar Panels

Figure: Replacement of the power supply on Ambrym volcano monitoring station

5.7 Improvement of Sea Level Monitoring in Vanuatu

On June 2015 two (2) Tide Observation Systems were installed under "The Project for Improvement of Equipment for Disaster Risk Management" Tide Observations for Vanuatu funded by the Japanese government through the World Bank. The project sites are Litzlitz Wharf, Malekula, and Lenakel Wharf, Tanna. It is envisaged that tsunami waves will be recorded whenever a tsunami is generated with waves traveling to these locations. These installations have increased the number of tide observation systems in the Vanuatu region to four.

5.8. Volcanic hazards Assessment on Ambrym, Tanna, Ambae, Lopevi and Gaua

5.8.1 Volcanic Hazard assessment through permanent monitoring data analysis

Ambae volcano

Volcanic activity summary

Observation and seismic data analysis of Ambae volcano show continuing slight increasing in level of signs of volcanic unrest with slight increase number of volcanic earthquake (Vol.EQ) and volcano-tectonic earthquake (VT). **789** volcanic events are recorded at the vicinity of Mano Voui with daily light degasing. Its volcanic Alert Level is maintained along the year at **Level 1**.

Seismicity

639 volcano-tectonic earthquakes and **149** volcanic earthquakes are recorded from LVVL station.

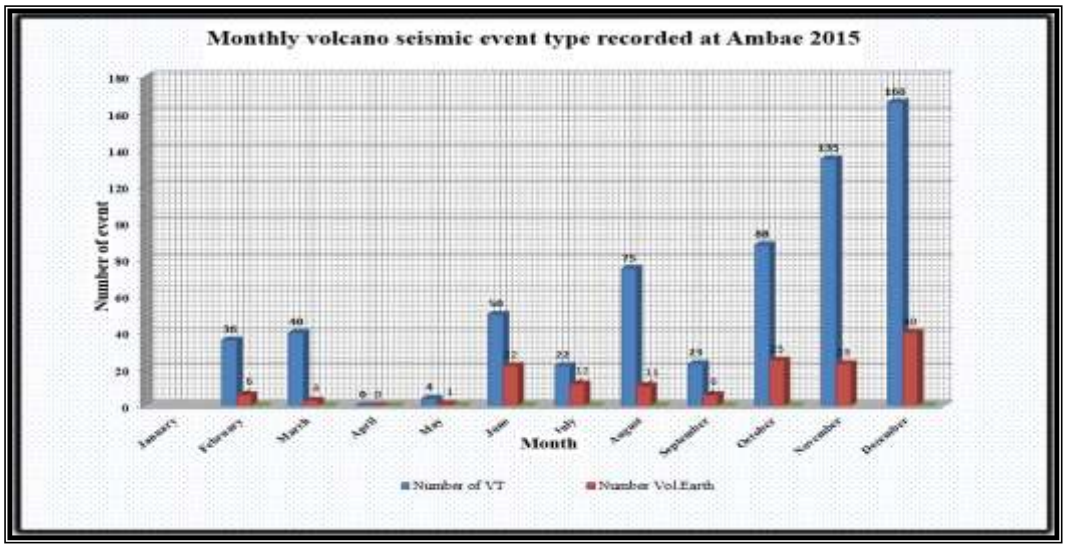


***Fig.1**: Annual volcano seismic event type recorded from LVVL station*

Visual Observation

Photos below show that there is no volcanic plume observed at Ambae during the year.


***Fig.2**: Some images from the webcam at Ambae for volcano monitoring*

So2 flux and volcanic gas monitoring (Satellite images)

Calendar below shows volcanic gas plume detected by the Modis _Terra & Aqua satellite in the atmosphere and the daily flux of SO2 detected by the Ozone Monitoring Instrument-Aura emitted from Ambae volcano.

Ambrym volcano

Volcanic activity summary

Ambrym volcano underwent a minor eruption phase in February 2015. Its activity remains slightly increased in major unrest phase at Alert Level 2 until the end of the year 2015 with slight variable increase number of volcano seismic event type such as volcanic earthquake (Vol.EQ), volcano-tectonic earthquake (VT) and presence of short period (<1 minute) of harmonic tremor ranging between 4 000 to 20 000 maximum amplitude in early October to early December 2015. **15 592** volcanic events are recorded at the vicinity of Ambrym with daily substantial degasing.

Seismicity

1 601 volcano-tectonic earthquakes, **1 291** volcanic earthquakes and **12 699** explosions are recorded from AMB1 and WAMB stations.

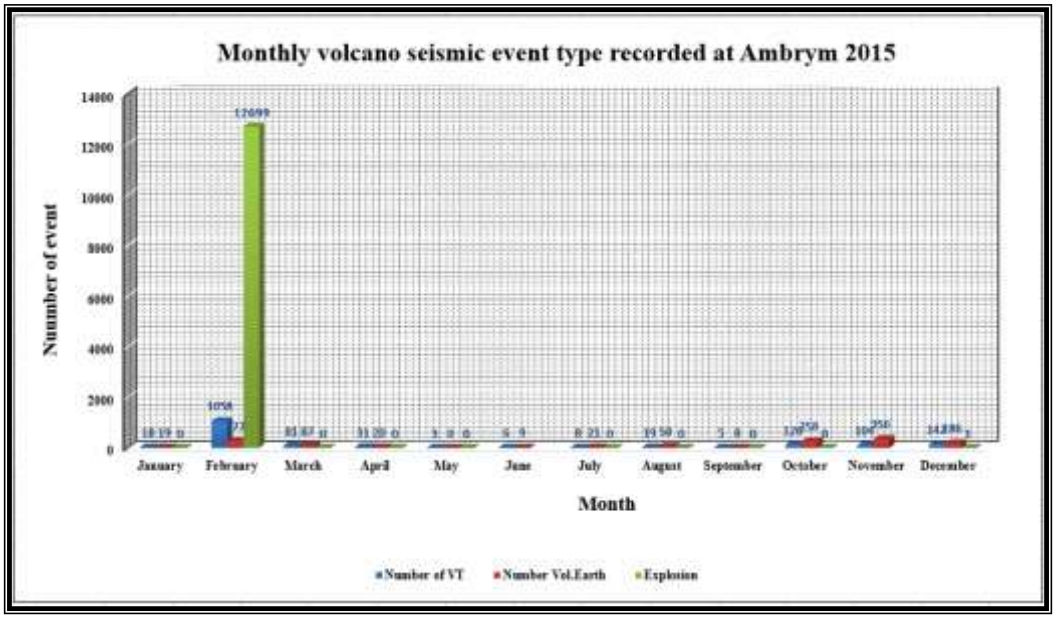


***Fig.4**: Annual volcano seismic event type recorded from AMB1 and WAMB station*

Visual Observation

Significant photos below taken from the webcam at AMB1 station show volcanic activity of Ambrym with daily continuing steam plume emission and important degassing during the year, lava fountain, lava flow and explosive activity during the minor eruption on 21st February 2015.

White thick volcanic plume (steam) observed on 11st and 24th January 2015

White thick volcanic plume (steam) observed 10th of August and September 2015
Left photo: The volcanic gas layer (light blue color in the cloud) is visible.


White thick volcanic plume (steam) observed 19th and 20th October 2015
Both photos: The volcanic gas layer (light blue color in the picture) is visible.


White thick volcanic plume (steam) observed 21st November 2015
Both photos: The volcanic gas layer (light blue color in the picture) is visible.


White thick volcanic plume (steam) observed 15th December 2015
Both photos: The volcanic gas layer (light blue color in the picture) is visible.
***Fig.5**: Significant photos of Ambrym volcanic activity by the webcam at AMB1 station*

So2 flux and volcanic gas monitoring (Satellite images)

Calendar showing volcanic gas plume detected by the Modis _Terra & Aqua satellite in the atmosphere and the daily flux of SO2 detected by the Ozone Monitoring Instrument-Aura emitted from Ambrym volcano is shown in Annexes 2.

Tanna volcano

Volcanic activity summary

Observation and seismic data analysis of Yasur volcano show continuing slight increase in level of sign of volcanic unrest; Explosions become intense with increased number early November 2015. On 13rd November 2015, its volcanic Alert Level was raised from **Level 1** to **Level 2**. This Alert level and activity remains until the end of the year. **170 489** volcanic explosions are recorded at the vicinity of Yasur with daily substantial degasing.

Seismicity

170 488 volcanic explosions are recorded from YASH station.

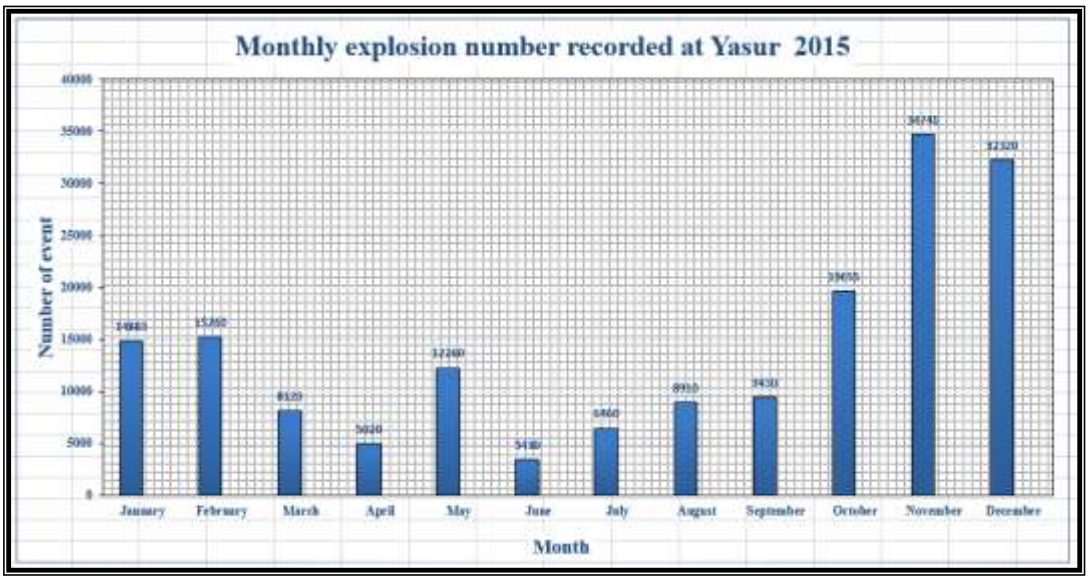
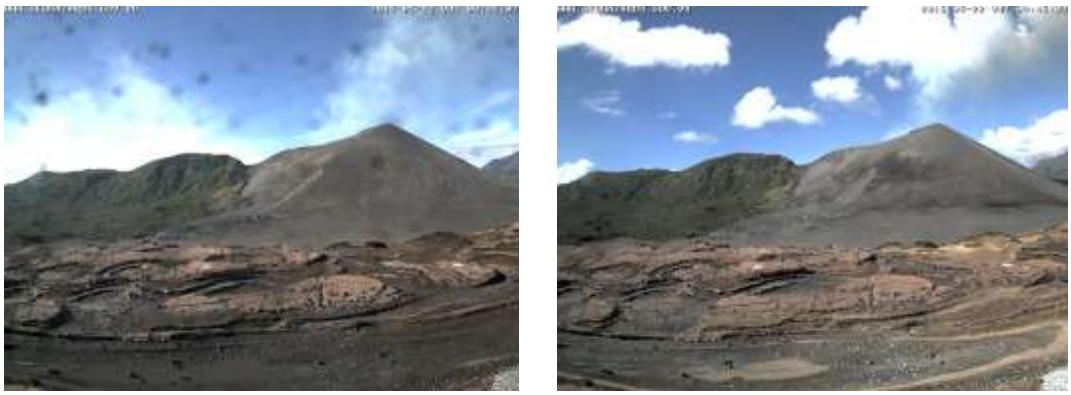


***Fig.7**: Annual number of explosion recorded at YASH station*

Visual Observation

Significant photos below taken from the webcam at YASH station show volcanic activity of Yasur with continuing volcanic ash and steam plume emission, light degassing and ash fall during the year.

Volcanic ash plume observed on 1st and 19th January 2015



Volcanic gas plume observed on 12nd and 22nd May 2015 (layer of blue color in the cloud)


Volcanic steam plume observed on 3rd and 11st June 2015


Volcanic ash plume observed on 26th July and 1st August 2015


Volcanic steam plume observed on 4th September and 2nd October 2015


Volcanic ash emission on 30th November 2015

Volcanic ash emission on 27th and 31st December 2015

Significant photos of Yasur volcanic activity by the webcam at YASH station

So2 flux and volcanic gas monitoring (Satellite images)

The calendar showing volcanic gas plume detected by the Modis _Terra & Aqua satellite in the atmosphere and the daily flux of SO2 detected by the Ozone Monitoring Instrument-Aura emitted from Tanna volcano is shown in Appendix 2.

5.8.2 Volcanic hazards assessment through other means for non-permanently monitored volcanoes

Gaua volcano

Gaua volcano have no monitoring station. Its Alert Level is maintained at Level 1 since 21st December 2010.

So2 flux and volcanic gas monitoring (Satellite images)

The calendar showing the volcanic gas plume detected by the Modis _Terra & Aqua satellite in the atmosphere and the daily flux of SO2 detected by the Ozone Monitoring Instrument-Aura emitted from Gaua volcano is in Annexe 2.

Lopevi volcano:

Lopevi volcano have no monitoring station. Its Alert Level is maintained at Level 1 since 15th December 2014.

On 21st December 2015, the Real Time Webcam was installed at Paama Island for Lopevi activity monitoring.

Visual Observation

Photos below show that there is no volcanic plume observed at Lopevi during the year.

Image(28 January 2015) of webcam before cyclone Pam passage on 13rd March 2015

Image(31st December 2015) of webcam after cyclone Pam passage on 13rd March 2015

6. GEO-HAZARDS DATA, PRODUCTS AND SERVICES

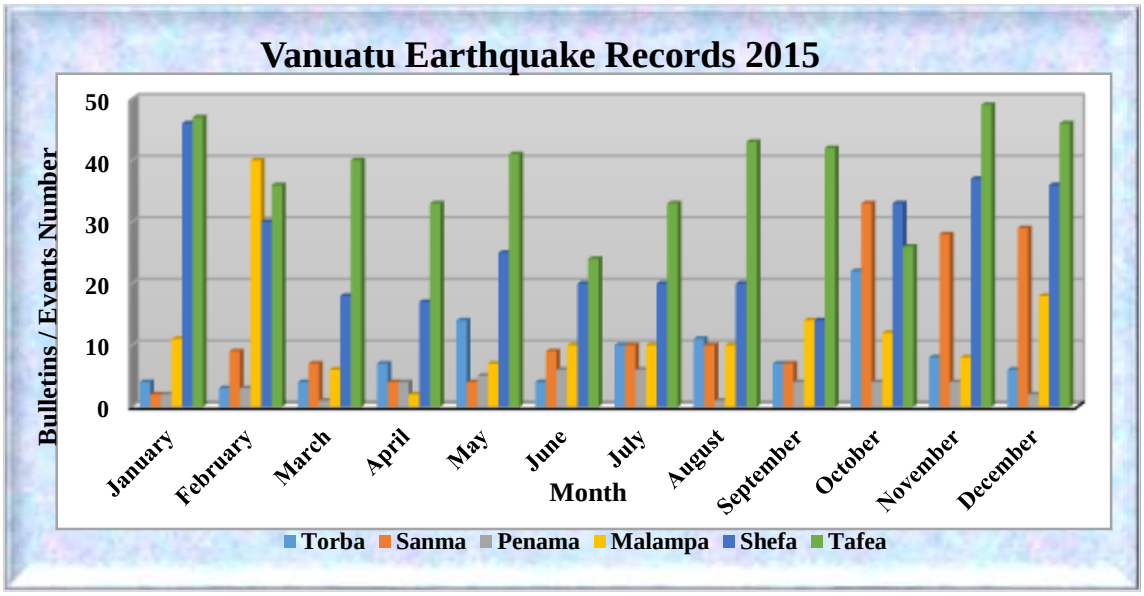
6.1. Issue earthquake occurrence bulletins for local communities

6.1.1 Automated products and services

Earthquake information is automatically uploaded in the website as soon as detected. However this detection system is yet to be upgraded to ensure appropriate filtering of false events that tend to appear automatically on the website. Therefore adequate training in the website uploading techniques is required for the seismology team.

6.1.2 Earthquake bulletins for local communities

A total of 1218 earthquake bulletins were produced in 2015 (Figure 9). Provincial wise, 100 bulletins for earthquakes that occurred in Torba region, 152 bulletins for earthquakes that occurred in Sanma region, 42 in Penama, 148 in Malampa, 316 in Shefa, and 460 in Tafea. Most bulletins were produced during the last quarter of 2015 corresponding well with high number of seismograph station in operation during that quater. Despite Tropical Cyclone Pam destroying the Seismic Network Infrastructure and internet infrastructure on mid-March 2015, 76 bulletins were produced on March and about 67 on April.



Bulletins of Earthquake events per Province in 2015

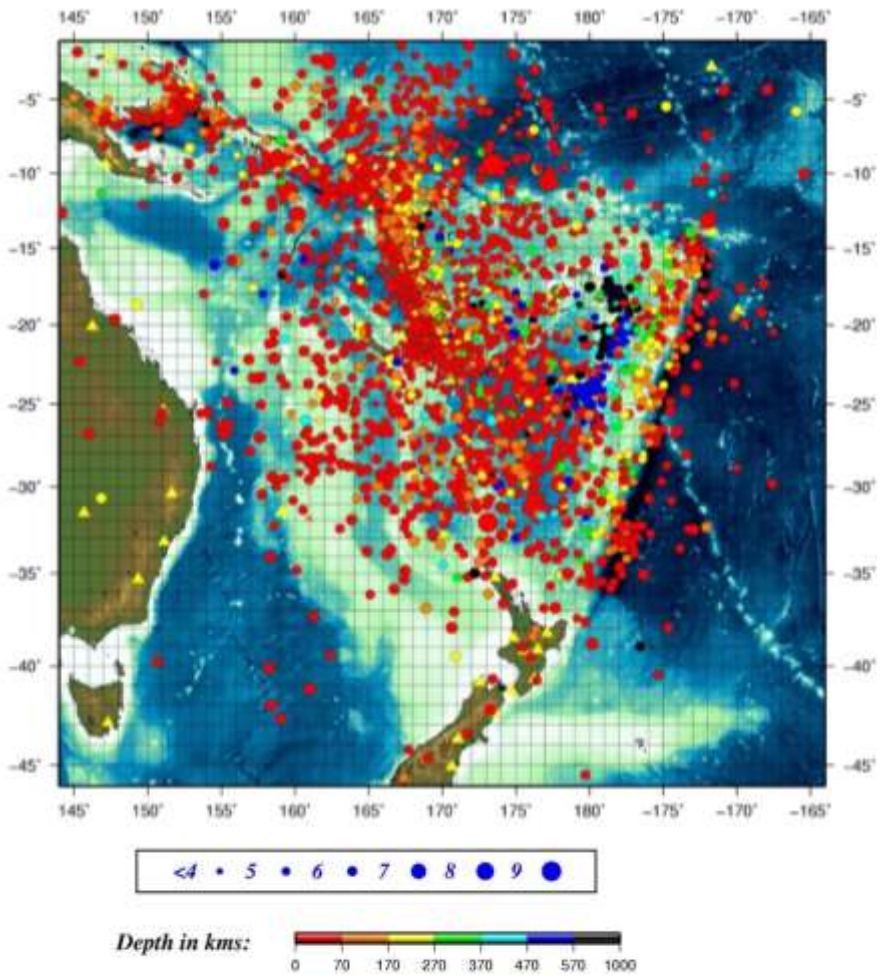
6.2. Issue monthly and annual earthquake bulletins for scientific communities

6.2.1 Monthly Bulletin

Monthly seismological bulletins from the Vanuatu Seismic Network are successfully produced. Though there were some delays in production related to Tropical Cyclone Pam disruptions for the month of March, April and May, and for the months of February, October, and December where there was an earthquake crisis. However, all significant events were re-computed before running the bulletins. The bulletins present seismic events in the Vanuatu region for a particular month. This success is attributed to our Data Analyst & Processor daily routines, weekly routines and monthly routines management.

6.2.2 Earthquake detection in the Vanuatu region and annual Bulletin

In 2015, the total number of individual events computed successfully (location, depth and magnitude) increased dramatically. This is due to upgrading of seismograph stations and installations of 4 new permanent stations throughout the archipelago and the expansion of the Oceania regional Seismic Network (ORSNET) to other countries that contributed both in the location of local and regional earthquakes. Over 2,700 events were detected in 2015 in the Vanuatu region. In a normal month an average of 130 events were computed successfully. More events are detected than in the past with events with magnitude <4 increasing significantly. These may be attributed to increase in seismograph stations. In the Vanuatu region, during an earthquake crisis up to about 300 to 500 earthquakes are detected on a monthly basis. Figure 2 shows individual earthquakes located by the regional seismic network in 2015.



Individual earthquake events located by the regional seismic network in 2015. Notice the increase of events in the Vanuatu region attributed to improvement of exiting seismic stations, installation of 4 new stations and earthquake crises in 2015.

6.3. Issue volcano Alert Bulletins for tourism industry, local communities and general public

Alert bulletins for monitoring volcanoes are monthly issued base on seismicity, visual (webcam) data and satellite images (OMI and Modis). This information is public and they are disseminated via:

- emails address list;
- Geohazards Observatory website (www.geohazards.gov.vu);
- Geohazards Observatory and Vanuatu Meteorology and Geohazards Department Facebook pages;

Soft copies of these bulletins are accordingly printed and archived in appropriate databases.

Table below shows dates of issuance of Volcanic Alert Bulletins of monitoring volcanoes and their appropriate Alert Level.

Volcanoes	Volcanic Alert Level	Dates of the issuance and Dissemination of Volcano Alert Bulletins
Manaro Voui (Ambae Island)	**Alert Level 1** (Signs of volcanic unrest)	15th June 2015
		7th August 2015
		30th September 2015
		30th October 2015

		1st December 2015
Benbow and Marum (Ambrym Island)	**Alert Level 2** (Major unrest)	21st February 2015
	Alert Level 3 (Minor eruption)	
	Alert Level 2 (Major unrest)	2nd March 2015
		7th April 2015
		18th May 2015
		15th June 2015
		22nd July 2015
		21st August 2015
		30 September 2015
		30th October 2015
		1st December 2015
Yasur (Tanna Island)	**Alert Level 1** (Signs of volcanic unrest)	27th April 2015
		21st October 2015
	Alert Level 2 (Major unrest)	13rd November 2015
		15th December 2015

6.3. Issue monthly and annual volcano activity bulletins for scientific communities

Monthly and annual volcano bulletins issued are archived in the Volcano Database (Volnas_Product) and strictly internal within Geo_hazards Division

6.4 Issue monthly volcano activity update bulletins for general public

The monthly volcano activity update bulletin template has been discussed internally and developed. In 2015 the only Ambrym volcano activity of February 2015 update was provided for NDMO and donor partners for their action.

6.5. Issue weekly report of Geo-hazards monitoring systems and operations

Daily products issued are archived in the Volcano Database (Volnas_Product) and seismonas (earthquake database) and in the share folder of Geo-Hazards staffs. They are 3 different kind daily products issued by the volcanology team, the seismology team and the technical team according to their respective duties. Daily products are compiled each end of the weekend to a weekly product and they are strictly kept internal within Geo-Hazards Division to keep track of the daily and weekly operations.

6.6. Review and develop specific education and awareness materials for specific audience using specific software

Volcanology section of Geo-Hazards Division have developed, reviewed and finalized various volcanology awareness materials in forms of maps, brochures, glossary and posters.

6.6.1 Safety, scenario and background Maps

From 16th to 20th February 2015 with Dr. Graham Leonard, the section improved drafted volcanoes background, safety and scenario maps for Yasur, Ambrym, Ambae, Gaua and Lopevi using QGIS software.

The next important stage is to do consultation with villages/communities about these maps to have their concerns, comments, ideas, priorities and languages (wording and meaning) before doing the final editing and printing.

6.6.2 Volcano Fact Sheet

Some information (Need to seek information from historical eruption) in the drafted volcano fact sheet have to be complete before doing the final editing and printing (e.g: Vanua-Lava, Ambae, Lopevi and Gaua).

6.6.3 Brochures

English brochures about volcano were created with the help of two attachment students from Leicester University in the UK, by Eleri Simpson and Ben Clark, on 11st August 2014 using inscape software. These brochures of information includes cartoons and were translated into French and bichelamar on September 2015. The next stage is to do the finale editing before printing for communities and villages awareness tools.

6.6.4 Volcanology Glossary

The glossary is drafted in three languages (French, English and bichelamar) on July 2015 and need to finalize and standardize.

6.6.5 Volcanology Terminology

The Terminology is drafted in tree languages (French, English and bichelamar) on July 2015 and need to be finalized and standardized.

6.7. Participate in education and outreach missions in schools and during global events as WMO/WW day, sciences week, environment week

A survey and awareness campaign was conducted on Efate, Malekula and Santo under the activity of Communication and Outreach Partnership. The survey and awareness is on products and services provided by VMGD. The campaign team comprises representative of all Divisions in VMGD. The PSO Seismology, Morris Harrison is the team leader for this campaign team. On Efate, the campaign runs from 19 September to 8 October. A total of 8 communities were visited on Efate. On Malekula and Santo, a combined total of 10 communities were visited from 13 to 25 October. Mass awareness materials were distributed during the campaigns. Data entry and analysis of survey data are on-going.

7. GEO-HAZARDS MANAGEMENT AND OPERATING PROCEDURES

7.1. Update Draft SOPs for Admin response/Geohazards response, emergency response, Issuance of Geohazards products

The sections responsible for issuance of Geo-hazards products have reviewed their SOPs accordingly. In volcanology different systems utilized have been addressed to ensure proper procedures are in place for their usage.

7.1.1 Display, process and analysis operation systems

Kygalmas

Since 14th November 2014, the Volcano Database was moved from kygalmas to a Network Attached Storage-Nase with the assistance ICT Division (Helpdesk), which are distributed in 3 servers:

*Vol_analysis;

*Vol_Products;

*Vol_Raw Data;

Early October 2015 kygalmas started to freeze and still continuing until current date. On 17th November 2015, the section received the new kygalmas (**hp)** computer with two monitor (24-inch) and one UPS from Spim Company paid from World Bank project.

Volcano Data Base, Volnase: (Vol_analysis, Vol_Products and Vol_Raw Data)

Data in the volcano Database are daily, monthly and annually update. The access of this Database is secured and restricted. Few staffs are identified to access it.

Programs and scripts

The automatic shell scripts (Linux) for volcano seismic data analysis in real time (rsam, ssam, tremor, drum, color_drum and calendar plots) was created on **11th November 2014** with the assistance of Dr. Steve Sherburn (Taupo Observatory, New Zealand Volcanologist) and Sylvain Todman and currently daily run via **crontab** (Linux) every 11:00am . Programs and scripts are working properly.

Dashboard

Dashboard was created on **1st December 2014** which displaying the Vanuatu Real Time Volcano Data with the assistance of Dr. Steve Sherburn (Taupo Observatory, New Zealand Volcanologist).

Volcano_Observation-Data_Record

Volcano seismic observation data (Database) was created on **3rd December 2014**, which contains daily volcano seismic event record at each stations. It is daily update.

7.1.2 Standard Operating procedures (SOP)

SOP's below have been reviewed on September 2015 and have to be finalize and standardize:

- Volcanology_Operation_Procedures/Templates;
- Volcanology_Analysis_Procedures/Templates;
- Volcanology_ Products_Procedures/Templates;

7.2. Review Tsunami detection and operation procedures

Tsunami detection and operating procedures were internally heavily discussed. With the current upgrade of the network and other development in the Division the tsunami operating procedures must be reviewed in collaboration with the other division responsible for Tsunami warning. However more review should come into effect only when Geo-Hazards Division take over the Tsunami Warning system responsibility.

7.3. Finalise Geo-Hazards operating manual/Geo-Hazards Directive including all hazards/Geo-Hazards monitoring systems Manual

This Manual still remain the working documents. It will be finalized when the whole network is set up well aware of its operations.

7.4 Engage in the VMGD Business and annual budgeting for 2014/2015

The Division meetings have discussed the business plan for 2016.

7.5 Report annually and bi-annually on the Geo-hazards operations and achievements 2014

In 2015 the division mobilized in the writing of the annual report 2014.

7.6. Assess staffs through staff's appraisal

The staff appraisal work plans for 2016 have been drawn in October 2015. All Geo-Hazards staffs contributed.

7.7 Control the Geohazards assets

The Geo-Hazards assets is well recorded in the Division inventory that was drafted in April 2015 capturing all assets that are funded by recurrent budget and project funds, particularly World bank funding and New Zealand Ministry of Foreign affairs. This asset inventory has been reviewed in December 2015 tracking the mobilization of all the equipment registered.

7.8. Ensure the Geo-Hazards business plan is well implemented within means and timeframe

The implementation of the Geo-Hazards business plan in 2015 was very challenging due to the passage of Tropical cyclone PAM that destroyed part of the Geo-Hazards network. Therefore part of the year 2015 was consecrated in the recovery of the Geo-Hazards monitoring network.

8. PROJECT MANAGEMENT

8.1 Mainstreaming Disaster Risk Management (MDRR) Project

The manager Geo-hazards Division is part of the executive committee to control the implementation of the MDRR project. Executive meetings are organized once per month but regular contacts with project consultants where necessary.

8.2. Increasing Resilience to Climate Change and Natural Hazards (IRCCNH) project

The Geo-Hazards Division is implementing the component 1.3 of this IRCCNH project. Regular meetings were called with the project adviser and the Monitoring and Evaluation team to follow up on the implementation of this component according to World Bank standards.

8.3. Project of cooperation through the Government of New Caledonia

This project was implemented since few years, funding support is yearly renewed. Another project proposal has been submitted to the French Embassy to seek funding for the year 2015-2016. Unfortunately this request was not successful.

8.4. Oceania Regional Seismic Network (ORSNET) Project

This project is funded by the Pacific Funds through the French Governement. It is managed by the Manager Geo-hazards for the ORSNET countries. She had to submit project acquittals before requesting new funding for 2016. Fortunately the request proposal was successful to get extra 40,000 Euros for 2016.

8.5 Other small project

CRISP project, Solomon Islands

Regular contacts with the Solomon Islands team especially in regards to the organization of the assistance of the Vanuatu Geo-Hazards team for the interest of the Melanesian brothers and ORSNET partners.

Red Cross- volcanic hazards and safety map design

The French Red Cross also provided their assistance to the Vanuatu Geo-Hazards team in the design of the volcanic hazards background and safety maps design. They also offer to assist in the installation and handing over of these tools to the local community in 2016. Several planning meetings were organized with them throughout the year 2015.

IPGP, Paris (France) - Maintenance of the Sanvu network

The Geo-hazards manager raised an invoice to IPGP under the MOU between VMGD and IPGP to cover for the Geo-hazards intervention on the SANVU seismic station in Santo. This station is part of the Global network and funded by IPGP. The amount of 582,000Vt have been requested in the invoice, this sum is being paid through late 2015 and ready to be used in 2016.

9. EXTRA RESPONSIBILITY DUE TO CYCLONE PAM

Tropical cyclone warning

Sophie Turere, Juanita Laga, Sandrine Cevuard and Guillaume Kasten helped out in "answering phone calls" few days leading up to Tropical Cyclone Pam making landfall on Efate on the 13th March 2015. This involved being pick-up to work following a routine.

Distribution of relief supply

Tropical Cyclone Pam causes a lot of damage and disruptions on the local seismograph network. Monitoring stations on Ambrym, Lopevi, Efate and Tanna were down for about 2 months after the event. From mid-March to June 2015, officers helped out in the household survey and relief distributions around Efate under the state of emergency in place after the cyclone. Juanita Laga, the Data Analyst and Processor, and Morris Harrison, the PSO Seismology participated in both the household survey and relief distributions. Sophie Turere, Data Analyst

and Processor, Athanase Worwor, Technician and Guillaume Kasten, Technician participated in the relief distributions.

ACHIEVEMENTS COMMENT

The achievement of the Geo-hazards division during the year 2015 is tremendous despite the Category 5 Cyclone that disturbed a lot of activities initially planned for 2015. The main achievements that can be easily spotted are:

- The permanent recruitment of 3 staffs to 3 new posts for Geo-Hazards Division and the retirement of a long time served staff on medical ground.
- The development and establishment of the National Tsunami warning system for Port Vila and Luganville
- The recovery of the Geo-Hazards monitoring network after the passage of Cyclone PAM.
- The establishment of the new Volcanic risk management framework
- The extension of the national Seismic monitoring network to 4 extra stations
- The extension of the national seismic network to the region through data sharing with the ORSNET countries

All these would not be possible without the improvement of the data transmission systems in Vanuatu by the OGCIO, which is the main partner to ensure all Geo-Hazards real-time monitoring in Vanuatu.

CHALLENGES COMMENT

The main challenges the Geo-Hazards Division faced during 2015 was the impact of the tropical Cyclone PAM that damaged the Geo-hazards monitoring network and halted many activities planned for 2015, particularly the World Bank funded IRCCNH project component in Early Warning system. Fortunately, this challenge turned into an opportunity where the equipment purchased for the planned activities have been used in the recovery of the Geo-hazards monitoring network after the passage of the Cyclone.

The second challenge the Division faced was around the ongoing temporary status of few junior staff. Though the recruitment processes for the contract staffs have been launched in good time, it was still very complicated to get all contract staff permanently recruited in 2015.

Thirdly, with the improved geo-hazards monitoring system, the information is getting more and more accurate that demands appropriate wok processes. This is a challenge that the Division will work through in 2016 to harmonizing SOPS internally and with other stakeholders, review work instructions, upgrading skills and knowledge in normal observations operations to better respond to the needs of the people of Vanuatu. This is a great challenge that will help the Division to standardize its operations and products in

5. OBSERVATIONS DIVISION

DIVISION PURPOSE AND KEY OUTCOMES

The Observation Division contributes to the Department's purpose by maintaining optimal observational Networks to meet the data and information needs of the VMGD Divisions and other national, regional, and international users and networks.

The Observation Division realizes its vision by 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 also works closely with regional and international technical partners to meet VMGD's network data and information reporting obligations.

The key strategic outcomes for the Observations Division are as follows:

- Restore, expand and sustain observation data networks, stations, systems, sensors and equipment;
- Effectively maintain the quality of real-time observations from all observing networks of VMGD Divisions;
- Ensure that the VMGD headquarters and Divisions have consistent and reliable access to real time observation data; and;
- Increase the number of observation data for existing, new and additional networks, stations, systems, sensors and equipment

2014 PRIORITY ACTIVITIES AND RESULTS

Programs and Objectives required by the 2015 Business Plan are summarized in the table below with results and commentary provided.

Programs	Objective	Strategy/ies	ACTION/ Performance Indicators	Expected Key Result Areas/Achievements	Support Division/Project /Working Group	Results
Weather & climate Monitoring	365 days & 24/7 recording and measurement of land and Atmospheric conditions	Observation reports issued every three hours at all seven weather station (Sola, Saratamata, Santo, Lamap, Bauerfield, Tanna, Aneityum)	Observation reports (Synoptic/Metar) issued every three hours at all seven weather station (sola, Saratamata, Santo, Lamap, Bauerfield, Tanna, Aneityums	19,040 Climate/Synoptic Data Reports	ALL	√
			Hourly synoptic report issued at Bauerfield weather station	6,064 Synoptic Report (b/field)		√

			Hourly Aviation reports issued at Bauerfield weather station.	8,760 Aviation Report		√
			Climate data issued daily at Bauerfield	365 Climate Reports(all station		√
			Daily Hourly Aviation report issued at Pekoa, Whitegrass, starting from1800Z-0900Z GMT (santo), 1800Z-1700Z GMT (santo)	5475Aviation Report (santo) 4015 Aviation Report (W/Grass). 16320 Aviation Report for 6 outer stations		√
Data Quality	Meet national & International data requirements	Monthly/Weekly Calibration site/equipment	Cut back grass once a month. Wash/Paint instrument shelter. Clean all instrument from dust.	Monthly Maintenance report form completed and send to Via	ALL	√ Need improvements on monthly reports
Training and Development	Enhance the knowledge & Skills of staff to assist provincial customers & partnerships	2 staff to be attached with Fiji Meteorology and other external training, Vila/outer island staff to be attached with forecast/climate/observation division	Liaise with relevant divisions for date of On-job training, and training formats, logistical arrangements for airfares and accommodation	2 staff or more to be attached each year	ALL	x
Strengthen outstations Infra structure & Communications systems.	Improve Provincial weather Offices to be more responsive to Rural User	Improve communications technology. Improve office set-up equipment.	Purchase computers, internet connect and furniture's. Allocate Budget to provincial weather offices	All	ICT	√ on process
Transfer of Staff	Transfer of staff	Transfer timbale will be done to allow a smooth transfer process in relation to Budget.	Arrange payments of tickets/ posting allowances.	4 staff transferred	ADMIN	√

Upper air Observations	Monitor, Measure Profile of Atmosphere	Daily launching of weather balloons/sounds using hydrogen gas	Purchase consumables. Daily data, upper level winds, TTAA, TTBB, TTCC, and TTDD. Produce hydrogen with electrolizer	365 data sets for national and international users	ADMIN	X
Student Attachment	Introduce Meteorological Science to students	Science Students will be attached during school holidays on 7 synoptic sites.	Shortlist applicants, and notify director. Notify students once director approval	21 students attached each year	ADMIN	X
Digitize Data at Bauerfield	Climate data bank & Other related divisions access the data faster	All data will be entered into CLIDE at Bauerfield		Training in basic weather observations		X
Installation of AWS on all Sites	Improve on real - time data	Purchase 7 AWS through Donor funding	1. Purchase of AWS. 2. Provide Training to Technicians. 3. Build and install AWS	7 AWS installed on Sola,Santo,Saratamata,Pekoa,Lamap,Whitegras,Aneityum		√ 2 AWS installed success fully, 5 still on process

ACHIEVEMENTS COMMENT

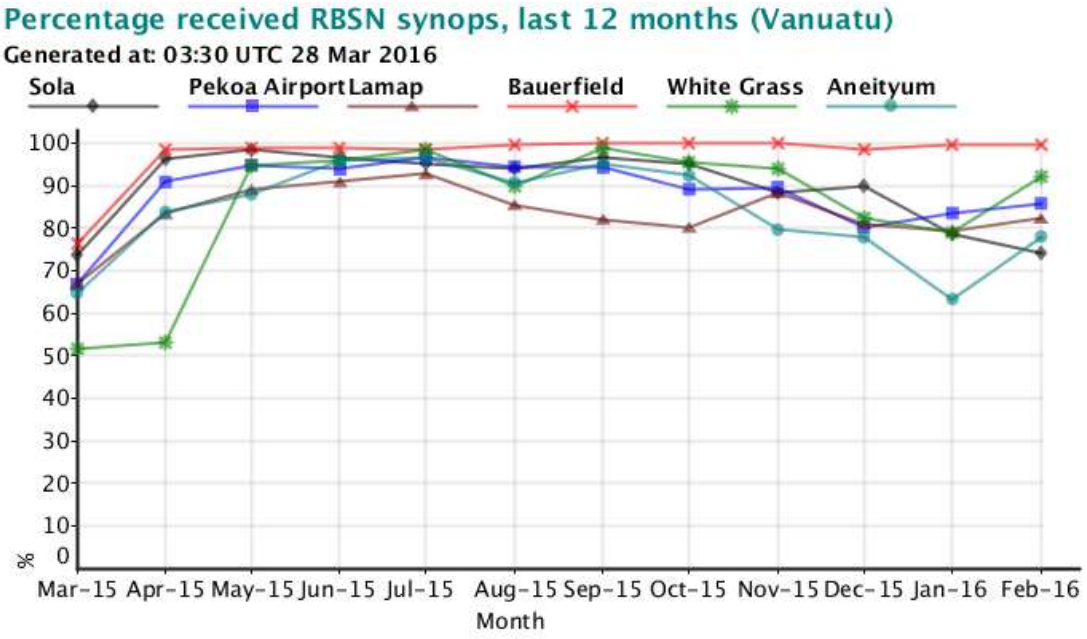
When TC Pam struck Vanuatu during the 13th of March 2015, almost all stations were down for some time, ranging from one day to one month. All communication were affected as well during TC Pam, which means no data were transmitted via GTS for a period of one day or more for some stations. Staff in the observation stations throughout Vanuatu were able to collect meteorological data, but were not able to transmit it live, as communication was down for some time in some outer island station. However, after few weeks to a month of hard work from the VMGD's technical personnel, all stations were back to normal.

The Observation Division has, for the first time, acquired two automatic weather stations installed, one at Bauerfield International Airport and one at Pekoa International Airport. Process for additional 5 AWS is underway and hopefully will be implemented during 2016.

Additionally, the Observation Division has achieved one of its long time goals, and that is to renovate the Bauerfield office. The building is now fully renovated and awaits new furniture's to be purchase under VCAP project.

Below is the AWS at Bauerfield Weather Office; Picture to the right; Bauerfield building complete

Performances from Observation stations for the last twelve months



CHALLENGES

Communication Network

There are times when observation stations face difficulties in transmitting data to the head office due to communication network breakdown, particularly with the HF radio and telecommunication network.

Instruments/Thermometer

VMGD weather stations do not have spare thermometers to replace faulty ones. All thermometers on all 7 station are old and need immediate replacement.

No relieve to assist outstation observers

All stations are manned with 2 observers to carry out this 24/7 three hourly data collection. It is a very challenging situation when one observer is on annual leave and no relieve is provided.

Office equipment

Most of Observation Stations do not have PC, internet and printer.

Data quality

Most stations do not have equipment to maintain their station/instrument site to the required standards.

AWS archive

The AWS does not automatically archive data; it is done manually.

6. ICT & ENGINEERING DIVISION

DIVISION PURPOSE AND KEY OUTCOMES

The ICT and Engineering Division contributes to the VMGD purpose by having qualified, skilled and motivated staff to enable VMGD adapt to technology changes and use up-to-date, modern and sound infrastructure and ICT to support all of VMGD's services.

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

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

- VMGD's e-communications and office productivity and operating systems are up-to-date and maintained.
- Observation data networks, stations, systems, sensors and equipment are automated and providing VMGD Divisions with updated data and information for various products and services.
- Verification schemes for aviation weather forecasts and tropical cyclone products services and warnings are established and automated where possible.
- Automated and centralised points for in-coming weather, climate, water, volcano, seismic and other related environment and geo-hazards observation data and information are developed.
- Automated access to and use of Vanuatu real-time observations data and information by each VMGD Division.
- 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.
- A VMGD documentation management system is developed and established.
- 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.
- VMGD website is routinely updated and improved.
- VMGD communication network throughout the country is improved.
- Automated delivery of VMGD's weather, climate, flood, volcano, seismic/earthquake and related environment and geohazards information, forecasts, services and warnings.
- Electronic infrastructure is supported and expanded accordingly.

- Automated redundancy/back-up systems are active and in place for all VMGD Divisions.

PRIORITY ACTIVITIES AND RESULTS 2015

Programs and Objectives required by the 2015 Business Plan and results are summarized in the table below and commentary provided in the following text.

ICT and Engineering Division (Business Plan)			
Programs	**Objective (Targets)**	**Result** ✓ ✘	**Result Summary**
Data & Computing services	Robust ICT and Administrative support systems	✓	Target for 1% comms outages reached
	Manage and improve VMGD LAN/WLAN monitoring network	✓	VMGD VLAN redesign and implemented.
		✓	Security cameras installed and operational
	Improve data redundancy and storage	✓	VMGD's central standard database server obtained and operational
	Maintenance of VMGD's Data Centre.	✓	Data Centre's equipment undergone maintenance
		✓	Data Centre's Environment Monitoring plan developed
	Ensure VMGD, NDMO & Energy Depts employs a fully off-site redundant system	✘	Project proposals yet to be for offsite backups
		✓	Automatic schedule backups updated
	Improve Data Security Services	✘	New Firewall hardware purchased and operational
			Proxy server services enabled
Telecommunications	Redesign and upgrade VMGD's website and intranet	✓	Server hardware purchased and configured. Works put forward for 2016
	VMGD's Provincial monitoring stations connected online	✓	Saratamata, Pekoa, Isangel, Lakatoro & Litzlitz connected on new VLAN
		✓	2 new AWS & 2 Tide Stations connected online.
	Outstation's HF Communications reception as backup be made available	✘	New reception yet to be catered for WGrass, BField and Aneityum by VCAP Project
	Ensure GTS communications MSS upgraded	✓	New GTS MSS installed and networked via the JICA Project
	Upgrade VMGD Exchange server	✓	Server purchased and installed.
		✘	Licensing issues to be rectified and fully operational in 2016

Infrastructure Management	Maintenance and support to the Observations network to meet WMO/ICAO requirements	✓	Routine bi-annual maintenance checks trips made to Tanna, Aneityum, Santo and Malekula. The rest included in 2016.
	Ensure Electrical Efficient (EE) lightings and appliances are operational throughout VMGD buildings	✓	Done.
	Upper Air operations rectified and fully functional	✓	Done. Stocks of sondes required
	Provision of Engineering workshop environment	✘	Project proposals yet to be created for this
	Provision of automatic weather station transitions are met	✓ ✓	Transition of manual to AWS data intrastructure and communications for Isangel. Lenakel, Litzlitz, Lakatoro, Pekoa and Bauerfield completed. Wind system upgrade for Bauerfield and Pekoa
	Provision of regular preventative maintenance	✓	Carried out for BField, Pekoa and WGrass
ICT/Engr Management & Operating Procedures	To develop and complete divisions' operational procedures	✓	Main division SOPs are completed, while policies works to be included in 2016
	Formalise contingency plans for cases of power and communications failure	✘	Yet to be completed due to lack of human resources. Fowarded to 2016.
	Management of ICT/Engr resources, plans and reporting	✓ ✓ ✓ ✓ ✓ ✘ ✓	Engaged in VMGD Business, Corporate and Strategic planning. Budget planning done Annual and bi-annual reports submitted Staff appraisals done Control ICT and weather instrument assets Address technicians' capacity building in collaboration with Aid Donors. Re-emphasized in 2016. 2015 division's business plan well implemented
	Long Term human resource development	✘	Yet to be initiated by VMGD HRO
	Adhere to update and revise respective QMS documentations	✓	Done

2015 was a hectic year when TC Pam's presence really disrupted most communications. Luckily no major damages were done to VMGD's backup HF communications infrastructure. Thus this was quickly rectified within hours of the severe cyclone's passing.

With VMGD's expansion on the Government's broadband network, a milestone indeed for VMGD as a leading Government Department in utilising that service to its fullest to safeguard the nation in providing a timely, quality and accurate daily weather services for public alike, shipping, aviation and tourism services industries.

Moreover the near realtime monitoring of the atmosphere and surrounding seas. Inclusively are climate services and realtime geohazards monitoring services for our volcanoes thus adds onus to having establish VMGD's own domain separated from the Government domain with a direct WAN connection.

This adds pressure to the limitted resources available and extra responsibilities for the division in addition to providing daily support as summarised in this report.

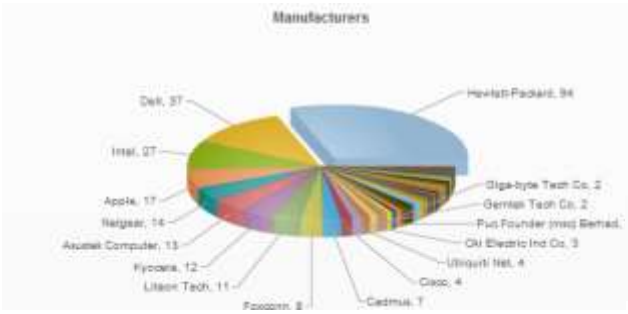
ICT & ENGINEERING SUPPORT SYSTEMS ADMINISTRATION

The Division, through its Electronic Technicians, ICT Technicians and Electrical Technicians has provided support to over 1,000 + devices inclusive of desktops, Servers, laptops, smart devices, video and network devices, electrical appliances, and telecommunications support to over 100+ staff from VMGD, NDMO, Energy and Environment Department, Project Officers and Ministry staff. The Division staff has worked tirelessly to minimize, as much as possible, limiting systems downtime.

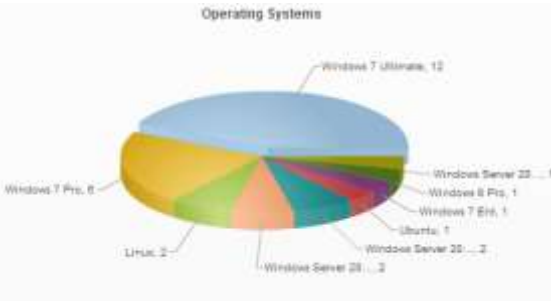
VMGD DOMAIN

There are over 1,000+ devices currently connected on VMGDs domain, excluding personal devices such as laptops and smart phones, tablets and ipads. For instance, shown below are some devices that were currently online at the time of this reporting during and not so on a busy time.

VMGD DomainEnvironment Charts



Device manufacturers on VMGD domain



Desktops OS on VMGD domain

For a smooth operation of a domain moreover a committed team, operational procedures were adapted within the division which enabled the staff to keep weekly logs of tasks and monthly reporting of works which were submitted to the Division Manager for follow-ups.


ICT Support Logs


Electrical Logs


Instruments logs

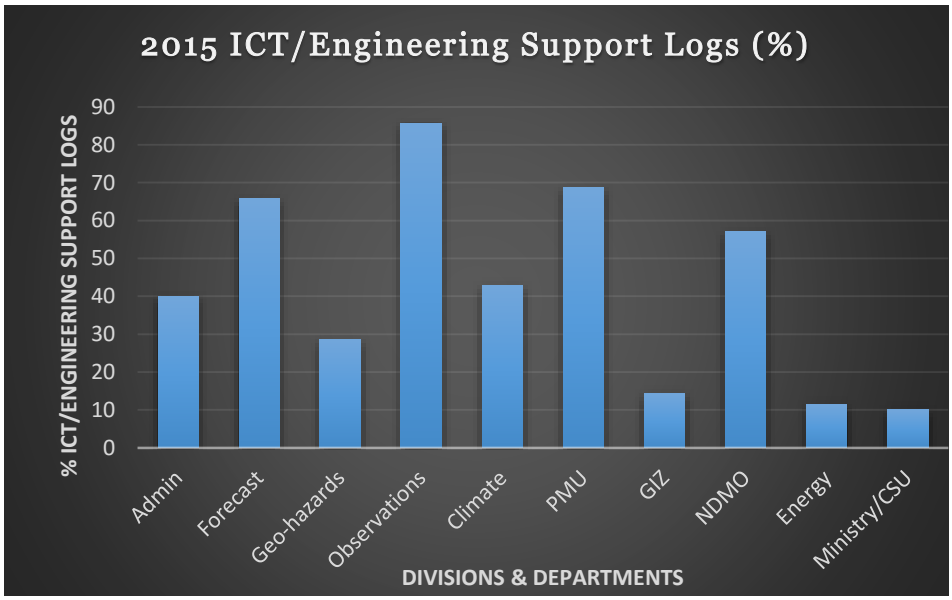

Electronics logs

SYSTEMS ADMINISTRATION SUPPORT

The ICT/Engineering Division was overwhelmed with the ever growing expansion of VMGD staff members moreover supporting all departments under the ministry and extensive number of project officers who resides in the VMGD premises.

Foremost is the daily ICT support that the division has to keep up with, despite having a ratio of 1:20 as the number of technicians to number of queries per day. Thus this brings about the notion of having an online helpdesk ticketing system for the division which assisted with logging jobs.

Main support per divisions and department are summarized below:



In addition to daily systems administration and respective equipment and instruments maintenance within the division, the above graph illustrates the percentage (%) of ICT and Engineering Support Logs given for each divisions and departments throughout 2015. Support are inclusive of equipment maintenance, upper air operations, desktops support, telecommunications including voice-over-ip and HF communications support, electrical support, daily network support, wireless access, internet access, printing support and applications support. Additional extensive roles included web programming, utilities programming and configurations, compilation of reports and to electrical support given.

Nearly 90% support logs was ardent to Observations division, which has stations scattered throughout the provinces. Moreover the establishment of the two new automatic weather stations and two tide stations for Vanuatu. The operations of the upper air station also consumes technicians' time for its daily operations.

Major works were done on communications and the installation of the two newly installed Tide Stations and the two new Automatic Weather Stations in the country funded under a JICA Project together with the GTS MSS Server and Display systems for the operations and daily data ingestion for the Weather Forecasting Division.

69% of the support logs was towards the PMU Division. As the PMU contracts staff moreover the influx of consultants attached in the division throughout the year, support jobs increases. Support ranges from account creation, printing support, wireless access and online meeting access. Quiet an amount of time was spent on web hosting NAB portal together with with respective troubleshooting.

Forecasting Services support logs increases to 70% as the division operates daily round the clock. In addition to the daily ICT support, most support was towards the AWS and Tide stations' real-time data displays together with the newly established GTS MSS system. The TC Pam's passing also puts a strain on the limited resources we have thus occupies one's time to resolve technical matters. Various meetings hosted also was supported by the ICT technicians.

NDMO. operations was among the top three divisions/depts that the technicians daily supports. As with PMU, most supports are centred around printing, wireless access and file servers access. Consultants for various projects particularly during the TC Pam recovery phase together with hosting various meetings and conferences, thus the assistance of technicians was needed.

For all other divisions and departments, daily ICT support was provided. No major dramas were encountered.

3. ROUTINE STATIONS' MAINTENANCE

As stated in the Division's Station Maintenance Operations Procedure, each year before and/or after a cyclone season, a routine maintenance visit by a technician is needed to be made to VMGD's Weather Observations Stations in the different Provinces. In 2014, maintenance trips were conducted on some stations depended on available financial resources.

PORT VILA SEA LEVEL TIDE STATION – JANUARY 2015

Mission: Repair of sensor frames and solar panel batteries maintenance

The technicians assisted the Australian Bureau of Meteorology (BoM) in arranging for the repair of the Port Vila Tidal Station sea level sensor frame at the main wharf in Port Vila. The repairs were done by Fletcher Company.

Due to the solar panels not having the correct amount of exposure to sunlight to charge the batteries to its full capacity, maintenance of station's solar panel batteries was also carried out.

BAUERFIELD OBSERVATION/UPPERAIR STATION – MARCH-OCTOBER 2015



Mission: Temporarily cover roof due to cyclone damage and routine upperair workstation cleanup.

TC Pam had significantly blown part of the roofing off the balloon shed thus an urgent temporary tarpaulin was sought to cover the roof until a permanent cover be sought.

Various works were also carried out such as:

- The error on the Air Traffic Control PTB330 was reported and correct settings were entered to display QNH air pressure.
- Rectified electrical faults due to severe thunderstorms which damages electrical sensors.
- Installation of one Air Traffic PC Display of Runway 110 wind information. AVL provided two serial converters for checked and confirmation of correct function for wind data.
- Maintenance checks carried on Digicora regarding GPS signal reception fault.
- Reconnection of Balloon shed electricity power supply, caused by TC Pam.
- Repair works of Digicora PSU.
- Repair works on ceilometer
- Test flights were carried out on the upper air sounding system to detect intermittent faults.
- Bench testing of 6 repaired wind displays carried out by Mcvan Industries, Australia.
- Bench testing of 3 new wind sonic sensors supplied by Mcvan Industries, and

Routine station's cleanup was also carried out together with rewiring of Bauerfield electrical works.

SOLA SYNOPTIC STATION, VANUA LAVA. – AUGUST 2015

Mission: Routine equipment maintenance.

The Technician was dispatched to perform routine station maintenance on all equipment at the site. The mission was successfully carried out.

PEKOA STATION, SANTO – JULY & OCTOBER 2015



Mission: Routine equipment maintenance and install new office curtains for di.

En route to Sola, the Senior Technician was dispatched to perform routine station maintenance and at the same time install brand new office curtains as the office do away with curtains for quite a while now. Tasks completed as expected with relevant reports produced.

The installation of the new AWS as also done in June-July 2015 with respective reporting documents produced.

ISANGEL TVL TOWER SITE – JULY 2015

Mission: Install Unelco power mains and breaker for communications links to/from Isangle and Lenakel wharf Station. Provide all weather box to house communication devices/breaker. Communications link was also established.

The instrument technician was deployed to Whitegrass on his regular maintenance trip particularly after TC Pam damages in Tanna.

4. COMMUNICATIONS AND SYSTEMS MONITORING UPGRADE

SARATAMATA STATION, AMBAE – 10-16TH APRIL 2015

Mission: to troubleshoot and re-establish wireless communications from Provincial tower to VMGD building.

Data and electrical cabling works together with function tests was done at the site in extending VMGD's domain and VOIP link from PWD's Office's cabinet to VMGD's Office. Electrical works to the existing generator house was made.

BAUERFIELD STATION'S COMMUNICATIONS UPGRADE – JAN & AUG 2015

Mission: To rectify continuous packages losses from FM90 tower to VMGD and Bauerfield Station. Access Points firmware upgrade to be done. Rectify circuit breaker problem.

After various LOS tests and package losses tests being carried out between FM90 tower, Bauerfield Station and VMGD HQ, the solution to rectify these losses were carried out without major disruption. Access Points firmware upgrade was also done successfully.



VMGD'S DATA CENTRE, PORT VILA

Mission: Data cabling tidying mission.

As the department grows, additional resources puts emphasis on the existing physical network in VMGD's datacenter thus the need for proper cabling labelling and tidying was required. It took 1 weekend for that to materialize.

Figure 1: VMGD Data Centre data cabling works

5. PROJECT WORKS

The division involved in various project works throughout 2015 where this report only summarizes the two major ones.

(I). ENERGY DEPARTMENT'S UAE FUNDED SOLAR PROJECT

The technicians were involved in the project in configuring and installation of wireless access points at both location back to VMGD's domain and ensuring a secured and private network was provided to the contractors for remote access to both the parliament and VMGD solar sites.

Training was also provided to a member of the technician who was involved maintaining such establishment or infrastructure.

Date: November 2015

(II). JICA PROJECT "EQUIPMENT FOR IMPROVEMENT FOR DRR"

Various works are carried out in between division's daily activities to assist in the implementation of the said project with Project's Engineers and Consultants. This year the emphasis was on extending VMGD domain into the relevant project sites thus an expensive exercise but implemented.

Technicians are dispatched to Tanna, Malekula and Santo for communications installations, various equipment and comms testing and the final acceptance tests of respective station equipment installations. Respective live streaming of data were also accomplished with respective reports.

Site 1: LitzLitz Wharf Tide Station, Malekula.
Mission: To Install a secured Tide Station, its power source supply, data transmission loggers and communication devices including cabling works.
Dates: June and July 2015

Site 2: Lenakel Wharf, Tide Station, July 2015.

Mission: To Install a secured Tide Station, its power source supply, data transmission loggers and communication devices including cabling works.

- To Install communications trenching from TVL tower to Provincial office, cabling and electrical works to seismic station and installation of comms equipment cabinetf and fence rainfall datalogger gauge.

Dates: June, July and August 2015

Technicians deployed to site for data and electrical cabling works. Comms cabinet installed together with successful transmission of Wifi communications and real-time data transmission back to VMGD HQ. All devices connected successfully to VMGD domain and VLAN.

Site 3, 4, 5: Lakatoro, Isangel & VMGD Port Vila Strong Motion Stations

Mission: To assist in cabling and installation of communication network, data cabling, software to OS and hardware installation.

Dates: May – Jun 2015

Two technicians were deployed with Geo-hazards Technicians to respective fields to successfully carry out the installations.

Site 6 : AWS Bauerfield Stations.

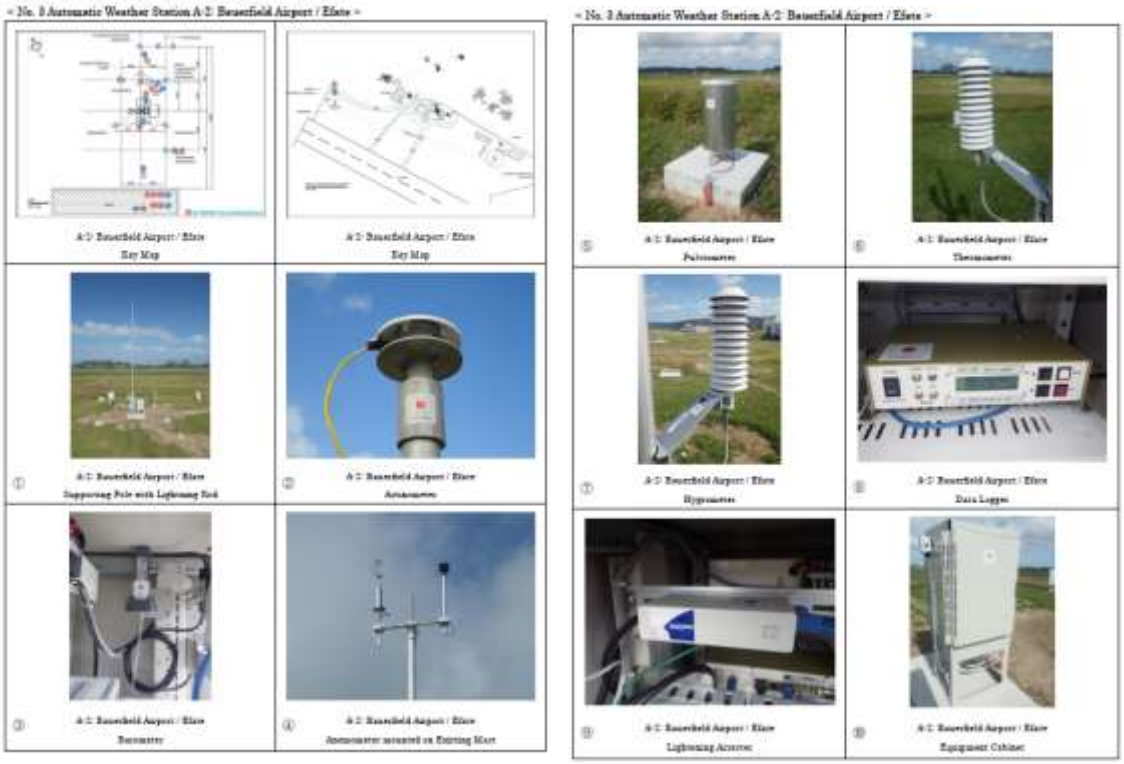
Mission: Installation of an Automatic Weather Station (AWS) for Bauerfield Station. Data and electrical installation works. Calibration of Equipment training.

Dates: June and July 2015

Communication works including data and electrical cabling works was successfully carried out together with installation of AWS station and data sensors.

Equipment calibration training was also carried out.

AWS



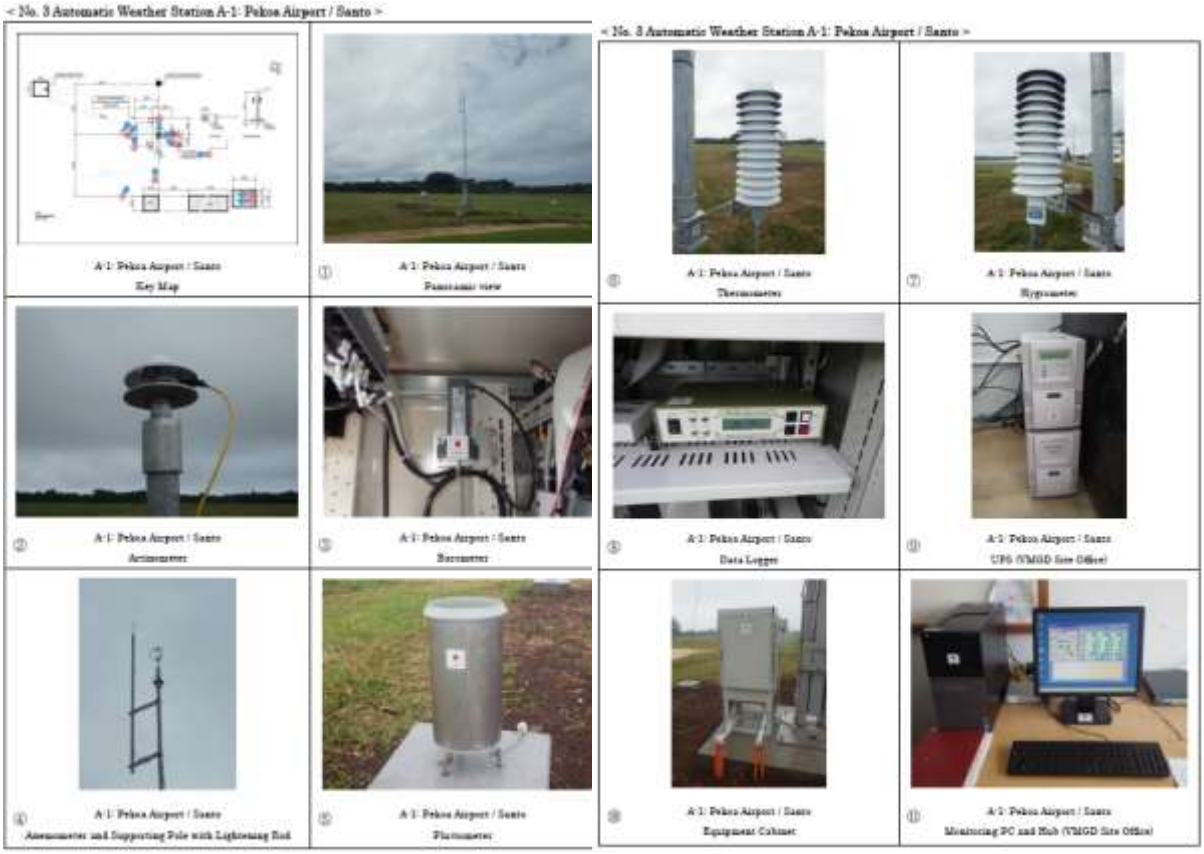
Displays and Equipment/Sensor calibration toolkits

Site 7 : AWS Pekoa Station, Santo,

Mission: Installation of an Automatic Weather Station (AWS) for Bauerfield Station. Data and electrical installation works. Calibration of Equipment training.

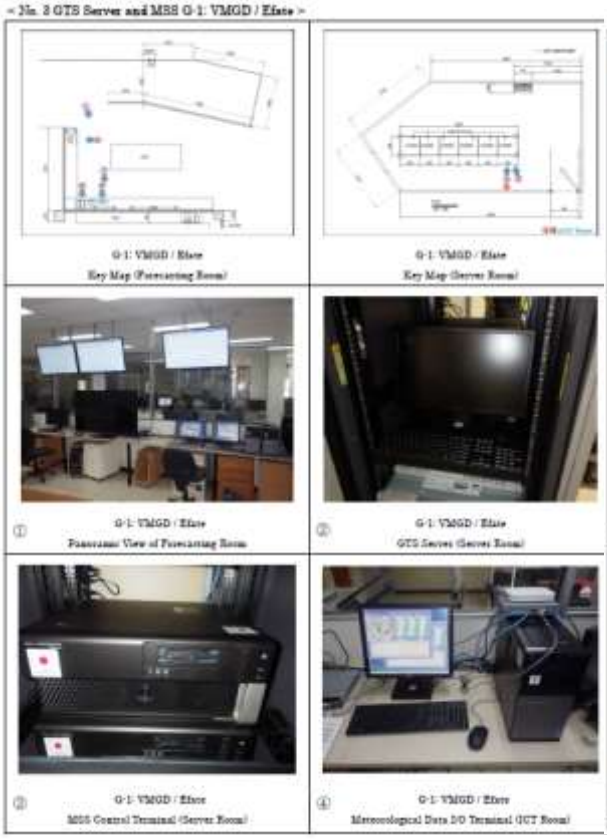
Dates: June and July 2015

Communication works including data and electrical cabling works was successfully carried out together with installation of AWS station and data sensors.
Equipment calibration training was also carried out.



Site 8: GTS Server and Message Switching System (MSS), VMGD Port Vila
Mission: Installation of GTS Server and Message Switching System for VMGD. Routing of real-time data from field sites to VMGD and transmission to BoM, Melbourne.
Dates: July 2015
Technicians works around the clock to install and operation GTS Server and MSS from its Hardware configuration, router configurations, domain and VLAN group policy management to its software applications and web displays. It was a tremendous effort that went for only 1.5 days.

< No. 3 GTS Server and MSS G-1: VMGD / Efate >



< No. 3 GTS Server and MSS G-1: VMGD / Efate >

Project Trainings:

Field Operation Training – Tide and Strong Motion Broadband Stations

< Initial Operation Training >

< Initial Operation Training >

Operation Training – Automatic Weather Stations

Total System training

Total System training

In addition to these trainings were Web Programming training where all divisions participated in these couple of weeks trainings.

6. EVENTS

ICT DAY MAY 2015 – "DRIVERS OF INNOVATION"

Apart from other events that the division participated in, ICT Day 2015 was one of many events. Annually the VMGD's ICT/Engineering Division participated in the Government's ICT Day events organized by the OGCIO team. 2015 saw VMGD as one of the leading Government agency for utilizing the full potential of ICT for its services.

This year's event was a successful one with the participation of VMGD technicians. A booth was allocated for VMGD where the technicians displays posters and monitors displaying live data feed from VMGD.

7. REDUNDANCY SYSTEMS

Contingency planning is an essential process in any technical operations thus onus was on the division for such operations. During the 3rd quarter of 2015, emphasis were on implementing automatic backup scripting on various servers.

NAS rack stations were deployed for such purposes therefore monthly off-site data backups eventuated. Under the MDRR Project, funds were obtained for the purchase of VMGD's virtual server hardware, UPS and other needed servers. The installations and deployment of their use for redundancy purposes, with be initiated in 2016.

8. ACHIEVEMENTS COMMENT

The first portion of 2015 saw the division's staff involvement in TC Pam recovery process. Emphasis was on reviving communications to outer stations together with assisting the TC Pam NGO agencies in coordination of communication links.

The establishment of the Energy Department within VMGD premises thus another 30% increase in network devices. Ministry's CSU & cabinet also puts an emphasis on the network with additional staff connected. Although human resources and funds were limited within the ICT/Engineering Division, it was very promising to see that the Division had accomplished some outstanding achievements throughout 2015 despite various unforeseen work responsibilities.

Major achievements were through JICA Project implementations for two tide stations installations, two automatic weather stations 3 strong motion broadband stations and 1 extensive GTS MSS server together with its backup. With the implementation of the project, VMGD domain communication was expanded to Litzlitz and Lakatoro in Malekula, Isangel and Lenakel in Tanna and broadband access via VMGD domain to Pekoa Airport station in Santo. The smooth transition of new established stations to the newly developed VLAN and respective subnets for the new domain was an added bonus as VMGD's domain expansion need was comprehendible.

In addition are the continuous ICT and Engineering support the Team provided to all the divisions within VMGD, to the Energy Department, NDMO, CSU, Ministry, GIZ and housed projects. No major disruptions were experienced thus a 2% minimal communications downtime had occurred throughout 2015 despite TC PAM.

Another achievement was the scheduled monthly backups for both VMGD and NDMO operational data. This is very vital as part of VMGD systems contingency planning. More emphasis and upgrade will to be made on this in 2016 to improve its redundancy operations and operational drills, together with respective Operations, procedures and policies as several servers were obtained through project funds to initiate such development/upgrade.

The Division's involvement in providing the technical support towards the locally hosted Regional conferences/workshops, was praised by workshop participants and Divisions involved.

As this Division exists to provide professional technical support to all VMGD Divisions, technical operations within the ICT/Engineering Division itself are crucial to smoothly back up VMGD's operations. An achievement within the Division is the Server monitoring operations which is now online for data traffic monitoring, and server surveillance.

In addition is the backhaul WiFi communications for Bauerfield Observation Station to VMGD's domain. This brought communication disruptions at a 3% downtown rate.

More work will be emphasized in 2016 for upgrading all outstations' communication systems and alternate power source. These will be achieved through VCAP Project.

9. CHALLENGES COMMENT

The major challenge this year was dealing with 1000+ electronic devices monthly, with limited human resources and limited operational funds.

Limited funds for the upgrade of various sensors, weather instruments, communication upgrades, real-time weather monitoring and physical off-site backup infrastructure. This was a challenge that needs to be addressed in 2016.

Another challenge is expanding VMGD's domain to all synoptic sites throughout Vanuatu. As this is an expensive exercise, such expansions are only feasible two stations per year as per Gov operations budget wise due to high travelling costs involved. This is highly likely covered by the upcoming VCAP Project component for VMGD.

VMGD's Data Centre is becoming crowded thus investment of employing virtual servers and data centre's environment monitoring systems are other challenges that needs to be addressed at the soonest.

A deteriorating workshop for the electronics technicians was also an eyesore for the technicians. It contributes to staff demoralization thus hinders staff performances at times. A challenge that needs immediate address in 2016.

As most of these challenges centres around financial commitments, these needed to be addressed via projects funds. This is one of the priorities for 2016.

10. HUMAN RESOURCE

The table below provides information about staffing within the ICT and Engineering Division in 2015.

Staffing Division	Details
Numbers:	6 (one on contract awaiting permanent appointment)
Performance Appraisals Conducted	Done later 4th quarter.

Study Leave:	Nil
Secondment:	Nil
Annual Administration Leave:	All staff with entitled admin leaves
Other Leave/Resignation/Retirement:	Nil

The division was very fortunate to extend contracts for 1 staff this year to help out with the workload of daily supports. During the last quarter of 2015, a post was advertised to recruits a System Administrator to minimized the workload on available limited resources. As the department grows with these changes and dependent on technology use, it is recommended to recruit 2 other technicians to relief the workload next year or so.

Staff capacity development is essential for the division thus must be addressed.

7. CLIMATE CHANGE AND DISASTER RISK REDUCTION DIVISION

The Climate Change and Disaster Risk Reduction Division contributes to VMGD purpose by being 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 programs, and working effectively with local, regional and international partners.

The Climate Change and Disaster Risk Reduction Division implements and operates 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 programs and projects to support national level commitments to Climate Change and Disaster Risk Management multilateral agreements.

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

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

PRIORITY ACTIVITIES AND RESULTS 2015

Programs and Objectives required by the 2015 Business Plan and results are summarized in the table below and commentary is provided in the following text.

Climate Change and Disaster Risk Reduction Division (Business Plan)			
Programs	**Objective (Targets)**	**Result ✓✖**	**Result Summary**
Secretariat Services for the National Advisory Board on Climate Change and	NAB operating as a well-functioning decision-making and advisory body	✓	Six NAB meetings were convened throughout 2014. Most meetings focused on the endorsement of new projects and projects in the pipeline

Disaster Risk Reduction (NAB)			developed by key government sectors as well as civil society organizations.
Coordination of all CC and DRR initiatives in Vanuatu	PMU and NAB is aware of all CC & DRR activities being undertaken or planned in Vanuatu and coordinates to ensure complementarity	✓	PMU developed a project brief form in 2012 revised in 2013. This project brief provides an overview of all CC/DRR related projects and initiatives planned or proposed. PMU then issues an endorsement letter to the implementing agency. These records are managed by PMU communications officer. In 2014 fifteen projects and initiatives were endorsed by NAB.
	PMU supports and facilitates the implementation of CCA/DRR programmes and projects with NAB stakeholders	✓	To date six large multi-sectoral projects are managed if not supported by the PMU. These projects include the World Bank projects namely; IRCCNH, MDRR and REDD+ projects, the UNDP- PRRP and V-CAP projects, and the ICLIM project. Apart from projects PMU continues to provide secretariat services to the NAB and coordinates international and regional agendas on CC/DRR on behalf of the government of the Republic of Vanuatu. Such included the coordination of COP20 meeting, SIDs meeting in Samoa and several other COP related meetings attended by the Manager of PMU in 2014.
Advisory Services	PMU provides timely and appropriate advice to GoV, NGO and CSO actors on CC and DRR issues	✓	PMU continues to advise the national and local actors on CC/DRR initiatives based on decisions executed through the NAB on a daily basis. PMU provides secretariat services to NAB and continues to actively participate in key sector meetings and conferences related to CC/DRR agendas.
Policy and Strategy	Finalise a national CC & DRR policy and action plan	✓	The policy work was initiated by EU-GCCA project in 2012 mainly involving desk reviews of what documents exist both nationally and internationally. The UNDP-PRRP then continued the work left by EU-GCCA in 2013-2014 engaging an international consultant to consult with all six provinces in order to develop the policy further. At December 2014 a policy draft was released for comment by all actors. The policy is now at final stages and is expected to be launched in mid-2015.
Project Management and Operations	Effective PMU coordination and project management PMU adequately staffed	✓	To date there is adequate number of staff within the PMU to be performing the functions stated in the NAB booklet. With the increase in the number of projects managed through PMU, there is

			also an increase in the number of staff to facilitate the implementations of these projects. In 2012 there were four (4) staff recruited to the PMU, In 2013 a total of 8 and in 2014 a total of 12 staff recruited into PMU to support sectors with different projects. Apart from staff PMU has recruited and engaged 20 international consultants throughout 2014. (See staffing section for details).
International CC & DRR obligations	Support and facilitate the national implementation of international CCA/DRR obligations	✓	PMU staff played a key role in coordinating the Vanuatu delegation at the SIDs conference in Samoa in September 2014. At the conference PMU officers coordinated the meetings relevant for Vanuatu's attendance on a daily basis. Apart from SIDs conference PMU represented the Vanuatu government in the following meetings in 2014 – Loss and damage, APAN meeting, UNDP-PRRP board meeting, ICLIM planning meeting, PCCP advisory and technical meetings.
Participation in international agenda	Raise capacity of GoV representatives to participate in international fora	✓	Each PMU staff is designated to participate and contribute to international fora. PMU manager coordinated the UNFCCC-LEG meeting in October 2014. M&E officer and Communications officer supported the coordination of SIDs delegation in Samoa in September 2014.
Adaptation & DRR	Build the foundations for more effective CCA & DRR work in Vanuatu	✓	The CC/DRR policy is at the final stages of completion. The UNDP-PRRP worked in collaboration with PMO to complete and finalize the policy. This policy document sets the foundation and will guide the implementations of CC/DRR initiatives in Vanuatu.
Climate Change Mitigation	Improved GoV oversight of CC mitigation projects in Vanuatu	✓	PMU is lacking a mitigation officer. Two mitigation projects were endorsed by NAB in 2014 and currently managed through the department of Energy.
	Mainstream CC perspectives into energy-related projects and improve CC mitigation outcomes	✓	(As above…)
Financial Management & Procurement	Establish PMU capacity to manage donor funds	✓	With technical assistance PMU managed to develop guidelines related to managing EU and World Bank financial procedures. PMU currently has a finance manager who is the only trained personnel able to operate the EU SARA financial system in Vanuatu. PMU also

			has a procurement officer. A total of three trainings related to world bank procurement and financial systems were delivered to PMU by the world bank in 2014. Procurement and Financial management advisors currently sit within PMU to train and support the local officers.
	NAB oversight of all GoV managed CC&DRR funding	✓	As mentioned above, six NAB meetings in 2014 to endorse new projects and initiatives in Vanuatu.
Monitoring, Evaluation and Reporting	Monitor progress and outcomes of government and externally funded CC & DRR projects	✓	Each donor funded project has its M&E framework to monitor and report on progress. Emails and regular online updates play an active role for M&E purposes. There is no overarching M&E framework within PMU since there are several donor funded projects with their specific requirements therefore all M&E framework in place are project specific. All projects also have different frequencies in reporting.
	Monitor and evaluate the work of the PMU	✓	A risk governance assessment was completed in late 2013 and early 2014 supported by UNDP-PRRP programme. Some of the recommendations are now being implemented by PMU and relevant sectors. An evaluation was conducted in late 2014 assessing the progress of an IRCCNH project but also assessing PMU and NAB involvement. Recommendations from this evaluation guided the implementations of the next phase of the multi-sectorial world bank project (IRCCNH)
Information management	Collect, manage and make accessible data and information on CC & DRR knowledge and activities relevant to Vanuatu	✓	The Communications Officer and M&E officer participated in four PCCP advisory meetings in 2014. Some of the discussions included the linking up of the NAB portal to the PCCP (regional portal) which the two officers are managing locally. The NAB portal is well functioning with an average of 40 users per day recorded in December 2014. This illustrates the number of people accessing information from the NAB portal. ICLIM project endorsed in 2014 will support further development of the NAB portal.
Communication & Engagement	Raise awareness of NAB and PMU activities	✓	Awareness of the NAB and PMU is continually raised through the participation of PMU staff at regional and international conferences such as the LEG meeting, SIDs conferences, COP

			meeting and mostly through the NAB portal access.
	Build partnerships with VMGD sections, NDMO and NAB stakeholders	✓	PMU communications Officer is the co-chair of the communications, outreach and partnership internal working group (COPWIG) of VMGD. Seven COPWIG meetings were convened in 2014 to discuss VMGD key messages, glossaries, one VMGD product and the continued partnership for divisions within VMGD. This working group has been functioning very efficiently. PMU Communications officer also coordinated the radio programs for VMGD in 2014. All divisions within VMGD managed to raise awareness of their products through the radio programs and talk back shows.
Training and capacity building	Increase PMU, VMGD & NDMO staff capacity to implement NAB agenda	✓	An assessment is required to demonstrate the increase in capacity however the participation of officers in international meetings and conferences provides an avenue that supports capacity building. Several meetings were attended by officers within VMGD and NDMO.

Climate Change and Disaster Risk Reduction Division Projects			
Programs	**Objective (Targets)**	**Result ✓✖**	**Result Summary**
IRCCNH	Increasing resilience of local communities to adapt to climate change and natural hazards	✓	(See below)
MDRR	Strengthen urban planning and tsunami preparedness	✓	(See below)
UNDP-PRRP	Communities are more resilient to risks from climate change and disasters.	✓	(See below)
ICLIM	Supporting the regional management of climate change information in the Pacific	✓	(See below)
V-CAP	To improve the resilience of the coastal zone to the impacts of climate change in order to sustain livelihoods, food production and preserve and improve the quality of life in targeted vulnerable areas	✖	
RPP REDD+ (FCPF)	The RPP sets out how Vanuatu intends to develop its REDD+ programme which is referred to as the National REDD+ scheme.	✖	

NAB/PMU COORDINATION OF ALL CC/DRR INITIATIVES IN VANUATU

Six NAB meetings were held in 2015 mostly focused on the endorsement of new projects and projects in the pipeline developed by key government sectors as well as civil society organizations. The following table lists all projects endorsed by NAB in 2015.

Project Name	Type/Theme	Funding source	Lead Implementing agency
AECOM Pacific Australia Climate Change Science and Adaptation Planning (PACCSAP) Program	Infrastructure - Economic analysis of climate change adaptation options to protect low-lying settlements and critical infrastructure	Australian Aid - Pacific Australia Climate Change Science and Adaptation Planning (PACCSAP) Program	Public Works Department
Nambawan Vanuatu REDD+ Project	REDD+ Implementation	Private equity - possible CDM Bazear loan	Vanuatu Carbon Syndicate Company to be registered
PACC project	Infrastructure – Climate proofing coastal infrastructure construction works to be completed in 2015	SCCF via UNDP and SPREP	Department of Public Works
SNC (Second National Communications)	Climate change focus- draft developed in 2014 and validated. Submission in 2015	Funded by GEF via UNDP	Ministry of Climate Change
EDF10 ACP-EU Project: Building Safety & Resilience in the Pacific	Multi-sectorial		National Disaster Management Office
WISE REDD+ Project	Education support for Government Program	United States of America Department of State (Funding goes through Conservation International who manages the project at the global level for five countries including Vanuatu)	Conservation International and Live and Learn Vanuatu
Climate Zone National Competition 2014	Youth and student engagement in climate change, written and oral quiz	GIZ	MOE
ICLIM Project	Climate Change data and information management	DFAT (Department of Foreign Affairs and Trade – Australian Government	Griffith University and SPREP (piloting in three countries; Vanuatu, Fiji and Tonga
LIDAR Capture for Aneityum	Survey and Mapping Research to assess environmental change	Australian Aid - Pacific Australia Climate Change Science and Adaptation Planning (PACCSAP) Program	Ministry of Climate Change

Specific information on projects is captured through project brief form developed by PMU to support the NAB endorsement process. Once projects are endorsed, all information is recorded in a database managed by PMU

Communications Officer. A letter is issued to all lead implementing agencies to advice on the status of endorsement. In 2014, fifteen projects, ideas and concepts were received by NAB for endorsement.

To date, six large multi-sectorial projects are managed if not supported by the PMU. These projects include the World Bank projects namely; IRCCNH, MDRR and REDD+ projects, the UNDP- PRRP and V-CAP projects, and the ICLIM project. *(see information under project updates)* Apart from project work, PMU continues to provide secretariat services to the NAB and coordinates international and regional agendas on CC/DRR on behalf of the government of the Republic of Vanuatu. These include the coordination of COP20 meeting, SIDs meeting in Samoa, LEG meeting hosted by Vanuatu, Regional meetings and several other COP related meetings attended by the head of PMU and the Ministry in 2014.

PARTICIPATION IN INTERNATIONAL CC/DRR AGENDA

PMU Manager assigned each PMU staff to follow and participate on international and regional agendas in 2015. The following table summarizes all regional and international meetings attended by PMU staff in in 2015;

CC/DRR Theme	Designated PMU Officer	Meeting/Conference outcomes	Coordinating agency/ Venue
ADP - Adhoc Working Group to the Durban Platform (under the UNFCCC) Workshop	Communications Officer	Vanuatu representative to the G77 plus China, SIDs and LDCs	UNFCCC secretariat Bonn, Germany
PIFFAC M&E Workshop and APAN meeting	M&E Officer	Key discussion outcomes on the 6 PIFACC thematic areas and indicator reporting on country progress so far against the PIFACC indicators. A country profile was edited and reviewed as a product of this exercise. This country profile has been uploaded to the pacific Climate Change portal (PCC)	SPREP – Climate Change Division, Apia- Samoa
UNFCCC negotiations training	Communications Officer	SIDs negotiators training towards COP meetings	UNIDAD – UNDP- DFAT partnerships Singapore
ICLIM planning workshop	VMGD-ICT Manager and PMU M&E Officer	Planning of activities for ICLIM project managed by Griffith University and SPREP piloted in Fiji, Tonga and Vanuatu.	SPREP and Griffith University Brisbane
Small Islands Developing States (SIDs) conference	Communications Officer and M&E Officer	A successful side event with 60 participants. Vanuatu showcased the data and information management through NAB portal at the national level along with Tonga and Fiji as pilot countries. SRPEP presented the PCCP.	UNFCCC secretariat Apia, Samoa

LEG Meeting	Coordinated by PMU Manager and attended by PMU team	Reviewing the National Adaptation Plans - countries	UNFCCC Port Vila, Vanuatu
Cost benefit Planning meeting	Principal Scientific Officer, CC-DRR	Planning of activities for Cost benefit analysis at country level	GIZ Nadi - Fiji
Adaptation fund training	Principal Scientific Officer, CC-DRR	Regional training for countries to learn about project development process	GEF & CTN Apia- Samoa
Adaptation Committee Meeting	Principal Scientific Officer, CC-DRR	Vanuatu representative to G77 plus China, SIDs, LDCs and AOSIS	UNFCCC Secretariat Bonn - Germany

Reviewing the Vanuatu NAPA at LEG meeting

Media press conference at VMGD during cyclone season launch, 2014

PROJECT UPDATES

(i). Increasing Resilience to Climate variability and change and natural hazards (IRCCNH) funded by the World Bank

The designated implementing agency is the Vanuatu Meteorology and Geo-hazards Department (VMGD), within the Ministry of Climate Change Adaptation, Meteorology, Environment, Energy and Disaster Management (MCC). Given the complexity of the main purpose of the project, 'to mainstream Climate Change Adaptation and climate-related Disaster Risk Reduction', the implementation of the project also requires the involvements of other governmental departments based within the same Ministry: the National Disaster Management Office (NDMO) and three other Ministries: the Department of Local Authorities (DLA), under the Ministry of Internal Affairs, for Component 2; the Department of Agriculture and Rural Development (DARD) under the Ministry of Agriculture, Quarantine, Forestry and Fisheries, for component 3.1; and the Department of Geology, Mines and Water Resources (DGMWR), under the Ministry of Lands and Natural Resources, as well as of one governmental agency: the Vanuatu Agriculture Research and Technical Centre (VARTC).

In terms of implementation and impact, in these first two years, most efforts have been put into setting sound foundations for the project in terms of institutional and organisational setting, funding agreements, financial and accounting systems, internal procedures and HR arrangements (Component 1). These include the establishment of a Project Management Unit (PMU), hiring local and international staff, refurbishing offices as well as the acquisition of key equipment for the functioning of the PMU and of the all departments involved in the implementation of the project.

Prioritising the institutional strengthening and development has not prevented delivering tangible results under the rest of the components (2, 3 and 4). Contrarily, focusing on the institutional aspects of the project has allowed to setting structures and processes that clearly are supporting the implementation of the whole project in a coordinated and coherent manner and increase government's capacity of absorption and implementation effectiveness for the second and final phase of the project. Further, the institutional focus has also supported achieving results within other climate change related projects in country.

Summary of project activities delivered at component level during the two first years of the project:

- Start of the project, and continued support to PMU administration and staff with recruitment, FM, Procurement and M&E reports produced, workshop and training
- 2 NDMO Provincial disaster offices being established (TAFEA & TORBA), with 2 trained officers and risk assessments in progress
- Installation of VMGD real time communication systems in progress including manuals on warning dissemination and radio network infrastructure
- Development of DLA guidelines for council development plan, and support to the Vatu Mauri Consortium to initiate a micro-project mechanism
- Resilient root crops being researched and distributed from VARTC which is also being refurbished
- 2 root crop DARD demonstration sites for Kumala with key farmers identified
- RWS Surveys completed, site identification completed for 30 water tanks, and Guidelines on Water Standards finalised
- Mid Term Review preparations underway

PMU meeting with EU ambassador and DG-MoCC

(ii). Mainstreaming Disaster Risk Reduction Project (MDRR) funded by World Bank

The Mainstreaming Disaster Risk Reduction project in Vanuatu is implemented by the Vanuatu Meteorology and Geo-hazards Department and intends to strengthen the urban planning and tsunami preparedness in the main urban areas through a tsunami warning systems to be installed in Port Vila and Luganville towns to help the urban population and their surrounding rural areas prepare for tsunami. The resources provided by this project will strengthen the NAB and assist the Government to conduct thorough hazard and risk assessment in the urban areas and use the data to inform national land use planning policies including the design of a Tsunami warning system for both urban areas.

With this intention, initial consultations have been carried out with various stakeholders of the project from April 30th to May 21st 2014 which the project have gathered relevant information to help with planning of activities and other logistics preparations towards rolling out the necessary awareness programs of the project.

Following on from that initial consultations way-forward and outcomes, the need for one on one stakeholder inception workshop with the main stakeholders – Port Vila Municipal Council, Luganville Municipal Council councilors, Sanma and Shefa provivincial governments authorities and leaders and the Local Civil Based Organisations were planned in order to proceed further with the awareness aimed at creating partnerships with them and the project in Vanuatu. As a result of having the series of workshops from August to November 2014, municipal boundaries and provincial peri-urban boundary lines and focal points were clearly identified and confirmed. The stakeholder workshops are the first of its kind as a starting stage to the MDRR project in its preparations to roll out the outreaching and awareness programs to prepare PVMC authorities for future activities and programs. The workshops involved the presentation of the MDRR project's components and purpose, which resulted in constructive discussions and suggestions as a way forward with the responsible contact persons from the Municipality council and councillors for both townships.

Another major activity achieved was the selection of the BECA International Consulting Firm which will undertake all the risk assessments, mapping and planning for the urban preparedness for Port Vila and Luganville prior to the installation of the sirens which will be implemented in the second phase of the project. With this progress, BECA have already completed their inception visit to Vanuatu in February and a draft Inception Report has been submitted for review and approval by the Executive Committee members in early June 2014.

Summary of communications and outreach activities delivered at component level during the two first years 2013 – 2014 of the project:

- Development of four video slots to promote the project through the Television Blong Vanuatu in May to June 2014.
- 21 weekly radio programs by all Divisions of VMGD on their products and services broadcasted by the Radio Vanuatu.
- Advertisement slots created and aired through Radio Vanuatu and Paradise FM98.

MDRR workshop with Port Vila Municipal Council

(iii). UNDP Pacific Risk Resilience Programme (PRRP) funded by DFAT

The Pacific Risk Resilience Programme (PRRP) is a five year programme funded by the Australian Government Department of Foreign Affairs and Trade (DFAT) with a total budget of US$16.1m. It is due to complete all activities in July 2018. It is delivered through a partnership between UNDP and the International NGO Live and Learn Environmental Education (LLEE) and lead government agencies in four participating countries – Fiji, Solomon Islands, Tonga and Vanuatu. The programme has been operational in Vanuatu since 2013 with the signing of an Aid Memoire between UNDP and the government of Vanuatu in February 2013. The main government focal agency is the Ministry of Climate Change (MoCC).

Vanuatu is one of the four countries in the PRRP and is known for three notable achievements to date. Firstly the completion of government endorsement of the Risk Governance Analysis (RGA) which will provide lessons learned for other countries. A critical ingredient for achieving end-of programme outcomes has been and will continue to be the leadership of the NAB. Secondly the progress for integration of CCDRM at the provincial level planning and budgeting including the area Council Development plans in Aniwa and Aneitym. Subsequently a provincial planning, budgeting and monitoring guide with the CCDRM integrated are now finalized by DLA. Finally PRRP has secured a successful partnership with Digicel Vanuatu on the application of mobile telephony for CCDRM awareness raising campaigns – this led to over 35,000 people participating in a national climate change quiz which demonstrates the potential for the application of mobile telephony as an alternative to traditional media. A partnership is being established between the private sector and the key government agencies including NDMO, Education and Agriculture line ministries. PRRP also supported the provincial consultations for the CCDRR policy which is now at final stages of completion.

(iv). Pacific iCLIM Project funded by DFAT

The Pacific iCLIM project is a regional project focusing on establishing a regional system for managing and sharing climate change data and information in the Pacific. The project is being implemented by Griffith University in collaboration with SPREP, commencing on 3 March 2014, with an anticipated completion date of 30 June 2016.

The establishment of a Pacific regional system for managing and sharing climate change data and information is being carried out in collaboration with three pilot countries (Fiji, Tonga and Vanuatu), who are already involved in implementing national level portals, procedures, policies and practices that will enable connectivity to the SPREP hosted PCCP.

The Government of Vanuatu is in the process of finalizing the draft National Climate Change and Disaster Risk Reduction (CCDRR) Policy. The vision of this Policy is for Vanuatu to be resilient to climate change impacts, natural and geological risks, which will be achieved by targeting the five key priority areas of governance, capacity, information, preparedness and knowledge.

The CCDRR policy prioritization of information focuses specifically on improving Vanuatu's management of climate change and disaster risk reduction data and information in order to enable more informed decision making for planning, development and disaster operations, and development of accurate community awareness tools. The ICLIM project is contributing to the area of information management and knowledge sharing related to climate change and disaster risk reduction. ICLIM is implemented by VMGD-ICT division in collaboration with the PMU with specific support and development of the NAB portal.

Vanuatu hosted side event on NAB portal, SIDS Meeting, Apia

FINANCIAL MANAGEMENT AND PROCUREMENT

With technical assistance PMU managed to develop guidelines related to managing EU and World Bank financial resources. With the establishment of financial and procurement systems, PMU is better equipped to manage World Bank funds and better coordinate with implementing agencies. PMU senior finance officer is the only trained personnel able to operate the EU SARA financial system in Vanuatu and PMU is fortunate for this achievement. PMU procurement officer has undertaken three trainings related to World Bank and EU procurement. A total of three trainings related to World Bank procurement and financial systems were delivered to PMU by the World Bank between March 2013 and December 2014. Procurement and Financial management advisors have been recruited and will continue to support the PMU in 2015.

MONITORING, EVALUATION AND REPORTING

Each donor funded project has its M&E framework to monitor and report on progress. Emails and regular online updates play an active role for M&E purposes. There is no overarching M&E framework within PMU since there are several donor funded projects with their specific requirements therefore all M&E framework in place are project specific. All projects also have different frequencies in reporting.

A risk governance assessment was completed in late 2013 and early 2014 supported by UNDP-PRRP programme. Some of the recommendations are now being implemented by PMU and relevant sectors. An evaluation was conducted in late 2014 assessing the progress of WB-IRCCNH project but also assessing PMU

and NAB involvement. Recommendations from this evaluation guided the implementations of the next phase of this multi-sectoral World Bank project (IRCCNH)

ACHIEVEMENTS COMMENT

NAB/PMU was fully dependent on donor funding to implement all its activities in 2014. NDMP-PRRP, MDRR and IRCCNH projects shared their resources to support the on-going operations and activities of the NAB/PMU throughout 2014. With support from VMGD, NDMO, PMO and other key sectors involved in CC/DRR agendas, PMU/NAB was able to achieve results planned for 2014.

CHALLENGES COMMENT

Challenges related to the sustainability of PMU/NAB and obtaining government buy-in into the set up remains a challenge.

STAFFING

The following tables provide information about staffing of the Climate Change and Disaster Risk Reduction Division in 2014. The number of staff at the PMU has increased since 2012 due to the number of projects being erected. All PMU staff are supported by projects on contract basis.

Staffing	Details
Numbers:	Twelve staff altogether including international consultants offering support when needed. Details of project funded staff; 2 – UNDP,PRRP 4 – WB, IRCCNH 4 – WB, MDRR 2 - PACC
Performance Appraisals Conducted	Varies depending on contract periods
Study Leave:	None
Secondment:	None
Annual Administration Leave:	All staff but varies according to contract periods
Other Leave/Resignation/Retirement:	None

VMGD Communications, Outreach and Partnerships Working Group

DEPARTMENT OF ENERGY
2015 Annual Report

Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management.

ENERGY EFFICIENCY


PHOTOVOLTAIC


WIND ENERGY


HYDRO-POWER


PETROLEUM


URBAN POWER ACCESS

ENERGY THE PILLAR OF DEVELOPMENT

This document comprises of a collection of reports submitted by responsible officers of different programs within the Department of Energy and compiled by the Acting Director. These reports are against the 2015 Business Plans as required by PSC through the Director General's office of the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management.

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SECTION ONE - OVERVIEW

REVIEW OF 2015 BY THE DIRECTOR

For the Department of Energy, 2015 was regarded as a very busy but an exciting year also. Major projects that have been under preparation during the last 12 months were now entering into their commencement stages or commissioning. Several more new projects are being born. In 2015, there was sufficient allocated budget to maintain 8 permanent staff; Director, Program Manager, Finance and Procurement Officer and Finance Administrator, Power Off Grid and On Grid Officers, Energy Efficiency Officer and the Petroleum Officer. In addition to this, six (6) project officers have been recruited to add to the work-force of the Department.

2015 marks one year of the Department's relocation from the Old George Pompidou Building to the Meteo Complex. Due to this relocation, new office equipment and furniture have been obtained and now enhancing the service delivery of the Department. Also a Branch Office has been established, to cater for the additional recruited staffs. Even so additional office space is required and the Department has consulted and designed a one-story building to house all staff. This office building project will be undertaken in 2016-2018.

In April 2014, the National Energy Road Map was launched along with the new Department logo. This gave momentous directions to the Department for the energy sector development in Vanuatu. Two programs that came about as a result were the GPOBA Program and the VREP Program. The DoE further saw the need to revise the NERM and initial works began in in the 3rd Quarter of 2015. The updated NERM should have COM endorsement in 2016.

In August 2015, the PSC approved the new Department structure outlining the 3 sections in the Department; Electrification, Energy Security and Administration. The Department has prepared in its 2015 plans and budget to recruit 4 more officers in 2016.

While these achievements were being made, it was normal that these developments now demanded a more committed effort from the Department to meet the funding requirements and the expectations of the National Energy Road Map.

ABOUT DEPARTMENT OF ENERGY [DOE]

The Department of Energy (DoE) is a Department within the Ministry of Climate Change Adaptation, Meteorology, Geo-hazards, Energy, Environment and National Disaster Management Office.

In 2015 the DoE was responsible for identification, implementation, management and evaluation of energy projects, monitoring and facilitating energy activities as well as providing awareness and training activities.

1. VISION

The vision of the DoE is "to energize Vanuatu's growth and development through the provision of secure, affordable, widely accessible, high quality, clean energy services for an Educated, Healthy and Wealthy Nation".

2. MISSION

The DoE's mission is "an Effective, Equitable and Efficient Energy Sector".

Specifically, this has been achieved through the excellence in the following areas:

- Increased professional staffing
- Official endorsement of the National Energy Road Map

- Approved Donor support funded projects
- New office space
- New office equipment and furniture

3. PRINCIPLES

The guiding principles of the DoE are:

- Trustworthy : Sincere and honest in allocated responsibilities
- Respect : Appreciate each others' beliefs and status
- Energetic team : Active and have passion for work
- Team work : Consultation, Willingness, supportive to each other in achieving goals

4. OBJECTIVES

The DoE had aimed to meet the growing demands of the Government of Vanuatu and all Ni-Vanuatu for access to clean and affordable power with efficient energy usage and appliances. The objectives of this overall goal were:

- Enhance service delivery of the department
- Achieve greater diversity of energy sources
- Improve access to electricity
- Advance energy efficiency and conservation methods
- Strengthen linkages for progressing development
- Promote reliable, secure and affordable petroleum and gas supply

5. AREAS OF RESPONSIBILITY

The DoE is the main Government arm for all matters relating to the energy sector. This includes but not limited to, energy policies, energy legislations, electrification, petroleum, energy efficiency & conservation, energy awareness and trainings.

6. PROGRAMS, FUNCTIONS AND SECTORS SERVED

With the new DoE Structure, DoE has three units, (i) Administration, Finance & Procurement; (ii) Energy Security Unit; (iii) Electrification Unit. There were six (6) main programs under these three units, namely; Administration, Energy Efficiency & Conversation, Petroleum, Subsidy Scheme, Rural Electrification and Urban Electrification. The Table below is showing the functions for these five (5) programs under the department.

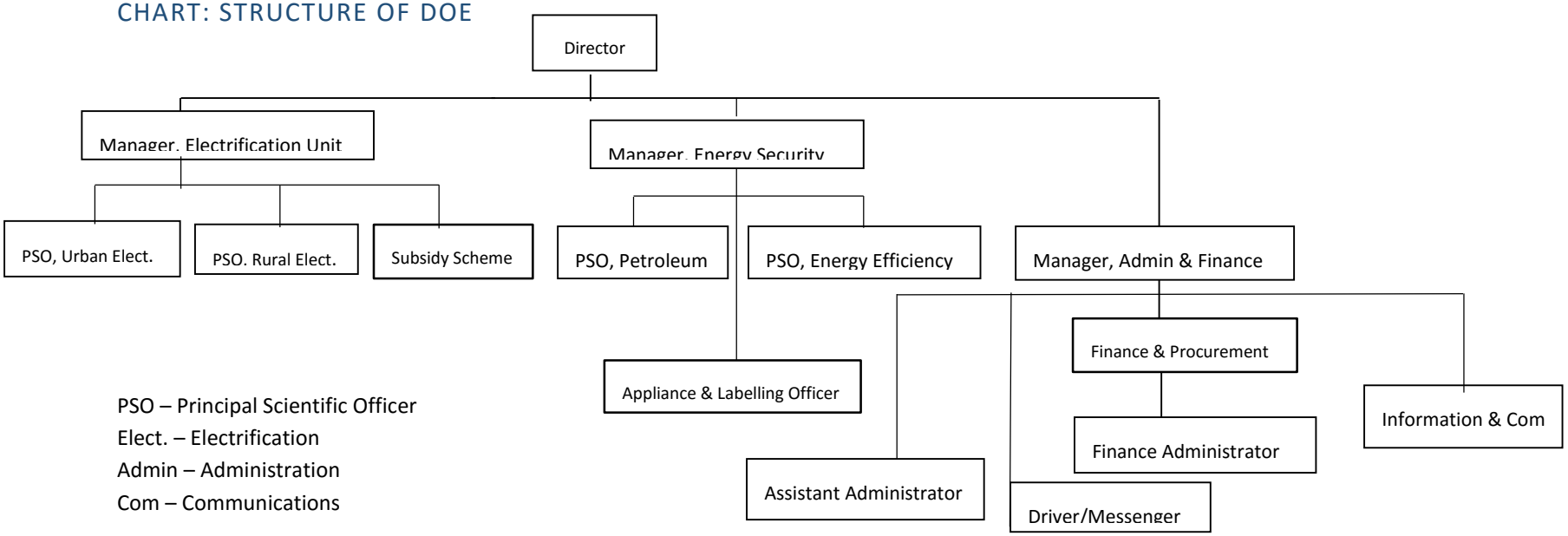
Table: DoE Programs & Functions						
Administration		**Electrification Energy**		**Security**		
Administration	**Urban Electrification**	**Rural Electrification**	**Energy Efficiency & Conservation**	**Petroleum**	**Subsidy Scheme**	**Programs**
Office Administration	Grid extensions	Resources assessment	Energy audits	Data collection	Data collection	**Functions**
Policies	Household connections	Electrification	Data collection	Supply & Price Monitoring	Monitoring, Evaluation & Verification	
Finance & Procurement	Legislation	Trainings	Legislation	Trainings		
Assets management	Trainings	Awareness	Trainings	Awareness		
Capacity training	Awareness		Awareness			
The overall energy sector development	Urban energy sector or concession areas	Rural energy sector (outside of concession areas)	Urban & Rural energy sector	Petroleum Sector	Urban and Rural energy Sector	**Sectors**

7. STRUCTURE AND STAFF

When the Government took its policy decision in 2013 to create the new Ministry of Climate Change, the DoE was transferred from the Ministry of Lands to the new Ministry. The Ministry of Climate Change placed energy as its priority and as such, the DoE structure and staffing was reviewed.

Below is a schematic of the DoE approved structure in 2015.

CHART: STRUCTURE OF DOE



PSO – Principal Scientific Officer
Elect. – Electrification
Admin – Administration
Com – Communications

TABLE: STAFF OF DOE

Name	M/F	Position	Date of Entering PSC/Assignment	Employment Status
Jesse BENJAMIN	Male	Director (now Appointed DG to MOCCA in Feb 2016)	May 2006	Permanent
Leo MOLI	Male	Manager, Energy Security	February 1982	Permanent
Emma MALA	Female	Finance Administrator	June 2000	Permanent
Antony GARAE	Male	PSO Urban Electrification	October 2013	Permanent
Terry MAEL	Male	PSO Petroleum	October 2013	Permanent
Kathy KANAS	Female	Finance & Procurement	December 2013	Permanent
Christopher SIMELUM	Male	PSO Rural Electrification	January 2014	Permanent
Joseph TEMAKON	Male	PSO Energy Efficiency & Conservation	January 2014	Permanent
Jerry LAPI	Male	PEEP II Local Coordinator also GPOBA IVA	January 2013 November 2014 Renewed Nov 2015	Contract Contract
Alfred JOEL	Male	PALS Local Support Officer	June 2013 Renewed June 2014 Renewed June 2015	Contract
Elizabeth WAIWAI	Female	ESDP Project Implementation Assistant	August 2014	Contract
Paul KAUN		GGGI National Expert	March 2015	Contract
Michel LEODORO	Male	ESDP Project Communication Officer	18th May 2015	Contract
Hellen WILSON	Female	EDDP Project Finance Officer	1st July 2015	Contract
James ALICK	Male	Project Support Officer	May 2015	Contract
Brett RAKAU	Male	ESDP Communication Officer	2nd November 2015	Contract
Leith VEREMAITO	Male	VREP Program Manager	September 2015	Contract

8. FUNDING BASIS

For permanent Officers, their personnel emoluments were being met from the 2015 recurrent budget allocation. For contract officers, their remunerations were being met from respective donor funded project.

Goods and services of the Department were met from both Government recurrent budget allocation and project funding.

[Total Allocation by government] Personnel Emoluments was 17,298,856 Vatu

Operations (goods & services) was 5,357,836 Vatu

Total Government budget allocation was 22,656,692 Vatu

The completed, ongoing including new energy projects are summarized in the Table below:

Table: Projects

Item	Project	GIP Code	Donor	Amount (Vatu)	Status
1	Access Power Project	10A163	AusAid	63.6 million	Ongoing
2	Luganville Transaction Advisory Services	09P763	AusAid	124.2 million	Ongoing
3	Lighting Vanuatu	10E163	AusAid	38 million	Completed in 2015
4	Promoting Energy Efficiency in the Pacific II (PEEP II)	13C763	ADB	35 million	Completed in 2015
5	Scaling Up Renewable Energy Projects (SREP)	13M263	Climate Investment Fund (CIF) through the World Bank	25 million	Completed in 2015
6	Global Partnership on Output Based Aid (GPOBA)	14D363	World Bank	400 million	Ongoing
7	Energy sector Management Assistance Program (ESMAP)	14B963	SIDS fund through the World Bank	100 million	Ongoing
8	Talise Micro Hydro Project Phase II	09I263	Italian Fund through IUCN	20 million	Ongoing
9	Pacific Appliances & Labeling Standards (PALS)	13D163	SPC	8 million	Ongoing
10	East Ambae & Aniwa Island Desalination Plants	13L563	Japanese fund through the Pacific Islands Forum Secretariat (PEC Fund)	400 million	Completed in 2015
11	Solar PV Grid Connected Systems for Parliament Complex and Meteo Complex	14C963	UAE	500 million	Completed in 2015
12	Feasibility studies on Brenwe River on Malekula, Wambu & Sarakata Rivers on Santo	13K263	Clean Energy Financing Partnership Facility managed by ADB	205 million	Completed in 2015
13	Vanuatu Rural Electrification Project (VREP I)	O9I263	New Zealand funding managed by World Bank	470 million	New
14	Biofuel Projects for Malampa, Penama & Torba	13A464	European Union GoV	191 million 218 million	Ongoing

15	Melanesian Miracle Program (M3P)		AusAid through SPC	30 Million	Ongoing
				2,800.8 million	

9. MINISTRY AND POLICY FRAMEWORK

MINISTRY, MINISTER AND DIRECTOR GENERAL

Having been transferred out from the portfolio of the Ministry of Lands & Natural Resources in March of 2013, it was now over two (2) years that the DoE was with the newly established Ministry of Climate Change.

The Ministry of Climate Change is new, meaning a new Corporate Plan has to be drawn up and all departments under the new ministry have to adjust where necessary to support the new Ministry. This new Ministry had an experienced Director General (DG) in 2015 (Mr Jotham Napat), together with his valuable knowledge and the strong support from the Minister and his political team, the DoE was privileged to receive the support it needed from the ministry's team to achieve what can be achieved in the DoE's Business Plan. In December 2015, the DG has then resigned and to contest in the January snap General Elections.

POLICY FRAMEWORKS - NATIONAL, REGIONAL AND INTERNATIONAL

The Government policies that guided the work of the Department in the period January to December 2015 were:

1. National Energy Road Map 2013 – 2020
2. Priorities & Action Agenda 2006 – 2015, Chapter 9.4
3. National Energy Policy of 2007
4. Rural Electrification Policy of 2003

ABOUT THIS REPORT

This report outlines major developments and initiatives carried out by the DoE between January to December 2015.

REPORTING REQUIREMENTS

Business Planning is a requirement from the Public Service Commission for all institutions to provide on an annual basis.

REPORTING PROCESSES

This document comprises of a collection of reports put together by the Energy Security Manager (previously Acting Program Manager) and different Program Officers within the DoE and compiled by the Acting Director. This report is against the 2015 Business Plan as required by PSC through the Director General's office of the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management.

SECTION TWO - PERFORMANCE 2015

DEPARTMENT PERFORMANCE OVERVIEW

Department Performance	
Key Area	**Key Results and Highlights**
Institutional	- Renovation of House into Branch Office - Purchase new office equipment (computers, PA System, Paper Shredder, vehicle) and furniture (desks and chairs) - Launching of the department Website and Facebook - Design of new Office Building
Policy	- Commenced revision of the National Energy Road Map (NERM) - Development of the Vanuatu Appliance and Labeling Standards Bill - Legal and Regulatory Review of the relevant energy legislation - Renewable Readiness Assessment Report (RRA) - Intended National Determined Contribution (INDC) Report
Programs/Functions	Administration - Recruitment of three (5) project officers Energy Efficiency & Conservation (EE&C) - Public/Organization and school Awareness on EE & C best practices - Free bulk distribution of T5, 4 feet EE fluorescent bulbs to schools (Anglophone and Francophone) in Port Vila - More than 1,000 T5, 4 feet EE Fluorescent and Compact fluorescent bulbs distributed to Vila central hospital to replace T8, 4 feet fluorescent and incandescent bulbs and reduce electricity cost - Subsidy sales of EE lightings to households and organizations in Port Vila and Luganville(PEEP 2) - Weekly energy news in Daily Post Newspaper - TV Advertisement of Energy Efficiency tips - Final draft of Energy efficiency bill completed and enlisted with list of bills to pass in parliament in 2016 - Ongoing preparation of forms and other administrative requirements ready for implementation of EE Act to regulate targeted high energy consuming appliances imported into Vanuatu. Off-grid Electrification - Development of the Vanuatu Rural Electrification Project (VREP) - Subsidy Implementation Manual - Launching of VREP - Recruitment of VREP Program Manager - Scoping of VREP 2- Micro Grid development Vanuatu Rural Electrification Project (VREP) - Review of the Geothermal Regulations On-grid Electrification - September 2015 marks one year of the implementation of the Global Partners on Output Based Aid (GPOBA) funded Program - Micro Hydro Study Tour in the Solomon Islands - Feasibility studies of 3 rivers for hydro development and grid extensions - Completed the Scaling-Up Renewal Energy Project (SREP) investment plan - Review of the URA Act - Review of Electricity Act

	Petroleum - Price Monitoring - Review of the Petroleum Act Subsidy - GPOBA subsidy scheme is progressing well with Unelco and VUI - VREP I subsidy, two Vendors signed SIA and ready to sale & distribute
Outreach	- Several public workshops conducted on energy projects around the country - Several public awareness through the media - Public outreach through dissemination of energy pamphlets - Participating in Trade shows, Fest Napuan and Symposium programs promoting Renewable Energy and EE &C best practices
Infrastructure	- Commissioning and Handover of the Desalination plants for East Ambae & Aniwa Island - Commission of the UAE Grid Connected PV Solar in Port Vila - Commission of the Melanesian Miracle Program - Development of the EU funded Biofuel Plants for Penama and Torba Province. - Solar Farm at Undine Bay Plantation
People	- Consultants and Technical Assistance provided by donor partners on the new projects mentioned in the table of projects above - Consultations with the communities of East Ambae, Efate (Port Vila), Maewo, North Pentecost, Central & NW Malekula, Santo (Luganville), Vanualava & Tanna
International Meetings/Workshops	- Regional workshop on accelerating the deployment of feasible renewable technologies in the Pacific Islands, Hawaii, 2 – 22 Jul'15 - Financing for Small Island Developing States (SIDS), Malaysia, 3 – 4 Aug'15 - Introduction of National Lighting Test Centre, Kazakhstan, 4 – 7 Nov'15 - UNEP Global Efficient Lighting Forum, China, 8 – 13 Nov'15 - IRENA- Regional Consultative Workshop on Renewable Energy in the Pacific, Suva, Fiji, 11 – 13 Nov'15. - PEC Fund Regional Coordinators Meeting, Lautoka, Fiji, Nov 23 – 25 Nov'15. - Seminar of Geothermal in the Pacific, Tokyo, Japan, 30 Nov – 4 Dec'15. - Asian Clean Energy Forum, Manila, Philipplines, 10-14th Jun '15
Finances	- DoE was allocated 22,656,692 Vatu for salaries and operations from Vanuatu Government and 2,800.8 million Vatu for projects from development partners
	-

PERFORMANCE BY PROGRAM

2015 PRIORITY ACTIVITIES AND RESULTS

Programs and Objectives required by the 2015 Business Plan and results are summarized in the table below and commentary provided in the following text.

Table: Department (Business Plan)			
Programs	**Objective (Targets)**	**Result** ✓✖	**Result Summary**
Administration	Enhance service delivery of the department	✓	- Six Project officers (VREP I & SDP/ESMAP) have been recruited (2 directly involved with Finance and Office Assistant)
		✓	- Purchase of additional office equipment
		✓	- 2014 annual report completed
		✓	- 2016 budget prepared
		✓	- 6th monthly report prepared
		✓	- Website for department launched
		✓	- Creation of Branch Office as additional office space
		✓	- Purchased of new computers, binding machine, PA system, Camera, shedder and new furniture
		✓	- Procurement of IT Equipment & Server
		✓	- Procurement of TAs for on-grid & off-grid achieved
		✓	- Developed 3 project proposals
		✓	- Revised design, costing & seeking funds for new office building commenced.
		✓	- Tender process for new office building
		✓	- Structure of Department reviewed (PSC Approval Sept 2015)
		✓	- Reviewed and approval of Job descriptions
		✓	- Process retirement packages for officers
		✓	- Review of National Energy Road Map
		✓	- Procurement of Legal and Regulatory Consultant to Support review energy related Acts. To be completed in 2016
		✓	- Recruitment of transaction advisor for geothermal PPP & PPA arrangements
		✓	- Procurement of new Office Vehicle
		✓	- Audit of GPOBA, ESMAP, SREP & VREP projects conducted
Urban Electrification & Subsidy Scheme	Improve access to electricity	✓	- Implementation of the GPOBA program effectively started in September 2014 and continued into 2015
		✓	- Commenced the process for the Luganville Electricity Concession tender (starting with recruitment of advisor)
Rural Electrification & Subsidy Scheme	Achieve greater diversity of energy sources	✓	- Feasibility studies of 3 rivers for hydro development
		✓	- Wind data collection continuing
		✖	- Maintain wind monitoring towers (insufficient budget)
	Strengthen linkages for progressing development	✓	- Launching of East Ambae & Aniwa Desalination Project
		✓	- Biofuel project works on East Ambae & Vanualava completed
			- VREP I POM & SIM finalised and Client connection to WB system

		✓	- COM Paper on VREP II and Brenwe hydropower and grid extensions on Malekula & Santo
		✓	- Seek funding for VREP II
		✓	- Launching of Renewal Readiness Assessment (RRA)
		✓	- 1st Phase of National Appropriate Mitigation Actions (NAMA) study completed
		✓	- SREP investment plan completed
		✓	- SREP investment plan approved by the SREP sub-committee in Washington DC
		✓	- Completion of UAE funded solar project
		✓	- Complete M3P project on Tanna
		✓	- EIA on geothermal completed
		✘	- Develop COM paper for decision over Takara airport
		✓	- Commissioning of Talise Micro Hydro 1st Stage (Generation)
		✓	- Secured funding of 2nd stage (Distribution) of Talise Micro Hydro.
		✓	- Facilitate technical fault on Talise hydro
		✓	- Production of brochures & posters achieved in Energy Efficiency activities
		✓	- 3 schools talks achieved in Energy Efficiency activities
		✓	- PREFACE-Monitoring & maintenance trip to Torba not achieved
Energy Efficiency & Conservation	Advance energy efficiency and conservation method	✓	- Completed the Minimum Energy Performance Standards & Labelling Bill on Energy Efficiency
		✓	- Conduct public awareness to 10 institutions
		✓	- Production and dissemination of pamphlets & stickers
		✓	- Public awareness through media outlets
		✘	- Conduct energy audits on public institutions
		✘	- MRV of PEEP 2 lighting project
		✓	- Raise awareness on MEPS & L Act (as the Bill was not being able to be tabled in 2015 due to the political situation, most of the activities after the parliament approval have not been implemented). The Bill is still on the priority list of bills to be tabled in parliament in 2016.
		✘	- Installation of bulb eater (insufficient office space)
Petroleum	Promote reliable, secure and affordable petroleum and gas supply	✓	- Review of Petroleum Act
		✓	- Review of URA Act
		✓	- Consultations with petroleum and gas companies
		✓	- Collect data on petroleum and gas supply & pricing
	Strengthen linkages for progress development	✓	- Monitor tanker discharge
		✓	- Take part in safety & environmental exercises
		✓	- Raise public awareness

Table: Department (Additional Activities)			
Programs	**Objective (Targets)**	**Result ✓✖**	**Result Summary**
Administration	Procure new office vehicle	✓	- Trade-in Old Vehicle
Administration	Staff assisted NDMO to delivery relief supplies through Vanuatu	✓	- Officers travelled to Paama & Ambrym, and assisted around Efate.
Administration	Enhance service delivery of the department	✓	- COM approved Vanuatu accession to the Global Green Growth Institute (GGGI)
Energy Security and Electrification	Provide awareness during major events staged in Port Vila	✓	- Staff involved in promoting Energy Efficiency and Renewable Energy in the Fes Napuan

Department (Business Plan)

1. Enhance Service Delivery of the Department:

Additional Staff to assist Government delivery in Energy Sector

- 6 Project Funded Officers recruited:
  - Through the World Bank and Energy Sector Development Program (ESDP-ESMAP (SIDS) the Project Implementation Assistant, the Communication Officer and the Finance Officer were recruited to assist Government with implementation of ESMAP, GPOBA and VREP.
  - Also under the World Bank administered project of VREP, the Program Manager was recruited in assist in the roll out and implementation phase for VREP. VREP is funded by the New Zealand Government through the Pacific Regional Infrastructure Facility.
  - With the Government's engagement to the Global Green Growth Institute (GGGI) the Department was fortunate to recruit the National Expert. GGGI supports the work of the Department on promoting Green Growth and in review of the National Energy Road Map.
  - In addition to these a Project Support Officer was recruited under partnership with the GIZ Office.

The Department of Energy Vehicles

- The Department has 2 vehicles, a Hyundai Car, Executive Tucson funded by the GPOBA Program (purchased in 2014) and a Toyota 4x4 Hilux (purchased in 2009). In 2015, the Department traded-in the Toyota Hilux for a Mazda BT50 4x4 double Cabin. Both vehicles facilitate the service delivery of the department.

Photo: New Truck- G794

Branch Office created to house additional staff recruited in 2015

- When the Department of Energy moved to the Ministry of Climate Change in 2014, it was realized that the Office Space was inadequate. In January 2015, the Department negotiated with the Governance for Growth Program (Ausaid) whom funded the renovation of a vacated Meteo staff residence. The Branch Office now accommodates 7 DoE staff.

Photo: Branch Office

The DoE Website

- In November 2015, the DoE hosted its first ever Website. This was launched at the National Workshop on Green Growth in Vanuatu. The website was developed by the Communication Specialist under the ESMAP Project. The Website contains the Department's profile and other development in the Energy Sector.

- Website Address: **www.doe.gov.vu**

Website Home page

Additional Office Furniture

- Due to the increase number of staff from 11 in 2014 to 16 in 2015, the Department purchased additional Office Equipment. Some of these Office items were procured for respective project operations for its recruited staff, while others were provided from the Department's recurrent operational budget.

Project funded Office Equipment:

Photo: 3 Laptops, 1 paper Shedder, 3 filling Cabinets, 5 executive chairs, 1 PA System, Laminating machine

Others Highlights:

- Upgrade IT and network server – Having relocated into the Meteo Complex, this has provided the opportunity for the DoE to be connected to reliable IT and Network services. This has administratively improved the service delivery of the Department.
- Procurement of TAs for Urban Electrification (on-grid) & Rural Electrification (off-grid) achieved – There were several TAs that were funded by donors to assist the DoE in developing its INDC Report, RRA Assessment, & PEEP II project.

- Developed 3 project proposals – In addition to the projects that the DoE is implementing and those that are in the pipeline, there were 3 more new project proposals that have been developed by the Department. These were:
  1. Development of Brenwe Hydro Power and Grid Extension to Lakatoro/Norsup;
  2. Prefeasibility Studies for Geothermal, for hydro on Iapilmai and Lowanau (Ikonoula) rivers, all on the island of Tanna and hydro study on Umej river on Aneityum;
  3. Improved Efficiency of the Sarakata Hydro Power Plant

- These activities were also achieved:
  1. Design, costing & seeking funds for new office building.
  2. Structure of DoE reviewed and approved in 7/08/2015
  3. Job descriptions of new structure revised, including that of the Petroleum Officer.

Commence Update of the National Energy Road

- The Council of Ministers endorsed in early July for the work on the update of the National Energy Road Map (NERM) to begin. Consequently, the Department mobilized Castalia Consulting Group in August, 2015 to begin working on the update. The funding support for the assignment was provided by World Bank through the ESMAP grant. In addition, the Department also received technical support from the Global Green Growth Institute (GGGI) to develop the energy efficiency and green growth strategies for the energy sector which will be incorporated into the NERM update. The GGGI also assisted the Department in undertaking an assessment to identify and recommend a suitable green financing mechanism to assist the Department with funding energy related investments in the Country.

- As part of this review exercise, the Department in partnership with GGGI organized a workshop on energy efficiency and green energy financing mechanism in November, 23, 2015 followed by a training workshop on energy efficiency for energy sector stakeholders at Warwick Le Lagoon Resort.
- The work on the NERM update is anticipated to be completed in May, 2016, with CoM approval in June, 2016.

Photo: A workshop participant presenting her group work.

Photo: Participants including Minister of CC (seated 5th from left) at the workshop on Energy Efficiency and Green Financing Mechanism at Warwick Le Lagoon Resort, 23 November, 2015.

2. Improve Access to Electricity

Global Partnership for Out Put Based Aid (Project)

- Improved Electricity Access project was financed by Global Partnership on Output Based Aid (GPOBA) Grant through the International Development Association (World Bank). The project commenced operation in 2014 and is expected to be completed by 2018. Small Domestic Consumers who, due to their lower income based, and are not able to meet the high cost of connecting to utility grid network, are the ones targeted in the project. The Project assisted them by subsidizing 80 percent of grid connection cost, and provide up to VUV 40,000 subsidy for cost of household wiring.
- It is anticipated that over the duration of the project, 4,300 households within the four main concessionaires (Port Vila, Luganville, Lenakel and Lakatoro) will be benefiting directly by formally connecting to utility network and at the same time these households can have their homes wired to standards similar to the Australia and New Zealand standards (AS/NZS 3000).
- Since commencement, **521 households** have been formally connected to utility network in Luganville, Port Vila, Malekula and Tanna with about 60 percent have had their homes wired to AS/NZS standards.


Photo: Picture on your left depicting a series of prepaid meters with 5 amps installed for small domestic customers in Siviri Village, North Efate. On your right, a photo featuring a light bulb in a small traditional house as part of house wiring that consist of 2 light bulbs, 2 power outlets and two switches.

Vanuatu Rural Electrification Project (VREP Phase 1)

- In September 2015, the Vanuatu Rural Electrification Project (VREP) was officially launched by the then Minister of Climate Change and Energy, Hon Thomas Laken. The launch was well attended by representatives from development partners, private sector, non-government organization and officials of the Department of Energy (DoE) and other government departments.

Photo: Official launch of the Vanuatu Rural Electrification Project

Examples of 'Plug and Play' solar systems considered under VREP



- The VREP is a subsidy program, managed by the DoE and supported by World Bank. Funding is provided by New Zealand MFAT. The Project is subsidizing 'Plug and Play' 5-30watts solar home systems for 17,500

households, 2,000 aid posts and 230 community halls outside of the electricity concession boundaries of Lenakel, Port Vila, Lakatoro and Luganville. The subsidy is aimed at making the quality products more affordable and increase access to quality, clean and cheap lighting for rural population throughout Vanuatu.

- Following its launch, the VREP Program Manager was recruited and commenced implementation of the Project. Other achievements include finalization of the vendors and products for VREP. Off the six (6) vendors expressed interest in VREP, three (3) were approved – Energy 4All, eTech and PCS Limited and 2 signed the Subsidy Implementation Agreement to commence ordering and sales of VREP approved products. A draft Product Catalogue was also released with six (6) products and ready for publicizing in provincial launches planned for 2016.

Talise (Maweo) Micro Hydro Project

- Since its Commissioning (1st Stage – funded by IUCN, 2014), the Department has been able to in 2015, negotiate with IUCN, the Australian Government and the Vanuatu Government to fund the 2nd Stage which is Electricity Distribution. It is anticipated that 3 communities (+300 households at Talise, Narovorovo and Nasawa including Schools, Health facilities and a new airport will be electrified).

Photo: Commissioning of Project- Hon. James Bule, Minister for Climate Change (in 2014) and delegation at the Talise Hydro Power Station

3. Achieve Greater Diversity Of Energy Sources

Potential Hydro Power Developments

- Feasibility Studies of 3 Rivers (rivers of Brenwe on Malekula, Wambu and Sarakata on Santo) for Hydro Energy Potential, funded through the Clean Energy Financing Partnership Facility through the ADB. The Department has also commenced the process for a Government approval to a Loan with ADB for development of the Brenwe Hydro.


Photo: Left, view of Brenwe River, Malekula. Right, view of Sarakata River, Santo

Wind Power Development

- Wind data collection at 6 Wind towers installed throughout the country (funded by IUCN) has faced challenges with natural disasters. Having been through the disasters and transmitting data to the Office computer was greatly affected. For Vanualava and Tongoa was partly collected due to the wind monitoring tower blown down by TC Pam. The tower in Tanna fell down due to volcanic ashes and sulphur corroding the anchors. With almost 2 years of data, the Department contracted Entrua Hydro Tasmania to analyze the data received from all 6 sites and 3 sites have been recommended for further development.

Handing over for the Desalination Project; East Ambae Solar Powered Desalination Plant and the Diesel Powered Desalination Plant in Aniwa Island.

- Completion of Project - East Ambae & Aniwa Desalination Project – The Project is funded by the Japanese Government through the Pacific Islands Forum Secretariat under a program known as "Pacific Environment Community Fund" (PEC). The project process commenced in October 2010 but the actual physical project implementation started in October 2014 and completed in December 2014.
- Upon completion, the Department of Energy as the implementing agency organized the Handing Over Ceremony at the East Ambae Desalination Plant. The Handing Over was a historical event bringing in together a heavy Government led delegation including the Minsters for Climate Change, Health, Public Works and Lands. Also to witness the Ceremony was the 1st Secretary of Japan Fiji Embassy and the Deputy Director from the PIFS including a PEC Fund PMU Official. The ceremony was well attended with many Ambae and Aniwa residents appreciating the project. During the El Nino period the plants were very useful in producing alternate source of water.
- The Handover Over Certificate created a commitment between the Ministry of Climate Change, the Ministry of Public Works and the Ministry of Lands.

Photo: from left: 1st Secretary from the Japan Fiji Embassy, Minister James Bule, Minister Esmon Saimon, Minister Ralph Reganvanu, Minister George Wells, and PEMANA President, Longsdale Hinge.

Launching of the Renewable Readiness Assessment (RRA)

- Renewable Readiness Assessment (RRA) Plan has been developed from 2014 and published in 2015. The Report was funded by the International Renewable Energy Agency (IRENA). The purpose of this RRA is to list of potential renewable energy projects that can be developed in reaching the goals and targets as set in the National Energy Road Map (NERM).

VREP 2 Scoping Mission with the World Bank

- The VREP 2 scoping mission was jointly conducted by Energy Specialists from the World Bank and the Rural Electrification Officer (Off-Grid) at the Department of Energy. In May 2015, the team visited 3 islands; Ambrym (West- Craig Cove), Vanua Lava (Sola) and Malekula (North West). The objective of the mission was to obtain general information of the setup of most rural communities (public institution; Health and Education) through Vanuatu. The trip also gave a better understanding of income generating activities that would result from better access of Electricity in the rural areas. The VREP 2 scoping exercise plans to develop suitable Micro electricity grids in feasible islands around Vanuatu as part of Rural Electrification (NERM).

UAE Funded Solar Project

- The United Arab Emirates through their agency MASDAR has awarded the supply and construction of the project to Clay Engineering of Fiji.
- The implementation of the Project got delayed due to TC Pam, however was completed in mid November 2015.
- Upon completion a Power Purchase Agreement (PPA) has be signed between the Vanuatu Government, through the Department of Energy (DoE) and UNELCO. This is the first ever PPA for the Government and Utility.

- The 767kW grid connected solar power plant was installed at the Parliament Car Park (645kWp) and the Meteo Complex (123kWp). Financed by the United Arab Emirates (UAE) Pacific Partnership Fund at a total cost of 5 million US dollars

Photo: Aerial view of the 645 kWp solar installation at the Parliament area

M3P Project

- This project was funded by the Australian Government through SPC Fiji. The project involved setting up of two solar charging stations, one each on Lapangtawa village (Whitesands) and Iatukuri village (Port Resolution), Tanna and provided 200 pico solar lanterns to a total of 200 households in the two villages.

Photo: Lapangtawa village technicians taking lead in assembling the charging station and monitoring the lanterns which are being charged

Other Activities

- Monitoring & maintenance trip to Torba not achieved – This planned activity to the Torba PV sites was not being undertaken due to budget limitation.

4. Advance energy efficiency and conservation methods

Public Awareness on Energy Efficiency & Conservation & MEPSL Act

- Contact public awareness on EE & C best practices and the EE legislation in Lakatoro, Malekula – Lakatoro Government branch departments, NGOs, chief reps, woman reps, and provincial government, Lakatoro School, Norsup School, Rensarie College, Lenakel town and all secondary schools in Tanna. In all these places copies of the following documents and brochures were given out: National Energy Road Map, Home Energy Guide for Vanuatu, Vampire Load Brochures, Jet Stove Brochures, Energy Smart Calculators and Renewable Energy Posters.
- Contact awareness on importance of applying EE and C practices to save on operating cost to government departments in Port Vila namely, the Biosecurity Department, customs boarder section and Ports and Harbor department, the Vanuatu Chamber of Commerce. Awareness and show cases were also held in organizations, events, communities and schools around Port Vila including, the SDA mission head quarter, Sea Side Tongoa Community, Melemaat Church, Shefa Day celebrations at Siviri, Fest Napuan 2015, Vanuatu Tourism School, Tebakor College, Port Vila Trade Show, Sorovanga Secondary school and the Vanuatu Institute of Technology.

Photo: Awareness at Norsup College, Lakatoro Secondary School and Rensari College

Photo above: PEEP 2- Handing over of 200 EE T5 fluorescent bulbs to Vanuatu Institute of Technology and more than 1,000 EE Bulbs to Vila Central Hospital

Below - Displaying EE lighting to residents at Sea side Community and an awareness at Biosecurity Department

Office

Production and Dissemination of Pamphlets & Stickers

- Produced energy efficiency and conservation tips pamphlets and produced media outlet awareness on labelling standards – Energy efficiency & labelling standard awareness have been conducted in schools and through the media.
- Produced and printed in bulk energy efficiency and conservation stickers and distributing to be affixed on targeted appliances reminding users to conserve energy and safe money and the environment.

Distribution of Efficient Bulbs to the Public

- Ongoing Energy efficient T5, 4 feet fluorescent and compact fluorescent bulb distribution to schools in Port Vila including Malapoa College, Vanuatu Institute of Technology, Lycee Antoinne Du Bouganvile, Ecole Public, and the Vila central hospital. Some EE bulbs have also been shipped to Luganville in Santo and distributed by VUI.
- Giving out of EE lights to public in Port Vila and other concession areas to replace inefficient lightings and safe on electricity cost ended in 2015. This initiative is to enable consumers to test the benefit of using EE appliances, so it could influence their decision when deciding to purchase new electrical appliances in the future.

5. Promote Reliable, Secure and Affordable Petroleum and Gas Supply

Consultations With Petroleum and Gas Companies

- As the Government is not directly involved in the importation and distribution of petroleum products, constant consultations with the companies is a must, to be kept abreast of the activities within and outside Vanuatu.

Collect Data on Petroleum and Gas Supply & Pricing

- Continued collection and updating on fuel quality data – This is an on-going activity that the DoE continued to undertake at appropriate times.
- The fuel storage capacity currently stands at 18 million liters. The storage facilities are owned by the private sector in Port Vila and Luganville.

- The country's strategic stocks for 500 ppm diesel is 2 months and 1 month each for unleaded petrol, 10 ppm diesel and Jet A-1.
- Continued collection of fuel pricings – This is an on-going activity for the DoE. Fuel prices in Vanuatu and world oil prices have also been issued to all government agencies through the OGCIO.
- The price of petroleum has dropped for the first time over six years in Vanuatu. The prices for petrol and diesel were reduced in three installments by a total of 45 vatu per liter for diesel (500 ppm and 10 ppm) and 35 vatu per liter for unleaded petrol. Liquefied Petroleum Gas (LPG) dropped by 5 vatu per kilogram for retail, 27 vatu per kilogram for commercial and 4 vatu per kilogram for bulk.

Monitor Tanker Discharge

- 3 monitoring missions have been conducted by the Petroleum officer of the DoE last year on the tanker discharging at the main wharf

Safety & Environmental Exercises

- One officer (Petroleum) took part in one fire training exercise at Pacific Petroleum last year.

Raise Public Awareness

- A pamphlet on fuel safety signs have been produced and distributed to all the fuel stations around Port Vila and at the Saralana Fes Napuan festival.

Department (Additional Activities Not in Business Plan)

Enhance Service Delivery Of The Department:

- In September 2015, DoE staffs (10 in all) have taken part in a one day Basic First Aid course, delivered by the ProMedical First Aid Trainer in Port Vila.

Achieve Greater Diversity of Energy Sources

PICO Hydro Development

- The Imaki 1.2kW Pico hydro system initially came about following the interest of the School of Photovoltaic at the University of New South Wales (UNSW), through Dr. Richard Corkish, to assist the remote islands of Vanuatu to have access to electricity through promoting the use of renewables. The collaboration with the remote communities was intentionally to support very remote communities to have access to reliable source of Electricity. This power system was damaged during cyclone Pam and

the DoE was requested by Chief Jacob of Imaki village, South-West Tanna to assist in reviving it again. A detailed assessment of the system was conducted by DoE on 28th May 2015.

GPS Route of the Penstock from the Storage-Turbine House

DoE officer checking system inside the power house

- Funding for the Loltong 3 kW Pico hydro project came from AusAid through Governance For Growth (GFG) and NZAid. This project was designed by officers of the department. Construction is also supervised by DoE. Detailed survey of the site was conducted in June 2015 and construction commenced in July 2015.

Local labour and local materials were used to assist in construction of the intake tank

Achievements Comment

As stated in Section One – Overview, this year 2015 was regarded as a very busy but also an exciting year. Major projects that have been under preparation during the last 12-24 months were now completed and some were entering into their implementation stages. Several more new projects were being born. The increased of the recurrent budget has enabled additional tasks carried out. While appreciating these achievements, there were challenges faced in accomplishing the objectives of the 2015 Business Plan. Some planned activities were delayed due to TC PAM in March as staff were involved with Food Relief to affected areas and islands.

Regardless of the limitations and challenges, the cooperation and support provided to the Department were very valuable which have engineered this office to achieve some of the objectives of the planned 2015 activities. The Department expressed its highest appreciation to the Ministry of Climate Change with its Corporate Services Unit headed by the Director General and the Departments under this Ministry (MoCC), the Public Service Commission, together with all those Government Authorities, Development Partners and Key Energy Stakeholders who have valuably contributed in the achievements made in 2015. The progress of the major Electrification Projects such as the UAE Solar Project, the GPOBA and VREP are among the achievements.

CHALLENGES COMMENT

TC Pam relief, staff shortage, government instability and insufficient budget were some of the factors contributing to non-achievements of the planned activities. But at the same time external factors that were beyond the capacity and authority of this Department and even the Government have also influenced planned activities achievements.

The population of the country as citizens, voters, taxpayers and businesses operators placed a responsibility-burden on the Government with high expectations to provide favorable environments in the energy sector to facilitate development. This is a challenge as this responsibility depended upon the resource availability and political-will to make such expectations become reality. There were criticisms for slow to non service delivery to the population but this was again the challenge that a small Department as the Energy Office had to face.

There was no legal instrument to guide and empower the DoE in its decision making. Political-will can be a good driving tool for moving forward but for certain energy issues, political decisions seemed to be the deciding factor rather than for economic and social factors for the future prosperity of this nation.

The management issues for large energy projects have been an issue which required re-arrangement of the institutional project coordination with other departments and aid donors.

After all, challenges were faced and will be there at times. However, the DoE saw some of these as venues for gaining knowledge for improvements.

STAFFING

The following tables provide information about staffing of the DoE in 2015.

Staffing	Details
Numbers:	Total staff 15 – Permanent [8], Contract [7]
Performance Appraisals Conducted	Annual for [8] staff
Study Leave:	None
Secondment:	None
Annual Administration Leave:	Total number of staff taking Administration Leave [7]
Other Leave/Resignation/Retirement:	Total number of staff taking sick leave [5]

APPENDIX 1: MEETINGS, WORKSHOPS & TRAININGS ATTENDED BY STAFF OF THE DOE

Workshop	Objectives	Venue	Date	Outcome/Remarks
Geothermal Development Seminar for Pacific countries 2015	To learn how Japan is developing its geothermal resources and the role of key implementing institutions	Tokyo, Japan	30th Nov – 4th Dec 2015	Countries presented including SPC presented to the Japanese Government Officials and reps of the Green Climate Fund their way-forward as a proposal to GCF to assist countries in developing their geothermal resources
Pacific Environment Community (PEC) Fund Coordinators Meeting	• Present the project implementation progress, share project benefits and lesson learned • Actions in ensuring sustainability of project installations • Requirements of the project financing future of the PEC Fund	Lautoka, Fiji	23rd – 25th Nov 2015	Coordinators presented status of their respect projects and plans for 2016
Energy Efficiency and Conservation to accelerate deployment of energy efficiency	To raise awareness on energy efficiency strategies and objectives that are being developed for the updated National Energy Road Map	Port Vila, Vanuatu	24th Nov 2015	Inform participants on best energy efficiency management practice in Vanuatu
Seminar for the south Pacific & UNEP Global Efficient Lighting Forum.	Focus on addressing technical issues and involved in applied research for emerging, energy efficient lighting technologies.	Beijing, China	8th – 13th Nov 2015	Increase capacity building in the Energy Sector
IRENA Regional Consultative Workshops on renewable Energy	• Formulating follow – up actions at the national and regional levels buildings on the (RRA) Renewable Readiness Assessment study results in the four Pacific Island Countries; • Identify priority actions to support geothermal development in the regional through the	Suva, Fiji	11th – 13th Nov 2016	Tourism Sector To discuss strategies for accelerating deployment of RE in island tourism. Geothermal Sector To conduct a consultative process to help identify priority areas of action towards creation of enabling conditions for promotion of

	Global Geothermal Alliance;(GGA) • Formulating strategies for accelerating deployment sharing best practices of renewable energy in the island tourism			geothermal development in the Pacific. Energy Sector The event aims to, building on the RRA study results, provide an opportunity for the key stakeholders to discuss the formulation and implementation of follow-up actions at national and regional levels. More importantly, through the process, an articulated action agenda can be developed in order for the donors & participating countries can establish dialogue.
Introduction of National Lighting Test Centre	• Focus on addressing technical issues and involved in applied research for emerging, energy efficient lighting technologies	Kazakhstan , Astana	4th – 7th Nov 2015	Increase capacity building in the energy sector
INDC workshop	• To assist pacific island countries to complete their INDC before submission to UNFCCC • Provide an introduction to the INDC concept and processes • Provide a platform for participating countries to share experiences, challenges, and lessons learned, and to learn from INDC submissions to date. • Provide practical and concrete technical guidance on INDC Preparation in : - Analysis to underpin mitigation INDCs - Packaging and communicating INDCs - How countries interested in communicating an adaptation undertaking could approach this task	Apia, Samoa	7 October 2015	- Introduction of New financial players emerge to assist countries in developing their Final INDC - Clear Identification of challenges shared by other countries - Clear overview of the Mitigation and Adaptation approach and/or options

	- Procedural issues & domestic validation of INDCs • Improve participants' capacity to prepare and submit INDCs			
Intended National Determined Contribution (INDC) Validation Workshop Training	• Developing INDC for Vanuatu	Port Vila, Vanuatu	18th Sept 2015	- For COP21 meeting in Paris, France
GCF Readiness Workshop	• To provide the NDA/FP participants with an opportunity to enhance understanding about necessary procedures to engage with the GCF such as preparing strategic framework including country programme, accreditation applications and funding proposals, and • To build network among the participants to promote GCF projects for SIDS.	Tokyo, Japan	14-16 September 2015	- Clear understanding of the GCF, how to access it (processes), timeframes for various process Countries stress the difficulties in accessing to this fund, given the requirements are very tough and the process is very lengthy.
INDC workshop	• Developing INDC for Vanuatu	Port Vila, Vanuatu	7th Aug 2015	- For COP21 meeting in Paris, France
Financing for the renewable energy in Small Island Developing States (SIDS)	• Share information about existing and emerging financial structures for renewable energy investment on SIDS – including development and climate Financing; • Identify the main source currently accessible as well as potential new sources of financing in SIDS. Explore how public funding's can leverage private investments in	Kuala Lumpur, Malaysia	3rd – 4th Aug 2016	

	the light of diverse markets Sizes, public finance conditions and market structures; • Formulate concrete proposals that can be fed into the climate process (UNDFCCC COP21) • Identify projects and activities that will be further developed as parts of the SIDS Light house Initiatives; • Explore how renewable Energy can help to enable the attainment of the SDG's; • Provide Platform for developing networks among various stakeholders who are engaged in the promotion of renewable energy in SIDS partners			
Regional Workshop on Accelerating the Deployment of Feasible Renewable Energy Technologies in the Pacific Islands	• review the policy, legal and regulatory framework needed to attract the investment to support renewable energy project development throughout the PICs; • good understanding of an integrated approach to energy sector planning and program im0plementation • Explore financial and capacity building considerations related to clean energy deployment in the PICs	Honolulu, Hawail	July 20-22, 2015	- Prepare a joint submission proposal for GCF to fund $23 million towards capacity building for SPC members. - Submit "shovel-ready" projects and "near-shovel ready" projects to SPC and PPA for efficacy analysis and collective presentation with a World Bank provided credit enhancement and risk insurance instruments. - Prepare an aggregated proposal to be submitted to GCF by the WB, as accredited entity to the GCF, with 4-8 projects totalling at least $75 million.

Regional workshop on accelerating the deployment of feasible renewable technologies in the pacific islands	• To review the policy, legal and regulatory frameworks needed to attract the investment to support renewable energy projects development throughout the PICs; • Discuss an integrate approach to energy sector planning and program implementation; and • Explore financing and capacity building considerations related to clean energy deployment in the PICs.	Honolulu, Hawaii	20th – 22nd Jul 2015	- Achieving universal access to modern energy services - Doubling the rate of improvement in energy efficiency; and - Doubling the share of renewable energy in the global mix.
ESMAP Knowledge Exchange Forum: Sustainable Energy for Small Island Developing States(SIDS)	• Exchange of knowledge, experience, lessons and insights among practitioners	Vienna, Austria	17 June 2015	- To meet the energy efficiency and renewable energy potentials, scaled-up action and investments are needed in targeted areas such as cities, and in key sectors such as industry, transport, power generation, lighting and buildings, where the impact and potential benefits are greatest. - The Forum recommends the adoption of the Sustainable Development Goals at the UN General Assembly in September (as recommended in the report of the Open Working Group on the SDGs). The key to the success of the global development debates of 2015 is a major scaling up of action on the ground.
10th Asia Clean Energy Forum (ACEF), 2015	• Promoting energy efficiency and renewable energy • Energy Sector regional cooperation and integration	ADB, Manila, Philippines	June 15-19 2015	- Asia and Pacific countries gearing up for negotiations in Paris COP21 event of limiting global warming to less than 2^0C. - ADB confirm funding for projects available but require countries to have in place good business

				models and methodologies - Petroleum Officer more aware and better understand the Asia Pacific regional efforts to address clean energy as well as innovations in renewable energy and energy efficient and conservation models now available in the market (including some still in the drawing board).
Vanuatu Renewable Energy Project (VREP) draft Subsidy Implementation Manual (SIM)	• To finalize the SIM for the implementation of the VREP project	Port Vila, Vanuatu	21st Apr 2015	

2nd Regional Technical Dialogue on Intended Nationally Determined Contributions (INDCs)	• Share country experiences with the design and preparation of their Intended Nationally Determined Contributions (INDCs) • Share information on challenges being faced and identify lessons learned and best practices to address these challenges • Address issues related to the underlying technical basis required to prepare robust, realistic, and achievable contributions • Identify support needed to reach domestic agreement on contributions and follow-up actions • Provide an update on the process of preparing INDCs and share newly identified challenges	Land Mark Hotel, Bangkok	24-26 Feb 15	- An update on the UNFCCC climate negotiations and takeaways from previous Regional Technical Dialogues on INDCs - Clear directions which allowed participants to discuss institutional arrangements, securing ministerial mandates for INDCs, and stakeholder engagement. - Clear overview of data requirements and analysis for INDC - Expected challenges related to INDC preparations - The final day of this workshop was organized by the World Research Institute (WRI) focusing specifically on the GHG Protocol Mitigation Goal Standard and Policy and Action Standard: Greenhouse gas accounting for policies, actions, and mitigation goals.
Pacific INDC Workshop	• To assist in preparation of country's INDC	Auckland New Zealand	19-20 February 2015	- Participants have clear understanding of how to approach preparing the INDC' - Practical hands on GHG calculations - Clear insight of the Mitigation and adaptation approach.

Department of Environmental Protection and Conservation

2015 Annual Report

Ministry of Climate Change Adaptation, Meteorology and Geo-Hazards, Energy, Environment and the National Disaster Management Office

TABLE OF CONTENTS

SECTION ONE – OVERVIEW

REVIEW OF 2015 BY THE DIRECTOR

This 2015 annual report presents the main activities and achievements undertaken by the Department of Environmental Protection and Conservation (DEPC). The year was quite a busy and successful one in which many things were achieved.

Some of the main activities that were achieved by the DEPC during 2015 include: the completion of the DEPC's revised structure which was submitted to the Public Service Commission in November 2015; the completion of the DEPC's Corporate Plan 2016-18; progressing the draft National Environment Policy and Implementation Plan (NEPIP) which will be completed during the first part of 2016; and conducting National Environment Week from 5-12th June, coinciding with the celebration of World Environment Day on 5 June and World Oceans Day on 8 June.

The DEPC operates under four main divisions: Biodiversity and Conservation; Environmental Protection; Environmental Planning and Assessment; and Support Services.

The Biodiversity and Conservation Division achieved a lot in 2015 especially in terms of Community Conservation Areas (CCAs) and encouraging Vanuatu communities to use their natural resources wisely and protect the environment. One of the greatest achievements was the registration of the Loru Protected Area on the West Coast of Santo. An information booklet on CCAs was also produced to assist communities in establishing and managing their CCAs. In addition, a National Invasive Species Strategy and Action Plan was developed and officially launched during National Environment Week celebrations.

In 2015 the Environmental Protection Division successfully ran several workshops with the six provinces and three municipalities of Port Vila, Luganville and Lenakel to help them develop their Solid Waste Management Plans as required under the *Waste Management Act No. 24 of 2014*. All provinces started to develop their draft plans in 2015 and it is hoped that these plans will be finalised in 2016. This division also successfully completed the J-PRISM Phase 1 project, implemented in collaboration with the Vanuatu JICA office. This project has promoted the 3rs concept (reduce, reuse, recycle) especially with the Port Vila based schools as well as introducing the Freshwota 4 community project with aluminium and steel can collection. This division has also has worked very closely with the Port Vila Municipality and other agencies to deal with waste from Severe Tropical Cyclone Pam (TC Pam).

The Planning and Assessment Division is another hard working division, especially in implementing the Environmental Impact Assessment (EIA) work as required under the *Environmental Protection and Conservation Act* [Cap. 283]. This division achieved a lot in 2015 with more than 50 Preliminary Environment Assessments (PEA) undertaken and a number of EIA reports for major development projects in Vanuatu reviewed. Most of the revenue collected by the DEPC in 2015 came from PEA and EIA report fees. This will continue to be the main contributor to DEPC's revenue collection in the future.

Despite the above achievements, the DEPC has faced a number of challenges in 2015. The shortage of staff to deal with the huge amount of responsibility and the workload that all staff continues to face remains a challenge. This was particularly apparent in the first half of 2015 when the DEPC was involved in the preparation of the Post Disaster Needs Assessment report for TC Pam. The DEPC produced the environment section with the assistance of the Secretariat of the Pacific Regional Environment Programme (SPREP), the World Bank and other donor agencies.

The isolation from the rest of the Ministry of Climate Change often makes things difficult for the DEPC. The absence of a permanent Director during 2015 contributed to the capacity issues the DEPC faced and continues to

face. The very limited operational budget of 1.8 million vatu for the DEPC for 2015 was beyond our control, and explains why the DEPC has not implemented fully the activities as stated in our Business Plan for 2015.

In conclusion, the year 2015 has been very challenging and rewarding. Rewarding as by facing these challenges the DEPC staff continue to have great courage and remain strong in carrying out their responsibilities. As a result, we can see that a lot of things have been successfully achieved in 2015. There are many more plans and activities yet to achieve and I am sure that the DEPC will expand and achieve more in 2016.

Trinison Tari
Acting Director, Department of Environmental Protection and Conservation

ABOUT THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND CONSERVATION

In 2002, the Government of the Republic of Vanuatu passed the *Environmental Management and Conservation Act No. 12 of 2002*, now the *Environmental Protection and Conservation Act* [Cap. 283] (EPC Act). The EPC Act formally established the Department of Environmental Protection and Conservation (DEPC) in legislation and outlines its role in the development, coordination and implementation of the Government's environmental policies and programs.

While the DEPC was originally established as the Environment Unit in 1986, it was upgraded to departmental status in 2010 and is now a part of the Ministry of Climate Change Adaptation, Meteorology and Geo-hazards, Energy, Environment and the National Disaster Management Office (MCCA).

Operationally, in 2015 the DEPC staff worked under four divisions: Biodiversity and Conservation, Environmental Protection, Environmental Planning and Assessment and Support Services. In the provinces, the DEPC was represented by an officer in Sanma Province. The work of the Sanma Extension Officer incorporated activities across all divisions of the DEPC. Together, the work carried out by each of these divisions reflected the vision, mission and responsibilities of the DEPC.

VISION

The vision of the DEPC is: *'Leading Vanuatu to a clean, resilient and sustainable environment'*.

MISSION

The DEPC works to achieve its vision by leading by example: '*Think Environment First: Show People!'*

PRINCIPLES

The DEPC operates under two sets of guiding principles: One that governs the way staff work together and one that relates to the type of work done by the DEPC.

In operating as a department, the DEPC's guiding principles are to value:

In discharging its functions as a department, the DEPC's guiding principles are to:

- Promote clean development in Vanuatu
- Build resilient communities who will be able to adapt to climate change
- Encourage and support sustainable resource management and conservation
- Promote a green economy
- Work towards sustainable development
- Explore the development of a carbon scheme for Vanuatu.

OBJECTIVES

The DEPC aims to:

1. Develop appropriate legislation to lead and guide clean, resilient and sustainable development
2. Strengthen compliance and enforcement of environment legislation and policies
3. Enhance coordination between all stakeholders (government sector, private sector, donor partners and NGOs)
4. Develop and implement the National Environment Policy (NEP) focusing on a green economy
5. Improve the resourcing, revenue collection and working environment for the DEPC.

AREAS OF RESPONSIBILITY

The DEPC is the government agency responsible for matters relating to the environment. This includes developing, coordinating and implementing the government's environmental policies and programs. It also includes representing Vanuatu on the international stage as the focal point for multilateral environmental agreements (MEAs).

PROGRAMS, FUNCTIONS AND SECTORS SERVED

The DEPC's programs and functions are reflected in the operational divisions of the DEPC: Biodiversity and Conservation, Environmental Protection, Environmental Planning and Assessment and Support Services. As the protection, management and conservation of the environment is a cross cutting issue, DEPC's work ultimately serves all sectors of Vanuatu. To reflect this, DEPC works in partnership with other government agencies, donor partners and NGOs to implement a variety of programs and projects. The key programs and projects the DEPC worked on in 2015 are shown in Table 1.

Table 1: Key DEPC programs and projects 2015

Biodiversity and Conservation
Vunausi Estuary Conservation Project
Accession to the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention)
Global Environment Facility Pacific Alliance for Sustainability (GEF-PAS) Forestry and Protected Area Management (FPAM) Project
Reducing Emissions from Deforestation and Forest Degradation (REDD+) Program
Biodiversity and Protected Areas Management (BIOPAMA) Programme
Marine and Coastal Biodiversity Management in Pacific Island Countries (MACBIO) Project – including the development of an Oceans Policy for Vanuatu (in conjunction with the Department of Foreign Affairs)
Asian Development Bank Coral Triangle Initiative (ADB-CTI)
Community Conservation Areas (CCAs)

Research into Vanuatu's biodiversity
Critical Ecosystem Partnership Fund (CEPF) Program
National Biodiversity Strategy and Action Plan (NBSAP) Review Project
GEF-PAS Invasive Alien Species (IAS) Project
Programme of Work on Protected Areas (PoWPA)
Environmental Protection
Agence Francaise de Developpement (AFD) Secretariat of the Pacific Regional Environment Programme (SPREP) Regional Solid Waste Management Initiative
The Project for Promotion of Regional Initiative Solid Waste Management in Pacific Island Countries (J-PRISM) – a Japan International Cooperation Agency (JICA) Japanese Technical Cooperation Project
GEF-PAS Persistent Organic Pollutants (POPs) Release Reduction Project
Pacific Hazardous Waste (PacWaste) Project
Pacific Ocean Pollution Prevention (PACPOL) Programme
Reduce, Reuse, Recycle Initiative (the 3Rs)
Port Vila Urban Development Project (PVUDP)
Environmental Planning and Assessment
Port Vila Urban Development Project (PVUDP)
Vanuatu Inter-Island Shipping Support Project (VISSP)
Port Vila Lapetasi International Multi-Purpose Wharf Development Project
Takara Geothermal Power Project
Asian Development Bank Technical Assistance 7566-REG Project: Strengthening and Use of Country Safeguard Systems: Strengthening Implementation Capacity for EIA in Vanuatu (ABD-TA 7566)
Roads for Development Project

In addition to these programs and projects the DEPC has a number of core functions.

The main functions of the DEPC are to:

- Develop, coordinate and implement the Government's environmental policies and programs
- Undertake environmental research, assessment and monitoring
- Issue permits for bioprospecting under the EPC Act and in accordance with Vanuatu's obligations under the Convention on Biological Diversity (the CBD) and the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation (the Nagoya Protocol)
- Support communities to formally protect areas of biodiversity significance through registration as CCAs
- Issue permits under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) through the administration of the *International Trade (Flora and Fauna) Act* [Cap. 210] and associated regulations
- Encourage effective waste services and operations
- Control the discharge and emission of pollution
- Administer the *Waste Management Act No. 24 of 2014* and the *Pollution (Control) Act No. 10 of 2013*
- Control ozone depleting substances (ODS) in Vanuatu in accordance with the *Ozone Layer Protection Act No. 27 of 2010* and Vanuatu's obligations under the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer (the Montreal Protocol)
- Administer the Environmental Impact Assessment (EIA) process in accordance with the EPC Act and the *Environmental Impact Assessment Regulations* (EIA Regulations).

In addition to these functions, the DEPC is the national focal point for a number of MEAs and ensures that development and activities occurring in Vanuatu are in line with the Government's commitments under these international and regional instruments.

While focusing on the DEPC's functions that are directly linked to environmental protection, management and conservation, the DEPC is also responsible for complying with other government rules and policies such as the requirements of the *Public Service Act* [Cap. 246] and the *Public Finance and Economic Management Act* [Cap. 244]. The Support Services Division plays an important role in performing this function.

STRUCTURE AND STAFF

In 2015 the structure of the DEPC was under review by the Public Service Commission (PSC). During 2015 the DEPC reached a maximum of 19 staff, nine of which were permanent staff (including one staff member on study leave overseas).

Table 2: DEPC staff 2015

*Permanent DEPC staff

Division	Staff	Position
Director and Support Services	*Trinison Tari	Acting Director Senior Education and Information Officer
	**Touasi Tiwok*	*Principal Environment Officer: On study leave in 2015*
	*Primrose Malosu	Administration and Finance Officer
	*Christophe Bulerop	Driver Messenger
	*Anaclet Philip	Sanma Extension Officer
	Norma Tor	Volunteer (Student at the University of Canterbury)
Biodiversity and Conservation	*Donna Kalfatak	Senior Biodiversity Officer
	Mark Kalotap	NABSAP Review Project Coordinator
	Vatu Molisa	International Union for Conservation of Nature (IUCN) Project Liaison Officer (MACBIO, BIOPAMA and CEPF projects)
	Lilly Fatdal	GEF-PAS IAS Project Coordinator
	Molu Bulu	ADB-CTI Senior Programme and Finance Management Officer
Environmental Protection	*Carol Rovo	Senior Waste Management and Pollution Control Officer
	Mayuka Kozawa	Environmental Education Officer (JICA volunteer)
	Anna Bule	National Ozone Project Officer
	*Reedly Tari	Senior EIA Officer

Environmental Planning and Assessment	*Wycliff Junior Bakeo	Compliance Officer
	Kate McPherson	Environment Legal Support Officer (Australian Volunteers for International Development (AVID) program)
	Iain Haggarty	ABD-TA 7566 Team Leader and EIA Specialist
	Matthew Kensen	ADB-TA 7566 Safeguards Specialist

Biodiversity and Conservation Division

The Biodiversity and Conservation Division is responsible for implementing activities relating to biodiversity conservation through terrestrial, marine and coastal conservation/protected areas; biodiversity assessments and research; wetlands management; invasive species management, control and eradication; and the implementation of international and regional natural resource, ecosystem management/protection and biodiversity related conventions. The Biodiversity and Conservation Division consists of one permanent staff member, supported by a number of project officers aligned with specific projects.

In fulfilling its functions, the Biodiversity and Conservation Division deals directly with a number of MEAs. In addition to the MEAs listed below, the Biodiversity and Conservation Division works closely with the Vanuatu Fisheries Department to support the implementation of other MEAs.

Table 3: Current MEAs relating to biodiversity and conservation
✓= Vanuatu has ratified, accepted, approved or acceded to the MEA.

MEA	Type of MEA		Current status in Vanuatu
	International	Regional	
Convention on Biological Diversity	x		✓
Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity	x		✓
Cartagena Protocol on Biosafety	x		
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	x		✓
Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention)	x		
Convention on the Conservation of Migratory Species of Wild Animals	x		Vanuatu has signed a number of memoranda of understanding under the

MEA	Type of MEA		Current status in Vanuatu
	International	Regional	
			CMS but is not a party to the Convention[2]

Environmental Protection Division

The Environmental Protection Division is responsible for coordinating the implementation of the *Ozone Layer Protection Act No. 27 of 2010*, the *Pollution (Control) Act No. 10 of 2013*, the *Waste Management Act No. 24 of 2014* and the National Waste Management Strategy and Action Plans for 2011-2016.

The vision of the section is 'Safe Vanuatu. Protect our Environment'.

The Environmental Protection Division consists of two sections: The Waste Management and Pollution Control Section and the National Ozone Unit.

Environmental Protection Division: Waste Management and Pollution Control Section

From January to mid-July the work of the Waste Management and Pollution Control Section was undertaken by the Acting Director as the sole permanent staff member of the section was on study leave. The Senior Waste Management and Pollution Control Officer returned to normal duties at the DEPC in mid-July. In 2015 the Waste Management and Pollution Control Section was supported by a JICA volunteer who coordinated waste education activities, primarily with primary school children.

As the name suggests, the Waste Management and Pollution Control Section is responsible for waste management and pollution control. The mission of the section is for an environmentally sustainable Vanuatu in which all types of wastes are collected, reused, recycled and treated by environmental sound technologies suited to local conditions and waste going to landfill is minimised and pollution to the receiving environment is within acceptable standards. In fulfilling its functions, the Waste Management and Pollution Control Section deals directly with a number of MEAs.

Table 4: Current MEAs relating to waste management and pollution control
✓= Vanuatu has ratified, accepted, approved or acceded to the MEA.

[2] Memorandum of Understanding on the Conservation of Migratory Sharks; Memorandum of Understanding on the Conservation and Management of Dugongs (*Dugong dugon*) And Their Habitats Throughout Their Range; Memorandum of Understanding for the Conservation of Cetaceans And Their Habitats in the Pacific Islands Region.

MEA	Type of MEA		Current status in Vanuatu
	International	Regional	
Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention)	x		✓
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention)	x		
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention)	x		
International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 relating thereto (MARPOL Convention): Annex V (Waste Disposal)	x		✓
MARPOL Convention: Annex VI (Air Pollution)	x		✓
Waigani Convention		x	✓
Convention for the Protection of Natural Resources and Environment of the South Pacific (Noumea Convention)		x	✓

Environmental Protection Division: National Ozone Unit

The National Ozone Unit does not consist of any permanent DEPC staff. From January to July 2015 the National Ozone Unit consisted of one contracted staff member, funded through the United Nations Environment Programme (UNEP). The National Ozone Unit remained un-staffed for the remainder of 2015 with the Compliance Officer undertaking tasks as required.

UNEP funding for staffing the National Ozone Unit is made available in three tranches and is linked to the MEAs that deal with ODS. The first two tranches of funding have been received by Vanuatu. The payment of the third tranche is dependent on the completion of activities in the agreed work plan. To be able to access the third tranche the DEPC must ensure the completion of the technicians' training. A number of challenges in 2015, including the availability of the trainer, recovery from Severe Tropical Cyclone Pam (TC Pam) and the lapse between contracts for the National Ozone Project Officer meant that this training was not completed and therefore, funding not available.

Table 5: Current MEAs relating to the National Ozone Unit
✓= Vanuatu has ratified, accepted, approved or acceded to the MEA.

MEA	Type of MEA		Current status in Vanuatu
	International	Regional	
Vienna Convention for the Protection of the Ozone Layer	x		✓
Montreal Protocol on Substances that Deplete the Ozone Layer	x		✓
Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (London 1990)	x		✓
Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (Copenhagen 1992)	x		✓
Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal 1997)	x		✓
Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (Beijing 1999)	x		✓

Environmental Planning and Assessment Division

The Environmental Planning and Assessment Division is one of the technical divisions of the DEPC and was established to implement the provisions of Part 3 of EPC Act.

Part 3 of the EPC Act covers Environmental Impact Assessment (EIA). Section 11 of the EPC Act, under this part, stipulates that:

> *All projects, proposals or development activities that:*
> *(a) impact or are likely to impact on the environment of Vanuatu; and*
> *(b) require any license, permit or approval under any law;*
> *Must comply with the provisions of this Act.*

EIA refers to a *process* of assessing the potential environmental, social and custom impacts of a development project and putting in place management measures to mitigate any adverse impacts. The *process* involves submitting an Environmental Permit application to the DEPC for assessment, prior to issuing an Environmental Permit for the development project.

Hence, the main responsibilities of the Environmental Planning and Assessment Division are to:

1. Facilitate the *process* from the application stage to giving Environmental Permits for development projects.
2. Undertake screening and reviewing of Environmental Permit applications.
3. Undertake Preliminary Environmental Assessments (PEA) as part of the review of Environmental Permit applications.
4. Conduct site visits on development project sites.
5. Produce PEA reports and provide recommendations to the Director.
6. Develop Terms of Reference for EIA reports.

7. Organise the review of EIA reports by an EIA Review Committee (the Committee).
8. Prepare Committee meeting minutes and reports of the Committee.
9. Develop Environmental Permit conditions.
10. Undertake monitoring and compliance on development projects during and after construction.

By administering the EIA process in accordance with the EPC Act and the EIA Regulations, the division seeks to promote better management and protection of the natural environment through effective planning, implementation and enforcement of the DEPC's environmental frameworks to ensure clean, resilient and sustainable use of the natural resources for the citizens of Vanuatu. This is reflected in the vision and mission of the division: Ensuring sustainable development for the protection and management of natural resources today and tomorrow.

In 2015 the Environmental Planning and Assessment Division consisted of two permanent staff members and two part-time technical advisors funded through ADB-TA 7566. The division and the DEPC more generally were also supported by an Environment Legal Support Officer through the AVID program.

Support Services Division

The Support Services Division plays an important role within the DEPC, providing administrative support for all departmental activities including those projects housed within the DEPC. The division also manages and controls the DEPC's re-current budget and raises local purchase orders (LPOs) for departmental and project activities. Furthermore, the Support Services Division is responsible for managing the assets of the DEPC. In 2015, the Support Services Division in Port Vila consisted of two permanent staff members, an Administrative and Finance Officer and a Driver Messenger. In addition to their normal administrative support activities, the staff of the Support Services Division have also been utilised by senior officers to assist in their areas of work. These opportunities have been seen as a capacity building initiative.

The Support Services Division also includes the Sanma Extension Officer. The work of the Sanma Extension Officer covers activities across all divisions of the DEPC.

FUNDING BASIS

The DEPC budget for 2015 was 20,173,849vt of which 18,309,742vt was used on payroll/personnel expenses and 1,864,107 on operations. This operational budget is inadequate for the DEPC to carry out its functions. In particular, it has resulted in delays in paying membership fees associated with international conventions.

The DEPC has been operating on a very small budget since its establishment as a unit. These budgeting arrangements continued when the DEPC became a department in 2010. It is impossible to run all of the activities and programmes of the DEPC with such a small budget. After several executive management meetings within the MCCA, 5 million vatu from the VMGD operational budget was transferred into the DEPC operational budget. This money has been entered into the Vanuatu Budget Management System for use in 2016 and will allow the DEPC to implement some of the activities in its work plan for 2016.

Towards the end of 2015, the DEPC had some savings in its payroll budget. Subsequently, the DEPC made a virement of 1.1 million vatu from payroll to operations. This money was used to commit payments towards equipment, furniture, outstanding TVL invoices, the printing of publications, fuel and stationery for office administration.

In 2015, the DEPC raised a total of 100 LPOs alone. The table below indicates a summary of all the different expenses made throughout the year.

Table 6: Summary DEPC expenses in 2015

Expenses Detail Report — Government of Vanuatu

For transactions between 1 January 2015 and 31 December 2015 — **Extracted on 04/03/16 16:26**

Filters Applied to this Report	
Fund	2-Recurrent Fund
Ministry	M20-Ministry of Climate Change Adaptation, Geohazards, Meteorology and Energy
Dept	64-Environment Unit
Cost Centre	6401-Environment Unit
Activity	MGEA-Environmental management, research and extension Services
Job Code	
Currency	Vatu
Book	Primary Book (vatu)

Account	Description	Actual	Commitment	Total	Budget	Under/(Over)
	Personnel Expenses					
8AAA	Acting Allowances	843,417	-	843,417	-	(843,417)
8AAF	Family Allowance	160,724	-	160,724	340,965	180,241
8AAH	Housing Allowances	1,304,318	-	1,304,318	2,100,144	795,826
8AAO	Other Allowances	30,000	-	30,000	-	(30,000)
8AAP	Home Island Passage Allowances	24,758	-	24,758	200,000	175,242
8AAS	Special Allowances	-	-	-	200,000	200,000
8ASP	Provident Fund	446,507	-	446,507	615,753	169,246
8AWC	Contract Wages	-	-	-	-	-
8AWP	Permanent Wages	12,423,437	-	12,423,437	14,852,880	2,429,443
PAYR	Payroll expenses	-	-	-	(3,020,199)	(3,020,199)
	Personnel Expenses	**15,233,161**	**-**	**15,233,161**	**15,289,543**	**56,382**

	Operating Expenses					
8CAB	Subsistence Allowances	-	-	-	100,000	100,000
8CBI	International Accommodation	27,000	-	27,000	-	(27,000)
8CCI	International Courses	54,457	-	54,457	-	(54,457)
8CEC	Consultants Fees	-	-	-	-	-
8CFV	Vehicles Fuel	144,889	-	144,889	224,070	79,181
8CIV	Vehicles Hire	25,609	-	25,609	-	(25,609)
8CJO	Office Cleaning	10,822	-	10,822	77,600	66,778
8CKD	Advertising - Communications	45,600	-	45,600	-	(45,600)
8CKP	Postage - Communications	15,147	-	15,147	-	(15,147)
8CKR	Printing - Communications	88,889	-	88,889	77,600	(11,289)
8CKS	Stationery - Communications	205,970	-	205,970	132,675	(73,295)
8CKT	Telephone / Fax - Communications	281,642	-	281,642	163,876	(117,766)
8CMG	General - Materials	22,959	-	22,959	-	(22,959)
8CMO	Office - Materials	311,551	-	311,551	-	(311,551)
8CNT	Other Rental	8,889	-	8,889	-	(8,889)
8COI	Incidentals	31,218	-	31,218	-	(31,218)
8COP	Official Entertainment	235,157	-	235,157	-	(235,157)
8CRE	Equipment Repairs & Maintenance	31,031	-	31,031	88,343	57,312
8CRV	Vehicles Repairs & Maintenance	27,845	-	27,845	97,000	69,155
8CTI	International Travel	9,000	-	9,000	-	(9,000)
8CTL	Local Travel	87,333	-	87,333	145,500	58,167
8CUE	Electricity Utilities	209,923	-	209,923	194,000	(15,923)
8CUW	Water Utilities	-	-	-	97,000	97,000
8CZV	Value Added Tax	330,296	-	330,296	215,555	(114,741)
8EEA	Equipment - Additional General	727,193	-	727,193	-	(727,193)
8EEC	Equipment - Computer	116,356	-	116,356	-	(116,356)
8EER	Equipment - Replacement General	-	-	-	250,888	250,888

8FCB	Bank Charges	2,500	-	2,500	-	(2,500)
OVER	Overhead expenses	-	-	-	1,188,169	1,188,169
	Operating Expenses	**3,051,276**	**-**	**3,051,276**	**3,052,276**	**1,000**
	Total Expenditure	**18,284,437**	**-**	**18,284,437**	**18,341,819**	**57,382**

In addition to its recurrent budget, the DEPC is managing four projects with external funding:

1. PoWPA: United Nations Development Programme (UNDP)
2. GEF-PAS IAS Project: UNEP and SPREP
3. MACBIO, BIOPAMA and CEPF Projects: IUCN
4. NBSAP Review Project: UNEP.

MINISTRY AND POLICY FRAMEWORK

The protection and conservation of the environment is a cross-cutting issue, supporting both economic and social development. This has meant that the work of the DEPC is governed by broad policy and legislative frameworks that link across a number of subject areas, including across the MCCA.

At the national level, the work of the DEPC has been guided by:

- the Priorities and Action Agenda (PAA)
- the draft NEP and draft National Environment Management Strategy (NEMS)
- Sectoral policies such as the National Energy Road Map, the Forest Policy and the Vanuatu Climate Change and Disaster Risk Reduction Policy
- Acts and regulations of the Republic of Vanuatu.

Many environmental issues also cross state boundaries. As part of the international community, the work of the DEPC is guided by international policies and laws including those relating to biodiversity, the trade in endangered species, the movement of hazardous wastes and ozone layer protection.

ABOUT THIS REPORT

This report outlines major developments and initiatives carried out by the DEPC between January and December 2015.

REPORTING REQUIREMENTS

Business Planning is a requirement from the PSC for all institutions to provide on an annual basis.

REPORTING PROCESSES

This document comprises of a collection of reports put together by the Acting Director, heads of the divisions within the DEPC and compiled by the Environment Legal Support Officer.[3] This report is against the 2015 Business Plan as required by PSC through the Director General's office of the MCCA.

[3] AVID.

DEPARTMENT PERFORMANCE OVERVIEW

1. ACHIEVEMENTS

Department Performance 2015: Department of Environmental Protection and Conservation	
Key Area	**Key Results and Highlights**
Policy	National Invasive Species Strategy and Action Plan 2014-2020 approved by the Council of Ministers (COM) and launched during National Environment Week. Fifth National Report: Country Report to the Conference of the Parties on the Convention on Biological Diversity launched during National Environment Week. Community Conservation Area Information Booklet published and launched during National Environment Week. Draft project proposal developed for accession to the Ramsar Convention. Initiated review of the National Waste Management Strategy, including workshops with provincial government representatives. Collaborated with other agencies and consultants associated with the PVUDP to prepare drafting instructions for the amendment of the *Public Health Act* [Cap. 234] to manage sanitation (including establishing a framework for developing standards for wastewater quality). Drafting instructions submitted to the State Law Office through the Ministry of Health. Collaborated with other agencies and consultants associated with the PVUDP to prepare drafting instructions for the development of a Drainage Bill. Held a validation workshop on the draft NEP and draft NEMS.
Programs/Functions	National wetlands inventory documents updated and submitted to the MCCA. Undertook eradication activities for the Little Red Fire Ant at five locations on Espiritu Santo. Training provided on establishing a pilot project for home composting. Monitoring and evaluation of the pilot projects also occurred. First Operations Manual for EIA developed through ADB-TA 7566. 58 Preliminary Environmental Assessments (PEA) made and 50 applications finalised. Approval of five major projects including the Takara Geothermal Power Project, the Simonsen Wharf Rehabilitation Project and sub-projects of the PVUDP.
Outreach	Flora and fauna database updated to include birds and freshwater fish. Three CCA management committees trained in annual reporting requirements. One new CCA registered. Biodiversity assessment for the Homo Bay Conservation Area (South Pentecost) completed and report submitted. Awareness cartoon on the Little Red Fire Ant developed. Customs Officers annual refresher training on ODS conducted.

	Capacity training for Port Vila Municipal Council and Luganville Municipal Council (Melanesian J-PRISM workshop). Waste characterisation survey carried out in Sanma Province including at Palm Estate, Santo East and Second Canal.
Infrastructure	Obtained and installed the DEPC's first printer/copier/scanner connected to the government network and available to all staff.
People	Review of the DEPC organisation structure completed and restructuring proposal submitted to the PSC for endorsement and approval.

BIODIVERSITY AND CONSERVATION DIVISION

The activities implemented by the Biodiversity and Conservation Division during 2015 are outlined in chronological order below.

January

- The Vunausi Estuary Conservation Project started before 2014. In 2015, the main activity for this project was a final site visit by representatives from the relevant sectors (fisheries, forestry and water resources) in January 2015. This visit was organised in order to gather baseline information about the area, helping the DEPC and other organisations to learn of the capacity needs, the technical information regarding the area and to plan for future activities of the project.
- Presented the updated national wetland inventory document to the Director General of the MCCA for progression to the Developmental Committee of Officials (DCO) and COM.
- Staff from the Biodiversity and Conservation Division worked with the wetland consultant to prepare a project proposal to help Vanuatu accede to the Ramsar Convention.

February

- Conducted natural resource management and EPC Act awareness in relation to establishing marine conservation areas with the communities of Port Olry, Lolath, Matantas and Hog Harbour.
- Completed a rapid biodiversity assessment and reporting for the FPAM project hosted by the Department of Forests. The Department of Forests and the DEPC are co-partners in implementing the FMAP project.
- Designed and printed the 2015 wetland poster in preparation for launching during National Environment Week.
- Guided the REDD+ project team, led by Live and Learn Environmental Education, on the process of developing a management plan for the Loru Protected Area. As part of this project, the Sanma Extension Officer assisted the Department of Forests in undertaking surveys and mapping out the boundary of the REDD+ project. The Sanma Extension Officer also coordinated arrangements for community consultation and, later in the year, participated in REDD+ consultation on sustainable forest management.
- The IUCN regional office in Fiji provided the first environmental law training workshop in order to establish links between the Vanuatu Environmental Lawyers Association, natural resource sectors and the DEPC. IUCN assisted with setting up the Vanuatu Environmental Lawyers Association. This training was part of strengthening environmental governance of natural resources and biodiversity. This strengthening of environmental governance is one of the main components of the ADB-CTI project.
- The IUCN Project Liaison Officer attended a meeting for the BIOPAMA project in Fiji. This meeting was an opportunity to receive an update from the IUCN on all programme activities.

- Prepared and submitted a COM paper to the Director General of the MCCA for the updated national wetland inventory booklet.
- Sanma Extension Officer, Compliance Officer and Environment Legal Support Officer undertook a site inspection of the Vatthe CCA in Santo. This site inspection and field survey was in response to alleged non-compliance with the rules of the Vatthe CCA Management Plan.

March

- The IUCN MACBIO project conducted a legal review of marine protected areas and how they are covered in national policies and plans. This review was completed in March and presented to national sectors in April.
- Participated in the regional steering committee meeting for FPAM project, Port Vila. Divisional staff also participated in the national steering committee meeting following the regional meeting.
- Requested the FPAM project to financially assist the DEPC with the finalisation of the draft NEP and draft NEMS.
- The BIOPAMA programme officially started in Vanuatu in March 2015. BIOPAMA is hosted by the regional IUCN office in Fiji and also works closely with SPREP. It is also working with Vanuatu to help improve information about protected areas. The BIOPAMA programme is establishing a Regional Reference Information System (RRIS) that is housed within the Pacific Islands Protected Areas Portal (PIPAP). PIPAP is being developed as an important regional hub for information exchange between people working with protected areas. It is an online information system bringing together relevant information to support decision-making for planning, designating and managing protected areas. The RRIS displays maps and supporting information about biodiversity values, marine and terrestrial ecosystems, species and habitats, pressures and threats, and management and governance.
- Divisional staff and a representative of the Vanuatu Fisheries Department participated in the regional workshop on the future of coastal/inshore fisheries management from 3-6 March 2015. The workshop discussed the management of marine coastal fisheries including the need for collaboration between fisheries organisations and environmental organisations to support marine conservation/protected areas and other initiatives.
- The MACBIO ecosystem economic valuation consultation report prepared by the IUCN MACBIO project manager and the economic valuation consultant in February was presented to national stakeholders.

April

- Conducted fauna assessment for the Homo Bay Conservation Area (South Pentecost). This assessment was supported by financial assistance from the FPAM project. Data entry and report writing of the field assessment took place immediately after the field assessment. A detailed report was completed and submitted to the Food and Agriculture Organization of the United Nations (FAO) regional office in Samoa.

Awareness to field guides on the important fauna of Pentecost Island and Vanuatu

- Attended the ABD-CTI project regional meeting in Brisbane. The countries under this project are Papua New Guinea, Solomon Islands, Fiji, Vanuatu and Timor Leste. This meeting enabled the ADB-CTI project to present the findings of the project's mid-term review and allowed the country representatives to review the amended scope of project components/activities following the recommendations of the mid-term review.
- Engaged full time over a period of two weeks meeting with the SPREP officer assisting the DEPC and other government agencies with the environment assessment of the impacts of TC Pam.
- Developed project proposals for fish aggregating devices (FADs) and coral reef monitoring with Conservation International using new methodology proposed by the University of Queensland.

May

- Developed a project proposal for re-vegetating CCAs in Malampa, Penama, Shefa and Tafea provinces affected by TC Pam. The project proposal was finalised following two meetings with the responsible ministry technical advisor and was submitted to the MCCA.
- Worked with Nguna-Pele representative to finalise the draft Lelepa Island Tours (LIT) Apuma Marine Protected Area Management (MPA) Plan, including community consultation for final review of the draft plan. Conducted meetings with the manager of LIT Apuma MPA about issues relating to the draft and the land ownership of the coastal areas adjacent to the MPA.

June

- Conducted freshwater fishes and crustaceans research on Aneityum Island with the French Natural History Museum through funding from the CEPF.
- Created a database (spread sheet) of Vanuatu conservation areas, national resources and approved research applications. This database forms an important part of the Environmental Registry under the EPC Act.
- Conducted the first rounds of island consultation on the draft ocean policy, fully funded by the MACBIO project. This included consultation on the islands of Pentecost, Ambae, Maewo, Gaua, Mota Lava, Vanua Lava and Santo. The consultation was carried out in close collaboration with the Department of Foreign Affairs, the Ports and Marine Department, the Department of Geology, Mines and Water Resources and Provincial Affairs.
- National Invasive Species Strategy and Action Plan 2014-2020 launched by the Director General of the MCCA during National Environment Week.

Director General of the MCCA formally launching the National Invasive Species Strategy and Action Plan 2014-2020

July

- Conducted freshwater fishes and crustaceans research on Tanna Island with the French Natural History Museum through funding from the CEPF.
- Screened the Unakap Marine Protected Area Management Plan prior to approval for legal registration.
- Prepared and dispatched eel fish specimens and Vanuatu gecko specimens for laboratory analysis at the French Natural History Museum.
- Conducted consultation on the draft national ocean policy on the islands of Malekula and Ambrym.

Ambrym national draft ocean policy consultation participants

- In July 2015, the CEPF called for proposals. The DEPC was involved in the preparation of proposals and the national screening of proposals by the national review team in August 2015. Six proposals were approved. These are Vanuatu Environmental Science Society (VESS) organisational capacity building project, the Lake Letas Ramsar Convention project (using Lake Letas as the national site for acceding to the Ramsar Convention), the Mystery Island crazy ants eradication project, Landcare New Zealand invasive species eradication project, Tasi Vanuatu network capacity building project and the Futuna Island network organisational capacity building project.
- The Senior Programme and Finance Management Officer of the ADB-CTI project participated in the 'environmental law lessons learned' meeting in Fiji in July 2015. Different environmental lawyers from Fiji shared their experiences regarding managing resources and environmental protection through legislation with environmental lawyers from the Solomon Islands and Vanuatu.

August

- Prepared terms of reference and contracts for the IUCN to assist with the revision and write up of the revised NBSAP. The contract was signed and the first national stakeholders consultation began. Following the consultation, divisional staff documented the findings and the results of the face to face consultations.
- Environmental law training with the IUCN was organised but later cancelled as similar EIA training was taking place at the same time.
- A communication consultant was contracted by the GEF-PAS IAS project to develop an awareness cartoon about the Little Red Fire Ant and its impact on biodiversity. In particular, how they are spread from one island to another.
- Participated in the FPAM project regional steering committee meeting held in Nadi, Fiji. This meeting was organised for the participating countries to present updates of their activities and project implementation. It also enabled participating countries to receive an update about the new extension period for the project.
- The Senior Biodiversity Officer provided compliance training on the legal registration of CCAs and conservation/protected area management plan development to 60+ natural resource management

and climate change community champions at Malaliu village on Nguna Island. The training was organised by the Nguna-Pele Marine Protected Area using funding from the ADB-CTI project.

September

- Participated in the FPAM project regional steering committee meeting held in Nadi, Fiji.
- Conducted Little Red Fire Ant infestation site identification and basic GPS handling training with representatives from the DEPC, the Department of Forests, Biosecurity Vanuatu and Land Survey on Efate Island.

Chemical application on Little Red Fire Ant infested areas of Santo

- Finalised reports for NBSAP Review Project provincial consultations. This included finalising the provincial biodiversity maps and keys such as the important biodiversity hot spots for birds, turtles, dugongs, coconut crabs, ecotourism sites, important ecosystems and habitats as well as conservation areas.
- GEF 5 project proposal first national Local Conservation Trust Fund workshop held at the Department of Forests.
- Staff from the Biodiversity and Conservation and Support Services Divisions were involved in the application of chemicals on Little Red Fire Ant outbreaks at five sites on Santo. Sites included Talua, Pepsi, Mango, Solway and an area opposite the Catholic Church close to Unelco. At the same time, a media consultant was with the control team in Santo making a video documentary on how to control Little Red Fire Ants.
- Consultation on the draft national ocean policy on the islands of Tanna, Aneityum, and Erromango.

Tanna draft national ocean policy consultation participants

- External consultants visited in September 2015 to prepare a case study for presentation to the final ADB-CTI ANZDEC meeting. The case study was based on the 'Nguna-Pele train the trainers' training targeting the natural resource management and climate change champions.

October

- Prepared for the first national consultation workshop for the NBSAP.
- Prepared for the final validation workshop for the draft NEP and draft NEMS.
- Participated in the national steering committee meeting for the FPAM project.
- Final review of Loru Protected Area Management Plan. The plan was presented to the Acting Director and at a national committee meeting and the protected area's legal registration discussed. The legal registration of the Loru Protected Area as a CCA was approved by the committee.
- Handed over signs produced under the GEF-PAS IAS project to Biosecurity Vanuatu. These signs are to be displayed at Vanuatu's international airports to remind people to declare or dump their plant and animal products, reminding people about the risks of invasive species.

Acting Director DEPC formally handing over signs to the Director of Biosecurity Vanuatu

- Reviewed contract and terms of reference for the IUCN to assist with the NBSAP review.
- Contract signed by local consultant to develop the DEPC's website. This work is financially supported by the NBSAP Review Project. Work began on website design.
- Participated in the NBSAP resource mobilisation and GEF constituency meeting at the Cook Islands.
- Participated in the final ADB-CTI and ANZDEC regional meeting in Sydney, Australia. Case studies of projects in each participating country (Timor Leste, Papua New Guinea, Solomon Islands, Vanuatu and Fiji) were presented. Two final project proposals for Vanuatu were also presented at this meeting. These were the FADs and coral reef monitoring proposals.

Vanuatu participants of ADB-CTI/ANZDEC regional meeting with ANZDEC Managers

November

- First NBSAP Review Project national consultation workshop held in Port Vila. Participants at the workshop discussed biodiversity related issues and the revised NBSAP focal areas. This workshop was facilitated by IUCN in collaboration with the Biodiversity and Conservation Division.

National NBSAP Review consultation participants

- Baited Little Red Fire Ants on five invested areas on Santo. Tools and chemicals were given to Sanma Extension Officer to continue with the spraying. In the second half of 2015 the Santo Extension Officer revisited the sites, collected data and conducted follow-up spraying.
- Launching of Loru Protected Area as a recognised CCA at Khole village, Santo. The ceremony was officiated by the DEPC Acting Director with the Sanma Extension Officer, Sanma Province, the Department of Forests (Santo), High chief of the Khole area and district pastor covering Khole village attending.
- Draft national ocean policy consultations happened in Futuna and Paama. This work is a component of the MACBIO project and consultations were done in collaboration with relevant sectors such as the Department of Foreign Affairs, the Vanuatu Fisheries Department, the Department of Geology Mines and Water Resources, the Ports and Marine Department and Provincial Affairs.
- Final validation workshop for the draft NEP and draft NEMS workshop held in Port Vila. The workshop was facilitated by SPREP and the DEPC. The consensus reached at this workshop was that the two documents be merged into a single document. The document is now called National Environment Policy and Implementation Plan (NEPIP) and is anticipated to be finalised in the first half of 2016.
- Officers from the Biodiversity and Conservation Division partnered with the Sanma Extension Officer to conduct CCA management committee training for registered CCAs annual reporting with Penoru, Vatthe and Loru areas in Santo.
- First design of the DEPC website presented to staff for comments and submissions of divisional information for respective web pages was requested.

December

- Held FADs and coral reef monitoring project proposal meetings with the Vanuatu Fisheries Department and the MCCA.
- Conducted a Vatthe CCA community meeting to discuss and decide on some proposed changes to the Vatthe CCA Management Plan. The Sanma Extension Officer was also involved in this meeting. Minutes of the meeting were produced in relation to the approved changes discussed at the meeting. It is anticipated that the changes will take effect in the first quarter of 2016, once the communities have agreed to the minutes and the CCA management committee formally writes to the Director requesting the changes.

- Reviewed final version of the cartoon awareness and the Little Red Fire Ant control video documentary. These materials are expected to be released in the first quarter one of 2016.
- Submission of CCA annual reports by Santo registered conservation areas.
- Participated in the Pacific Ecosystem-based Adaptation to Climate Change (PEBACC) two-day workshop at the Novotel Hotel, Suva Fiji. The workshop was organised to learn about relevant existing projects within Solomon Islands, Fiji and Vanuatu prior to planning for PEBACC project activities in each of the three countries.

Regional PEBACC workshop participants

ENVIRONMENTAL PROTECTION DIVISION

Environmental Protection Division: Waste Management and Pollution Control Section

Following the Senior Waste and Pollution Officer's return from study leave in mid-July, the focus of the Waste Management and Pollution Control Section was on the implementation of J-PRISM project activities. In particular, workshops to assist the provincial and municipal councils develop their respective Solid Waste Management Plans.

The J-PRISM project is one of a number regional waste and pollution projects that the DEPC is involved in.

Waste and Pollution Control Section: Performance 2015 Regional Waste and Pollution Projects		
Key Area	**Project Information**	**Key Results and Highlights**
AFD/SPREP Regional Solid Waste Management Initiative	This is a four year project (October 2011 – Sept 2015) and is focused on technical capacity building for improved solid waste management.	Ongoing capacity building for Vanuatu. Development of a used oil management programme.
Japanese Technical Cooperation Project for Promotion of Regional Initiative on Solid Waste Management in Pacific Island Countries (J-PRISM)	Phase one of this project (February 2011 – February 2016) is focused on strengthening the human and institutional capacity base for sustainable solid waste management in the Pacific Region through the implementation of the Pacific Regional	Human and institutional capacity for solid waste management was strengthened through training of Port Vila, Luganville and Lenakel counterparts in the region and in Japan. A Ni-Vanuatu counterpart was selected as a landfill expert for the region. He is

	Solid Waste Management Strategy (2010-2015).	Mr. Amos Mathias from the Port Vila Municipal Council.
Pacific POPs Release Reduction Project (GEFPAS POPs)	This five year project (2013-2018) mainly targets the unintentional production of Persistent Organic Pollutants (uPOPs). The main sources of uPOPs are open burning, waste incinerators, waste oil spillage, industrial processes and burning of plastics, PVC, and electrical cables. In doing so, the project looks at improving the management of solid and hazardous waste in the region.	In 2015 a participant from Vanuatu attended the capacity building training at the Fiji National University (FNU). A proposal was also submitted in May for implementation in 2016. This is an ongoing project.
PacWaste	The main activities of the PacWaste project include: • Health care waste management • Asbestos management • E-waste management • Atoll waste management The project runs from May 2013 to March 2017.	In 2015, five incinerators to treat medical wastes were donated and installed in five different hospitals of Vanuatu. These are: Vila Central Hospital (VCH), Northern District Hospital (NDH), Lolowai Hospital, Norsup Hospital and Lenakel Hospital. Training on the manual operation of these incinerators will be conducted in 2016. This is an ongoing project.

From September the Senior Waste and Pollution Control Officer was able to work more closely with the Environment Legal Support Officer[4] to develop instructions for drafting regulations under the Waste Management Act. The first priority is to focus on developing regulations to license private waste operators in Vanuatu. This regulation is on track to be implemented by the end of 2016 after a three month grace period for licence applications and awareness to inform the public on the conditions and requirements of the licensing system.

This year staff from the Waste and Pollution Section were able to participate in three trainings. The first training was conducted in July in Suva Fiji. This training was conducted mainly to understand the country's obligations under the Waigani Convention.

The second training was conducted in Port Vila in collaboration with the Department of Agriculture and Rural Development (DARD). The training was on home composting. Two methods of composting were demonstrated during the training – liquid and pit composting. The aim of the training was to establish a pilot study on home composting for seven households in Port Vila. However, due to the El Nino dry season the activity was not implemented really well by the participants. The activity is planned to be fully implemented in 2016.

[4] AVID.

Demonstration of liquid and pit composting to participants by DARD staff during the home composting training in July

The third training was conducted through SPREP and the GEF POPs project at the Fiji National University in Suva Fiji. The training was a train the trainers program on waste management and landfill management. An action plan to conduct trainings in Port Vila in 2016 for home composting was developed by the participant.

In addition to these training opportunities, the officer responsible for waste management and pollution control attended four regional meetings or workshops and one international meeting. Details of these meetings are shown in the table below.

Table 7: Regional and international meetings/workshops attended by the Senior Waste Management and Pollution Control Officer in 2015

Meeting	Venue	Outcome
Sixth Regional 3R Forum in Asia and the Pacific	Dharubaaruge Male, MALDIVES	Presentation on the current waste management and pollution control situation in Vanuatu.
Melanesian J-PRISM workshop	Honiara, SOLOMON ISLANDS	Update on the progress of J-PRISM project activities for solid waste management in three Melanesian countries (Solomon Islands, Papua New Guinea and Vanuatu). Participants from Vanuatu included the DEPC, the Port Vila Municipality and the Luganville Municipality.
Melanesian consultation workshop for the review of the Regional Waste Management and Pollution Control Strategy 2016-2025	Nadi, FIJI	Discussed waste management and pollution control issues, challenges and action plans to be included in the Regional Waste Management and Pollution Control Strategy 2016-2025. The regional strategy was endorsed in September during the annual SPREP meeting in Apia, Samoa.
Workshop on the 'Development of the Solid Waste Management Capacities for Local Government Officials'	Port Vila, VANUATU	All provincial planners, area council secretaries and municipal environmental health officers participated during the workshop and were able to develop their first draft Solid Waste Management Plans (SWMP). The final SWMPs for all provinces are on track to be endorsed in May 2016 during the council meetings.
3rd Annual PacWaste Steering Committee Meeting and Workshop	Tarawa, KIRIBATI	Discussed the way forward for the management of hazardous waste materials including, asbestos, e-wastes and medical wastes for respective countries.

J-PRISM Melanesian workshop in Honiara, Solomon Islands

PacWaste 3rd Steering committee meeting in Tarawa, Kiribati

Discussion on Solid Waste Management Plans among the participants during the workshop with local government authorities

The Sanma Extension Officer also had the opportunity to participate in waste related activities in 2015. In particular, attending briefings in Luganville regarding the use of red plastic bags for waste disposal and undertaking waste audits.

Environmental Protection Division: National Ozone Unit

Key activities undertaken by the National Ozone Unit in 2015 included:

- Working with the Vanuatu Customs and Inland Revenue Department (Customs) to provide refresher training on ODS. The training included outlining illegal trade measures and providing a refrigerant identifier to Customs. Exercises on using the refrigerant identifier were also conducted, ensuring Customs Officers knew how to operate equipment.
- Renewing and updating the UNEP's informal prior informed consent procedure online (iPIC).
- Reporting to the Ozone Secretariat about consumption data, as per the reporting requirements of Article 7 of the Montreal Protocol. The Article 7 data was submitted to the Ozone Secretariat before the 30 June deadline.
- Reporting on Vanuatu's implementation of activities under the Montreal Protocol to the Multilateral Fund Secretariat by 1 May.
- Working with Customs to ensure that all ODS listed in the Ozone Layer Protection Act were captured in the migration from the Harmonised System 2007 to the Harmonised System 2012.

ENVIRONMENTAL PLANNING AND ASSESSMENT DIVISION

The table below summarises the activities implemented by the Environmental Planning Assessment Division in 2015 with results and commentary provided. Further descriptions of the objectives, activities and results follow this table.

Environmental Planning and Assessment Division: Performance 2015			
Programs	**Objectives (Target)**	**Results (✓✖)**	**Result Summary**
1.0 Develop and review appropriate legislative framework	**Review and amend Part 3 of the EPC Act and EIA Regulations** • Engaged ADB-TA 7566. A regional project on Strengthening and Use of Country Safeguard Systems	Ongoing ✓	The review process started in 2014 and continued in 2015. It was supported by ADB-TA 7655 (funded by the ADB). A team of three consultants (two international and one national) have supported the DEPC to implement and understand the requirements of the EPC Act and EIA Regulations. This support forms the basis of the review of the EPC Act.
	• Analysis of the EPC Act (Part 3) and the EIA Regulations	✓	A legal analysis report was produced by the Environmental Legal Specialist. This report revealed the gaps in the EPC Act and EIA Regulations.
	• Institutional capacity assessment	✓	The institutional capacity assessment report was produced by the Team Leader and EIA Specialist. Also, a Safeguard Specialist was engaged to support the TA tasks.
	• Internal workshops and discussions	✓	These workshops were held internally to discuss the issues/gaps that require improvement.
	• Stakeholder workshops and consultations	✓	Held workshops and meetings with stakeholders on what requires improvement.
	• Develop the operational manual for EIA	✓	EIA Operations Manual produced.
	• Review of application forms and templates	✓	A revised application form, called Environmental Permit

			Application, was produced (English and Bislama version). Supporting Information template produced for Environmental Permit (English and Bislama version). Short guide to Environmental Permit Application developed. PEA report assessment template revised.
	• Develop drafting instructions	✓ Ongoing	Started on the drafting instructions for amendments to the EPC Act and EIA Regulations (with support from the Environment Legal Support Officer). Preliminary matters section, including terminology, finalised.
2.0 Strengthen compliance and enforcement of environment legislation, regulations and policies	**Review and process Environmental Permit applications for development projects** • Number of Environmental Permit applications received	✓ Ongoing	This is ongoing work for the division. More details of this are in the text that follows this table under Environmental Permit applications registered 58 Environmental Permit applications were received in 2015.
	• Number of Environmental Permit applications requiring full EIA reports	✓	Three applications required EIA reports to be prepared.
	• Number of projects approved and granted an Environmental Permit	✓	Out of 58 project applications registered, 44 were granted an Environmental Permit with conditions.
	• Number of Environmental Permit applications discontinued and cancelled	✓	Six project applications were discontinued and cancelled because proponents did not provided information required by the DEPC within a minimum of three months. Four other projects are ongoing and another requires more information.
	• Number of EIA reports approved	✓	Two EIA reports were approved in 2015 (Wong Sze Sing Santo Meat Abattoir and Simonsen Wharf Rehabilitation Project).

	Major infrastructure and utility development projects • Infrastructure projects managed by the Vanuatu Project Management Unit (VPMU)	✓	Big Government infrastructure and utility projects. Held meetings with project contractors and VPMU to discuss and agree on the Table of Contents for Site Environmental Management Plans (SEMP).
		✓	Reviewed and approved four SEMPs (applications) for subprojects under the PVUDP.
		✓	Reviewed and approved the Terms of Reference (TOR) for the Simonsen Wharf Rehabilitation Project, Luganville Santo (VISSP).
		✓	Reviewed and approved the TOR for South Paray Bay Channel dredging Project (VISSP).
		✓	Reviewed and Endorsed the Environmental Management Plan for Vanuatu Tourism and Investment Project (VTIP) – Port Vila beautification project.
		✓	Reviewed and approved change of design to Lapetasi Multi-Purpose Wharf Project.
	Utility projects	✓	Held community consultation at Takara for the Takara Geothermal Power Project.
		✓	Organised the EIA Review Committee to review the ESIA report for Takara Geothermal Power Project.
		✓	Approved the Takara Geothermal Power Project, Phase 1 – Exploration drilling
		✓	Reviewed and approved the UAE-Grid Connected Solar PV System Project – Parliament park and VMGD compound.

	Reviewing EIA reports • EIA reports reviewed by the EIA Review Committee	✓	Organised the review of EIA reports. Two EIA reports reviewed in 2015.
	Registration of EIA Consultants • Number of new EIA consultants registered	✓	Two new EIA Consultants registered, with certificates, in 2015.
	• Number of licences renewed (consultants)	✓	One licence renewed.
	Undertake compliance work on development activities and operations and impose appropriate enforcement actions	✓	Compliance work undertaken on development activities and enforcement actions such as stop work notices issued for non-compliance.
	Ensure compliance with EIA Regulations, EMMPs and Environmental Permit conditions	✗	Need compliance checks and audits on approved development projects.
3.0 Awareness trainings/workshops	**EIA awareness workshop for SANMA Province** • Awareness to general public including Government agencies, private investors, real estate agents, Municipal Councillors.	✓	EIA awareness workshop financed by SPREP and co-facilitated by SPREP and the DEPC. The aim was to provide participants with an overview of SPREP and its capacity-building work related to environmental planning and assessment, and environmental policy frameworks; and to strengthen participants' understanding of the EIA process. Workshop was successfully held at VNPF Conference room, Luganville Santo. 23 participants attended this workshop and field visits with participants were conducted.
	EIA workshop for EIA Review Committee (Port Vila)	✓	Targeting mainly the members of EIA Review Committee this workshop aimed to build the capacity of EIA Review Committee members to review EIA Reports and make recommendations.

			Workshop was successfully conducted at the DEPC/Lands Department Conference Room. 15 participants attended.
	EIA Report workshop for EIA consultants (Port Vila)	✓	Targeting mainly EIA consultants and practitioners. Aim was to build capacity of EIA consultants and practitioners. Workshop held at the DEPC/Lands Conference room and facilitated by SPREP and the DEPC. Nine participants.
4.0 Enhanced coordination between all stakeholders (government sector, private sector, donor partners and NGOs)	**Develop DEPC website** • EIA information in DEPC website	✗	Need to develop EIA information to be included in the website.
	EIA inductions trainings for authorised officers • Induction trainings with authorised officers	✗	Need to conduct inductions with authorised officers.
	• Share new EIA templates with authorised officers and EIA consultants	✓	New templates for Environmental Permit Application and revised PEA templates sent to relevant officers and EIA consultants.
	Application for Negotiator Certificate • Number of land negotiator certificates signed by the DEPC	✓	Administered by the Lands Department. 165 applications signed by DEPC.
	• Number of Land Management Planning Committee (LMPC) meetings attended	✓	Attended six LMPC meetings in 2015 and reviewed 165 applications.
	Attending meetings	✓	Other meetings attended included the National Offshore Mineral Committee meeting.
5.0 Improve the resourcing, revenue collection, and working environment for DEPC	**Upgrade Sanma Environment Office** • Induction training of Sanma Extension Officer	✓	Brief induction of how to complete PEA forms in DEPC offices Port Vila.
	• EIA awareness workshop in Luganville	✓	Sanma Extension Officer attended the workshop and

			organised field trips for the participants.
	Revenue collection	✓	The division is one that collects revenue for the Government. The division has the potential to collect over a million vatu per year.
6.0 Division strengthening and building	**ADB TA-7566** • Capacity building of division staff	✓	Four capacity building training sessions for division staff were conducted by the EIA Specialist under ADB-TA 7566.
	• Legal volunteer support – Internal workshops and information sharing	✓	The Environment Legal Support Officer[5] greatly assisted the division through legal information development and sharing – enhancing understanding.
7.0 Information Management	**Updating of EIA Database**	✓	The EIA Database is up-to-date.
	Training of Support Services staff to update EIA Database	✓	Support Services Division staff trained on how to use and update the EIA Database.
8.0 Other programs & activities	**Attend regional meetings and workshops**	✓	See details of workshops in the text that follows (under other programs and activities).
	Assist with the organisation of National Environment Week and launching of the National Invasive Species Strategy and Action Plan and the CCA guideline booklet	✓	National Environment Week was held in June at the Vanuatu Cultural Centre. Booklets were launched by the then DG for MCCA, Mr. Jotham Napat.
	Court cases	✓	Worked on two court cases - preparing evidence for the court.

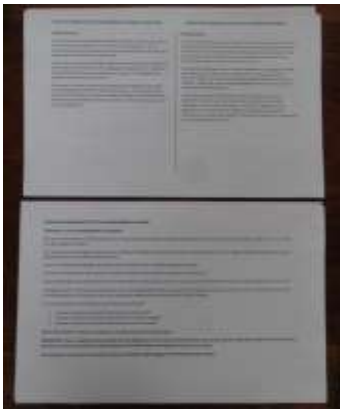
1. Develop and review appropriate legislative framework

The review of Part 3 of the EPC Act and EIA Regulations started in 2014 and continued through 2015. It is an ongoing project for the Environmental Planning and Assessment Division. The review is supported by ADB-TA 7566. The principal aim of the review is to identify and strengthen gaps in the legal regulatory frameworks for the environment. The procedural changes identified through this TA inform the changes to be made in the legislative frameworks.

[5] AVID.

(1)

(2)



(3)

Figures (1), (2) and (3) are samples of documents revised under this TA-7566. (1) is the English version of the Environmental Permit Application and (2) is the Bislama version. (3) is the guide to the application and supporting information template.

DEPC and ADB meeting for second TA

The DEPC had further discussions with ADB representatives about the possibility of a second TA to continue supporting the review process. A proposal was drafted based on the discussions of specific tasks.

2. Strengthen compliance and enforcement of environment legislation, regulations and policies

Reviewing and processing of Environmental Permit applications

Every year, the Environmental Planning and Assessment Division receives over 50 Environmental Permit applications. In 2015, the division received a total of 58 Environment Permit applications for screening and reviewing. Out of the 58 applications, 44 were approved, six were cancelled, one required more information and four are still ongoing. Table 8 shows the number of applications received for each category of project. Figure 1 is a bar chart showing the number of applications verses the different types of development projects.

Table 8: Environmental Permit applications received by category in 2015

Development project category name and code	Number of Environmental Permit applications received
Foreshore development (FORE)	9
Tourism development (TOU)	5
Industrial development (IND)	2
Mining/Quarry (MIN)	28
Logging (LOGG)	0
Retail/Wholesale development (RET)	1
Agriculture projects (AG)	0
Aquaculture projects (AQ)	0
Transport and Telecommunication (TR)	2
Energy Generation Facilities (ER)	3

Waste Disposal Facilities (WA)	1
Subdivision (SUB)	0
Health facilities (HE)	0
Recreational facilities (REC)	0
Churches (CH)	1
Others (OTH)	6
TOTAL	**58**

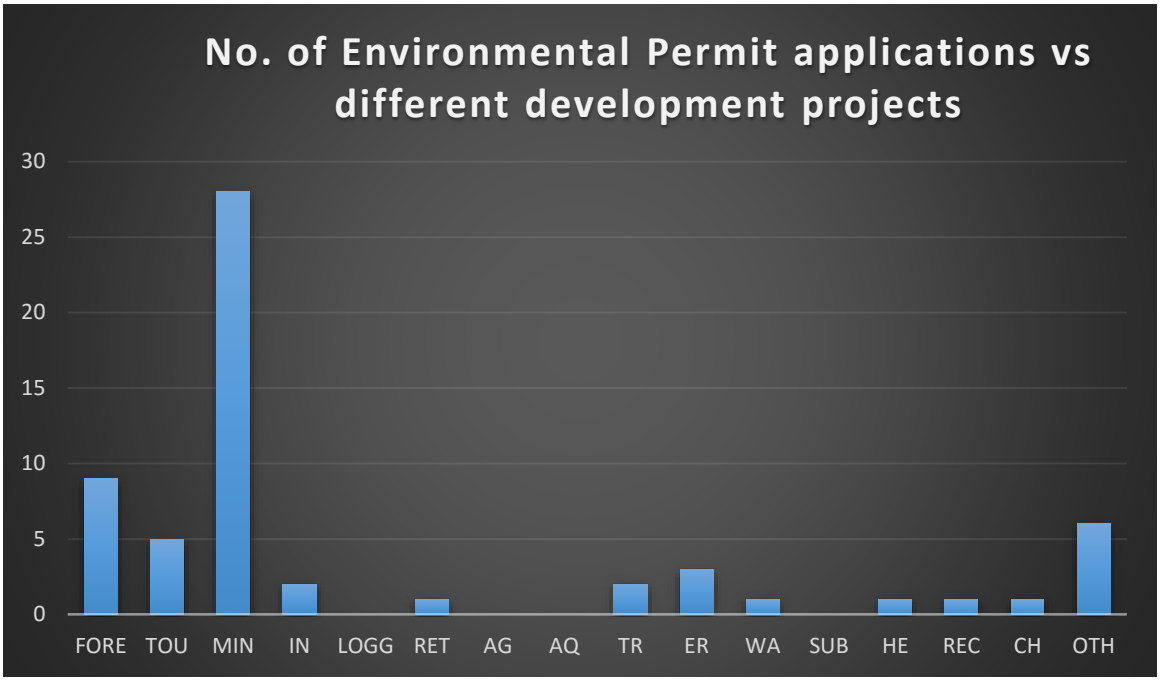


Figure 1: Number of applications verses different types of development projects

Table 8 and Figure 1 show that mining/quarrying activities had the most applications registered in 2015, followed by foreshore development activities, other development activities (including excavations, seawalls above the mean high water mark and commercial buildings) and tourism developments. All other types of development were below two applications.

There were no applications received for subdivision projects in 2015, reason being that all subdivision projects were suspended by the Department of Lands pending the endorsement of the Subdivision Policy. Similarly, no applications were received for intensive agricultural activities, aquaculture and logging activities.

The Sanma Extension Officer was also involved in EIA activities, undertaking site inspections and preparing PEAs for projects including retaining sea walls, quarries and new/rehabilitated wharf developments. In many cases, the Sanma Extension Officer acted as a central coordinator between the DEPC, the Public Works Department and the Department of Geology, Mines and Water Resources. For example, attending briefings on wharf reconstruction, liaising with land owners/attending consultation meetings regarding stone, sand and basalt supplies and working with the Department of Geology, Mines and Water Resources to inspect and report on proposed quarry development sites.

3. Awareness training/workshops

Three in-country workshops were conducted in September 28 – October 02 2015. These workshops were funded and facilitated by SPREP and the DEPC.

The first workshop was held in Luganville and the two others were held in Port Vila.

EIA training participants hard at work in the field (Santo) and the classroom (Port Vila)

EIA awareness activities in Santo

4. Enhanced coordination between all stakeholders (government sector, private sector, donor partners and NGOs)

It is our commitment to increase coordination and strengthening the working together between stakeholders including the Government sectors and private sectors. The division will work together more with the relevant Government sectors to develop environmental guidelines for public infrastructures and extractive activities in 2016-17.

All officers involved in EIA, including the Sanma Extension Officer have been involved in customer service activities throughout the year – explaining the EIA requirements and how the EIA process links with other development processes such as obtaining foreshore development consent and planning permission.

Similarly, the Environmental Planning Assessment Division and the Sanma Extension Officer were involved in completing applications for land negotiators certificates and land leases. These application forms are used by the Ministry of Lands and require input from the DEPC.

5. Improve the resourcing, revenue collection, and working environment the DEPC

The Environmental Planning and Assessment Division is one of the divisions of the DEPC that collects revenue through Environment Permit application fees, submission fees for EIA reports and penalties collected through compliance and enforcement work. Most of the revenue collected by the DEPC is associated with EIA fees.

6. Division strengthening and building

It is our aim to continue strengthening and building the division with human resources, donor support (TAs) and voluntary programs to ensure the division carries out its programs effectively and produces the desired results.

7. Information Management

The EIA Database is continually updated by the Environmental Planning and Assessment Division, in partnership with the Support Services Division. The EIA Database has been created to keep track of the progress of Environmental Permit applications. Officers from the Support Services Division were trained to use the database in 2015.

8. Other programs & activities

Listed below are other activities the division participated in during 2015. This included regional meetings and workshops.

Pacific Islands Regional Ocean Acidification Workshop: 7-9 October 2015, Stamford Plaza, Auckland, New Zealand

The Pacific Islands Ocean Acidification Partnership project, supported by the government of New Zealand, is a joint SPREP, SPC, and USP project arising from ocean acidification. The project aims to build resilience to ocean acidification in the Pacific Islands.

The workshop addressed three major themes: vulnerability and adaptation; monitoring and research best practices; and policy and regional coordination, with the goal of building resilience to ocean acidification through sustainable management of coastal and pelagic fisheries.

Workshop Objectives: This workshop was designed to assist the partnership of Pacific Island Countries to work with experts to:

1. Understand the situation of ocean acidification in the Pacific, including the challenges we face in addressing OA;
2. Identify priority areas and actions for the Pacific Islands Partnership Ocean Acidification project; and
3. Identify initial suggestions for developing a further programme of work and funding for OA, by SPREP and SPC.

Workshop Outputs: This workshop was a prioritisation and planning step for the project that resulted in a specific set of priority activities under each of the projects three major themes and intended outcomes. Specific outputs desired from the workshop were:

1. A comprehensive list of existing and potential impacts and vulnerabilities that Ocean acidification creates for Pacific Island ecosystems, species, communities and economies. This includes a better understanding and awareness of the information and knowledge gaps on OA and the challenges of addressing OA.
2. A list of priority areas and activities to be conducted under the 3 project themes
3. A set of initial options for developing a further programme of work and funding for OA, by SPREP and SPC with Member countries and territories.
4. An understanding that participants will contribute to the selection of locations for activities of the Pacific Islands Partnership on Ocean Acidification project and in guiding the future of the partnership.

ADB–CTI and ANZDEC regional meeting, Sydney, Australia

The Senior EIA Officer participated in the final ADB–CTI and ANZDEC regional meeting held in Sydney, Australia in October 2015. It was attended by four participants from Vanuatu.

October 27- 29 2015, Nadi, Fiji: Pacific Environment and Social Net Work Workshop

The Pacific Environmental and Social Network Workshop held in Nadi, Fiji was organized by the World Bank and the Asian Development Bank, with the support of the Australian Department of Foreign Affairs and Trade (DFAT).

The workshop was a part of current efforts by the two banks to harmonise and develop common approaches to managing and monitoring environmental and social risks in the region, a theme which was welcomed by their Pacific counterparts during the three day workshop. The Senior EIA Officer made a well-received presentation at the workshop, highlighting some of the issues that Pacific Island Countries face when reconciling donor-funded safeguards with domestic EIA processes and legislation.

Pacific Environmental and Social Network Workshop

The Compliance Officer, on behalf of the DEPC, attended the annual SPREP meeting in Apia, Samoa.

2. SUPPORT SERVICES DIVISION

Support Services Division: Performance 2015	
Key Area	**Key Results and Highlights**
Customer service	Responded to incoming calls and answered queries. Provided information to walk-in clients on environmental processes. For example, registering CCAs, applying for Environmental Permits, CITES Permits as well as general enquires about the EPC Act, the Waste Management Act and the Pollution Control Act. The Sanma Extension Officer played a similar role in Santo. Assisted students seeking information on environmental issues by referring them to the right section. The Sanma Extension Officer played a similar role in Santo, helping Matevulu College students with their enquiries about climate change and providing posters and other resources to students from Aore Secondary School. Worked with senior staff and the VESS to coordinate arrangements for National Environment Week. In Santo, the Sanma Extension Officer presented the World Environment Day speech at a launching ceremony at East Santo School and the closing remarks and presentation at the closing ceremony at the Luganville Municipal Council.
Appointments for senior staffs	There was an average of three appointments organised per month for all senior staff.
Meetings	There were a number of meetings held in 2015 and the Support Services Division was responsible for organising logistics (i.e. venue and catering), raising LPOs and distributing invitation letters.
Staff travel	Organised travel for DEPC staff. Overall there were more than 10 incidences of overseas travel and more than 15 incidences of domestic travel. Most of the travel was undertaken by the Biodiversity and Conservation Division.
Filing	Purchased new filing cabinets for the DEPC and filed old files from 2014 as well as the 2015 outgoing and incoming files and other correspondences. The AVID liaised with the OGCIO to create a folder for the DEPC to file electronically and share e-files across the organisation.
Staff annual leave	Maintained details of staff leave. The total number of annual leave days and sick leave taken by each division in 2015 was: • Biodiversity and Conservation Division – 29 days annual leave • Environmental Protection Division – 16 days annual leave • Environmental Planning and Assessment Division – 36 days annual leave, 4 days sick leave • Support Services Division – 9 days annual leave, 3 months maternity leave The Principal Environment Officer was on study leave in 2015.
Office assets purchased	Purchased new office equipment including: • Desktop computers for three of the four divisions of the DEPC • A laptop for the Senior Biodiversity Officer • 2 new office projectors • 1 new office digital camera • 2 new tables • 2 new chairs

Support to other divisions within the DEPC	Participated in the 'Little Red Fire Ants Eradication' Training Workshop and workshops regarding the identification of fruit flies. The hands-on training for Little Red Fire Ants involved field work in Santo at several targeted sites identified as having high Little Red Fire Ants populations as well as rural areas around Efate namely, Teouma and Nambatu Lagoon. The Driver Messenger also assisted the Compliance Officer to undertake site inspections on proposed developments and serve Stop Work Notices to developments that did not comply with the requirements of the EPC Act.
TC Pam recovery	For three months, from March to May 2015, the Driver Messenger and Compliance Officer worked on the TC Pam relief efforts. The Driver Messenger also travelled to Tanna, spending an additional month supporting distribution of supplies to the communities affected by TC Pam.

Members of VESS, the DEPC and volunteers helping clean up Fatumaru Park during National Environment Week

Participants involved in Sandalwood planting as part of National Environment Week

In addition to the activities mentioned above, the Sanma Extension Officer carried out a number of site visits and inspections in 2015 including in the:

- Vathiritu logging area, Hog Harbour: Inspected the logging operations and assessed the damage to blue water trees. Report prepared for the property owner.
- Port Olry tourism zone: Made an assessment of damage to trees within the tourism area and prepared a report for the property owner.

The Sanma Extension Officer also attended a number of meetings and workshops including:

- The Sanma Northern Part Health Planning Workshop – to develop priority activities for 2015.
- The Pepsi area survey consultation meeting – to help community leaders prioritise their implementation activities.
- The Basic Essential Skills Series (BESS) Training run through the Sanma Provincial Government Council.
- Training on risk proof planning, budgeting and monitoring – to assist the Area Council Secretary to plan and budget for project proposals.
- National Cooperative Day and participated in the 'Lukaotem Gud Sanma' festival.
- The Red Cross representative members meeting to elect executive members.
- Planning Division meetings of the Sanma Provincial Council – to provide input regarding environmental consents for development and to consider the activities to be included in the work plan.
- A workshop run by the Department of Forests in relation to CEPF's investment strategy in the Melanesian Islands Biodiversity Hotspots.
- Training regarding how to respond to an international emergency at Pekoa International Airport.
- Biosecurity Vanuatu training on fruit fly surveillance in the Pacific. This training provided guidance on identifying flies that damage gardens in Vanuatu as well as treatments that can be applied to stop the flies.
- Stakeholder meetings regarding planning, logistics, management and awareness of the Sarakata River clean-up.

3. CHALLENGES

The DEPC continues to be housed in the George Pompidou Building, away from the rest of the MCCA (located in Nambatu). This pre-Independence hospital converted into office space and largely used by the Ministry of Lands was condemned for use after the earthquake in 2004. Moving the DEPC to the MCCA ground is not only an issue of more effective administration and professional collaboration but also one of organisational justice. We should not be housing our officers in dangerous office quarters.

For a number of months in 2015 the DEPC was without a vehicle. While the Director General kindly donated the use of G800 to the DEPC, this small vehicle is not suitable for undertaking field work and the DEPC is reliant on the willingness of other departments to allow the DEPC to use their double cabins.

TC Pam occurred in early 2015 and caused a number of activities to be delayed or not implemented. The DEPC's participation in the Post Disaster Needs Assessment also highlighted the absence of some baseline information relating to aspects of Vanuatu's biodiversity.

The DEPC operational budget for 2015 was 1,864,107vt. The DEPC has been operating on a very small budget since its establishment as a unit. These budgeting arrangements continued when the DEPC became a department in 2010. It is impossible for the DEPC to implement all of the activities listed in the Business Plan and associated staff work plans with such a limited budget.

Staffing within the DEPC was also a challenge in 2015. In particular, acting arrangements were in place for the Director's position for all of 2015. Backfilling of positions including the Principal Environment Officer and the Senior Education and Information Officer were not progressed due to budget constraints. These human capacity issues placed increasing responsibility and an increased workload on the remaining DEPC staff.

2015 was really a challenging year for the Waste Management and Pollution Control Section. A key issue was staffing at both the DEPC and the local government authorities (Municipal and Provincial Councils). Waste management and pollution control is a very new topic for local government authorities. To ensure coordination is effective down to provincial and municipal levels, the DEPC has to prepare resource materials to disseminate information and raise awareness about waste management. Staffing levels within all of these organisations needs to be sufficient to ensure effective coordination from the DEPC. Lack of enough staff and budget was a challenge for the DEPC in implementing waste management and pollution control activities in 2015.

Waste management and pollution control is a huge issue for Vanuatu's environment. A lot of technical activities still need to be implemented to ensure the country meets its commitments and obligations under different MEAs, and also for the effective implementation of the Waste Management Act, the Pollution Control Act and the National Waste Management Strategy and Action Plans for 2011-2016. It is important that the government recognises the important needs for strengthening the work of the Waste Management and Pollution Control Section. This is by recruitment of staff from the national government level down to provincial and community levels. A national budget specifically for waste management and pollution control is essential to ensure government assistance down to communities is enhanced in order to protect the environment and the health, safety and livelihoods of the people.

Lack of staff is also an issue when considering the implementation of MEAs to which Vanuatu is a party. In relation to waste and pollution, Vanuatu has ratified a number of important MEAs but their implementation is limited by a lack of staff. It is important that more qualified staff are recruited for effective coordination of activities with government ministries and departments throughout Vanuatu.

Vanuatu has also yet to ratify two important conventions: the Basel Convention and the Rotterdam Convention. Ratification of these conventions will allow the Government of the Republic of Vanuatu to access additional funding opportunities to implement waste management activities at the national level.

The Basel convention is on the control of transboundary movements of hazardous wastes and their disposal. It is an international treaty that was designed to reduce the movements of hazardous wastes between nations, and specifically to prevent transfer of hazardous waste from developed to less developed countries (LDCs). It is important that Vanuatu government ratify this convention to ensure there is control of imported materials into the country such as second hand tyres and vehicles etc. as there are no disposal or treatment facilities here. Ratification of this convention will also allow Vanuatu to export hazardous waste materials which cannot be treated within Vanuatu, such as lead acid batteries, to other regional member countries for further recycling and treatment purposes.

On the other hand, the Rotterdam Convention (on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade) is a multilateral treaty to promote shared responsibilities in relation to importation of hazardous chemicals. It is important that Vanuatu has a consent procedure for imports for certain hazardous chemicals into the country and to ensure there is an up to date National Chemical Profile.

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National Disaster Management Office

Annual Report 2015

Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management.

(Courtesy of Ayong Zoe, Mataso Island (2015))

This document comprises of a collection of reports submitted by heads of different Divisions within the National Disaster Management Office and compiled by the Director of NDMO. These reports are against the 2014 Business Plans as required by PSC through the Director General's office of the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management.

REVIEW OF 2015 BY THE NDMO DIRECTOR

On Friday 13 March 2015, Vanuatu experienced one of its worst natural disasters in history. The magnitude and strength of Severe Tropical Cyclone Pam was so immense that meteorologists are now considering the addition of a sixth category level.

Since its passing, TC Pam has been both the biggest challenge and biggest operation of the NDMO. More than 80% of the total population, across all six provinces, was impacted. The resilience and dedication demonstrated by staff, working with the surge of international assistance to provide emergency shelter, health care, and distribute food and water across the country.

There is still much to do, particularly as El Nino compounds the effects felt by TC Pam. The NDMO is coordinating with Government stakeholders and VHT partners to respond to water shortages, food security concerns caused by the El Nino, and continued efforts to coordinate TC Pam and El Nino recovery efforts will remain a high priority well into 2016.

It is essential that lessons are learned from disasters, and systems with preparedness are improved for coming years. The NDMO, with support of the European Union, facilitated a Lessons Learned workshop in June 2015 to bring together representatives of Government, humanitarian organizations, private sector, NGOs, academic institutions, chiefs, community representatives, and people affected by the disaster and other stakeholders.

The objectives were to:

- Recognise achievements and discuss key challenges that face disaster response coordination
- Generate recommendations to improve current systems and response mechanisms
- Strengthen existing partnerships and develop new partnerships
- Shape the next chapter in humanitarian action to better meet humanitarian needs

Recommendations for improvements to the current national and sub-national level coordination system were identified, along with additional key resources. The NDMO, Government agencies and implementing partners have been working in coordination to implement priority recommendations.

In recognition of the lack of resources, a restructure of the NDMO was approved by the PSC for implementation in 2016. Work has commenced to enhance Provincial capacity to communicate and coordinate disasters at local level, including the construction of fully equipped Provincial Disaster Offices (PDOs) in each Province and appointing Provincial Disaster and Climate Change Officers (PDCCOs).

Developed with stakeholders, the Strategic Plan 2016-2020 will guide the NDMO over coming five years.

I am proud of the efforts by NDMO staff, line government and partners, and achievements of the NDMO in 2015, and we will continue to build a safer, secure and resilient Vanuatu in 2016.

Mr. Shadrack Welegtabit
Director, NDMO

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SECTION ONE - OVERVIEW

ACHIEVEMENTS OF THE NDMO

The NDMO is currently under the Ministry of Climate Change and Disaster Management and so far the following achievements had been undertaken:

- In 2015, it was not an easy year for National Disaster Management as more effort was put into responding to Severe Tropical Cyclone Pam (Category 5);
- National Disaster Management Office's 5 year strategic plan was drafted and endorsed by the Ministry to complement Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) national policy;
- Both Tafea and Torba disaster centres has successfully completed under the IRCCNH (Increasing Resilience on Climate Change and Natural Hazards) project funded by World Bank;
- Public Service Commission approved a revised NDMO structure to factor in the provincial disaster officers who are currently recruited and funded by projects;
- Coordination of Tropical Cyclone Pam response to early recovery with on-going support towards El Nino monitoring in partnership with other government sectors, Private and NGO's stakeholders;

Ongoing and 2016 Focus Activities

- Ensure that the NDMO performs its roles and responsibilities;
- Review of the PAA to reflect the work that the NDMO and partner agencies are doing in Vanuatu;
- Review the National Disaster Act (CAP 267);
- Review and develop Provincial and community disaster plans and other relevant documents;
- Continue to strengthen national, Provincial and Community disaster and climate change networks;
- Further decentralization of NDMO service to all provinces through recruitment of PDOs and completion of three permanent EOC centres and
- Strengthening the logistic facilities and wider stakeholder's training.

NATIONAL DISASTER MANAGEMENT OFFICE

The National Disaster Management Office (NDMO) is a Department within the Ministry of Climate Change Adaptation, Meteorology, Geo-hazards, Energy, Environment and National Disaster Management Office. Main function is to coordinate responses to emergency and disaster events and management the Disaster Risk Management framework.

Vision

The vision of the National Disaster Management Office is: "Ensuring safer, secure and resilient communities in Vanuatu through the government's decentralized programs and services."

Mission

The NDMO works to achieve its Vision by being:

'*The National emergencies and disasters coordinating agency to improve its coordination mechanism and building strong capability through establishment of robust partnership with other line emergency responders to safe live and reduce losses to properties of all citizens ;.*

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

- Effective coordination of responses to disasters;
- Strengthening disaster and climate change networks at National, Provincial and community level;
- Mainstreaming DRR and CCA programs and activities into other sector plans, policy and budget;
- Inform community and partners at all layers in hazards and risk for safer development planning program;
- Improve effective and reliable communication networks and linkages amongst all partners at the national, provincial and at community levels;
- Facilitate capacity building on DRM and CCA at all levels;
- Develop DRM & CCA policy;
- Review the National Disaster Act (Cap 267);
- Implement the NDMO Strategic Plan and
- Building strong inter-operability coordination system with all emergency response agencies.

Principles

The guiding principles of the NDMO are:

- **Coordination:** organizing and assisting people to work together using shared resources and capacities for DRM and CC;
- **Accountability:** maintain the integrity of the department by ensuring culturally acceptable provision of services for all;
- **Transparency:** Operating openly for others to see and to enable effective good relationships among our partners and increased participation in all aspects of the planning and implementation of activities;
- **Partnership:** Working with other responsible humanitarian actors including government private and civil society organizations;
- **Inclusiveness**: Encourage greater participation of all groupings in all aspects of interventions thus advocating for gender equity and equality;
- **Sustainability:** Making sure that program and activities continue into the future;
- **Equity:** Maintain the principle of neutrality and impartiality and upholding the dignity of all the people that we serve;
- **Mainstreaming:** Integrating of Disaster Risk Management Framework into all line government sectors ' policies and legislations as well as private sectors and decentralizing this into local government institutional arrangement and traditional governance systems.

OBJECTIVES

The NDMO aims to coordinate responses to emergencies and disasters to ease the impacts of both natural and man-made hazards throughout Vanuatu through nine (9) core objectives:

1. To improve and strengthen coordination of responses to emergencies and disasters at national and provincial levels;
2. To improve preparedness planning in disaster risk reduction and climate change adaption programs and activities
3. To improve communication networks and linkages at all levels;
4. To improve engagement between line agencies and VHT members at national, provincial and community levels;
5. To mainstream DRM and CCA arrangements across all government, civil society and private sector plans policies and budgets;

6. To conduct awareness and training programs and activities at national, provincial and community levels;
7. To promote and strengthen DRR and CC activities at all levels;
8. To improve monitoring, evaluation and learning processes;
9. To improve knowledge management systems on DRM and CC. '[6]

AREAS OF RESPONSIBILITY

The National Disaster Management Office is mandated by the Government of Vanuatu to;

- Coordinate responses to emergencies and disasters;
- Work in partnership with humanitarian partners and emergency services;
- Implement strategies and policies of the National Disaster Committee (NDC);
- Advise the NDC in relation to disasters;
- Ensure disaster aid is used for the purpose for which it was provided;
- Establish clear communication networks between government and non-government agencies at all levels, in all directions;
- Develop DRR and CCA education programs and organize training exercises for communities and
- Perform other duties under the National Disaster Act [CAP 267].

PROGRAMS, FUNCTIONS AND SECTORS SERVED

Programs

Fundamental primary core of the National Disaster Management office is Disaster Risk Management framework. Under the Disaster Risk Management (DRM) framework, there are two primary programs for NDMO to coordinate and implement in collaboration with other stakeholders. Disaster Risk Reduction program focus on reducing the impact of disasters through better physical and land use planning, good policy, robust governance system and legislation. Disaster management is another element that focuses on strengthening coordination for disaster, preparedness, response and recovery after major disasters. Disaster management builds upon effective disaster risk reduction programs, poor disaster risk reduction program will lead to fragile disaster management system.

Functions

Establishment and functions of National Disaster Management Office as follows:

(a) To implement the strategies and policies of the National Disaster Committee;

(b) To advise the Committee in relation to disasters;

(c) To ensure that aid for disasters is used for the purpose for which it was provided;

(d) To establish clear communication networks between government and nongovernment agencies at all levels;

(e) To develop disaster education programs for the community and to organize disaster training exercises.

[6] 2015 Business Plan ,NDMO 2016-2020 strategy plan

(f) To perform such other functions as are conferred on it by or under Act.

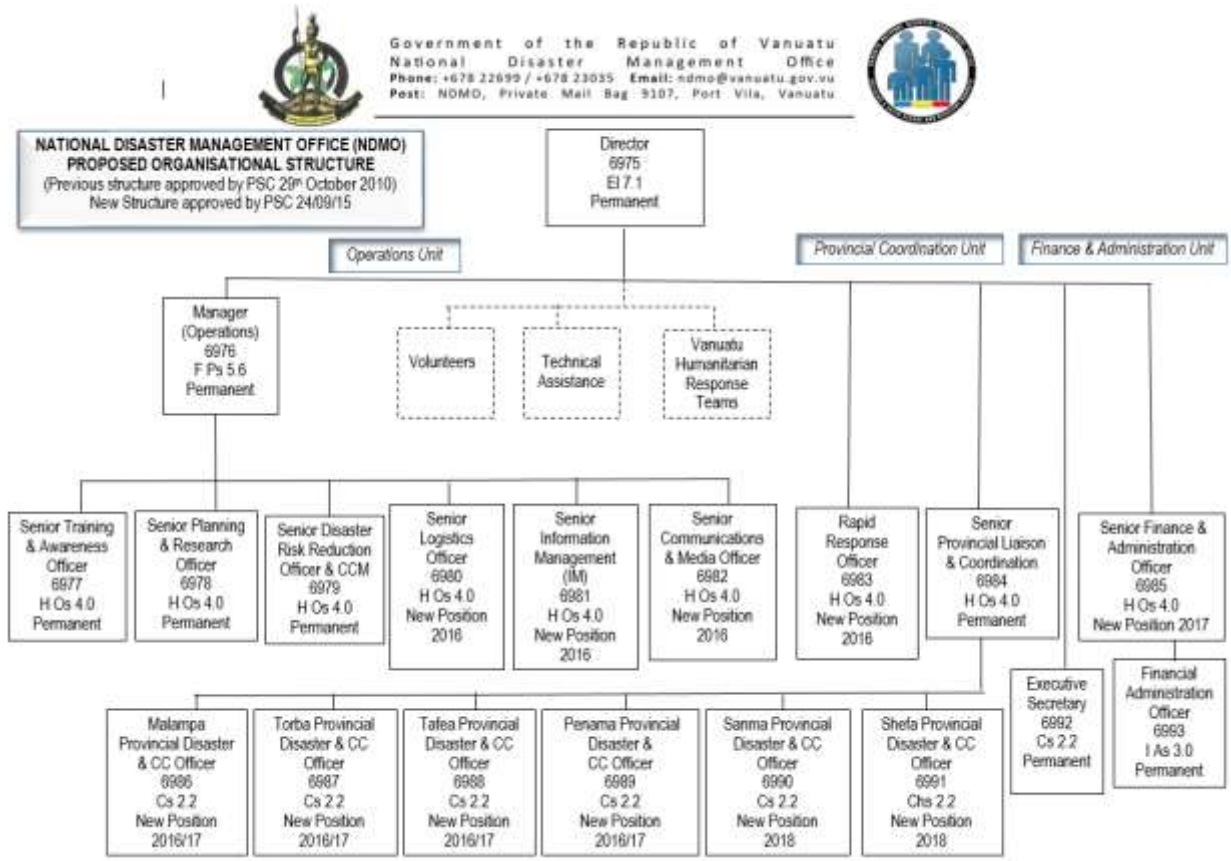
Sectors Served

The NDMO is a cross-sectorial organization, and works closely with:

- Government line Ministries and departments;
- Provincial Governments;
- VMF and VPF;
- Private sector;
- NGOs;
- CSOs;
- Women's and youth groups;
- International Disaster response organizations;
- Vanuatu Humanitarian Team;
- Regional organizations;
- Volunteer agencies;
- Donor Partners;
- Communities;
- Malvatumauri.

STRUCTURE AND STAFF

The newly revised NDMO structure is in the exhibit below.



STAFF

Currently, the National Disaster Management office is run by a total of 8 PSC permanent officers recruited under the Public Service Commission with the new structured of 19 recently approved by the PSC. The recruitment process under the new structure is yet to determined by the Department and the PSC Administration. For the

purpose of this report, our main focus is the existing PSC staff, NDMO project funded staff, Volunteers, Project Officers and Technical Advisors.

The following Permanent PSC staff;

1. Administration
2. Disaster Risk Reduction (DRR)
3. Provincial Liaison
4. Research and Planning
5. Operations
6. Training and Awareness

There are total of four project funded Provincial Disaster officer staff;

1. Tafea Provincial Disaster Officer
2. Malampa Provincial Disaster Officer
3. Sanma Provincial Disaster Officer
4. Torba Provincial Disaster Officer

The NDMO will be looking at Penama and Shefa Provincial Disaster Officers to be recruited next year 2016. National Disaster Management office has taking opportunity to tap into regional for surge capacity program through bilateral arrangement with main Donor countries in the region. Following are the volunteers, project coordinators and Technical Advisors providing capacity building and technical support.

1. Logistic support volunteer mobilised through AVID Australia;
2. Information and Management volunteer mobilised by NZ's Volunteer Service Abroad (VSA)
3. DRM Technical Advisor recruited by Australian Civilian Corps (ACC) DFAT program

Expenses Detail Report

Government of Vanuatu

For transactions between 1 January 2015 and 31 December 2015

Extracted on 02/03/16 15:23

Filters Applied to this Report	
Fund	2-Recurrent Fund
Ministry	M20-Ministry of Climate Change Adaptation, Geohazards, Meteorology and Energy
Dept	17-National Disaster Management Office
Cost Centre	
Activity	MGFA-National Disaster Management
Job Code	
Currency	Vatu
Book	Primary Book (vatu)

Account	Description	Actual	Commitment	Total	Budget	Under/(Over)
	Personnel Expenses					
8AAF	Family Allowance	192,096	-	192,096	382,720	190,624
8AAH	Housing Allowances	1,440,668	-	1,440,668	1,593,400	152,732
8AAP	Home Island Passage Allowances	-	-	-	1,098,560	1,098,560
8ASP	Provident Fund	467,942	-	467,942	516,627	48,685
8AWC	Contract Wages	43,200	-	43,200	-	(43,200)
8AWO	Overtime Wages	-	-	-	220,282	220,282
8AWP	Permanent Wages	11,505,720	-	11,505,720	12,312,720	807,000
PAYR	Payroll expenses	-	-	-	(2,426,716)	(2,426,716)
	Personnel Expenses	**13,649,626**	**-**	**13,649,626**	**13,697,593**	**47,967**
	Operating Expenses					

8CAB	Subsistence Allowances	1,270,000	-	1,270,000	500,000	(770,000)
8CFV	Vehicles Fuel	213,335	-	213,335	600,000	386,665
8CGR	Transport - Freight	-	-	-	150,000	150,000
8CIE	Equipment Hire	34,533	-	34,533	50,000	15,467
8CIF	Facilities Hire	-	-	-	100,000	100,000
8CIV	Vehicles Hire	528,081	-	528,081	150,000	(378,081)
8CJO	Office Cleaning	18,417	-	18,417	100,000	81,583
8CKD	Advertising - Communications	-	-	-	40,000	40,000
8CKI	Internet and Satellite Communications	29,123	-	29,123	-	(29,123)
8CKP	Postage - Communications	(12,800)	-	(12,800)	5,000	17,800
8CKR	Printing - Communications	54,122	-	54,122	350,000	295,878
8CKS	Stationery - Communications	552,530	-	552,530	520,000	(32,530)
8CKT	Telephone / Fax - Communications	296,041	-	296,041	550,000	253,959
8CMG	General - Materials	35,120	-	35,120	-	(35,120)
8COI	Incidentals	556,563	-	556,563	241,355	(315,208)
8COP	Official Entertainment	778,266	-	778,266	50,000	(728,266)
8COU	Uniforms	(11,693)	-	(11,693)	120,000	131,693
8CRB	Buildings Repairs & Maintenance	1,420,351	-	1,420,351	80,000	(1,340,351)
8CRE	Equipment Repairs & Maintenance	83,343	-	83,343	99,000	15,657
8CRV	Vehicles Repairs & Maintenance	307,129	-	307,129	550,000	242,871
8CSD	Distribution Supplies	12,444	-	12,444	-	(12,444)
8CTI	International Travel	336,080	-	336,080	-	(336,080)
8CTL	Local Travel	342,361	-	342,361	500,000	157,639
8CUE	Electricity Utilities	(714,862)	-	(714,862)	2,024,560	2,739,422
8CUW	Water Utilities	7,685	-	7,685	100,000	92,315
8CWL	Local Workshops	-	-	-	420,000	420,000
8CZV	Value Added Tax	596,383	-	596,383	-	(596,383)
8EEA	Equipment - Aditional General	319,111	-	319,111	-	(319,111)
8EEC	Equipment - Computer	122,306	-	122,306	-	(122,306)

8EEP	Equipment - Photocopiers	177,422	-	177,422	-	(177,422)
8EES	Equipment - Specialised	(121,081)	-	(121,081)	-	121,081
8EET	Equipment - Computer Software Purchases	212,001	-	212,001	-	(212,001)
8EFO	Furniture - Office Furniture	64,960	-	64,960	-	(64,960)
OVER	Overhead expenses	-	-	-	865,000	865,000
	Operating Expenses	**7,507,271**	**-**	**7,507,271**	**8,164,915**	**657,644**
	Total Expenditure	**21,156,897**	**-**	**21,156,897**	**21,862,508**	**705,611**

PROJECTS IRCCNH FINANCIAL REPORT

Expended at 31/12/2015					
Description	**Contract number**	**GEF**	**EU**	**GFDRR**	**Total**
Provincial Disaster Buildings	W1				
Provincial Disaster Buildings	W2			21,049	
IT equipment for 2 PDC	G06A				
Office equipment for 2 PDC	G07A				
NDMO DRM Program Coordinator	C15			3,261	3,261
Provincial Disaster Officer (in Sola)	C16			1,802	1,802
Provincial Disaster Officer (in Isangel)	C17			2,567	2,567
Legislation Review Specialist (TA)	C18				
GIS Support Specialist (TA)	C28	1,442		8,852	10,294
	TOTAL	**1,442**	**-**	**37,531**	**17,924**

MINISTRY AND POLICY FRAMEWORK

Policy Frameworks – International, Regional and National;

At the global level, the United Nations Office for Disaster Risk Reduction (UNISDR) Sendai Framework for Disaster Risk Management 2015–2030 seeks to prevent new and reduce existing disaster risks, and aims to achieve a substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of people, businesses, communities and countries over the next 15 years. The Sendai Framework carries forward from the UNISDR Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters. The four priorities for action under this framework are:

- Understanding disaster risk reduction or Disaster Risk management;
- Strengthening disaster risk governance to manage disaster risk management;
- Investing in disaster reduction for resilience; and
- Enhancing disaster preparedness for effective response, and to build back better in recovery, rehabilitation and reconstruction.

Regional:

At the regional level, the Secretariat of the Pacific Community (SPC) and the Secretariat of the Pacific Regional Environment Programme (SPREP) have jointly facilitated the development of a proposed Strategy for Climate and Disaster Resilient Development in the Pacific (SRDP) 2016, with an overall goal to strengthen the resilience of Pacific Island communities to the impact of slow and sudden onset natural hazards by developing more effective and integrated ways to address Climate Change and Disaster Risk Management within the context of sustainable development. The new strategy is proposed to replace the Pacific Regional Disaster Risk Management Framework for Action 2005–2016. The proposed SRDP identifies three goals: 1) strengthened integrated risk management to enhance climate and disaster resilience; 2) low carbon development; and 3) strengthened disaster preparedness, response and recovery.

National level:

In 2012, the government of Vanuatu established institutional arrangements for joint governance of climate change and disaster risk reduction through the NAB and a Climate Change and Disaster Risk Reduction Project Management Unit within the Vanuatu Meteorology and Geo-Hazards Department. This represents a proactive approach to integrating key governance structures at the national level.

As a further key step, the National Advisory Board (NAB) commenced a risk governance assessment in 2013 to strengthen systems and provide a way forward in implementing climate change and disaster risk reduction measures. The Risk Governance Assessment Report was endorsed in February 2014 and its recommendations are being implemented. Dedicated NAB Secretariat positions are being established under a key recommendation to support NAB oversight of climate change and disaster risk reduction initiatives across Vanuatu. Representation of a broad range of agencies, together with CSOs on the NAB, provides a framework for mainstreaming across sectors and inclusive planning and decision-making.

The Government of Vanuatu is currently preparing a 15-year National Sustainable Development Plan (NSDP) for endorsement. The NSDP is proposed to come into operation this year 2016, and will incorporate three pillars: economic, environment and social, underpinned by a focus on culture. Like its predecessor — the Priorities and Action Agenda 2006–2015 and its Plan Long Act Short 2013–2016 document — the new NSDP

identifies climate change and disaster risk reduction as key priorities for government. The policy is aligned with the directions of the NSDP.

Department level:

At Departmental level, all programs and activities to implement the overall Disaster Risk Management and Climate Change policy has been put into a 5 years strategy plan for 2016 to 2020 to address the core framework of the policy. Strategy plan is an instrumental tool to strengthen Vanuatu's diverse local governance systems that include provincial authorities, island and area councils and traditional chiefs and leaders at the village level. This is the primary focus for the Department complementing the Sendai Framework of action priority 1-2; strengthening disaster risk governance to manage disaster risk reduction and management as well as understanding disaster risk reduction and management.

Many programmes and projects are being undertaken by government and partner agencies to build resilience at the national down to local level. Aligning the programs and projects to reflect and complement the global frameworks, regional and national policies building on the existing capacities and linking with community aspirations and initiatives to achieve the grassroots objectives of sustainable development. Thus, reflecting the Sendai Framework of Action Priority 3-4; Investing in disaster reduction for resilience; and enhancing disaster preparedness for effective response to build back better in recovery, rehabilitation and reconstruction. At Departmental level, the Priorities have been further streamlined into the national polices, the new NDMO Strategic Plan (2016 0 2020) and annual Business Plan for 2016.

ABOUT THIS ANNUAL REPORT

This Report outlines major developments and initiatives carried out by the National Disaster Management Office in 2015.

Reporting Requirements

Business Planning is a requirement from the Public Service Commission for all institutions to provide on an annual basis. A National Disaster Management Plan is legislated by the government to manage and coordinate line departments and agencies in disaster and should be up-dated annually. The lack of a current Plan and other plans such as an annually updated Cyclone Response Plan is a serious deficit. The Department is also obliged to provide an Annual Report on all the Disaster Risk Management programs and activities implemented over the course of last year.

Reporting Processes

This document comprises of a collection of reports submitted by heads of different Divisions within the National Disaster Management Office and compiled by the Director Mr. Shadrack Welegtabit. These report against the 2015 Business Plans as required by PSC through the Director General's office of the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management.

SECTION TWO - PERFORMANCE 2015.

DEPARTMENT PERFORMANCE OVERVIEW

The National Disaster Management Office (NDMO) is a department within the Ministry of Climate Change , Meteorology Geo-Hazards department , Energy, Environment and Disaster Management (MCC).

The NDMO is the official government agency main role and its main role is to coordinate responses to emergencies and disasters. As such, eighty percent (80%) of the work of the NDMO is dedicated to the

coordination of responses to emergencies and disasters. The additional twenty percent (20%) of the NDMOs efforts are directed toward implementing disaster risk reduction and climate change adaption programs and activities. In 2015, National Disaster Management has been fully focussed on Tropical Cyclone Pam response, where it was obvious that the situation was very challenging as it completely depleted all national and local resources.

Department Performance	
Key Area	**Key Results and Highlights**
Coordinating Disaster Response;	- National disaster management office has tested it's coordination system to the limit during Tropical Cyclone Pam early 13th March 2015; - The department has contributed significantly to assisting the TC PAM affected population with the total number of 188,000 people in four province (Penama, Malampa, Shefa &Tafea).
Supporting the coordination of early recovery programs ;	- National Disaster Management Office continuously coordinating the inter-agency meeting to help them plan for both TC PAM Early recovery and preparedness for next cyclone and Current El Nino impact ; - Work with clusters lead agency to assist community to build back better ; for instance NDMO was very instrumental for safer and stronger housing program in rural areas with Public Works Department (PWD) ; - NDMO work with WASH program to speed up the implementation of WASH program in most affected areas; - NDMO working together with the Food Security & Agriculture Cluster to address food security in the country especially TC PAM and El Nino affected areas. - Help the individual, communities and privates to clear the Customs import duty to assist with recovery and reconstruction.
Decentralizing NDMO function to provinces;	- Under IRCCNH project NDMO last year 2015 was fortunate enough to build two permanent Provincial Disaster Centres for Tafea and Torba province.; - Recruiting staff to manage the Offices under project funding. - The PRRP (UNDP) also recruited two Provincial Disaster Officers (PDOs) for Malampa and Sanma provinces.
Assisting and promoting Disaster Risk Management through Mainstreaming approach ;	- In 2015, NDMO despite interruption from TC Pam Operation, there was continuous participation in mainstreaming of DRM into Agriculture, Livestock, and National Environmental Policy and involve in negotiation dialogue for Global Sustainable Development Plan held in Port Vila 2015 Melanesian hotel.
Support the implementation of Disaster Risk Reduction and Climate Change projects;	- NDMO –continue to attend and presented for IRCCNH project review meeting with other related projects ; - Conduct consultation workshop with other line departments in Port Vila and Luganville Santo on Multi-Hazard Risk Mapping with the help of BECCA Funded under MDRR project.

Working with Stake holders and development partners to address DRM in the country;	- Continuous coordination role with donors ,UN agencies, regional Intergovernmental organizations and Civil Society Organisations (CSOs) to facilitate DRM training ; - Generators to assist private tourism companies.
Strengthening Disaster Risk Management arrangements.	- Restructure the NDMO ; - Working with major telecommunication companies and OGCIO to design a communication system and strategy for early warning; - Completed a 5 year Strategic Plan for NDMO.

ACHIEVEMENTS COMMENT

The National Disaster Management Office has made a great improvement in the last few years. 2015 marked five years of achievement since the establishment of the Department in 2011. The Department has shown significant strength and capability growth through consistent development happening within the Department. Below is the list of some major achievements made by the Department;

- TC Pam Response ;
- El Nino response;
- Strengthening of Clusters and VHT;
- NDMO Strategic Plan (2016 – 2020) drafted and approved consultatively;
- Strong MBC presentation to secure additional resources;
- On-going harmonization of donor support, including TAs and volunteers;
- Restructure approved;
- Completion of two permanent Tafea and Torba Provincial Disaster offices ;
- Fully participate in the Mainstreaming Disaster Risk Reduction program ;
- Increasing Resilient of Climate Change and Natural Hazard (IRCCNH) multilateral project manage by World Bank;
- EDF ACP-EU funding secured.

CHALLENGES COMMENT

In 2015, Tropical Cyclone Pam highlighted some of the main gaps within the National Disaster Management Office's current structure. With only eight permanent staff currently occupying positions within National Disaster Management Office, it proved how difficult it is to manage high magnitude disasters.

However, the Office has taken some proactive approached to address the gap through re-structuring. The major challenge is the actual recruitment for new positions to fill the new structure. The recruitment is not happening due to financial constraints the Department is going through at this stage. Another major issue is the annual operational budget for the Department is not sufficient for all programs to roll-out.

For the Department to effectively deliver services throughout the country, it needs some capital to accelerate the implementation of all programs. Most of the Disaster Risk Reduction preparedness programs could not be implemented because there is not sufficient funding to implement the programs. The Department is affective in Disaster Management which is responding to natural disasters through humanitarian assistance but little emphasis is placed on Disaster Risk Reduction or preparedness measures.

STAFFING

The following tables provide information about staffing of the National Disaster Management office Division in 2015.

Staffing	Details
Numbers	We have total of eight PSC permanent staff under the old structure ; • Director • Operation Manager • Administration Officer • Clerical & cleaner • Senior Disaster Risk Reduction Officer • Senior Planning and research Officer • Senior Training and Awareness Officer • Senior Provincial Liaison Officer There are four Provincial Disaster Officers funded under the IRCCNH (World Bank) in Tafea and Torba and PRRP (UNDP) projects, in Malampa and Sanma provinces. There are additional support TA under projects and other form of contract ; • 1 Person - EDF10 ACP-EU Project Coordinator • 1 DFAT funded technical Advisor • Logistic Support volunteer recruit by AVID • Information and Management volunteer recruit by NZ's Volunteer Service Abroad (VSA)
Performance Appraisals Conducted	Annual for [8[staff
Study Leave:	[Nil]
Secondment:	[Nil]
Annual Administration Leave:	Total number of staff taking Administration Leave [X]
Other Leave/Resignation/Retirement:	None

PERFORMANCE BY FOCAL AREAS

DIRECTORATE

Focal Area Purpose and Key Outcomes

The Directorate contributes to the Department's purpose by managing and operating the NDMO as stipulated in the National Disaster Act. The key strategic outcomes for the Directorate are:

- Managing and operating the NDMO; and
- Coordinating responses to emergencies and disaster events.

2015 Priority Activities and Results

Activity and Performance Indicators required by the 2015 Business Plan and results are summarized in the table below and commentary provided in the following text.

Directorate (Business Plan)			
Activity	**Performance Indicators**	**Result ✓✖**	**Result Summary**
Prepare Annual Budget	Budget passed by MBC	✓	Going to Parliament session in 2016
Implement Strategies of NDC	Secretariat of the NDC	✓	TC PAM and other events
Manage and operate the NDMO	Done throughout 2015	✓	Staff and resources were used until end of year
Ensure that DG and Minister are fully aware of all situation	Done with assistance of staff, line Government and partner agencies	✓	Providing briefing papers to DG and meeting with Minister as requested
Facilitate and strengthen linkages with line departments and partners	Vanuatu Humanitarian Team network coordinator is working with the NDMO	✓	VHT network had been established and functioning
Ensure that the DG and Minister are well advice	Provide briefing and regular meetings	✓	Done regularly in 2015
Attend and participate in meeting	Attend meetings at national level	✓	Attend meeting at regional and international levels such as in Sendai Japan

Directorate (Additional Activities)			
Activity	**Performance Indicators**	**Result ✓✖**	**Result Summary**
Attend other duties as directed by the DG and Minister	This was well noted during TC Pam	✓	TC Pam responses to the needs of affected people.

OPERATIONS

Focal Area Purpose and Key Outcomes

The Operations Unit contributes to the Department's purpose by assisting the Director NDMO with administration matters and managing operations during emergencies and other DRM related activities.

The key strategic outcomes for Operations are:

- Supervising and managing the staff under the operation;
- Monitoring & evaluating the staff performance ;
- Coordinating and managing operations during Emergencies;
- Representing NDMO at high level meetings both at regional and national level.

2015 Priority Activities and Results

Activity and Performance Indicators required by the 2015 Business Plan and results are summarized in the table below and commentary provided in the following text.

Operation Manager Business Plan			
Activity	**Performance Indicators**	**Result** ✓✖	**Result Summary**
1.Coordinate the compiling of quarterly reports from all staff;	Quarterly report compiled and submitted	✖	Quarterly Report was not properly done due to demands of TC Pam response operations.
2. Coordinate the compiling of annual appraisal reports from all staff;	Annual Staff appraisal report compile	✓	Successfully done
3. Coordinate the review of the annual business plan and drafting of 2016 BusinessPplan;	2015 Business Plan reviewed	✓	In progress
4. Assist to review the staff structural organization for NDMO;	Structured reviewed	✓	Successfully carried out
5. Coordinate operation during emergency and disasters;	Lead or coordinated the operation during TC Pam	✓	Done
6. Regular checking of all EOC equipment;	Number of tests taken per months	✓	Need more regular checking with support of VMGD ICT Unit and better security. Volunteers and visitors have unauthorized access.
7. Coordinate the monthly staff management meeting;	Meeting held with minutes produces	✖	Rarely held, no Minutes leads to lack of coordination
8. Coordinate the Logistic Cluster.	Number of meeting held per month	✓	Many meetings held because of Cyclone Pam and El Nino

Additional Activities from 2015			
Activity	**Performance Indicators**	**Result ✓✖**	**Result Summary**
1. Attend regional workshops	Attended KOICA workshop on behalf of Vanuatu government -Korea	✓	Done
2. Attend short-term training	Attended the warehouses and evacuation management training and use of Risk mapping tools training –Port Vila	✓	Done
3. Attend policy, international framework ,Convention and legislative review for other sectors	Attended the review of Global sustainable development goals consultations meeting Attended Paris –COP petition consultation for Vanuatu Attended the livestock policy consultation Attended Environment policy review consultation	✓ ✓ ✓	Done
4. Chair inter-cluster meeting	Assisting Director in Chairing the cluster meetings during TC Pam operation	✓	
5. Attend other cluster meeting	Shelter ,logistic and evacuation cluster meeting outside from inter-cluster meeting	✓	Done

RESEARCH AND PLANNING

Focal Area Purpose and Key Outcomes

Research and Planning contributes to the Department's purpose by coordinating and providing support to all government stakeholders, private sectors and other humanitarian partners to develop Disaster Risk Management specific natural disasters and man-made disasters response plans. This also contributes significantly to coordination during emergency and disaster response.

The key strategic outcomes for Research and Planning are:

- Reliable data available and updated to utilise during operations;
- Optimum resource utilisation;
- Plans distributed and use by all stakeholders;
- Plans used as guideline for development and responding to earthquake impact;
- Review all plans made to all stakeholders;
- Contingency developed and implement by stakeholders;
- Make sure are resilient against volcanic impact;
- Updated and accurate logistics data from all provinces;
- Increase effectiveness and timely response from public to Tsunami Warning;
- Community has an adequate capacity to effectively cope with CC and Disaster impact;
- Provincial DRM plan is used by PDC to address both DRR and DM implementation;
- PDC roles and responsibilities during emergencies clearly define;
- Increased accountability and efficiency during disaster response and
- Clarity on inter-operability and the relationship between each cluster.

2015 Priority Activities and Results

Activity and Performance Indicators required by the 2013 Business Plan and results are summarized in the table below and commentary provided in the following text.

Research and Planning (Business Plan)			
Activity	**Performance Indicators**	**Result ✓✗**	**Result Summary**
Community profiling (8 to be done next year, 2/quarter)	Number of Training provided to different communities Community profiling produce	×	Move to Year 2016 work plan
Develop Earthquake National Support Plan	Plan developed and approve by the minister responsible	×	Move to Year 2016 work plan
Review Tsunami National Support Plan	Plan review and approve by Minister responsible	×	Awaiting MDRR project funding
Review the Cyclone support plan 2015 version	Plan review	×	Not Done
Volcanic Evacuation Contingency Plan	Plan developed and approve by the Provincial and Minister responsible	×	Priority shift to TC pam operation and funding required to carry-out this activity
Set up logistics baseline data	Data collected and analyst	✓	Commenced with the help of logistics volunteer
Support the implementation of tsunami Early Warning System	Quarterly report produce	✓	Ongoing until end of this year 2016
Develop Provincial Disaster Committee DRM plan for Torba and Tafea	Numbers of community covered by the projects	×	Priority shift to TC Pam operations. Move to this year 2016 work plan
Involvement in community resilience and coping strategies (UNDP Project) as NDMO Rep.	Number of DRM plans developed in each province and approved by the council	×	Priority shift to TC pam operation Move to this year 2016 work plan
Support and assist the PDCs develop their SOP's	Number of SOPs developed in all provinces and approve by SG	×	Priority shift to TC pam operation Move to this year 2016 work plan
Other related activities in the revised Job Description.	Incorporated into the 2016 Annual Business Plan	×	This activity will be done in Year 2016

Research and Planning (Additional Activities)			
Activity	**Performance Indicators**	**Result ✓✖**	**Result Summary**
1)Assist with Planning and logistics during TC Pam	• Planning and logistic well-coordinated	✓	Most time and effort committed toward TC Pam operation.

AWARENESS AND TRAINING

Focal Area Purpose and Key Outcomes

Awareness and Training contributes to the Department's purpose by providing and coordinating different Disaster Risk Management (DRM) training and coordinated public awareness on DRM. The officer performs other multiple duties outside his major roles during major emergency response.

The key strategic outcomes for Awareness and Training are:

- Fully engaged with community awareness during TC Pam;
- The Vanuatu broadcasting and television corporation operational 24/7 during TC Pam;
- Community received proper and timely warning during TC Pam and
- Relief items coordinated to affected communities

2015 Priority Activities and Results

Activity and Performance Indicators required by the 2013 Business Plan and results are summarized in the table below and commentary provided in the following text.

Awareness and Training (Business Plan)			
Activity	**Performance Indicators**	**Result ✓✖**	**Result Summary**
Undertake awareness and training on DRM activities at the National and provincial level;	Number of awareness conducted	✓	0ngoing activity
Conducting Simulation Exercise (SIMEX) & training in partnership with PDO to PDCCC s and CDCCCs;	Number of simulation exercise conducted and reported ; Report submitted to Operations Manager and Director ;	✖	Defer to second quarter 2016 - This activity need both financial and commitment which did happen because of TC Pam operation
Conduct simulation exercise in Tafea and Torba;	Standardize simulation exercise package developed ; Reports on progress Tool endorse and approved by NDMO Tool uploaded into the NAB Portal for wider circulation and application	✖	Defer to second quarter 2016

Develop advocacy campaign through posters ,leaflets, T-Shirts, stickers and bill boards;	Number of IEC materials developed	✓	In progress
Conduct Emergency simulation training to NDMO staff, PDCs, Area Council Secretaries;	Emergency simulation training package developed ; The endorsed and validated by NDMO; Training and monitoring report	✗	Defer to first quarter 2016
Train the provincial government agencies how to monitor and advice on DRM program & activities at the provincial level;	Training manual completed and accredited by VNTC;	✗	Defer to second quarter 2016
Develop a National DRM training Manual;	Manual develop	✗	Defer to second quarter
Conduct TOT Simulation training to PDC ,area Council Secretaries ,PEO,ZCA;	Number of training provided ; Report submitted to Operation and Director on the outcome of the training ;	✗	Defer to second Quarter
Conduct Sphere Training at the National and provincial level;	Number of training provided ; Report submitted to Operation and Director on the outcome of the training ;	✗	Defer to second Quarter 2016
Monitor and evaluate the training program provided;	Number of communities assess, monitor and evaluate ;	✗	Last Quarter
Other activities from the Job descriptions to be incorporated into future work plan.	Other activities incorporated into 2016 Annual business plan.	✗	This will be carried out by first quarter 2016

Awareness and Training (Additional Activities)			
Activity	**Performance Indicators**	**Result ✓✗**	**Result Summary**
Assist to Coordinate the response during TC Pam	TC well-coordinated	✓	This is an additional duty perform only during emergencies

PROVINCIAL LIAISON

Focal Area Purpose and Key Outcomes;

- The Senior Provincial Liaison Officer contributes to the Department's purpose by Strengthen Provincial and community Networks for DRM and CC including improving communication Network and linkages at the provincial level down to community level

- Awareness and Training on DRM and CC at Provincial and Area Council level are also provided together with Stake holders and development partners.
- Improving partnership arrangement with Stake holders and development partners

The key strategic outcomes for the senior Provincial liaison Officer are;

1. Two Trainings has been conducted on Ambae in February 2015 and setting up 2 CDCCC from Wincalado area North East Ambae Area council with a total of 50 participants attending the training;

2. Training was also conducted on Pentecost in February 2015 with a total of 35 participants attending the training;

3. Training was conducted on Maewo in March 2015 with a total of 36 participants attending the training;

4. TC PAM response was activated in March – July 2015;

5. Consultation meeting was conducted with Communities from three different islands namely Tanna, Malekula and Ambrym around July to August 2015. The whole purpose of the consultation is to find ways how to improve communication and set up a communication mechanism to facilitate the complaint and feedback from communities and provide response to their feedback through active channels they choose themselves. It's more effective. A total of 300 participants from three islands attended the consultation meeting.

6. Training at Epau August 24-27 2015 with a total of 50 participants attends the training.

7. Simulation Training was also conducted on south east Malekula with 8 communities. At the end of the week, the CDCCC were able to test their Response Plan in the Simulation Exercise that involved the participation of the whole community. A total of over 8oo people from the 8 communities participated in the Simulation Exercise and training to test the community response plan during a cyclone.

Priority Activities and Results

Activity and Performance Indicators required by the 2013 Business Plan and results are summarized in the table below and commentary provided in the following text.

Senior Provincial Liaison Business Plan			
Activity	**Performance Indicators**	**Result ✓✖**	**Result Summary**
1) Coordinate the setting up of Provincial Disaster Committees	• Number of Provincial Disaster Committee set up • Number of Province Covered	✓	6 provincial Disaster committee were already set up and functioning (Tafea, Torba, Penama, Sanma, Malampa & Shefa)
2) Facilitated the establishment of the Provincial Disaster Offices through projects	• Number of offices established in each provinces	✓	Two permanent offices will be established in Tafea and Torba province

3) Assist PDO's to develop Provincial Disaster Risk Management plan	• Number of documented Disaster Risk Management Plan completed • Number of province covered	✓	Currently in the draft phase, needs to be finalize
4) Establish good communication links at national, provincial and community levels	• Number of Training sessions and consultations held with relevant agencies at national ,provincial to community level • Number of provinces covered	✓	Assisted the Torba and Malampa provinces to set up working groups to collect feedback from the community and NDMO to get response and channel that back to the community through same channel through the CWC working group. Functioning
5) Support provincial stakeholders to review their sectors	• Number of review plans completed	✓	Sending in Sitrep every two weeks to monitor the El Nino and assist the IM working group to produce national Sitrep
6) Assist the PDO's to Set up the Area Council Disaster Committees	• Number of provinces and islands covered	✓	Shefa 5 area council, Tafea 8 Area council Malampa 3 Area council Sanma 3 Area council Torba 4 area council
7) Assist the Setting up of Community Disaster Committees with Humanitarian partners	• Number of CDCs established in each province and islands	✓	Malampa 9 CDCCCs established in 2015 Shefa 7 CDCCCs established in 2015
8) Organise mapping exercise meeting for PGLAs	• Report compile and distribute to logistic cluster	✓	6 provincial LCA complete
9) Update CDCs contact list	• List updated and share with stakeholders	✓	Copy of registration forms

DISASTER RISK REDUCTION

Focal Area Purpose and Key Outcomes

Disaster Risk Reduction contributes to the Department's purpose by coordinating and assisting government, private and Civil society to mainstream and streamline disaster risk reduction into their work plan ,polices and legislations ; Working in collaboration with all stakeholders and Disaster Risk Reduction implementing partners.

The key strategic outcomes for Disaster Risk Reduction are:

- The DTM training took place at the National Emergency Operation Centre on the 4 to 5 August 2015. A Displacement Tracking Matrix was one of the first kind to be introduced after TC Pam. The questions raised were mostly on the location and when the event took place, including the

disaggregated data. The participants come from different Ministries and Departments.(See Annex 1 for Participant List).

- Organisation of DTM Assessment. June and July were spent planning, budget development, identification of numerators, applying for Imprest and scheduling of training and flights.

- DTM Assessment completed (September) – Ensuring all numerators had packs and made flights. I also spent one week carrying out assessment in Maewo with compiling reports from Port Vila and phone interviews for rural Efate, Mosso, and Lelepa.

- Excel Data completed (September) – Worked with casual data entry person to ensure all forms are completed in the excel spreadsheet.

2015 Priority Activities and Results

Activity and Performance Indicators required by the 2015 Business Plan and results are summarized in the table below and commentary provided in the following text.

(Senior Disaster Risk Reduction) (Business Plan)			
Activity	**Performance Indicators**	**Result ✓✘**	**Result Summary**
Coordinate the documentation of Traditional knowledge and practices on coping with Natural hazards	• Number of Documentation on traditional knowledge & practices	**X**	NDMO did not have funding for this activity, Meteo has secured funding from the Bureau of Meteorology in Australia to support this activity
Document traditional food preservation method for every island	• Numbers of islands covered and traditional preservation documented	X	No funding
Work with NGOs to harmonize the DRR terminology and messaging across all levels	• Number of trainings and consultations conducted	✓	CBDRR Working Group meets monthly to create documents/templates to standardize information and awareness, links to the NAB endorsement process
Standard DRM package developed, endorsed by NDMO and NAB	• DRM & DRR training manual Endorse	✓	NDMO and Save the children together with CBDRR working group had their first workshop on November 17 2015 to collect all the materials that have been developed by Working Group & created a DRM package. The process has been delayed because of the Cyclone.

			However we hope to complete by July 2016
Selected three islands to do DRR activities & monitor NGOs work on CEDs setting	• Regular visits and establishment of committees to oversee DRR activities on the islands	X	No Funding
Coordinates DRR activities among partners	• Numbers of partners implementing DRR programs across the country	✓	CBDRR working group Supporting work with Provincial officers Collaboration with NGOs
Develop Brochures for Hazard Key Messages	• Number of brochures develop	✓	The Hazard Key Messages have been developed and been translated into three language but no funding for printing
Develop Excel database for traditional Knowledge information Storage.	• Template develop and data collected	x	No funding
Develop Excel Data Base for Community Profile Information	• Excel Data Base is develop for community profile	✓	In progress with the support from OCHA and the Information volunteer
Create Google map and locate the CDCs	• Data convert to information and upload to Google earth	✓	Three consultations have been done with partner to find ways to create the Google map
Conduct DRM TOT training to partners at all Level	• List of TOT training on DRM Manual at the National Level	X	The activity has not been carried out due to cyclone Pam
Develop PDC Disaster Plan for Torba and Tafea Province	• Number of NDMO partners involve in the process	X	Not complete
Contact Simulation TOT at all level (in the province Torba and Tafea)	• Conduct training on the DRM & DRR Module	X	The activity has not been carried out due to Cyclone Pam
Provide ongoing support to Clusters	• Number of NDMO Partners attend the training	X	The activity has not been carried out due to Cyclone Pam
Assessment form review and training	• Assessment form is Finalized and Endorse	✓	The assessment has been review and ready for endorsement by Director
	Other Responsibilities		
Collecting and Analyzing information for Reporting	• Number of Reports Submit to NDC for approval	✓	Reports have been submitted to NDC to advise the Minister on

			stage of emergency or type of assistance
Liaise with National and International Partners arriving to Assist during Pam	• National and International Partners understand the process and context of Vanuatu	✓	National and International organisations work more closely under the leadership of Vanuatu government.
Coordinates the Evacuation Centre working group with the support from IOM	• Number of Meetings has held during the Period of March to August 2015	✓	EC working group has been working really hard to make sure everyone living in EC gets enough to drink/eat.
Support the Urban and Peri-Urban Distribution Plan	• Population data collected and shared	✓	Port Vila distribution went well according to the data that has been collected
Attend food distribution in Maewo	• Boarding schools and health centres has enough food	✓	All Boarding schools and health centres received enough food to feed the students & patients
Identification of Members of Evacuation Centre (EC) core committee **A. Comm.EC sélections** **- B. Comm.EC Management**	• Members identify and selected	✓	The Working Group was established and functioning
Organize Core workshop to finalize draft EC Guidelines Selection and Management	• EC guidelines and Management guide is developed and Standardized	✓	Extra duty related to TC Pam operations
Assist in Workshop Facilitation	• Number of workshops and training has been carried out	✓	Extra duty related to TC Pam operation
Support Endorsement Process	• Liaise with NDMO Director for the Endorsement of EC guidelines	✓	Extra duty related to TC Pam operation
Follow up with data entry	• DTM data entry completed	✓	Extra duty related to TC Pam operation
Carried out DTM assessment in Maewo	• Assessment form completed	✓	Extra duty related to TC Pam operation
Scan the Assessments form and Maps and send them to IOM	• Number of Assessment form and maps scan and send to IOM	✓	Extra duty related to TC Pam operation
Update the DTM tracking Matrix daily	• Area secretaries are contact every two weeks to track the Displacement people	✓	Extra duty related to TC Pam operation

LOGISTICS

Focal Area Purpose and Key Outcomes

Logistics contributes to the Department by coordinating logistic in emergency during major operations.

The key strategic outcomes for logistics are:

- Logistic Capacity Assessment is undertaken in all provinces
- Enhance better coordination and inter-operability between private, military and external logistic Partners during major emergencies.

Priority Activities and Results

Activity and Performance Indicators required by the 2015 Business Plan and results are summarized in the table below and commentary provided in the following text.

Logistic (Business Plan)			
Activity	**Performance Indicators**	**Result ✓✖**	**Result Summary**
Coordinate logistic in emergency	• Logistic cluster operational during emergencies; • Interoperability between private, military and civilian.	✓	Logistics coordination during TC Pam was under Logistic Officer control.
Manage dispatch of relief items	• Tonnage of Relief items reaching the target Population; • Number of relief quantities in stock and dispatch	✓	All relief supplies dispatched to all affected population during TC Pam was managed by logistic team in collaboration with WFP. Approximately 1000-3000 Metric tonnes of relief items reaching Vanuatu during TC pam and it's still ongoing
Manage the warehouse during emergencies	• Number of warehouse manages during emergency.	✓	Four temporary warehouses during TC Pam were managed and controlled by Logistic Team.
Managing the imported relief items and facilitating the custom clearance	• Number of imported relief items received and stored	x	Over 100 containers and Air cargos handle during TC PAM All containers will be cleared and distributed early 2016
Conduct Logistics Capacity Assessment	• Logistics capacity Assessment completed	x	The LCA was commenced utilising the Logistics Cluster, and will be completed early 2016
Conduct logistics lesson learnt for TC Pam	• Workshop conducted with relevant stakeholders	✓	Lessons Learnt Workshop led by WFP and report issued

	• Report issued with findings and recommendations		
Begin implementing lessons learnt from TC Pam	• Projects identified • Concept plans initiated	✓	Recruitment of a dedicated Logistics Officer approved and Terms of Reference written. Identification of a warehouse site commenced. Logistics Cluster re-established as a general cluster to assist with lessons learnt projects.

ADMINISTRATION

Focal Area Purpose and Key Outcomes

Vanuatu Humanitarian Team contributes to the Department's purpose by acting as a coordinating agency between the NDMO and partner members

The key strategic outcomes for Communication are:

- The VHT is a network with the coordinator sitting within the NDMO;
- Main coordinating agency between the NDMO (Government) and partner members (NGOs, UN agencies and the Red Cross)

Priority Activities and Results

Activity and Performance Indicators required by the 2015 Business Plan and results are summarized in the table below and commentary provided in the following text.

Vanuatu Humanitarian Team (Business Plan)			
Activity	**Performance Indicators**	**Result ✓✖**	**Result Summary**
Assist to train PDC in all Provinces	PDCs are trained in all six provinces	✓	Done
Train PDC and CDCCC to Conduct simulation exercise with PDC	PDCs and CDCCCs are trained	✖	Busy with response to TC Pam
Develop PDC DRM plan for Torba and Tafea	DRM plans for Torba and Tafea are developed	✖	Response to TC Pam
Provide ongoing support to clusters	Improve clusters capacity to response to events	✓	Done
Support the development of PDC SOP	Development of PDC SOPs	✖	Response to TC Pam

Conduct DRM training for PDOs	PDOs get DRM training	✖	Response to TC Pam
Conduct Emergency simex training	NDMO staff get emergency simex training	✖	Response to TC Pam
Develop standard DRM package	Standard DRM package developed	✖	To be done in 2016
Develop specific disaster support plan	Specific disaster support plan develop	✖	To be done in 2016

Vanuatu Humanitarian Team (Additional Activities)			
Activity	**Performance Indicators**	**Result** ✓✖	**Result Summary**
VHT monthly meeting	Weekly coordination meetings	✓	Done

CLERICAL AND CLEANER

Focal Area Purpose and Key Outcomes

Administration contributes to the Department's purpose by ensuring that phones and people are attended to with filing and official mails.

The key strategic outcomes for Communication are:

- Attend to in-coming and out-going phones and mails
- Do office cleaning and filing

Priority Activities and Results

Activity and Performance Indicators required by the 2015 Business Plan and results are summarized in the table below and commentary provided in the following text.

Administration (Business Plan)			
Activity	**Performance Indicators**	**Result** ✓✖	**Result Summary**
Attend in-coming and out- going phone calls	All calls are attended	✓	Done
Clean Office	Office is regularly cleaned	✓	Done
Office filing	Office documents are filed	✓	Done
Do out-going mails	Regular mail runs	✓	Done

Administration (Additional Activities)			
Activity	**Performance Indicators**	**Result**	**Result Summary**

		✓✖	
Attend other duties as requested by other staff and the Director	Done	✓	It was a busy year 2015.

INTERNATIONAL ORGANIZATION OF MIGRATION (IOM)

Focal Area Purpose and Key Outcomes

The key strategic outcomes for IOM are: Supporting NDMO in the area of CCCM and Evacuation as well as coordination and operational support in case of emergency

2:12.2. PRIORITY ACTIVITIES AND RESULTS

Activity and Performance Indicators required by the 2015 Business Plan and results are summarized in the table below and commentary provided in the following text.

IOM(International Organization of Migration)(IOM)			
Activity	**Performance Indicators**	**Result ✓✖**	**Result Summary**
Support NDMO in Emergency Response and Managing the Displacement Cycle	Displacement Tracking Matrix in Evacuation Center following cycle PAM	✓	Achieved and report produced
	Displacement Tracking Matrix (DTM) in all TC PAM affected Provinces	✓	Achieved and report produced
	Shelter Assistance and technical support to TC PAM affected population with Shelter / NFI and Building back Better campaign	✓	Emergency phase is over and activities continue with the purpose of strengthening resilience of NiVanuatu on safer traditional construction techniques. More than 16,000people assisted
Preparedness and DRR	Evacuation Center Guidelines (Selection and Assessment of Evacuation Center)	✓	Validation workshop on February 2016 and final draft circulated to partners.
	Evacuation Center Guidelines (Management of EC)	ongoing	A dedicated IOM staffer deployed to NDMO to support the preparation of the Guidelines
	Design and certification of Multipurpose community building (MPCB) to be used as rainwater catchment shelter and evacuation center	✓	Completed. Design and BoQ available to all partners. Design certified by NDMO and MIPU
	Construction of a pilot MPCB in Sea Side Tonga	✓	Completed. Inauguration date TBD

	Joint Mass Evacuation in Natural Disaster (MEND) Mission being planned with IOM/NDMO and UNDAC focusing on Gaua, Ambryn and Tanna	✓	Mission outline approved by Geneva and mission scheduled for the first 2 weeks of June 2016
Strengthen capacity of NDMO	Training of NDMO officer and PDO in Displacement Tracking Matrix (DTM) and Camp Coordination & Camp Management / Evacuation	✓	Training in Vanuatu, Training in PNG with Provincial Disaster Officers
	Establishment of a dedicated CCCM Unit within the NDMO, including technical and operational support	✓	CCCM Unit is functional and staffed
	Secondment of a CCCM technical Advisor to strengthen NDMO capacity	✓	Adivsor is working with NDMO since Dec 2015 and will continue until Aug 2016
	CCCM Training in Vanuatu for NDMO and other relevant departments	ongoing	Currently being planned
Policy Development and Coordination Support	Development of Displacement Policy for Vanuatu	ongoing	Request submitted to IOM for additional funds and technical support
	Interagency coordination support bridging gaps with shelter/housing sector	Ongoing	IOM hired a consultant to strengthen interagency dialogue and coordination between NDMO and PWD

PROJECTS (EDF 10 ACP – EU/SPC, MDRR, PRRP/UNDP@IRCCNH)

2:13.1. Focal Area Purpose and Key Outcomes

The Mainstreaming Disaster Risk Reduction in Vanuatu (MDRR) Project contributes to the Department's purpose by fully equipping the NEOC and establishing the tsunami early warning system

The key strategic outcomes for MDRR are:

- Fully equipping the National Emergency Operation Centre (NEOC); and
- Establishing the tsunami early warning system.

2:13.2. Priority Activities and Results

Activity and Performance Indicators required by the 2015 Business Plan and results are not summarized in the table because this project is being implemented jointly with VMGD.

TECHNICAL ADVISORS

2:14.1. Focal Area Purpose and Key Outcomes

The NDMO had engaged several TA over a number of years to support further strengthening of human resources development of the Department.

The key strategic outcomes for MDRR are:

- Provide Technical assistance in identified areas; and
- Continue to capacity build national staff

Priority Activities and Results

Activity and Performance Indicators required by the 2015 Business Plan and results will not be summarized because there are no local counterparts to really capture this activity which will continue for several years yet.

SUMMARY OF ACHIEVEMENT:

'Vanuatu is a country of more than 80 islands with a projected population of 272,000 people according to 2015 national statistics office calculations. Tropical Cyclone (TC) Pam struck Vanuatu on the evening of 13 March. The category 5 cyclone caused widespread damage across five provinces of the archipelago – Shefa, Tafea, Malampa, Penama and Torba. At, approximately 11pm local time, the cyclone passed over Efate Island, which is home to the capital city of Port Vila, before continuing in a southerly direction, passing just west of Erromango and Tanna Island.

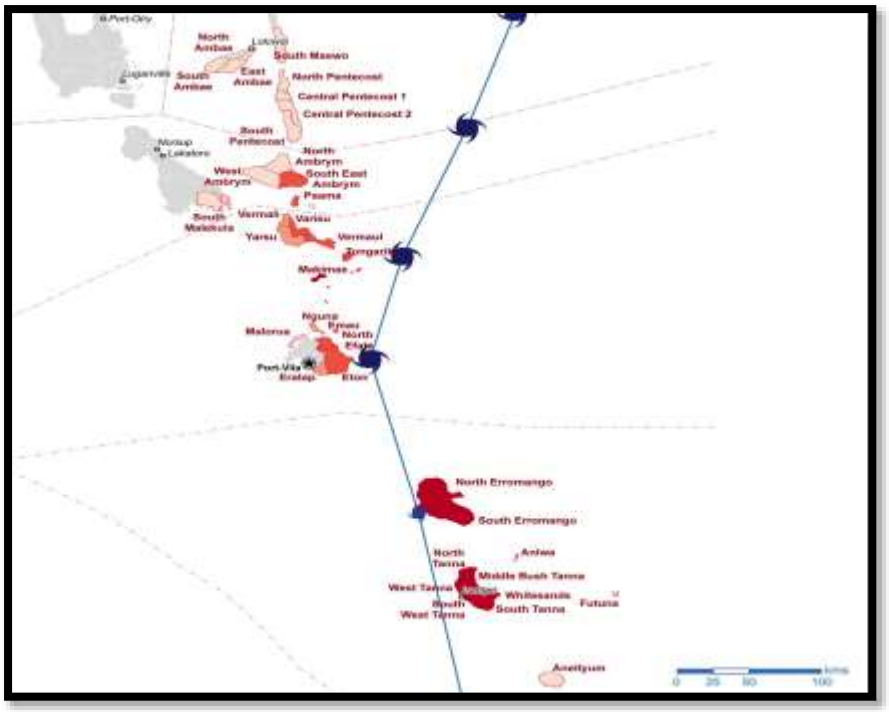
Severe and widespread damage was worst on the larger islands of Tanna, Erromango, and Efate, while there was less damage on the smaller islands of Anatom, Aniwa, and Futuna in the southern region. Eleven fatalities were subsequently confirmed in Tafea and Shefa provinces. An estimated 65,000 people were displaced from their homes. According to the Government of Vanuatu, 188,000 people have been affected by the devastating cyclone. Approximately fifteen thousand buildings were damaged or destroyed, including houses, schools, clinics and medical facilities. There was large-scale destruction of crops and the livelihood of at least 80% of Vanuatu's rural population was negatively impacted.

Many communities do not have access to safe water sources. An estimated 68 per cent of rainwater harvesting catchment structures was destroyed, 70 per cent of the wells have been contaminated, and piped water systems have been damaged. The extensive damage sustained by sanitation superstructures – 68 per cent were destroyed – had a direct impact on hygiene and sanitation practice among the affected people. [7]

National disaster management office activated operation centers to coordinate response. The EOC was in operational beyond the normal working hours in collaboration with multiple-agencies to coordination diverse humanitarian needs. National disaster emergency operation center is been coordinating large number of external technical personnel include both the civilian and foreign military. Most of the staffs were also deployed to conduct field assessment and also distributed the relief supplies to affected communities through-out the country.

During Tropical cyclone Pam response, government has put 80 percent of all resources into humanitarian relief support to affected communities. Much of the government resource to address food security, second to food is water and sanitation and shelter. Both government and world food programme (WFP) has jointly purchased more than 8,000 Metric tons of food has dispatched to most affected islands.

[7] Vanuatu Government (2015) PDNA reports , UNOCHA(2015) Humanitarian International Appeal



(Tracking MAP depicted the TC Pam pathway)

Tons of Tin fish distributed during TC by Peter K

Supporting the coordination of Early Recovery Programs

Approximately 81% of the households sustained some level of damages from Tropical Cyclone Pam. NDMO, working with humanitarian partners, managed to reach 26,304 households with total of estimated 18,000 tarpaulins, 18,000 shelters and 8,500 kitchens sets provided. Other related programs to support self-recovery have also been conducted with Shelter Cluster members NDMO, DLA and PWD assisting to coordinate the implementation aspect.

The National Disaster Management Office in conjunction with custom authorities assisted the clearance of imported relief items to support the private sector relief effort, individuals and NGO's recovery programs. It was part of the logistics function which is a primary role of National Disaster Management Office.

(Temporary School shelter by Ministry of education & UNICEF)

(Housing project after TC Pam lead by New Zealand support by Government)

Decentralizing NDMO function to provinces

Under the IRCCNH (Increasing Resilient to Climate Change and Natural Hazards), the NDMO will establish two permanent Disaster Centre's or provincial disaster office at Tafea and Torba. The two temporary offices are currently managed by two Provincial Disaster Officers recruited under project funding. They will be absorbed into the new NDMO restructure by the end of the project.

The Department is looking at three other provinces for EDF10 ACP-EU funding to construct the next Provincial Disaster Centre's. The process is in the pipeline for Penama ,Sanma and Malampa to be funded under EDF10 . (Picture below is the Tafea Disaster Office under construction in 2015)

(Torba Disaster Office)

Assisting and promoting Disaster Risk Management mainstreaming approach;

Support the implementation of Disaster Risk Reduction and Climate Change projects;

The National Disaster Management Office is part of the Urban Risk Mapping Executive Committee to facilitate the implementation of the Project. The MDRR project has completed the first and the second phase of the project and continues to support the implementation of the final phase which is the establishment of an Early Warning System for Port Vila and Luganville .

CHALLENGES AND CONSTRAINTS:

For programs under this Department, there were number of different challenges for all implementing activities earmarked for 2015. The challenges are diverse depending on the size of the activity against the

actual implementation site ie the accessibility of sites and resources needed for the actual implementation progress which will always be scarce.

For the National Disaster Management Office. major challenges apart from all other challenges are financial resources, labour and change of priority. Last year's 2015 Annual Plan was directly hampered by the Tropical Cyclone Pam operations and El Nino continuous coordination meetings. All staff must change their focii, putting aside their yearly planned activities and re-prioritising all efforts with a commitment toward coordination of TC Pam Humanitarian Relief Program.

The National Disaster Management Office has eight permanent staff in total, only four staff at operational level and three at administration level. With the number of staff we have altogether with technical advisors and including volunteers, this still does not provide an adequate labour force to handle response and maintain the peace-time programs. For this reason, most of the on-going Disaster Risk Reduction activities such as Preparedness Program had to be put to hold until the end of the year. The National Disaster Management Office's contribution towards the implementation of the DRR and CC existing projects was not really effective.

Another major challenge was the financial capacity for the operational programs. Most of the officers undertaking different activities clearly reflected in the 2015 Business Plan could not implement their activities. Funds were allocated specifically toward relief efforts for NDMO to respond to humanitarian needs.

RECOMMENDATION FOR IMPROVEMENT:

There are several areas that need improvement;

- NDMO organizational structure has been reviewed and revised to place more officers into the system with new positions under the newly approved structure to be considered for recruitment before another major disaster ;
- Standard Operation Procedures need to be reviewed urgently in light of Cyclone Pam Lessons Learned and the El Nino response experiences;
- Legislative review of the NDM Act (Cap 267) needs to happen by the end of 2016;
- The National Disaster Management Office operational budget needs to increase to help the implementation of the daily activities ; and
- NDMO is looking forward to developing a DRM Policy framework in 2016 to guide its operations and management over the years.

FINANCIAL REPORT

MINISTRY OF CLIMATE CHANGE

TABLE OF CONTENTS

EXPENSES DETAIL REPORT

MINISTERIAL CABINET SUPPORT & VMGD

For transactions between January 2015 and 31 December 2015

Dept Code All

		Total Annual Budget	Total Annual Expenses	Balance (under/over)
MGA	**Ministerial Cabinet Support**			
MGAA	**Portfolio Coordination**			
86AA	**Cabinet Operations**			
	Personnel Emoluments			
	Salaries and wages	22,998,610	23,960,897	-962,287
	Allowances	1,475,052	10,093,538	-8,618,486
	Employer Contributions	947,402	1,124,694	-177,292
	Payroll Expenses	10,095,472	-	10,095,472
	Other Goods & Services	6,608,502	6,514,778	93,724
	Capital Expenditure	-	106,666	-106,666
	Overhead Expenses	-1,957,160	-	-1,957,160
Total Activity		**40,167,878**	**41,800,573**	**-1,632,695**
Total Program		40,167,878	41,800,573	-1,632,695
VANUATU METEOROLOGICAL SERVICES				
MGB	**Executive Management & Corporate Services**			
MGBA	**Director General & Corporate Services**			
75DA	**Office of the Director General**			
	Personnel Emoluments			
	Salaries and wages	88,307,040	89,605,887	- 1,298,847
	Allowances	17,655,937	10,211,552	7,444,385
	Employer Contributions	3,725,597	3,631,575	94,022
	Payroll Expenses	-7,682,915	-	-7,682,915
	Other Goods & Services	25,071,248	29,249,698	- 4,178,450
	Capital Expenditure	4,939,892	4,898,662	41,230
	Overhead Expenses	4,304,794	-	4,304,794
	Commitments			
Total Activity		**136,321,593**	**137,597,374**	**- 1,275,781**
Total Program		136,321,593	137,597,374	- 1,275,781

NATIONAL DISASTER MANAGEMENT OFFICE

For transactions between January 2015 and 31 December 2015

Dept Code	All	Total Annual Budget	Total Annual Expenses	Balance (under/over)
MGF	**National Disaster Management Office**			
MGFA	**NDMO Coordination**			
1701	**NDMO Operations**			
	Personnel Emoluments			
	Salaries and wages	12,533,002	11,548,920	984,082
	Allowances	3,074,680	1,632,764	1,441,916
	Employer Contributions	516,627	467,942	48,685
	Payroll Expenses	- 2,426,716	-	- 2,426,716
	Other Goods & Services	7,299,915	6,698,412	601,503
	Capital Expenditure	0	774,719	- 774,719
	Overhead Expenses	865,000	-	865,000
Total Activity		**21,862,508**	**21,122,757**	**739,751**
Total Program		21,862,508	21,122,757	739,751

DEPARTMENT OF ENVIRONMENT

For transactions between January 2015 and 31 December 2015

Dept Code	All	Total Annual Budget	Total Annual Expenses	Balance (under/over)
MGE	**Environment Department**			
MGEA	**Management, Research & Extension Services**			
6401	**Environment Operations**			
	Personnel Emoluments			
	Salaries and wages	14,852,880	12,423,437	2,429,443
	Allowances	2,841,109	2,363,217	477,892
	Employer Contributions	615,753	446,507	169,246
	Payroll Expenses	- 3,020,199	-	-3,020,199
	Other Goods & Services			-592,008
	Capital Expenditure	250,888	846,049	- 595,161
	Overhead Expenses	1,188,169	-	1,188,169
Total Activity		**18,341,819**	**18,284,437**	**57,382**
Total Program		18,341,819	18,284,437	57,382

DEPARTMENT OF ENERGY

For transactions between January 2015 and 31 December 2015

Dept Code	All	Total Annual Budget	Total Annual Expenses	Balance (under/over)
MGD	**Energy Department**			
MGDA	**Energy Management & Development**			
6301	**Energy Unit - Petroleum**			
	Personnel Emoluments			
	Salaries and wages	14,288,400	13,226,094	1,062,306
	Allowances	2,429,000	1,814,747	614,253
	Employer Contributions	581,456	534,777	46,679
	Payroll Expenses	- 1,706,445	-	-1,706,445
	Other Goods & Services	5,011,365	3,931,959	1,079,406
	Capital Expenditure	346,471	1,580,510	- 1,234,039
	Overhead Expenses	340,000	-	340,000
Total Activity		**21,290,247**	**21,088,087**	**202,160**
Total Program		21,290,247	21,088,087	202,160

REVENUE SUMMARY REPORT

For transactions between January 2015 and 31 December 2015

M20 - MINISTRY OF CLIMATE CHANGE, METEOROLOGY, GEO-HAZARDS, ENERGY, ENVIRONMENT & DISASTER MANAGEMENT

Account	Description	Revenue	Budget	Over/Under	Cash Received
	Revenue				
7NFO	Other Fees	8,505,087	3,000,000	-5,505,087	3,624,365
7NOO	Other Recoveries	1,161,961	4,000,000	2,838,039	1,162,511
7NOP	Permits Recoveries	641,133	300,000	-341,133	641,133
7TLP	Prospector Licences & Registration	-	25,000,000	25,000,000	0
	Operating Revenue	**10,308,181**	**32,300,000**	**21,991,819**	**5,428,009**
	Total Revenue & Capital Receipts	10,308,181	32,300,000	21,991,819	5,428,009

STATEMENT OF APPROPRIATIONS

For transactions between January 2015 and 31 December 2015

Code	Description	Original Appropriation	Supplementary Appropriations	Virements	Final Budget	Actual Expenditure	Commitments	Total Expenditure	Under/Over
M20	**Ministry of Climate Change**								
MGA	**Ministerial Cabinet Support**								
86AA	Cabinet Operations	32,029,566	-	8,138,312	40,167,878	41,800,573	-	41,800,573	- 1,632,695
MGAA	**Portfolio Coordination**	**32,029,566**	**-**	**8,138,312**	**40,167,878**	**41,800,573**	**-**	**41,800,573**	**- 1,632,695**
MGA	Ministerial Cabinet Support	32,029,566	-	8,138,312	40,167,878	41,800,573	-	41,800,573	- 1,632,695
MGB	**Executive Management & Corporate Services**								
86AA	Cabinet Operations								
75DA	Office of the Director General	13,206,810	-	- 4,756,851	8,449,959	8,335,395	-	8,335,395	114,564
MGBA	**Director General and Corporate Services**	**13,206,810**	**-**	**- 4,756,851**	**8,449,959**	**8,335,395**	**-**	**8,335,395**	**114,564**
MGB	Executive Management & Corporate Services	13,206,810	-	- 4,756,851	8,449,959	8,335,395	-	8,335,395	114,564
MGC	**Vanuatu Meteorological Services**								
75DA	Meteorological Services		-	1,378,730	127,871,634	129,261,979	-	129,261,979	- 1,390,345
75DB	E-Government					-	-	-	-
75DC	Weather Forecasting & Monitoring	125,492,904	-	1,378,730	126,871,634	128,390,414	-	128,390,414	- 1,518,780
75DD	Geo-Hazard	1,000,000	-	-	1,000,000	871,565	-	871,565	128,435
75DE	ICT-Engineering	-	-	-	-	-	-	-	-
75DF	Climate Section	-	-	-	-	-	-	-	-

75DG	Observation Section	-	-	-	-	-	-	-	-
MGCA	**Meteorological Services Operations**	**252,985,808**	**-**	**2,757,460**	**255,743,268**	**258,523,958**	**-**	**258,523,958**	**- 2,780,690**
MGC	Vanuatu Meteorological Services	252,985,808	-	2,757,460	255,743,268	258,523,958	-	258,523,958	- 2,780,690
MGD	**Energy Department**								
6301	Energy Operations	22,656,692	-	- 1,366,445	21,290,247	21,088,087	-	21,088,087	202,160
MGDA	**Energy Management & Assessment**	**22,656,692**	**-**	**- 1,366,445**	**21,290,247**	**21,088,087**	**-**	**21,088,087**	**202,160**
MGD	Energy Department	22,656,692	-	- 1,366,445	21,290,247	21,088,087	-	21,088,087	202,160
MGE	**Environment Department**								
6401	Environment Operations	20,173,849	-	- 1,832,030	18,341,819	18,284,437	-	18,284,437	57,382
MGEA	**Environmental Management, Research & Extension Services**	**20,173,849**	**-**	**- 1,832,030**	**18,341,819**	**18,284,437**	**-**	**18,284,437**	**57,382**
MGE	Environment Department	20,173,849	-	- 1,832,030	18,341,819	18,284,437	-	18,284,437	57,382
MGF	**National Disaster Management Office**								
1701	National Disaster Management Office Operations	23,424,224	-	- 1,561,716	21,862,508	21,156,897	-	21,156,897	705,611
MGFA	**National Disaster Management**	**23,424,224**	**-**	**- 1,561,716**	**21,862,508**	**21,156,897**	**-**	**21,156,897**	**705,611**
MGF	National Disaster Management Office	23,424,224	-	- 1,561,716	21,862,508	21,156,897	-	21,156,897	705,611