REQUEST FOR TENDERS

RFT: 2023/030
File: AP_ 3/28/2
Date: 6 June, 2023
To: Interested Consultants / Service providers
From: Sunny Seuseu – VanKIRAP SPREP PMU and Rupeni Mario – Project Coordination Unit

Subject: **Request for tenders (RFT):** Vanuatu Meteorology and Geo-hazards Department (VMGD) Website and Mobile App Development for the Climate Information Services for Resilient Development Planning in Vanuatu (VanKIRAP) project

1. Background

1.1. The Secretariat of the Pacific Regional Environment Programme (SPREP) is an intergovernmental organization charged with promoting cooperation among Pacific islands countries and territories to protect and improve their environment and ensure sustainable development.

1.2. SPREP Members comprise 21 Pacific Island countries and territories (PICTs), and five developed countries with direct interests in the region: America Samoa, Northern Mariana Islands, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu and Wallis and Futuna. Metropolitan members are Australia, New Zealand, France, United Kingdom and United States of America.

1.3 The Climate Information Services for Resilient Development in Vanuatu (CISRD) or Vanuatu Klaemet Infomesen blong redy, adapt mo protekt (Van-KIRAP) Project, is a full size Green Climate Fund project implemented through the Secretariat of the Pacific Environment Programme (SPREP). The Van-KIRAP Project is implemented in the Republic of Vanuatu and managed by the Vanuatu Meteorology and Geo-hazards Department (VMGD) and SPREP Climate Change Resilience Programme (SPREP CCR), the Project Executing Agencies, in partnership with multiple partners in Vanuatu, Australia and South Korea.

1.4 SPREP approaches the environmental challenges faced by the Pacific guided by four simple Values. These values guide all aspects of our work:

- We value the Environment
- We value our People
- We value high quality and targeted Service Delivery
- We value Integrity

1.5 For more information, see: www.sprep.org.

2. Specifications: statement of requirement

2.1. SPREP wishes to call for tenders from a qualified and experienced company/firm who can offer their services to redevelop the VMGD website to better enable the delivery of CIS to Vanuatu audiences, so that they can have better access to relevant and timely climate information that aids them to increase their climate resilience.

2.2. The Terms of Reference is set out in Annex A.

2.3   The successful company/firm must provide the services to the extent applicable, in compliance with SPREP's Values and Code of Conduct:

https://www.sprep.org/attachments/Publications/Corporate_Documents/spreporganisational-values-code-of-conduct.pdf. Including SPREP's policy on Child Protection, Environmental Social Safeguards, Fraud Prevention & Whistleblower Protection and Gender and Social Inclusion.

2.6.   SPREP Standard Contract Terms and Conditions are non-negotiable.

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3.   Conditions: information for applicants

3.1.   To be considered for this tender, interested consultants /companies/firms must meet the following conditions:

  i.   Submit a detailed Curriculum vitae detailing qualification and previous relevant experience for each proposed personnel;
  ii.   Provide three referees relevant to this tender submission, including the most recent work completed;
  iii.   Complete the **tender application form** provided *(Please note you are required to complete in full all areas requested in the Form, particularly the Statements to demonstrate you meet the selection criteria – DO NOT refer us to the CVs. Failure to do this will mean your application will **not** be considered).*
  Provide examples of past related work outputs
  For the Technical and Financial proposals you may attach these separately.
  iv.   Provide a copy of valid business registration/license.

3.2   Tenderers must declare any areas that may constitute conflict of interest related to this tender and sign the **conflict of interest form** provided.

3.3   **Tenderer is deemed ineligible due to association with exclusion criteria, including** bankruptcy, insolvency or winding up procedures, breach of obligations relating to the payment of taxes or social security contributions, fraudulent or negligent practice, violation of intellectual property rights, under a judgment by the court, grave professional misconduct including misrepresentation, corruption, participation in a criminal organisation, money laundering or terrorist financing, child labour and other trafficking in human beings, deficiency in capability in complying main obligations, creating a shell company, and being a shell company.

3.4   Tenderer must sign a declaration of **honour form** together with their application, certifying that they do not fall into any of the exclusion situations cited in 3.3 above and where applicable, that they have taken adequate measures to remedy the situation.

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4.   Submission guidelines

4.1.   Tender documentation should demonstrate that the interested service provider satisfies the conditions stated above and in the Terms of Reference and is capable of meeting the specifications and timeframes. Documentation must also include supporting examples to address the evaluation criteria.

4.2.   Tender documentation should be submitted in English and outline the interested service provider's complete proposal:

  a)   **SPREP Tender Application form and conflict of interest form.** *(Please note you are required to complete in full all areas requested in the Form, particularly the Statements to demonstrate you meet the selection criteria – DO NOT refer us to the CVs. Failure to do this will mean your application will **not** be considered).*
  Provide examples of past related work outputs
  For the Technical and Financial proposals you may attach these separately.

b) **Honour form**

c) **Curriculum Vitae** of the proposed personnel to demonstrate that they have the requisite skills and experience to carry out this contract successfully.

d) **Technical Proposal** which contains the details to achieve the tasks outlined in the Terms of Reference.

e) **Financial Proposal** – provide a detailed outline of the costs involved in successfully delivering this project submitted in United States Dollars (USD) and inclusive of all associated taxes (refer Annex B).

4.3. Provide three referees relevant to this tender submission, including the most recent work completed.

4.4. Tenderers/bidders shall bear all costs associated with preparing and submitting a proposal, including cost relating to contract award; SPREP will, in no case, be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

4.5. The tenderer/bidder might be requested to provide additional information relating to their submitted proposal, if the Tender Evaluation Committee requests further information for the purposes of tender evaluation. SPREP may shortlist one or more Tenderers and seek further information from them.

4.6. The submitted tender proposal must be for the entirety of the Terms of Reference and not divided into portions which a potential tenderer/bidder can provide services for.

4.7 The Proposal must remain valid for 90 days from date of submission.

4.8 Tenderers must insist on an acknowledgement of receipt of tender.

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5. Tender Clarification

5.1. a. Any clarification questions from applicants must be submitted by email to procurement@sprep.org before 19 June 2023. A summary of all questions received complete with an associated response posted on the SPREP website www.sprep.org/tender by 21 June 2023.

b. The only point of contact for all matters relating to the RFT and the RFT process is the SPREP Procurement Officer.

c. SPREP will determine what, if any, response should be given to a Tenderer question. SPREP will circulate Tenderer questions and SPREP's response to those questions to all other Tenderers using the SPREP Tenders page (**https://www.sprep.org/tenders**) without disclosing the source of the questions or revealing any confidential information of a Tenderer.

d. Tenderers should identify in their question what, if any, information in the question the Tenderer considers is confidential.

e. If a Tenderer believes they have found a discrepancy, error, ambiguity, inconsistency or omission in this RFT or any other information given or made available by SPREP, the Tenderer should promptly notify the Procurement Officer setting out the error in sufficient detail so that SPREP may take the corrective action, if any, it considers appropriate.

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6. Evaluation criteria

6.1. SPREP will select a preferred service provider on the basis of SPREP's evaluation of the extent to which the documentation demonstrates that the tenderer offers the best value for money, and that the tender satisfies the following criteria:

6.2. A proposal will be rejected if it fails to achieve 70% or more in the technical criteria and its accompanying financial proposal shall not be evaluated.

I.   Technical Score – 80

Criteria	Detail	Weighting
Qualifications and Experience	i. Pitch deck – The company's background, services, core team members, past projects, outline of how you would perform this contract, what is included (e.g. number of revisions) ii. The company's web development portfolio, with references iii. The company's mobile app development portfolio, with references iv. Details on warranty offered	10
	Track record of such services over the past 7 years. The developer must provide 3–5 examples of successfully completed projects of a similar type and scale in your company's portfolio. Please include references for each. Similar services in the Pacific region.	10
	Appropriate tertiary qualifications (degree, postgraduate, certified technician, etc.) such as on website development. Curriculum Vitae for all proposed personnel, including Project Manager	5
	Essential skill sets - Web development - UI/UX design - Mobile app design - Mobile app development - Web form design - HTML - CSS - Joomla CMS - JavaScript & JS frameworks - PHP - SQL - Python - Linux administration - Web hosting security - Cloud hosting administration - Scientific programming	10
	Highly desirable - Previous experience developing national meteorological services (NMS) or commercial meteo websites - Extensive experience implementing web-based mapping solutions - Extensive experience implementing JS charting libraries	5

Technical Proposal / Methodology	All details on activities to deliver against the terms of reference are to be outlined including a clear timeline with the milestones to be presented.	30
	Training schedules including any maintenance needs and updates are to be included with manuals and other appropriate guidelines	10

II. Financial Score – 20

The following formula shall be used to calculate the financial score for ONLY the proposals which score 70% or more in the technical criteria:

$$\text{Financial Score} = a \times \frac{b}{c}$$

Where:
a = maximum number of points allocated for the Financial Score
b = Lowest bid amount
c = Total bidding amount of the proposal

Tender submissions must provide itemised financials in their proposal (in USD). This should be in an annotated budget listing based on the table below:

Task	Cost (day rate, USD)	No. of days	Total cost (USD)
1. Inception visit to Vanuatu to meet with VanKIRAP and VMGD staff	$		$
2. Develop new UI and UX for the website redevelopment	$		$
3. Design hybrid mobile application	$		$
4. Implement improvements to the website backend	$		$
5. Test redeveloped website and new mobile app	$		$
6. Produce technical documentation of website and mobile app	$		$
7. Train VMGD staff to maintain and update the website and mobile app	$		$
GRAND TOTAL			$

7. Variation or Termination of the Request for Tender

7.1 a. SPREP may amend, suspend or terminate the RFT process at any time.

b. In the event that SPREP amends the RFT or the conditions of tender, it will inform potential Tenderers using the SPREP Tenders page (**https://www.sprep.org/tenders**).

c. Tenderers are responsible to regularly check the SPREP website Tenders page for any updates and downloading the relevant RFT documentation and addendum for the RFT if it is interested in providing a Tender Response.

d. If SPREP determines that none of the Tenders submitted represents value for money, that it is otherwise in the public interest or SPREP's interest to do so, SPREP may terminate this RFT process at any time. In such cases SPREP will cancel the tender, issue a cancellation notice and inform unsuccessful bidders accordingly.

8. Deadline

8.1. **The due date for submission of the tender is: 05 July 2023, midnight (Apia, Samoa local time).**

8.2. Late submissions will be returned unopened to the sender.

8.3 Please send all tenders clearly marked 'RFT 2023/030: VMGD Website and Mobile App Development for the Climate Information Services for Resilient Development Planning in Vanuatu (VanKIRAP) project**'**

Mail: SPREP
       Attention: Procurement Officer
       PO Box 240
       Apia, SAMOA
Email: tenders@sprep.org (MOST PREFERRED OPTION)
Fax: 685 20231
Person: Submit by hand in the tenders' box at SPREP reception,
         Vailima, Samoa.

Note: Submissions made to the incorrect portal will not be considered by SPREP. If SPREP is made aware of the error in submission prior to the deadline, the applicant will be advised to resubmit their application to the correct portal. However, if SPREP is not made aware of the error in submission until after the deadline, then the application is considered late and will be returned unopened to the sender.

SPREP reserves the right to reject any or all tenders and the lowest or any tender will not necessarily be accepted.

SPREP reserves the right to enter into negotiation with respect to one or more proposals prior to the award of a contract, split an award/awards and to consider localised award/awards between any proposers in any combination, as it may deem appropriate without prior written acceptance of the proposers.

A binding contract is in effect, once signed by both SPREP and the successful tenderer. Any contractual discussion/work carried out/goods supplied prior to a contract being signed does not constitute a binding contract.

For any complaints regarding the Secretariat's tenders please refer to the Complaints section on the SPREP website http://www.sprep.org/accountability/complaints

Terms of Reference

VMGD Website and Companion Mobile App Development for 'Climate Information Services for Resilient Development in Vanuatu' (VanKIRAP) Project

Assignment title:	VMGD Website Redevelopment and Companion Mobile App Development
Post Level:	Company or contractor (hereafter referred to as 'Developer')
Contract type:	By open tender
Contract duration:	24 weeks / 6 months
Last revision date:	5 May 2023
Live version URL:	https://docs.google.com/document/d/1Yhq1gmoqKu9sTvgrX7ioMBNd4U75doUW9_HruYWk-Bvs/edit?usp=sharing

Table of contents

Project Summary

Vanuatu is among the most vulnerable countries on earth to the increasing impacts of climate change, including climate-related natural disasters and the effects of slow-onset events such as the sea-level rise and ocean acidification.

As the effects of global warming manifest and the hazards of climate change arise at accelerating rates, there is a need to shift the paradigm towards the standardised and mainstream use of science-based climate information, at multiple timescales, to support resilient development pathways. The 'Climate Information Services for Resilient Development in Vanuatu' project (known in Vanuatu by its Bislama name, VanKIRAP – Vanuatu Klaemet Infomesen blong Redy, Adapt mo Protekt) is supporting this shift through the strengthening and application of Climate Information Services (CIS) in five targeted development sectors: tourism, agriculture, infrastructure, water, and fisheries. VanKIRAP's key implementing agency in Vanuatu is the Vanuatu Meteorology and Geohazards Department (VMGD). VMGD's website is a critical platform for delivering CIS to Vanuatu audiences (see Annex 1 for more information).

The current version of the VMGD Website (https://www.vmgd.gov.vu/vmgd/index.php) was developed in 2016.

VanKIRAP seeks the services of a professional website development company to redevelop the website to better enable the delivery of CIS to Vanuatu audiences, so that they can have better access to relevant and timely climate information that aids them to increase their climate resilience.

The redevelopment has three main components:

TOR1 – **Website frontend redevelopment**

TOR2 – **Backend optimisation**

TOR3 – **Development of a hybrid mobile application**

Background

About Vanuatu

Vanuatu is [among the most vulnerable countries on Earth](#) to the increasing impacts of climate change,

including climate-related natural disasters and the effects of slow-onset events such as the sea-level rise and ocean acidification.

The Pacific Islands Forum's 2018 Boe Declaration on Regional Security states that "climate change remains the single greatest threat to the livelihoods, security, and wellbeing of the peoples of the Pacific and our commitment to progress the implementation of the Paris Agreement".

Vanuatu, as a state signatory to the Boe Declaration, also recognises climate change as a strategic threat to the environmental, social, and economic wellbeing of the nation.

In 2015 the Vanuatu Ministry of Meteorology and Geohazards was restructured, establishing a dedicated Department of Climate Change and merging with the Ministry of Climate Change to reflect the role of meteorology and climatology in assessing climate change, as well as demonstrating how seriously the Vanuatu Government views this threat.

In 2016, the Vanuatu Government published the National Sustainable Development Plan 2016 to 2030 to guide the nation's development. This document recognises that mainstreaming climate information is a crucial tool in the country's arsenal for dealing with the threat of climate change.

Making climate information more widely available for policymaking and planning at all levels is an essential objective for the resilience of the nation.

As the effects of global warming manifest and the hazards of climate change arise at accelerating rates, there is a need to shift towards the standardised and mainstream use of science-based climate information, at multiple timescales, to support resilient development pathways.

The 'Climate Information Services for Resilient Development in Vanuatu' (known in Vanuatu as Van-KIRAP – Vanuatu Klaemet Infomesen blong Redi, Adapt mo Protekt) Project is supporting the strengthening and application of Climate Information Services (CIS) in five targeted development sectors: tourism, agriculture, infrastructure, water, and fisheries.

Project financing for the VanKIRAP Project is provided by the Green Climate Fund (GCF). The Project is co-managed by the Secretariat of the Pacific Regional Environmental Program (SPREP), together with implementing agency, the Vanuatu Meteorological and Geo-hazards Department (VMGD).

The VanKIRAP Project is building technical capacity to:

A. Harness and manage climate data;
B. Develop and deliver practical Climate Information Services (CIS) tools and resources;
C. Support enhanced coordination and dissemination of tailored information;
D. Enhance CIS information and technology infrastructure, and
E. Support the application of relevant CIS through real-time development processes.

Project goal

The VanKIRAP Project's goal is to increase the ability of decision-makers, communities, and individuals in Vanuatu, including those in the five target sectors, to plan for and respond to the long and short-term impacts of climate variability and change, using climate information services (CIS).

Project Objectives

The VanKIRAP Project has four objectives:

1. Strengthening the VMGD platform to provide quality climate data and information for CIS.

2. Demonstrating the value of CIS at the sectoral and community levels.

3. Developing CIS tools and engaging with stakeholders through outreach and communications.

4. Strengthening the institutional capacity for long-term implementation of CIS in decision-making.

Project Communications Strategy

The VanKIRAP Project Communications Strategy directs the strategic communications activities of the Project in order to achieve its goal and objectives. It has three main objectives:

OBJECTIVE 1: Make VMGD Vanuatu's primary source of climate and weather information.

OBJECTIVE 2: Inform audience(s) about the availability of all VMGD/VanKIRAP-produced CIS products and motivate them to use them.

OBJECTIVE 3: Promote engagement with VMGD/VanKIRAP-produced CIS products by demonstrating their practicality and relevance.

About the 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 who work together to ensure that the Department's core functions are carried out as specified in annual Business Plans, the Departmental Corporate Plan, and the Vanuatu Government's National Sustainable Development.

VMGD's Divisions

The **Administration Division** provides leadership and management structures for the operation of the VMGD. Given the relatively rapid development of the VMGD over the past decade, it has acquired the appropriate and relevant capabilities for capacity building and resource support for the increasingly wide array of services that it provides, and the resources supporting those services that go with it. This Division works closely with the Ministry to ensure the Strategic Plan, the Annual Business Plan and the Corporate Plan are developed and implemented.

The **Weather Forecasting and Services Division** provides timely and quality weather services and products to the general public, mariners, and commercial end users, via qualified meteorologists and through the deployment of the appropriate and state-of-the-art weather forecasting systems.

The **Climate Division** provides climate information, long term forecasts, services, and warnings. Through its qualified staff, modern and proven technology, the Climate Division analyses climate and related environmental data to monitor, predict and provide climate and other related environmental information, forecasts, advisories, and warnings.

The **Climate Change and Disaster Risk Reduction Division** 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.

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

The **Observations Division** maintains an observational network to provide the required data and information needed within VMGD and for other national, regional and international users and further networks. The Division installs, maintains and updates all 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 the VMGD's network data and information reporting obligations.

The **ICT and Engineering Division** ensures the VMGD uses up-to-date, modern infrastructure to

support all the services of the VMGD. It also ensures there is reliable ICT equipment and all necessary assets, for data processing and required interfaces for all Divisional requirements, including support for corporate and administrative functions.

Vision

The vision of the VMGD is:

To be a world-class meteorological and geohazards 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 geohazards services that are widely available and accessible, effectively applied, beneficial and highly valued by all sections of the community in Vanuatu.

Specifically, this mission is achieved through excellence in the following areas:

- Weather and climate forecasting.

- Leading in climate change adaptation and mitigation implementation, monitoring, and negotiations.

- Active monitoring and state-of-the-art implementation of early warning systems for geohazards.

- 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.

Objectives

The objective of the VMGD is to meet the needs of all people living in Vanuatu for meteorological and geohazards information and services essential to their safety, security, and wellbeing, and to ensure that meteorological and geophysical data and information are effectively applied to Vanuatu's National Goals.

VMGD aims to meet the growing demands of the Government and the people of Vanuatu for

improved meteorological and geohazards services that:

1. Ensure the safety, security, and wellbeing of the people and communities of Vanuatu.

2. Contribute to achieving national sustainable development.

3. Fulfil Vanuatu's commitments and obligations under relevant regional and international agreements and conventions.

About VMGD's current website

The current version of the VMGD Website (https://www.vmgd.gov.vu/vmgd/index.php) was developed in 2016.

The current web architecture consists of a single web server located at the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management building in the Nambatu area of Port Vila. The web server, applications, and database are all hosted on this single server.

The website is managed and updated internally by staff from VMGD's ICT and Engineering Division.

Security

The server sits behind a Fortinet Fortigate firewall appliance.

Software Stack

Server operating system: **CentOS**

Web server: **Apache**

CMS: **Joomla**

Current website information architecture

Refer to this diagram.

Objectives of this Consultancy

The services to be rendered by the consultancy service under this ToR are aimed at redeveloping the VMGD website and developing a mobile app version of the website.

Strategy A1.3 under Objective 1 of the Communications Strategy is to redevelop the VMGD website vmgd.gov.vu and develop new mobile apps to create an enhanced national climate information platform that enables end users (including users from the five target sectors) to easily locate high quality climate (and weather and geohazard) information.

Expected Outcomes

A. Make VMGD's climate information services and products more prominent and accessible via the redeveloped website and new mobile app.

B. Make VMGD's website and mobile app content design responsive and mobile first.

C. Increase audience reach of VMGD website and mobile app content within Vanuatu, including to users from the five target sectors (agriculture, fisheries, infrastructure, tourism, water).

D. Increase audience engagement with VMGD website and mobile app content within Vanuatu, including to users from the five target sectors.

Objectives

1. Develop a new, improved UI and UX for the VMGD website.

2. Design a companion hybrid mobile application for Android and Apple devices based on the VMGD website.

3. Improve the website backend.

4. Test and publish the final website and mobile app.

5. Fully document how to administer, manage, update and extend the website and mobile app.

6. Train VMGD staff to maintain and update the website and mobile app.

Tasks and Deliverables

TASK 1: Meet with VanKIRAP and VMGD staff in Vanuatu to understand the Vanuatu context, audience requirements, and to verify the production workflows and processes used by VMGD to produce the website.

■ Visit Vanuatu for (up to) 10 days to meet with VanKIRAP and VMGD staff to gain an understanding of Vanuatu and VMGD's operating context, capabilities, and resources.

■ Document how each website product is produced from raw data to finished webpage to understand the source, licensing, constraints, storage, transformations, APIs, life cycle, and archiving that happens vis-à-vis each product contained by the website.

Deliverable

1a   Completion of initial meeting during in-country visit.

Deliverable

1b   Inception visit aide-mémoire outlining consultations undertaken during visit and key findings.

Deliverable

1c   Report documenting workflows and production processes for each warning, climate, weather, observations and geohazard product, demonstrating an understanding of Vanuatu context and audience requirements.

TASK 2: Develop a new UI and UX for the website based on the audience analysis in Annex 1, the draft sitemap in Annex 2 and the list of frontend functional and non-functional requirements in the Scope of Works.

■ Redesign the look and feel of the website, paying close attention to the sitemap and needs of end users, as well as the technical requirements.

■ Produce mockup version of redeveloped website.

■ Incorporate feedback from VanKIRAP and VMGD to produce a final draft, working with the VanKIRAP Communications team and VMGD to populate the website with content.

Deliverable

2a
Draft set of wireframes and mock-ups of all pages in <u>Annex 2</u>, incorporating the findings of Deliverable 1.

Deliverable

2b
Final revised set of wireframes and mock-ups of all pages in <u>Annex 2</u>, based on consolidated feedback from VanKIRAP and VMGD.

TASK 3: Design a hybrid mobile application for Android and Apple devices based on the website, following the sitemap in <u>Annex 3</u>.

- Design mockup version of mobile app, based on the sitemap, end user requirements and the UI/UX of the website redesign.

- Incorporate feedback from VanKIRAP and VMGD to produce a final draft, working with the VanKIRAP Communications team and VMGD to populate the website with content.

Deliverable

3a
Draft set of wireframes and mock-ups of mobile app, based on <u>Annex 3</u>.

Deliverable

3b
Final revised set of wireframes and mock-ups of mobile app, based on consolidated feedback from VanKIRAP and VMGD.

TASK 4: Improve the website backend to support objectives 1-3.

- Produce a set of recommendations for achieving the list of technical requirements, including full TCO costings for all suggested recommendations.

- After consultation with VanKIRAP and VMGD ICT and Engineering Division, implement the approved recommendations.

- Report on the implementation against the list of technical requirements.

Deliverable

4a
Proposal outlining recommendations for achieving all functional and non-functional backend requirements.

Deliverable

4b
Report documenting the achievement of all functional and non-functional backend requirements.

TASK 5: Test redeveloped website and new mobile app to ensure all functional and non-functional objectives have been met, and publish production versions.

- Test website frontend: responsiveness, standards compliance, accessibility, conform all functional requirements have been met, including user acceptance testing with Vanuatu audience.

- Test website backend: performance, conform all functional and non-functional requirements have been met.

- Test mobile app: performance, accessibility, compatibility, confirm all functional and non-functional requirements have been met.

- Resolve any issues identified by testing.

- Provide a warranty period post website launch (please include details of the warranty offered in your tender bid).

Deliverable

5a   **VanKIRAP sign off upon completion of testing.**

Deliverable

5b   **Production version of the website published.**

Deliverable

5c   **Mobile apps published to Google Play Store and Apple App Store.**

TASK 6: Produce technical documentation to support objectives 1-5.

- Produce a user guide which details in full how to administer, update and maintain the website and mobile app, create new pages and menus, etc. Must include documentation of design system, development environments, credentials, details on hosting and configuration, including all TCO cost implications.

Deliverable

6   **Set of technical documentation on managing, maintaining and modifying website frontend, backend and mobile apps.**

TASK 7: Train VMGD staff so that they can maintain and update the website and mobile app.

- ■ Provide training courses in Vanuatu to VMGD staff and complete handover.

Deliverable

7   **Training course provided to VMGD staff in Vanuatu, and project signed off by VanKIRAP.**

Work Schedule

Project Schedule

All tasks are to be completed no later than 6 months from Agreement signing date.

Task	Deliverables	Deliverable delivery date
1. Inception visit to Vanuatu to meet with Van-KIRAP and VMGD staff	**Deliverable 1a:** Completion of initial meeting during in-country visit	Within **2** weeks from signing Agreement
	Deliverable 1a: Inception visit aide-mémoire outlining consultations undertaken during visit and key findings	Within **3** weeks from signing Agreement
	Deliverable 1c: Report documenting workflows and production processes for each warning, climate, weather, observations and geohazard product, demonstrating an understanding of Vanuatu context and audience requirements	Within **4** weeks from signing Agreement
2. Develop new UI and UX for the website redevelopment	**Deliverable 2a:** Draft set of wireframes and mock-ups of all pages in Annex 2, incorporating the findings of Deliverable 1	Within **10** weeks from signing Agreement
	Deliverable 2b: Final revised set of wireframes and mock-ups of all pages in Annex 2, based on consolidated feedback from VanKIRAP and VMGD	Within **14** weeks from signing Agreement
3. Design hybrid mobile application	**Deliverable 3a:** Draft set of wireframes and mock-ups of mobile app, based on Annex 3	Within **16** weeks from signing Agreement
	Deliverable 3b: Final revised set of wireframes and mock-ups of mobile app, based on consolidated feedback from VanKIRAP and VMGD	Within **18** weeks from signing Agreement
4. Implement improvements to the website backend	**Deliverable 4a:** Proposal outlining recommendations for achieving all functional and non-functional backend requirements	Within **12** weeks from signing Agreement
	Deliverable 4b: Report documenting the achievement of all functional and non-functional backend requirements	Within **16** weeks from signing Agreement
5. Test redeveloped website and new mobile app	**Deliverable 5a:** VanKIRAP and VMGD to sign off upon completion of testing	Within **18** weeks from signing Agreement
	Deliverable 5b: Production version of the website published	Within **20** weeks from signing Agreement

	Deliverable 5c: Mobile apps published to Google Play and Apple App Store	Within **20** weeks from signing Agreement
6. **Produce technical documentation of website and mobile app**	**Deliverable 6.** Set of technical documentation on managing, maintaining and modifying website frontend, backend and mobile apps	Within **22** weeks from signing Agreement
7. **Train VMGD staff to maintain and update the website and mobile app**	**Deliverable 7:** Training course provided to VMGD staff in Vanuatu, and signed off by VanKIRAP	Within **24** weeks from signing Agreement

Meeting schedule

The developer is required to participate in the following meetings as follows:

Meeting Type	Representatives Required	Frequency	Teleconference / Site
Initial project kick-off meeting	Developer, VanKIRAP, VMGD ICT, VMGD Division senior staff	*Once*	Virtual meeting
In-country visit initial meeting	Developer, VanKIRAP, VMGD ICT, VMGD Division senior staff	*Once*	In person meeting at VMGD
Post country visit debrief	Developer, VanKIRAP, VMGD ICT, VMGD Division senior staff	*Once*	Virtual meeting
Certification of project completion meeting	Developer, VanKIRAP, VMGD ICT, VMGD Division senior staff	*Once*	In person meeting at VMGD, upon completion of training course
Progress Meetings	Developer, VanKIRAP, VMGD ICT	*Fortnightly*	Schedule TBD at initial kick-off meeting

Budget

Tender submissions must provide itemised financials in their proposal (in USD). This should be in an annotated budget listing based on the table below:

Task	Cost (day rate, USD)	No. of days	Total cost (USD)
1. Inception visit to Vanuatu to meet with VanKIRAP and VMGD staff	$		$
2. Develop new UI and UX for the website redevelopment	$		$
3. Design companion hybrid mobile application	$		$
4. Implement improvements to the website backend	$		$
5. Test redeveloped website and new mobile app	$		$
6. Produce technical documentation of website and mobile app	$		$
7. Train VMGD staff to maintain and update the website and mobile app	$		$
GRAND TOTAL			$

n.b. Proposals above USD 180,000 may not be considered. SPREP reserves the right to proceed with the Objectives(s)/Task(s) it deems necessary.

Qualifications and Competencies

Tenderers must provide evidence of professional qualifications and experience required to perform the consultancy for all key personnel.

Experience	The developer must provide 3–5 examples of successfully completed projects of a similar type and scale in your company's portfolio. Please include references for each.
Essential technical skills	- Web development - UI/UX design - Mobile app design - Mobile app development - Web form design - HTML - CSS - Joomla CMS - JavaScript & JS frameworks - PHP - SQL - Python - Linux system administration - Web hosting security - Cloud hosting administration - Scientific programming
Highly desirable	- Previous experience developing NMS or commercial meteo websites - Extensive experience implementing web-based mapping solutions - Extensive experience implementing JS charting libraries
Soft skills	- Ability to work remotely - Ability to work under limited supervision - Excellent communication skills - Excellent project management skills
Language requirements	Excellent English verbal and written skills

What to include in your tender submission

1. **Pitch deck** – your company's background, services, core team members, past projects, outline of how you would perform this contract, what is included (e.g. number of revisions)

2. Your company's **web development portfolio,** with references

3. Your company's **mobile app development portfolio,** with references

4. **Curriculum Vitae** for all proposed personnel, including Project Manager

5. **Budget** itemised by tasks (in USD)

6. Details on **warranty** offered

7. **Bona fides** – copies of official business licence/registration

8. Completed **SPREP tender application** form

9. Completed SPREP **Declaration of Honour** form

10. **Any other relevant information** to support this tender application

Scope of Works

TOR 1a

Functional requirements for VMGD website redevelopment – frontend
This is a draft — please feel free to propose improvements to it in your tender submission.

Refer to **https://octopus.do/h9igqek1jm** for a visual sitemap of the redeveloped website.
(n.b. All comments here are also embedded in the visual sitemap for ease of reference)

GLOBAL

1. Global elements	
Original URL	n/a
Req 1.1	Page header – contains website name, VMGD logo, Vanuatu Govt logo. May also contain site search bar.
Req 1.2	Site search bar
Req 1.3	Topnav menu. Global page element. Menu item list (EN): 　a. Warnings 　b. Weather 　c. Climate 　d. Geohazards 　e. Learn More
Req 1.4	Breadcrumb nav – to enable easier site navigation
Req 1.5	Page heading
Req 1.6	User feedback form – This form is global and is intended to encourage users to provide their feedback. To reduce UX friction, it should be simple, containing just heading, explanatory text, text input field, optional email & phone number fields, and a submit button
Req 1.7	CTA– Use app / Facebook page / SMS / 116 number. This call to action section is intended to promote other ways of accessing VMGD information: 　a. Mobile app (when complete) 　b. Facebook page https://fb.com/vmgd.gov.vu 　c. SMS service (when complete) 116 toll-free number
Req 1.8	Footer nav – See footer menu section for details
Req 1.9	*[Climate-related pages only]* CTA – sign up for Climate Watch email newsletter. The 'Climate Watch' call to action is intended to be common across the home page and any climate-specific page. Its purpose is to promote the Climate Watch email newsletter product. To link to a Mailerlite/Mailchimp sign up form/landing page/pop up. This may be embedded JS or HTML – whatever is best for ease of use.
Req 1.10	Users must be able to print (or export to PDF) all website content, so that information can be easily shared with people without good internet access

MAIN SECTION

2. Homepage	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/

Req 2.1	Current alerts & warnings – This section provides a visual summary of all current alerts, watches, and warning for severe weather, climate, and geohazards.
	The purpose is to provide a quick summary of critical warning info for site visitors. It links to the Warnings category page.
	See https://www.metservice.com/ for an example. This example is a good starting point, but the new design should contain more info, i.e. at minimum:
	   a. Watch/alert/warning type
	   b. Name & icon of hazard type/level
	   c. Location name
	   d. Link to warnings page
	   e. The background of each warning panel (and the heading too?) should be colour coded using the relevant colour code for the hazard.
	
	n.b. Vanuatu frequently experiences multiple hazards simultaneously, so this section needs to be able to display multiple hazards warnings/alerts/watches.

Req 2.2	Location forecasts – this section shows location forecasts from around the country. It needs to show basic weather info for each location at a glance – weather icon, temperature range, e.g. https://www.meteoam.it/it/home. Full list of locations:
	  1. Anelghowhat
	  2. Big Bay
	  3. Bunlap
	  4. Emua
	  5. Lakatoro
	  6. Lamap
	  7. Lenakel
	  8. Luganville
	  9. Port Orly
	  10. Port Vila
	  11. Qotnue
	  12. Saratamata
	  13. Sola

Req 2.3	National current weather map – Current map is static, generated by VMGD forecasters using Meteo Factory from Meteo France: https://www.mfi.fr/systems/?id=8. Ideally, the new version of the map should be based on a vector web map, should show forecasts at each location, and be able to display a raster overlay of satellite data, e.g. https://www.meteoam.it/it/home (forecasts) & https://www-static.meteoam.it/maps/index.html?map=obs
Req 2.4	ENSO Status – reworking of current version on the homepage
Req 2.5	Volcano Alert Level – Provides a quick summary of the alert status of all of Vanuatu's volcanoes. Should link to Volcano page.
Req 2.6	This section is intended to be used by VMGD to highlight featured content / topical information of a non-critical nature (i.e. not warnings, alerts or watches)
Req 2.7	Featured content panels – This section is intended to be used by VMGD to highlight featured content / topical information of a non-critical nature (i.e. not warnings, alerts or watches)

A. Warnings

3. Warnings main page	
This is the main page for all watches, alerts, and warnings. This page is to be used as the CAP aware warning page.	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/warnings
Req 3.1	Current alert boxes – Boxes/list/menu (?) with one item per warning category, colour coded by alert level (no colour if no warning active). n.b. All currently active warnings should be fully visible at all times (no scrolling/hidden content), and should be displayed in descending order.
Req 3.2	Warning text – summaries of warnings, containing 1-2 pars of the full warning text. All warning/watches/alerts links to the full warning page ('warning page' template below) for the particular warning, except for tropical cyclones, which should have their own special warning page template.
Req 3.3	Explanatory text – alerts & warnings colour codes – provides quick summary of the alert/warnings for each hazard, including colour codes and icons
4. Warning page template	
This is a template page intended to be used for content pages for each category of weather, climate or geohazard warning/alert (except for tropical cyclones). It does not have an equivalent on the current website.	
Original URL	n/a
Req 4.1	Warning titles – may be colour coded (but not at the expense of legibility)
Req 4.2	Full text of warning
Req 4.3	Warning location map – Web based vector map of hazard location – can be an area or pinpointed location, and should use icons to indicate hazard type, as well as colour codes indicating alert/warning level
Req 4.4	CTA – safety instructions to follow. This call to action section is for warning/alert safety instructions that could potentially prevent injury, loss of life or property damage/loss (i.e. critical instructions).
Req 4.5	Links: Learn more about [hazard name] – This section to be populated programmatically – related/popular [hazard name] links
5. TC warning page template	
This is a template intended to be used for content pages for the 4 alert levels for Vanuatu tropical cyclone hazards: 'information', 'advisory', 'warning', and 'all clear'.	

Original URL	There are 3 equivalent pages whose content on the current website to be merged (n.b. there is currently no page for 'all clear', however, so this needs to be added as well):
	  1. https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/tropical-cyclone/information
	  2. https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/tropical-cyclone/advisory
	  3. https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/tropical-cyclone/warning
	
	n.b. More than one warning level can be active during a TC event, so the warning text area needs to be able to display different categories of warning that are both simultaneous and distinct.

Req 5.1	Improved UX. The redesigned page needs to provide more information for users who visit the page(s) when there is no TC information, advisory, warning or all clear current for the Vanuatu area. Ideally, the inactive state needs to resemble the form and style of the warning content, while remaining distinct through the use of colour.
Req 5.2	TC warning title – Warning titles may be colour coded (but not at the expense of legibility)
Req 5.3	Full TC warning text
Req 5.4	Satellite TC map – with transparent white overlay to indicate no TC hazard present (or other UX/UI treatment). Needs to be a vector web map with a raster

		overlay of satellite data, and (if possible) a vector overlay layer of TC track, current position, and projected path
	Req 5.5	TC location/Vanuatu TC tracking map – with transparent white overlay to indicate no TC hazard present (or other UX/UI treatment) Current site version: https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/tropical-cyclone/track Current page has no content when there is no current TC. To improve on this, ideally, a vector web map should display along with prominent text that indicates that no TC is currently active. n.b. Needs to follow grid used by Vanuatu TC tracking map – this is a well-respected and used VMGD product that is especially useful for users without reliable access to the VMGD website. Typically, these users track TCs on this map from grid locations given on national radio news bulletins
	Req 5.6	CTA for TC safety instructions – This call to action section is for warning/alert safety instructions for TCs that could potentially prevent injury, loss of life or property damage/loss (i.e. critical instructions).
	Req 5.7	Downloadable TC tracking map – Current version; https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/tropical-cyclone/vanuatu-cyclone-tracking-map. n.b. The Vanuatu TC tracking map is a well-respected and used VMGD product that is especially useful for users without reliable access to the VMGD website. Typically, these users track TCs on this map from grid locations given on national radio news bulletins. It is made available here so that people can print out copies and give them to friends and family who can't access the website
	Req 5.8	Links to 'Learn More' cyclone category page. This section to be populated programmatically – related/popular TC links
	Req 5.9	About TC bulletins section – content in current website equivalent: https://www.vmgd.gov.vu/vmgd/images/admin-media/docs/Tropical-Cyclone-Bulletiins_Flyer_A4_English.pdf
	Req 5.10	About TC categories section – content in current website equivalent: https://www.vmgd.gov.vu/vmgd/images/admin-media/docs/Tropical-Cyclone-Bulletiins_Flyer_A4_English.pdf

B. Weather

6. Weather forecasts & observations main page	
Has two equivalents on the current site, that have been merged & adapted in this new version: https://www.vmgd.gov.vu/vmgd/index.php/forecast-division & https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/public-forecast	
Original URL	n/a
Req 6.1	Latest satellite chart – Needs to be a vector web map with a raster overlay of satellite data, and (if possible) & a vector lat/long overlay layer
Req 6.2	Weather radar map – This is a placeholder for a future product currently in development, and due to come on stream in early 2025. Weather/rainfall radar output is usually displayed on NMS website as an animation, or a still image. Some examples: ● https://www.meteo.nc/nouvelle-caledonie/observations/images-radars ● http://www.bom.gov.au/products/IDR403.loop.shtml#skip ● https://www.metoffice.gov.uk/weather/maps-and-charts/rainfall-radar-forecast-map#?bbox=[[39.774769485295465,-34.98046875000001],[65.44000165965537,26.982421875000004]]&model=ukmo-ukv&layer=rainfall-rate&timestep=1679911200000

		Commercial meteo website http://www.windy.com displays weather radar imagery as animated loops atop a vector web map: https://www.windy.com/-Weather-radar-radar?radar,-21.814,166.191,9
	Req 6.3	Forecast location dropdown (or similar – doesn't have to be a dropdown). Menu list items: 1. Anelghowhat 2. Big Bay 3. Bunlap 4. Emua 5. Lakatoro 6. Lamap 7. Lenakel 8. Luganville 9. Port Orly 10. Port Vila 11. Qotnue 12. Saratamata 13. Sola
	Req 6.4	Links: 7-day forecast / Severe weather outlook / TC outlook – 1 box per item with title, and image
	Req 6.5	Links: Aviation & marine forecasts – 1 box per item with title, and image
	Req 6.6	Link: Observations
	Req 6.7	TK & weather – 1 box per item with title, and image

7. Today's forecast (location template)		
(Location data only accessible by clicking on the weather icons)		
Original URL		https://www.vmgd.gov.vu/vmgd/index.php/forecast-division
	Req 7.1	One page per location. List items: 1. Anelghowhat 2. Big Bay 3. Bunlap 4. Emua 5. Lakatoro 6. Lamap 7. Lenakel 8. Luganville 9. Port Orly 10. Port Vila 11. Qotnue 12. Saratamata 13. Sola
	Req 7.2	Location map for each station – vector web map
	Req 7.3	Current observation data – Key current observations, generated from AWS data, e.g. https://octopus.do/2utagln6hda#hcerbmsol-current-observation-data Needs to also show: a. Humidity a. UV b. Sunrise & sunset c. Tides d. Moon phases
	Req 7.4	Forecast data – This section is to display the day's forecast for the weather station. Ideally, it should show an hour-by-hour forecast, or at the very least, morning/afternoon/evening/overnight. See https://octopus.do/2utagln6hda#uolfdreo-forecast-data for some UI design examples.

8. 7-day forecast (location template)		
This template could potentially be combined with the daily forecast template.		

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/public-forecast/7-day
Req 8.1	One page per location. List items: a. Anelghowhat b. Big Bay c. Bunlap d. Emua e. Lakatoro f. Lamap g. Lenakel h. Luganville i. Port Orly j. Port Vila k. Qotnue l. Saratamata m. Sola
Req 8.2	Location map for each station – vector web map
Req 8.3	7-day forecast carousel – needs to show: a. Forecasted conditions (icon) b. Temperature (max/min) c. Rainfall

9. Severe weather outlook

This page provides a summary of all severe weather warnings.
It needs to automatically refresh whenever a warning is issued.

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/public-forecast/severe-weather-outlook
Req 9.1	Current Severe weather warning(s) – Text of current severe weather warnings to be summarised here, and linked to the full warning text, which uses the Warning page template.
Req 9.2	3 day Severe weather outlook – 1 box per day, with text summary (colour coded if a colour coded warning has been triggered)

10. TC Outlook

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/public-forecast/tc-outlook
Req 10.1	Current TC warning(s) – Text of current TC warnings to be summarised here, and linked to the full warning text, which uses the Warning page template. Required to use TC warning colour code system.
Req 10.2	Explanatory text
Req 10.3	TC outlook – row of 5 boxes, one per day. See colour code for Low, Medium, High, and Subtropical used by US Navy JWTC – https://www.metoc.navy.mil/jtwc/jtwc.html
Req 10.4	TC outlook map – Web map with satellite imagery layer and potential TCs labelled. Intent is to show tropical lows and depressions under investigation by meteorologists (technical term is 'Invests') as potential future cyclones, so that users can see the locations as they form. This is not a current feature of the website. See https://www.metoc.navy.mil/jtwc/jtwc.html for an example, including the colour code used.
Req 10.5	Download – printable TC tracking map PDF
Req 10.6	Search past TC outlooks – with calendar input fields

11. Aviation forecast

Current website equivalents to be merged on the new page:
1. https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/aviation-forecast/terminal-aerodrome-forecast-taf

	2. https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/aviation-forecast/area-forecast-arfor
	3. https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/aviation-forecast/metar
Original URL	n/a
Req 11.1	ARFOR text section
Req 11.2	TAF aerodrome dropdown – could also be tabbed as per page on current web-site. Item list: - RAW TAFs - Anelghowhat - Lamap - Norsup - Pekoa - Port Vila - Saratamata - Sola - Whitegrass
Req 11.3	TAR text display area
Req 11.4	METAR aerodrome dropdown– could also be tabbed as per page on current website. Item list: - RAW METARs - Anelghowhat - Lamap - Norsup - Pekoa - Port Vila - Saratamata - Sola - Whitegrass
Req 11.5	METAR text display area
Req 11.6	Search past Aviation forecasts – with calendar input fields
12. Marine forecast	
The new page needs to merge the existing page, plus:	
	1. https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/marine-forecast/marine-warning
	2. https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/marine-forecast/high-seas
	3. https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/warnings/hight-seas-warning
It also needs to add tide tables and moon phase sections (not available on the current website)	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/marine-forecast
Req 12.1	Current marine warning(s) – Text of current marine warnings to be summarised here, and linked to the full warning text, which uses the Warning page template. Sea states must conform to WMO Sea State Codes, and use VMGD's marine forecast colour codes.
Req 12.2	Marine forecast map (clickable) – Web map version of the marine forecast map on https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/marine-forecast. Data in current marine forecast table should display underneath the map, not as a popover
Req 12.3	Marine forecast information text. List items: - Central Waters - Channel between Efate & Erromango - Inshore Luganville Harbour - Inshore Port Vila Harbour - Northern Waters - Southern Waters
Req 12.4	High seas synoptic chart – based on https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/marine-forecast/high-seas. Web map preferred as a replacement for the current synoptic chart.

Req 12.5	High seas – text
Req 12.6	Tides – Port Vila. This is a new feature – data to be sourced from Australian Bureau of Meteorology: http://www.bom.gov.au/australia/tides/#!/offshore-port-vila
Req 12.7	Tides –Luganville. This is a new feature – data to be sourced from Australian Bureau of Meteorology: http://www.bom.gov.au/australia/tides/#!/offshore-lu-ganville-wharf
Req 12.8	Search past Marine forecasts – with calendar input fields
13. Observations (station template)	
Surface monitoring observation stations– data for each station to be displayed in tabs	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/observation
Req 13.1	Surface monitoring observation stations– 1 tab per observation station. List items: 1. Anelghowhat Observation Station 2. Lamap Observation Station 3. Pekoa Observation Station 4. Port Vila Observation Station 5. Saratamata Observation Station 6. Sola Observation Station 7. Whitegrass Observation Station Data tabs for each station: a. Location map (web map) b. Current observations chart – Current data to be supplied programmatically from AWS data for each observation station (see an example from Aust BoM for available parameters: http://www.bom.gov.au/products/IDN60801/IDN60801.94921.shtml.) Tabulated data should be made available if possible to users, as a table (and possibly also as an excel/CSV download for the past 24 hours). c. However, a more easily comprehensible formatted version should appear above the tabulated version, formatted graphically using a JS charting library. See examples at https://octopus.do/2utagln6hda#xbwcehweb-current-observations-chart: d. Search past Marine forecasts – with calendar input fields. Returned tabulated data to be output beneath the search input fields)
Req 13.2	About upper air observation – explanatory text and/or images (Could be moved to 'Learn More')

C. Climate

14. Climate main page	
Main page for climate information.	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate
Req 14.1	CTA – sign up for Climate Watch email newsletter (n.b. applies to all child pages of this page)
Req 14.2	Temp change in VU graphic (1910–2022). This graphic highlights for users why climate information is so important. Source: https://showyourstripes.info/c/pacific/vanuatu/
Req 14.3	Current status: National ENSO / Rainfall / SST / Coral bleaching – Gauge charts as per https://www.vmgd.gov.vu/vmgd/index.php/climate. Directly link the dial to the BOM website, so that it stays up to date and reduces VMGD labour.
Req 14.4	Links to climate outlook products: National CIS– Climate & Ocean Outlook / ENSO Update / Early Action Rainfall Watch / Climate Summary / TC Seasonal

	Outlook. These could be displayed as boxes with a featured image, product name, date, and a read more link. On the current website, these products are mostly provided as PDFs. In the re-design, we want these to be web pages, to make them responsive on smaller screens (and therefore accessible to more people)
Req 14.5	Links: Sectoral climate information services. These links are for CIS products that target key sectors. They come in two forms, each focused on different time-scales: 　1. **Outlooks/bulletins** – these are forward-looking, typically for 3 months or for a whole season 　2. **Climate observation station data** – these are retrospective and pro-duced monthly. Sector list: 　1. Agriculture 　2. Energy 　3. Fisheries 　4. Health 　5. Tourism 　6. Water
Req 14.6	Links: Climate observation stations. List: 　1. Aneityum 　2. Lamap 　3. Norsup 　4. Port Vila 　5. Sola 　6. Whitegrass
Req 14.7	Link to CSIRO-built Climate Smart (TBC) portal (not yet complete: working draft version https://van-kirap.ts.r.appspot.com, credentials available on request). How this is done is open-ended: it could be a clickable image or text, an iframe, or a set of tiles. (n.b. This section is identical to the one on the Climate Smart future climate por-tal landing page)
Req 14.8	Links: TK & climate. Section for displaying traditional knowledge indicators of climate-related events, or linking to other relevant TK content elsewhere on the website (content in development)
Req 14.9	Links: Climate data request form
15. Climate and Ocean Outlook	
Climate outlook product. This is a new page that merges content from https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries/vanuatu-climate-update *&* https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries/vanuatu-ocean-outlook *Some map content may be pulled from BOM's ACCESS-S model.*	
Original URL	n/a
Req 15.1	ENSO section
Req 15.2	Rainfall section
Req 15.3	SSTs section
Req 15.4	Sea level rise section
Req 15.5	Coral bleaching section
Req 15.6	Search archived Climate & Ocean Outlooks forecasts – with calendar input fields
16. Climate Summary (monthly report)	
Climate outlook product.	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries/vanu-atu-climate-summary
Req 16.1	Report content, in the following sections: 　a. Summary text 　b. Weather patterns

		c. Rainfall
		d. Atmospheric temperatures
		e. Average & Extreme temps
		f. Wind
		g. Mean sea level pressure (MSLP)
		h. ENSO
		i. SSTs
		j. Sea Level
		k. Search archive– with calendar input fields

17. Early Action Rainfall Watch

Climate outlook product.

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries/early-action-rainfall-watch

Req 17.1	Page content, in the following sections:
	    a. Summary text: ENSO, Rainfall Status, Rainfall Outlook
	    b. Rainfall status
	    c. Rainfall outlook
	    d. Drought projections to 2090
	    e. Time periods & impacts
	    f. Search archive– with calendar input fields

18. ENSO Update

Climate outlook product.

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries/enso-update

Req 18.1	Page content, in the following sections:
	    a. Summary text
	    b. ENSO
	    c. Madden-Julian Oscillation (must include trade winds)
	    d. Cloud
	    e. Rainfall outlook (+3mo)
	    f. Sea surface temps
	    g. MSLP
	    h. Model outlooks
	    i. SPCZ
	    j. Search archive– with calendar input fields

19. TC Seasonal Outlook

Climate outlook product.

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries

Req 19.1	Page content, in the following sections:
	    a. Summary text
	    b. TC Seasonal Outlook
	    c. Climate conditions
	    d. Potential impacts
	    e. TCs and ENSO update
	    f. VU TC tracking map (same element as Weather TC pages)
	    g. Search archive– with calendar input fields

20. 'Climate Smart' / 'Klaemet Smart' landing page

Original URL	New page
Req 20.1	Explanatory/summary text
Req 20.2	Link to CSIRO-built climate futures portal, final name yet to be decided (not yet complete – working draft version https://van-kirap.ts.r.appspot.com, credentials available on request). This page is intended to be the repository for climate change-related, longer-timescale CIS products to be developed in the future. How this is to be structured & presented is open-ended: it could be a clickable image or text, an iframe, or a set of tiles. (n.b. This section is identical to the one on the Climate main page)

21. Sectoral CIS product category page	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/climate-information-services/data-services
Req 21.1	Sectoral outlooks
Req 21.2	Sectoral data by climate observation station. n.b. Some sections in the sectoral CIS pages are like modules – they may appear in more than one product. Some sections are also shared between the sectoral climate observation pages and the climate observation station CIS pages – so that users are afforded different ways to encounter the information.
Req 21.3	Tiles linking to each of the sector case study pages on the CSIRO-built Climate Smart (TBC) portal (not yet complete: working draft version https://van-kirap.ts.r.appspot.com, credentials available on request).
22. AgroMet Bulletin	
Sectoral CIS outlook product.	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries/agromet-bulletin

Req 22.1	Page content, in the following sections:
	   a. ENSO status
	   b. Temp & rainfall outlook (+1mo)
	   c. Rainfall outlook (+3mo)
	   d. Tide outlook
	   e. Moon phases
	   f. Sea surface temps
	   g. Sea level rise
	   h. Climate smart recommendations: Crop variety / Planting / Farm management
	   i. Link to Agriculture sector case study on Climate Smart future climate portal
	   j. TK Indicators
	   k. Search archive– with calendar input fields

23. Fisheries Sector Outlook	
Sectoral CIS outlook product.	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries/fisheries-climate-outlook

Req 23.1	Page content, in the following sections:
	   a. ENSO status
	   b. SST outlook
	   c. Sea level rise outlook
	   d. Rainfall outlook
	   e. Coral bleaching outlook
	   f. Chlorophyll A concentration outlook
	   g. Max temp outlook
	   h. Min temp outlook
	   i. Tide outlook
	   j. Moon phases
	   k. Link to Fisheries sector case study on Climate Smart future climate portal
	   l. TK Indicators
	   m. Search archive– with calendar input fields

24. Infrastructure Sector Outlook	
Sectoral CIS outlook product.	
Original URL	n/a

Req 24.1	Page content, in the following sections:
	   a. Temp & rainfall outlook (+1mo)
	   b. Rainfall outlook (+3mo)

	c. Tide outlook
	d. Moon phases
	e. Sea level rise
	f. Volcano alert level summary
	g. Link to Infrastructure sector case study on Climate Smart future climate portal
	h. Search archive– with calendar input fields

25. Tourism Sector Outlook

Sectoral CIS outlook product.

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries/tourism-climate-outlook

Req 25.1	Page content, in the following sections:
	  a. ENSO status
	  b. Rainfall outlook
	  c. Daytime temp outlook
	  d. Nighttime temp outlook
	  e. SST outlook
	  f. Sea level outlook
	  g. Tide outlook
	  h. Coral bleaching outlook
	  i. Volcano alert level summary
	  j. Latest earthquake map (+2.5 mag, past week); color-coded EQ list
	  k. Climate smart recommendations: Tourism operators & Tourists
	  l. Link to Tourism sector case study on Climate Smart future climate portal
	  m. TK Indicators
	  n. Search archive– with calendar input fields

26. Water Sector Outlook

Sectoral CIS outlook product.

Original URL	n/a

Req 26.1	Page content, in the following sections:
	  a. ENSO status
	  b. Rainfall outlook (+1mo)
	  c. Rainfall outlook (+3mo)
	  d. Climate smart recommendations: Tourism operators / Tourists
	  e. Link to Tourism sector case study on Climate Smart future climate portal
	  f. TK Indicators
	  g. Search archive– with calendar input fields

27. Agriculture Sector CIS – by station (template)

Sectoral CIS product. The design for this product, output from CliDEsc, is adequate –the page just needs to be in responsive html format instead of served up as an image. Each AWS requires a separate tab:
1. *Aneityum*
2. *Bauerfield*
3. *Lamap*
4. *Longana*
5. *Norsup*
6. *Pekoa*
7. *Port Vila*
8. *Sola*
9. *Whitegrass*

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/climate-information-services/agriculture
Req 27.1	AWS tab content, in the following sections: a. Rainfall (MTD)

	b. Soil moisture in root zone (MTD)
	c. Air temperature (MTD)
	d. Growing conditions (last 90 days)
	e. Recommended actions
	f. Link to Agriculture sector case study on Climate Smart future climate portal
	g. TK Indicators
	h. Search archive– with calendar input fields

28. Energy Sector CIS – by station (template)

Sectoral CIS product. The design for this product, output from CliDEsc*, is adequate –the page just needs to be in responsive HTML format instead of served up as an image. Each AWS requires a separate tab:*
1. *Aneityum*
2. *Bauerfield*
3. *Lamap*
4. *Longana*
5. *Norsup*
6. *Pekoa*
7. *Port Vila*
8. *Sola*
9. *Whitegrass*

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/climate-information-services/energy
Req 28.1	AWS tab content, in the following sections:
	a. Daily solar radiation (MTD)
	b. Max air temperature (MTD)
	c. Daily wind run (3-25m/s) km/day (MTD)
	d. Rainfall accumulation (MTD)
	e. Search archive– with calendar input fields

29. Fisheries Sector CIS – by station (template)

Sectoral CIS product. The design for this product, output from CliDEsc*, is adequate –the page just needs to be in responsive HTML format instead of served up as an image. Each AWS requires a separate tab:*
1. *Aneityum*
2. *Bauerfield*
3. *Lamap*
4. *Longana*
5. *Norsup*
6. *Pekoa*
7. *Port Vila*
8. *Sola*
9. *Whitegrass*

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries/fisheries-climate-outlook
Req 29.1	AWS tab content, in the following sections:
	a. SST (MTD)
	b. Sea level (MTD)
	c. Rainfall (MTD)
	d. Max air temp (MTD)
	e. Min air temp (MTD)
	f. Coral bleaching (MTD)
	g. Chlorophyll A concentration (MTD)
	h. Recommended actions
	i. Link to Fisheries sector case study on Climate Smart future climate portal
	j. TK Indicators

	k. Search archive– with calendar input fields

30. Health Sector CIS – by station (template)	

Sectoral CIS product. The design for this product, output from CliDEsc, is adequate –the page just needs to be in responsive HTML format instead of served up as an image. Each AWS requires a separate tab:
   1. Aneityum
   2. Bauerfield
   3. Lamap
   4. Longana
   5. Norsup
   6. Pekoa
   7. Port Vila
   8. Sola
   9. Whitegrass	

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/climate-information-ser-vices/health

Req 30.1	AWS tab content, in the following sections:
	   a. Rainfall (MTD)
	   b. Air temperature (MTD)
	   c. Heat stress (MTD)
	   d. Search archive– with calendar input fields

31. Infrastructure Sector CIS – by station (template)	

This is a new sectoral CIS product. Each AWS requires a separate tab:
   1. Aneityum
   2. Bauerfield
   3. Lamap
   4. Longana
   5. Norsup
   6. Pekoa
   7. Port Vila
   8. Sola
   9. Whitegrass	

Original URL	n/a

Req 31.1	AWS tab content, in the following sections:
	   a. Air temperature (mtd)
	   b. Rainfall (mtd)
	   c. Rainfall accumulation (mtd)
	   d. Dry/wet days
	   e. Days w/out rain
	   f. % of avg monthly rainfall
	   g. Sea level (mtd)
	   h. Daily wind run (3-25m/s) km/day
	   i. Yearly vs. daily avg wind run
	   j. Daily/monthly wind run (YoY)
	   k. Recommended actions
	   l. Link to Infrastructure sector case study on Climate Smart future climate portal
	   m. Search archive– with calendar input fields

32. Tourism Sector CIS – by station (template)	

This is a new sectoral CIS product. Each AWS requires a separate tab:
   1. Aneityum
   2. Bauerfield
   3. Lamap
   4. Longana
   5. Norsup	

6. *Pekoa*	
7. *Port Vila*	
8. *Sola*	
9. *Whitegrass*	
Original URL	n/a

Req 32.1	AWS tab content, in the following sections:
	   a. Air temperature (mtd)
	   b. Max air temp (mtd)
	   c. Min air temp (mtd)
	   d. Rainfall (mtd)
	   e. Rainfall accumulation (mtd)
	   f. SST (mtd)
	   g. Recommended actions
	   h. Link to Tourism sector case study on Climate Smart future climate portal
	   i. Search archive– with calendar input fields

33. Water Catchment CIS – by station (template)

This is a new sectoral CIS product – there is no current website equivalent. Refer to mockup here:
https://octopus.do/2utagln6hda#xpmbfo-water-catchment-cis-by-station.
Each AWS requires a separate tab:
1. *Sarakata River Catchment*
2. *Tagabe River Catchment*

Original URL	n/a

Req 33.1	AWS tab content, in the following sections:
	   a. Placeholder – river FMP and EWS data (TBC)
	   b. ENSO gauge chart
	   c. Rainfall gauge chart
	   d. Rainfall (mtd)
	   e. Rainfall accumulation (mtd)
	   f. Max daily rainfall
	   g. Dry/wet days
	   h. Days w/out rain
	   i. Total monthly rainfall
	   j. % of avg monthly rainfall
	   k. Recommended actions
	   l. Link to Water sector case study on Climate Smart future climate portal
	   m. TK Indicators
	   n. Search archive– with calendar input fields

34. Climate observation stations CIS (template)

Some sections of the climate observation station CIS pages are also shared with the sectoral climate observation pages – affording users different ways to find data. Timescales for most data are past 30 or 90 days.

Original URL	n/a

Req 34.1	Station selector dropdown. List:
	   a. Anelghowhat
	   b. Lamap
	   c. Norsup
	   d. Pekoa
	   e. Port Vila
	   f. Saratamata
	   g. Sola
	   h. Whitegrass

Req 34.2	Station name heading
Req 34.3	Current tab section
Req 34.4	Tab: Rainfall. Content, in the following sections: a. Dry/wet days

	b. Days w/out rain
	c. Total monthly rainfall
	d. % of avg monthly rainfall
	e. Longest wet period/longest dry period
	f. Rainfall accumulation
Req 34.5	Tab: Soil moisture. Content, in the following sections:
	a. Soil moisture in root zone
	b. Available water– start of month
	c. Available water– end of month
	d. No. days w/ water stress
	e. No. days w/ water runoff
Req 34.6	Tab: Growing conditions. Content, in the following sections:
	a. Growing conditions (past 90d)
	b. water stress risk
	c. waterlogging risk
	d. wind damage risk
Req 34.7	Tab: Temperature. Content, in the following sections:
	a. max/min air temps
	b. Daily max temp
	c. Daily min temp
	d. min/avg/max temps (last 6mo)
	e. daily/monthly max temp 2022 v 2023
	f. daily/monthly avg temp 2022 v 2023
Req 34.8	Tab: Heat Stress. Content, in the following sections:
	a. No. days w/ mod/high/extreme heat stress
	b. Heat stress – no. days (last 3mo)
	c. No. days >95% daytime humidity
	d. Min relative humidity
	e. No. days >30°C vs. no. days <30°C
	f. No. days >35°C
Req 34.9	Tab: Solar radiation. Content, in the following sections:
	a. Daily solar radiation
	b. Yearly & daily average solar radiation
	c. Daily/monthly solar radiation (YoY)
Req 34.10	Tab: Wind. Content, in the following sections:
	a. Daily wind run (3-25m/s) km/day
	b. Yearly vs. daily average wind run
	c. Daily/monthly wind run (YoY)
35. Climate data request form	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/climate/climate-information-ser-vices/data-services
Req 35.1	Climate data request form – improved html/css/js version of existing form

D. Geohazards

36. Geohazards main page	
This is the main page for Geohazards. It does not have an equivalent on the current website.	
Original URL	n/a
Req 36.1	Current alert boxes: Volcano / EQ / Tsunami – Slider with one item per warning category, colour coded by alert level (no colour if no warning active). Links to Warnings page
Req 36.2	Links: Volcano / EQ / Tsunami main pages
Req 36.3	Explanatory graphic: geohazard alert levels/symbols

Req 36.4	Explanatory text: Geohazard monitoring network – image map needs to be re-placed by web map. Current website equivalent: https://www.vmgd.gov.vu/vmgd/index.php/geohazards/network

37. Volcano main page	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano
Req 37.1	Current alert boxes: Volcanoes. Boxes with one item per warning category, colour coded by alert level (no colour if no warning active). To allow for occasions when concurrent hazard events have occurred, all current warnings/alerts must be visible at once (i.e no slider or carousel). Links to Warnings page.
Req 37.2	Table – Volcanic activity summary for all volcanoes: a. Suretamatai (Vanua Lava) b. Mt Garet (Gaua) c. Manaro Voui (Ambae) d. Benbow & Marum (Ambrym) e. Lopevi f. East Epi submarine volcano g. Yasur (Tanna)
Req 37.3	Vanuatu Volcanic Alert Level explainer – Colour code & icons TBC. Current website equivalent: https://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano/volcano-info/volcanic-alert-level
Req 37.4	Volcano webcams – Web map to show locations of webcams (with streaming images to be shown at one side on rollover?)
Req 37.5	Search volcano alert bulletin archive (all volcanoes)
38. Individual volcano page (template)	
This page is new – it merges the content from the subpages of https://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano/our-active-volcanos, https://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano. *Each volcano requires its own page based on this template:* *1. Benbow & Marum (Ambrym)* *2. East Epi submarine volcano* *3. Lopevi* *4. Manaro Voui (Ambae)* *5. Mt Garet (Gaua)* *6. Suretamatai (Vanua Lava)* *7. Yasur (Tanna)*	
Original URL	n/a
Req 38.1	Current alert text & graphic icon for this volcano. Colour coded by alert level (if no warning is active, page text should read 'No volcano alerts or warnings are currently active'). Active warnings link to Warnings page.
Req 38.2	Location map & image(s). Web map showing volcano locations, marked by volcano icons, and showing current alert level for each.
Req 38.3	Vanuatu Volcanic Alert Level explainer. Current website equivalent: https://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano/volcano-info/volcanic-alert-level. (repeated from main geohazards page)
Req 38.4	Volcano info: description, elevation, lat/long coordinates, type, recent activity, past eruptions. The content of this page is to be merged from these current website pages: 1. https://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano/our-active-volcanos (and the subpages for each volcano) 2. Brochure content on https://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano/volcano-info/resources
Req 38.5	Webcam feed. n.b. not every volcano has a functioning webcam feed.

Req 38.6	Safety map. The content for this page is to be merged from the 'tourist' safety maps and the long-term hazard maps for each volcano found on https://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano/volcano-info/resources
Req 38.7	Volcano survival guide. HTML version of the volcano survival guides for each volcano found on https://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano/volcano-info/resources
Req 38.8	Drum plot image. n.b. not every volcano has a functioning drum plot feed.
Req 38.9	Search volcano alert bulletin archive (this specific volcano only)
39. Earthquake main page	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/geohazards/earthquake
Req 39.1	Current alert boxes: Earthquakes. Boxes with one item per warning category, colour coded by alert level (no colour if no warning active). To allow for occasions when concurrent hazard events have occurred, all current warnings/alerts must be visible at once (i.e no slider or carousel). Links to Warnings page.
Req 39.2	Latest earthquake map (+2.5 mag, past week); colour-coded EQ list. Design to be based on https://earthquake.usgs.gov/earthquakes/map/
Req 39.3	Earthquake survival guide – HTML version of https://www.vmgd.gov.vu/vmgd/images/geo-media/docs/earthquake-tsunami/earthquake_brochures_2021/Eng/Earthquake/Earthquake_information_brochure_ENGLISH.pdf
Req 39.4	Search EQ alert bulletin archive (search by year/month)
40. Earthquake drum plot page (template)	
This is a new page template. Each seismic station requires its own page based on this template: 1. *DVP (Efate)* 2. *RTV (Efate)* 3. *PVM (Efate)* 4. *LAKA (Malekula)* 5. *SANVU (Santo)* 6. *ABNG (Ambae)*	
Original URL	n/a
Req 40.1	Current alert: individual EQ. Colour coded by alert level (if no warning is active, page text should read 'No volcano alerts or warnings are currently active'). Active warnings link to Warnings page.
Req 40.2	Earthquake drum plot image. Web map to show location of each seismic station. EQ drum images on current website: https://www.vmgd.gov.vu/vmgd/index.php/geohazards/earthquake/drums
Req 40.3	Earthquake survival guide – (section repeated from parent page) HTML version of https://www.vmgd.gov.vu/vmgd/images/geo-media/docs/earthquake-tsunami/earthquake_brochures_2021/Eng/Earthquake/Earthquake_information_brochure_ENGLISH.pdf
Req 40.4	Search EQ alert bulletin archive (search by year/month – repeated from parent page)
41. Tsunami main page	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/tsunami
Req 40.1	Current alerts: Tsunami. Colour coded by alert level (if no warning is active, page text should read 'No volcano alerts or warnings are currently active'). Active warnings link to Warnings page.
Req 40.2	Tsunami survival guide. This content is currently provided as images – the new page needs to display it as HTML. The new page is required to merges content from these pages: 1. https://www.vmgd.gov.vu/vmgd/index.php/tsunami/tsunami-resources/tsunami-safety 2. https://www.vmgd.gov.vu/vmgd/index.php/tsunami/tsunami-resources/tsunami-preparedness

	3. https://www.vmgd.gov.vu/vmgd/images/geo-media/docs/earthquake-tsunami/earthquake_brochures_2021/Eng/Tsunami/Tsunami_information_brochure_ENGLISH.pdf
Req 40.3	Explainer: Tsunami info board. Current website equivalent: https://www.vmgd.gov.vu/vmgd/index.php/tsunami/tsunami-resources/tsunami-signage
Req 40.4	Tsunami evacuation maps. Current website equivalent: https://www.vmgd.gov.vu/vmgd/index.php/maps-and-charts/tsunami-evacuation-map
Req 40.5	Search Tsunami alert bulletin archive (search by year/month? Or just by year, given tsunami hazards tend to occur at most several times per year?)

E. Learn More
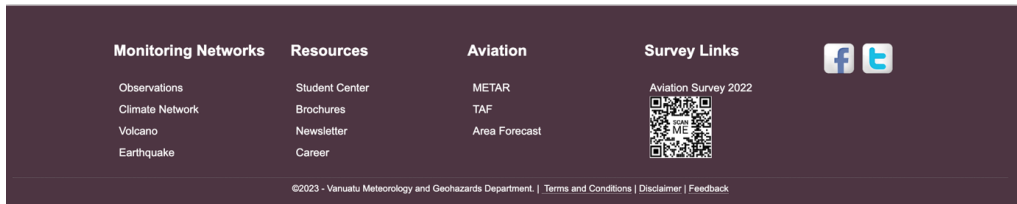
42. Learn More main page	
This is a new page. It is intended to contain informational/educational content that is non-critical (i.e. info that is not an alert or warning). The concept for this page is modelled on the UK Met Service 'Learn about…' section: https://www.metoffice.gov.uk/weather/learn-about	
Original URL	n/a
Req 42.1	Weather – Feature content links – Weather
Req 42.2	Climate – Feature content links – Climate
Req 42.3	Volcanoes – Feature content links – Volcanoes
Req 42.4	Earthquakes – Feature content links – Earthquakes
Req 42.5	Tsunami – Feature content links – Tsunami
43. Weather info category page	
Original URL	n/a
Req 43.1	Introductory text
Req 43.2	Links: weather content
Req 43.3	Link: Weather glossary
44. Weather info content page (template)	
Original URL	n/a
Req 44.1	Introductory text
Req 44.2	Body text
Req 44.3	Links: weather subtopic content
45. Weather info subtopic content page (template)	
Original URL	n/a
Req 45.1	Introductory text
Req 45.2	Body text
Req 45.3	Links: Related topics
46. Weather glossary	
Exemplar: http://www.bom.gov.au/lam/glossary/apagegl.shtml *(Content for this page in development*	
Original URL	n/a
Req 46.1	Alphabetical Index
Req 46.2	Body text – entries bolded
Req 46.3	Links: Related topics
47. Climate info category page	
Original URL	n/a
Req 47.1	Introductory text
Req 47.2	Links: climate content
Req 47.3	Link: Climate glossary
48. Climate info content page (template)	

Original URL	n/a	
Req 48.1	Introductory text	
Req 48.2	Body text	
Req 48.3	Links: climate subtopic content	
49. Climate info subtopic content page (template)		
Original URL	n/a	
Req 49.1	Introductory text	
Req 49.2	Body text	
Req 49.3	Links: Related topics	
50. Climate glossary		
Exemplar: http://www.bom.gov.au/lam/glossary/apagegl.shtml *(Content for this page in development*		
ment		
Original URL	n/a	
Req 50.1	Alphabetical Index	
Req 50.2	Body text – entries bolded	
Req 50.3	Links: Related topics	
51. Volcano info category page		
Original URL	n/a	
Req 51.1	Introductory text	
Req 51.2	Links: volcano content	
Req 51.3	Link: Volcano glossary	
52. Volcano info content page (template)		
Original URL	n/a	
Req 52.1	Introductory text	
Req 52.2	Body text	
Req 52.3	Links: volcano subtopic content	
53. Volcano info subtopic content page (template)		
Original URL	n/a	
Req 53.1	Introductory text	
Req 53.2	Body text	
Req 53.3	Links: Related topics	
54. Volcano glossary		
Exemplar: http://www.bom.gov.au/lam/glossary/apagegl.shtml *(Content for this page in development*		
ment		
Original URL	n/a	
Req 54.1	Alphabetical Index	
Req 54.2	Body text – entries bolded	
Req 54.3	Links: Related topics	
55. Earthquake info category page		
Original URL	n/a	
Req 55.1	Introductory text	
Req 55.2	Links: earthquake content	
Req 55.3	Link: Earthquake glossary	
56. Earthquake info content page (template)		
Original URL	n/a	
Req 56.1	Introductory text	
Req 56.2	Body text	
Req 56.3	Links: earthquake subtopic content	
57. Earthquake info subtopic content page (template)		
Original URL	n/a	
Req 57.1	Introductory text	
Req 57.2	Body text	
Req 57.3	Links: Related topics	
58. Earthquake glossary		

Exemplar: http://www.bom.gov.au/lam/glossary/apagegl.shtml *(Content for this page in development*	

Original URL	n/a
Req 58.1	Alphabetical Index
Req 58.2	Body text – entries bolded
Req 58.3	Links: Related topics

59. Tsunami info category page	
Original URL	n/a
Req 59.1	Introductory text
Req 59.2	Links: tsunami content
Req 59.3	Link: Tsunami glossary

60. Tsunami info content page (template)	
Original URL	n/a
Req 60.1	Introductory text
Req 60.2	Body text
Req 60.3	Links: tsunami subtopic content

61. Tsunami info subtopic content page (template)	
Original URL	n/a
Req 61.1	Introductory text
Req 61.2	Body text
Req 61.3	Links: Related topics

62. Tsunami glossary	
Exemplar: http://www.bom.gov.au/lam/glossary/apagegl.shtml *(Content for this page in development*	
Original URL	n/a
Req 62.1	Alphabetical Index
Req 62.2	Body text – entries bolded
Req 62.3	Links: Related topics

FOOTER SECTION

63. Footer nav menu	
Current version:	
Original URL	Bottom of page
Req 63.1	Global element –present across the website on every page. Menu item list (EN): 1. VMGD Intranet login 2. Joomla CMS login 3. About VMGD 4. Contact Us 5. Policies 6. Link: VMGD Facebook page 7. Download links: VMGD mobile app
64. VMGD Intranet login	

This is a new page to allow VMGD staff to access internal resources (local and cloud-based tools. LDAP login authentication for staff in VMGD offices will be via intranet, while remote staff will access the VMGD VPN.

Each VMGD division will need a portal containing links to the tools that they use (full list of URLs TBC):

1. *Climate Division*
2. *CCDRR Division*
3. *Forecasting Division*
4. *Geohazards Division*
5. *Observations Division*

See organisational structure for more info about VMGD's divisions.

Original URL	n/a	
Req 64.1	Secure VMGD staff login form (authenticated by VMGD's LDAP server)	
Req 64.2	Valid login will redirect to the division portal that the individual user is assigned to	

65. Joomla CMS login

Original URL	This page is new – there is no Joomla login hard-coded into the current website.
Req 65.1	Secure login to CMS

66. About VMGD page

Corporate/organisational content

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/about-us

Req 66.1	Submenu pages:
	   a. Corporate documents
	   b. Organisational structure
	   c. Current tenders
	   d. Current job vacancies
	   e. Projects

Req 66.2	Body text area

67. Corporate documents

Download portal for key organisational docs.

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/about-us/corporate-documents
Req 67.1	Document links – docs could be linked to as downloads, or as separate html pages (i.e. allow for both files and internal/external pages)

68. Organisational structure

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/about-us/organisational-structure
Req 68.1	Page Division organograms – currently images, but preferably, the new pages should serve these as editable JS charts

69. Current tenders

VMGD tender information – not currently in use, please populate with dummy content

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/about-us/resources/vacancy-tender-list
Req 69.1	List all open tenders – e.g. https://www.sprep.org/tenders
Req 69.2	Automatic archive – tenders move here once due date has passed

70. Current job vacancies

VMGD job vacancy information – not currently in use, please populate with dummy content

Original URL	https://www.vmgd.gov.vu/vmgd/index.php/about-us/resources/vacancy-tender-list
Req 70.1	List all open job vacancies – e.g. https://www.sprep.org/career-opportunities
Req 70.2	Automatic archive – job vacancies move here once due date has passed

71. Projects category page

This is a new page – content TBC

Original URL	n/a

Req 71.1	Links to Projects – Each project link needs an image/icon, a title, 2-3 lines of description, and a 'read more' link

72. Project page (template)	
This is a new page – content TBC	
Original URL	n/a
Req 72.1	Project description text area
Req 72.2	Project page content area
Req 72.3	Download links – project publications

73. VanKIRAP Project page	
Based on Project page (template)	
Original URL	n/a
Req 73.1	Project description text
Req 73.2	Project component summaries
Req 73.3	Placeholder: Climate Smart future climate portal (content TBD). This section is functionally identical to the equivalent section on the Climate Smart future climate portal landing page. Estimated delivery date: 23/9/2023.
Req 73.4	Placeholder: APCC OSCAR web app (content TBD). CIS product in development by APCC. Estimated delivery date: 23/7/2023
Req 73.5	Placeholder: Climate Watch mobile app (content TBD). Needs explanatory text and links to Earthwatch Australia's Climate Watch app page (TBC) plus download links to Android and Apple versions of app. Estimated delivery date: 23/6/2023.
Req 73.6	Placeholder: NIWA Climate Maps (content TBD). Set of web-based maps in development by NIWA. Estimated delivery date: 23/6/2023.
Req 73.7	Placeholder: BOM Marine heatwave tool (content TBD). This is a CIS being developed by BOM. Once completed, it will most likely become a page under the Climate section. Estimated delivery date: 23/6/2023.
Req 73.8	Placeholder: Sarakata FMP & EWS (content TBD). This is a CIS tool being developed by Tonkin + Taylor. It will provide data for the Water Sector CIS pages under Climate. Estimated delivery date: 23/6/2023
Req 73.9	Link: Project Traditional Climate Knowledge page. This page will house all TK content developed by the project. Content TBD.
Req 73.10	Download links – project publications

74. Traditional Climate Knowledge page	
This page and its child pages will first be a part of the VanKIRAP products page. Once the project is complete, it will become a dedicated part of the 'Learn More' section of the website.	
Original URL	n/a
Req 74.1	Introduction to TK – explanatory text
Req 74.2	Links to TK indicators page. Traditional knowledge indicator content is organised by 3 seasons: a. Cyclone season b. Wet season c. Dry season Each season is divided further into categories of indicators: d. Plants e. Birds f. Terrestrial mammals g. Marine mammals h. Fish i. Marine invertebrates j. Weather conditions k. Other natural phenomena

		Will need to include a web map – with clickable locations that link to stories about TK content for that location (content TBC) Concept: http://www.bom.gov.au/iwk/?ref=ftr
	Req 74.3	Links to TK calendars page – This section links to the category page for TK calendars. These are seasonal calendars that show TK indicators for climate in a calendar format (content in development). At this stage, one calendar per each 6 provinces will be produced.
75. Traditional Weather and Climate Forecast Indicators (template)		
	Original URL	n/a

	Req 75.1	One page per season:
		    a. Cyclone season
		    b. Wet season
		    c. Dry season

	Req 75.2	Birds content section – each indicator name requires indicator name, photo, and text areas
	Req 75.3	Plants content section – each indicator name requires indicator name, photo, and text areas
	Req 75.4	Marine mammals content section – each indicator name requires indicator name, photo, and text areas
	Req 75.5	Marine invertebrates content section – each indicator name requires indicator name, photo, and text areas
	Req 75.6	content section – each indicator name requires indicator name, photo, and text areas content section – each indicator name requires indicator name, photo, and text areas
	Req 75.7	Terrestrial mammals content section – each indicator name requires indicator name, photo, and text areas
	Req 75.8	Weather conditions content section – each indicator name requires indicator name, photo and text areas
	Req 75.9	Other natural phenomena content section – each indicator name requires indicator name, photo and text areas
	Req 75.10	Download link – TK Indicator publication (PDF version)
76. Traditional Climate Knowledge Calendars (template)		
Each calendar will be presented in two forms – as a graphic, and a table, with a download link to a PDF version.		
	Original URL	n/a

	Req 76.1	One page per province:
		    a. Torba
		    b. Sanma
		    c. Penama
		    d. Malampa
		    e. Shefa
		    f. Tafea

	Req 76.2	Calendar graphic area
	Req 76.3	Calendar – table version
	Req 76.4	Download link – TK Indicator publication (PDF version)
77. Contact Us page		
	Original URL	https://www.vmgd.gov.vu/vmgd/index.php/about-us/contact-us
	Req 77.1	Contact form
	Req 77.2	Links: office locations
78. Office locations page		
This is a new page.		
	Original URL	n/a
	Req 78.1	Head office location – text area & web map

Req 78.2	Observation station details – This section is just for physical address, phone and email address details for each observation station. Each item should also link back to the relevant Observation Station page under 'Weather'

79. Policies	
This is a new menu item (doesn't link to its own page)	
Original URL	n/a
Req 79.1	Footer nav menu item only

80. Forecast policy	
n.b. this page content seems to be missing or misdirected on the current website – new content TBC	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/public-forecast/fore-cast-policy
Req 80.1	Body text area

81. Disclaimer	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/about-us/disclaimer-info
Req 81.1	Body text area

82. Accessibility policy	
This is a new page – content TBC	
Original URL	n/a
Req 82.1	Body text area

83. Privacy policy	
This is a new page – content TBC	
Original URL	n/a
Req 83.1	Body text area

84. Cookie policy	
This is a new page – content TBC	
Original URL	n/a
Req 84.1	Body text area

85. Acceptable use policy	
The content for this page on the current website appears to be incomplete – additional content TBC	
Original URL	https://www.vmgd.gov.vu/vmgd/index.php/about-us/terms-and-conditions
Req 85.1	Body text area

86. Link: VMGD Facebook page	
Icon link to VMGD Facebook page	
Original URL	n/a
Req 86.1	Icon link to https://www.facebook.com/vmgd.gov.vu (opens in new tab)

87. Download links: VMGD mobile app	
Download links to VMGD mobile apps (once completed)	
Original URL	n/a
Req 87.1	Link to app in Google Play Store (opens in new tab)
Req 87.2	Link to app in Apple App Store (opens in new tab)

GENERATED PAGES

88. 404 Error page	
Original URL	n/a
Req 88.1	Error message text area
Req 88.2	Site content search form (prepopulated with content that produced error)

89. Search results page (template)	
Original URL	In page header
Req 89.1	Search results (styled for optimal UX), with pagination

TOR 1b

Non-functional requirements for VMGD website redevelopment – frontend

90. UI/UX	
Req 90.1	Website design and information architecture must be centred on the audience's informational needs. The usability and user experience of the users in Vanuatu differs from that of an audience in, for example, Australia, the United States, Asia, or Europe.
Req 90.2	Must have a contemporary look and feel
Req 90.3	Climate products should incorporate VanKIRAP's climate brand (in development) where possible
Req 90.4	Must use a design system to offer a consistent UX. This includes CSS, fonts, colour scheme, web components (e.g. dropdowns) and layout. This is to ensure future modifications to the website are consistent with the redesign, and production processes are more efficient.
Req 90.5	Low bandwidth users should be served up a simplified version of the website
91. Accessibility	
Req 91.1	Must comply with Web Content Accessibility Guidelines (WCAG) 2.1 standards for disabled users. Refer to the Vanuatu Government's Web Accessibility Guidelines https://rti.gov.vu/images/docs/guidelines/RTI%20Web%20Accessibility%20Guideline.pdf
92. Management	
Req 92.1	Must reduce resources and time required for content production and updating by streamlining content preparation, editing, and uploading processes
93. Documentation	
Req 93.1	It is important that VMGD retains the ability to maintain the website in Vanuatu. All modified and new content production processes must be fully documented. This may include tutorials, how-to guides and other reference material that can be understood by VMGD non-ICT and Engineering Division staff. These may include troubleshooting guides, flow diagrams and other technical documentation.
94. Localisation	
Req 94.1	Must have multilingual versions of each page and page templates in all three of Vanuatu's official languages (Bislama, English, French)

TOR 2a

Functional requirements for VMGD website redevelopment – backend
Refer to **https://octopus.do/h9iggek1jm** for a visual sitemap of the redeveloped website.

95. Website code	
Req 95.1	All code should be maintained under git
	All source code should be properly documented, in English
Req 95.2	All libraries, frameworks, and code should be open source and should be stored in Vanuatu. This allows products to be maintained, updated and improved. There should be no vendor lock-in.
Req 95.3	All new JavaScript code should be developed using either JavaScript or TypeScript and be ECMAScript compliant
Req 95.4	HTML/CSS should be mobile first (i.e. responsive)
Req 95.5	The amount of CSS should be minimised (e.g. by removing unused and redundant CSS)
Req 95.6	The amount of JavaScript should be minimised (e.g. by using a minimiser and removing redundant and unused code)
Req 95.7	Rationalise the number of map services used (to a single open source service, if possible)
Req 95.8	Use an open source JS charting library to produce all charts on the website
Req 95.9	Ingest data from Meteo Factory into a database. Currently, some (forecast) data from Meteo Factory is stored as flat XML files and parsed by the frontend. It may be more efficient to store this data in a database.
96. Protocols and standards	
Req 96.1	Critical alerts, warnings, and advisories must support Common Alerting Protocol (CAP). CAP allows a warning message to be disseminated simultaneously over many warning systems, increasing warning effectiveness and simplifying the task of activating a warning for responsible officials.
Req 96.2	Must comply with Web Content Accessibility Guidelines (WCAG) 2.1 standards for disabled users. Refer to frontend Requirement 89.1
Req 96.3	Images should use modern formats like WebP to reduce file size
97. Server software	
Req 97.1	Operating system for VMGD server should be upgraded to a LTS version of Linux, in collaboration with VMGD ICT and Engineering Division
Req 97.2	Upgrade Joomla to latest version, in collaboration with VMGD ICT and Engineering Division
Req 97.3	Apache web server should be replaced with NGINX
Req 97.4	Local open source analytics software should be used to ensure that usage data is logged locally for analysis by VMGD ICT & Engineering Division
Req 97.5	Edit robots.txt to make the website searchable by search engine crawlers
98. Caching and HTTP headers	
Req 98.1	Suitable cache policies must be used. Some products will require a short lifetime, while for other products, too short a lifetime will increase bandwidth
Req 98.2	GZIP compression response headers should be used
99. Web host	

Req 99.1	Ensure that a staging server is operational that:
	    a. Is not publicly accessible;
	    b. synchronises with the production server correctly.
	(n.b. a staging server Is present on the current web server which may require some modifications in liaison with VMGD ICT and Engineering Division)

Req 99.1	Obscure PHP headers and server version

TOR 2b

Non-functional requirements for VMGD website redevelopment – backend

100. Documentation	
Req 100.1	backend development and maintenance must be fully documented. This may include tutorials, how-to guides and other reference material that can be understood by VMGD ICT and Engineering Division staff. These may include troubleshooting guides, flow diagrams and other technical documentation.
101. Maintainability	
Req 101.1	The website needs to be maintained within Vanuatu. This means that the IT tools and programming languages used should be suited to the training and level of expertise available in Vanuatu. A solution built for conditions in Australia, NZ, Asia or the USA may not be suitable in Vanuatu.
Req 101.2	It should be easy to add new products. In other words, when new products come about, it should only require configuration changes, not code changes.
Req 101.3	Ensure website adheres to modern protocols and standards for performance
Req 101.4	Achieve key performance benchmark for all pages – Largest Contentful Paint of 1200 milliseconds, or less
Req 101.5	Achieve key performance benchmark for all pages – Total Blocking Time of 150 milliseconds, or less
Req 101.6	Achieve key performance benchmark for all pages – Cumulative Layout Shift of 0.1, or less
102. Redundancy & resiliency	
Req 102.1	Establish redundant and resilient high performance web hosting solution to ensure that the website remains available to users inside and outside of Vanuatu during natural disaster events
Req 102.2	Ensure offsite backup is functioning
103. Security	
Req 103.1	Improve website security against attack (state-sponsored, cybercriminal, ransomware are the most likely threat models)
Req 103.2	Harden security of Joomla (once upgraded to latest version)
104. Usability	
Req 104.1	Remove 'index.php' from Joomla permalinks
Req 104.2	Improve Joomla's handling of permalinks to ensure clean, SEO-friendly permalinks across the whole website

TOR 3a

Functional requirements for VMGD mobile app (Android and iOS)
Refer to **https://octopus.do/ina0edpupy** for a diagram of the mobile app's information architecture.

105. Analytics	
Req 105.1	Mobile app analytics tool required to measure audience engagement, acquisition, retention rate, stickiness ratio, session length, churn rate, exit rate and app performance
106. Information architecture	
Req 106.1	The mobile app's information architecture should follow the structure outlined in Annex 3.
107. Protocols and standards	
Req 107.1	Critical alerts, warnings, and advisories must support Common Alerting Protocol (CAP). CAP allows a warning message to be consistently disseminated simultaneously over many warning systems, increasing warning effectiveness and simplifying the task of activating a warning for responsible officials.
Req 107.2	Must comply with Web Content Accessibility Guidelines (WCAG) 2.1 standards for disabled users.
Req 107.3	Images should use modern formats like WebP to reduce file size
108. UX/UI	
Req 108.1	The mobile app should provide a streamlined, low-bandwidth version of the VMGD website
109. App code	
Req 109.1	All code should be maintained under git
	All source code should be properly documented, in English
Req 109.2	All libraries, frameworks, and code should be open source and should be stored in Vanuatu. This allows products to be maintained, updated and improved, and avoids vendor lock-in.
Req 109.3	All new JavaScript code should be developed using either JavaScript or TypeScript and be ECMAScript compliant
Req 109.4	The amount of CSS should be minimised (e.g. by removing unused and redundant CSS)
Req 109.5	The amount of JavaScript should be minimised (e.g. by using a minimiser and removing redundant and unused code)
Req 109.6	Rationalise the number of map services used (to a single open source service, if possible)

TOR 3b

Non-functional requirements for VMGD mobile app (Android and iOS)

110. Application architecture	
Req 110.1	The mobile app should be developed as a hybrid app as this is the best fit for the Vanuatu context in terms of cost, complexity, efficiency, and maintainability.
111. Documentation	
Req 111.1	All mobile app development and maintenance processes must be fully documented. This may include tutorials, how-to guides and other reference material that can be understood by VMGD ICT and Engineering Division staff. These may include troubleshooting guides, flow diagrams and other technical documentation.
112. Maintainability	
Req 112.1	The mobile app needs to be maintained within Vanuatu. This means that the IT tools and programming languages used should be suited to the training and level of expertise available in Vanuatu.
Req 112.2	It should be easy to add new products. In other words, when new products come about, it should only require configuration changes, not code changes.
113. Security	
Req 113.1	Ensure that the mobile apps conforms to the OWASP Mobile Application Security Verification Standard (MASVS)

Annex 1: Audiences

Primary audiences

1. Vanuatu public

2. Vanuatu public servants

3. Technical users of focal sectors (agriculture, fisheries, infrastructure, water, and tourism)

4. End users of focal sectors

N.b. These audiences are not discrete entities; there is inevitably some overlap between them.

Secondary audiences

1. Expatriate Ni-Vanuatu resident in nearby countries (Australia, NZ, New Caledonia)

2. Tourists planning a visit to Vanuatu, or already in country

3. Aviation industry users

4. Maritime industry users

5. Staff of VMGD partner agencies – Australian Bureau of Meteorology, NZ Met Service, NIWA, Meteo France, APCC, CSIRO, SPREP

6. Staff of Pacific Islands region national meteorological services (NMS) and national geohazards services (NGS)

7. Staff of NMS and NGS in other parts of the world

Summary – Key Vanuatu audience data

- Vanuatu's total population in 2022, based on the 2020 National Population and Housing Census, is approximately 314,000.

- 74% of the population live in rural areas, compared to 26% in urban areas

- Rural population is concentrated around provincial centres

- Population is relatively young: 56% are under 25

- Urban dwellers are more highly educated due to access to institutions and earning power

- Port Vila has the highest concentration of tertiary educated people in the country

- In rural areas, 97.5% of people speak an indigenous vernacular language or Bislama as their first language

- In urban areas, 95.7% of people speak an indigenous vernacular language or Bislama as their first language

- Nationally, 14.5% speak Bislama as their first language

- Nationally, 2.1% speak English as their first language

- Nationally, 0.8% speak French as their first language

- The proportion who say Bislama is their first language is highest in urban areas – 31% v. 11% in rural areas

- Women make up 45% of the workforce

- Women have a 0.2% lower rate of numeracy compared to men nationally

- Rural women are more likely to be innumerate (11.7%) versus urban areas (6.5%).

- 5-8% of the population have a disability

- Disabled people are four times as likely to reside in rural areas

- 125,100 total internet users in Vanuatu (2021)

- Men are more likely to use the internet, and this trend is strongest in rural areas

- There are proportionally more rural internet users than urban internet users – 58% versus 42%

- 60% of population still not using internet

- 89% of internet use occurs on a mobile phone

- Social media is the main reason users access the internet

- 44% say the internet and Facebook are the most important means of accessing news and information

- 64.7% of Vanuatu households have access to electricity

- 83% of rural households use solar power as the main electrical power source

Current VMGD website audience

Taken from VanKIRAP Communications Strategy, based on 2021 Google Analytics and semrush.com data. n.b. full access has not been granted to the GA account, so this information may be incomplete.

Overall traffic

- There are two sets of website traffic figures available from two different commercial website analytics tools, semrush.com and Google Analytics. The data available from Google Analytics is more detailed and is installed on the host server for vmgd.gov.vu, so may be more reliable, whereas the semrush.com data is gleaned from a free version of the tool which does not offer disaggregated traffic data per country.

- For the official Vanuatu Government domain gov.vu, of which vmgd.gov.vu is a subdomain, semrush.com reports a total of 254,466 visitors from all countries in 2021.

- semrush.com estimates total traffic for vmgd.gov.vu at 74,592 global users per annum in 2021 – an average of 6,216 per month, 204 per day, and 9 per hour, which approximates to about 29% of all visitation to *gov.vu websites.

- Google Analytics data for vmgd.gov.vu gives a figure of 51,689 total users in 2021, 44% lower than that reported by semrush.com, and a drop of 28% YoY on GA data. This equates to an average of 4,307 users per month, 142 per day and 6 per hour. 97% were new users (i.e. visitors who have not used the website before).

- Global website visitors were looking at 16.5 pages per session, with an average session length of 4 minutes and 55 seconds, according to Google Analytics.

- The average bounce rate for all visitors was 47% in 2021, a YoY increase of 8%.

Vanuatu users

- In 2021, Google Analytics says 36.1% of all website traffic came from Vanuatu, or 18,662 local users in total, an average of 1,555 users per month, 51 per day, and 2 per hour.

- 91.8% of these were new users. Of the Vanuatu total, 95.9% of traffic came from Port Vila, the remainder from elsewhere in the country (n.b. this figure may not be fully accurate as local ISPs do not accurately track user location).

- The total from Google Analytics equates to approximately 15% of the total number of internet users in Vanuatu in 2021, and about 20% of all Vanuatu visits to *gov.vu subdomains.

- The average bounce rate was 36.4%, average number of pages viewed per session was 14.8,

average session duration was 05:01, and average page load time was 4.98 seconds.

Demographics

- The age group that visited the most were the 25-34s (26.9%), followed by 35-44s (19.1%), 45-54s (17.7%), 18-24s (17.4%), 55-64s (9.6%), and 65+ (9.2%).

- Women were 51.3% of the Vanuatu audience, versus 48.7% men. Men had a lower bounce rate, looked at more pages per session, and spent more time on the website per session.

- Rural Vanuatu users had a lower bounce rate, looked at significantly more pages per session, and spent significantly more time on the website per session.

- 92.7% of Vanuatu users accessed the site with their browser set to a variant of English, and 3.4% on a variant of French.

Audience Acquisition

- 61.9% of Vanuatu visitors to the website were acquired from organic search, while 31.5% visited the website directly, 5% came from social media, and 1.6% were referred by other websites.

- Google accounts for 97.6% of all VU search traffic, and Facebook accounts for 98.7% of all VU social traffic.

Audience behaviour

- Despite the relatively small size of the Vanuatu audience, users in Vanuatu accounted for 48.7% of all page views on the website in 2021. Spikes in website visitation appear to coincide with significant weather, volcano or tsunami events, and most visitation is concentrated around cyclone season from October through to April, dropping during the winter months.

- The 20 most-visited pages accounted for 95.7% of all Vanuatu traffic to the website in 2021. 17 of these were forecast pages. They are listed with their stats below:

#	Page (root is /vmgd/index.php)	Page views	Uniques	Avg.dwell time	Entrances	Bounce %	Exit %
	Totals/averages	**949,073**	**141,209**	**00:00:21**	**59,544**	**37.17%**	**6.27%**
1	/forecast-division/maps-and-charts/latest-vanuatu-group-chart	767,735	10,098	00:00:12	3,735	11.41%	0.78%
2	/vmgd/index.php	28,446	20,632	00:01:00	18,593	19.34%	22.50%

3	/forecast-division	14,745	11,840	00:01:12	7,299	41.55%	39.34%
4	/forecast-division/public-fore-cast	10,378	7,528	00:00:26	1,220	22.38%	12.13%
5	/forecast-division/tropical-cy-clone/vanuatu-cyclone-track-ing-map	8,611	6,233	00:01:56	3,873	62.72%	51.11%
6	/forecast-division/tropical-cy-clone	8,002	5,405	00:00:44	1,618	33.93%	20.71%
7	/forecast-division/tropical-cy-clone/information	7,470	5,042	00:01:03	1,340	30.60%	21.83%
8	/forecast-division/tropical-cy-clone/track	6,813	5,070	00:01:44	1,585	56.34%	40.89%
9	/forecast-division/maps-and-charts/latest-satellite-image	6,682	5,044	00:01:07	1,760	44.20%	32.19%
10	/forecast-division/public-fore-cast/media	5,821	4,806	00:04:14	3,113	78.54%	72.77%
11	/forecast-division/public-fore-cast/7-day	5,653	4,666	00:01:32	1,281	55.58%	45.27%
12	/forecast-division/marine-fore-cast	4,709	3,315	00:01:25	1,232	57.87%	36.02%
13	/forecast-division/maps-and-charts	4,627	3,059	00:00:26	517	25.92%	12.75%
14	/forecast-division/tropical-cy-clone/advisory	4,568	3,131	00:01:29	773	30.92%	23.12%
15	/forecast-division/warnings/se-vere-weather-warning	4,543	3,400	00:01:10	683	44.07%	26.06%
16	/geohazards/earthquake	4,444	2,792	00:01:50	1,243	48.75%	31.68%
17	/warnings/tsunami-adivsory	4,294	1,840	00:03:53	731	58.41%	27.99%
18	/forecast-division/warn-ings/marine-warning	3,589	2,636	00:01:19	497	52.11%	27.14%
19	/forecast-division/warn-ings/current-bulletin	3,464	2,245	00:00:30	206	28.16%	12.01%
20	/forecast-division/aviation-fore-cast/metar	3,381	2,573	00:01:53	1,358	36.08%	32.18%

Climate-related content

- Climate-specific content accounted for only 0.5% of all Vanuatu visitation, or 4,594 page views in total in 2021. The average bounce rate for climate pages was slightly higher than the average for Vanuatu visitation across the website. Time spent on climate content was 68% less compared to the overall Vanuatu visitation average.

Technology Usage

- 61.2% of Vanuatu users accessed the website using a mobile phone in 2021, 35.7% on a desktop PC, and 3.1% on a tablet.

- 54.5% of Vanuatu users accessed the site on a device running Google's Android operating system, 31.7% on Microsoft Windows, 9.6% on Apple's iOS, and 3.9% on Apple's macOS.

- 84.9% of mobile devices accessing the site were running Google's Android OS, and 15% were running Apple's iOS.

- 69.5% of Vanuatu users accessed the site using Google's Chrome browser, 10.2% used Apple's Safari browser, and 7.2% used Mozilla Firefox.

- A Vanuatu version of the Android Google Play Store is available for Vanuatu, but there is no corresponding Apple App Store for Vanuatu

- Android includes two localisations for Vanuatu – English (Vanuatu) and Français (Vanuatu). Apple does not offer any language localisations for iOS/iPadOS.

- Support for Bislama localisation is not available in any currently available operating system or web browser.

Caveat: search queries

- Search Console is not integrated in Google Analytics, so no data available in GA on search queries in Google.

- Commercial search engine marketing tool semrush.com data on vmgd.gov.vu suggests that 93% of search traffic is informational in nature, 3.9% is transactional, 2.6% is navigational and 0.4% is commercial.

- semrush.com also has some search query data available for the domain, although only queries for February 2022 were available, and this data was not disaggregated by country. All the top five search keywords were volcano-related.

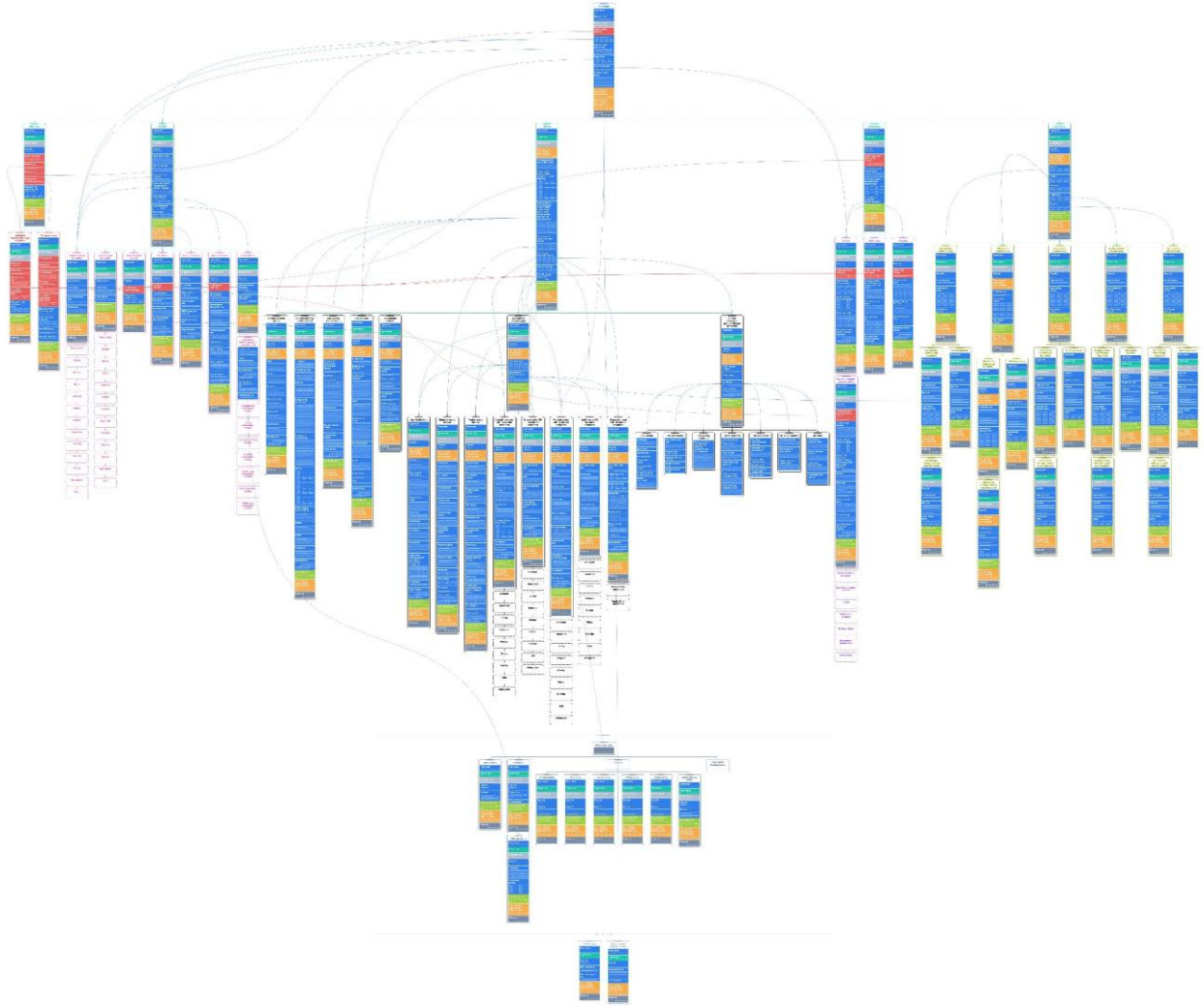# Annex 2: vmgd.gov.vu redevelopment sitemap

https://octopus.do/h9igqek1jm
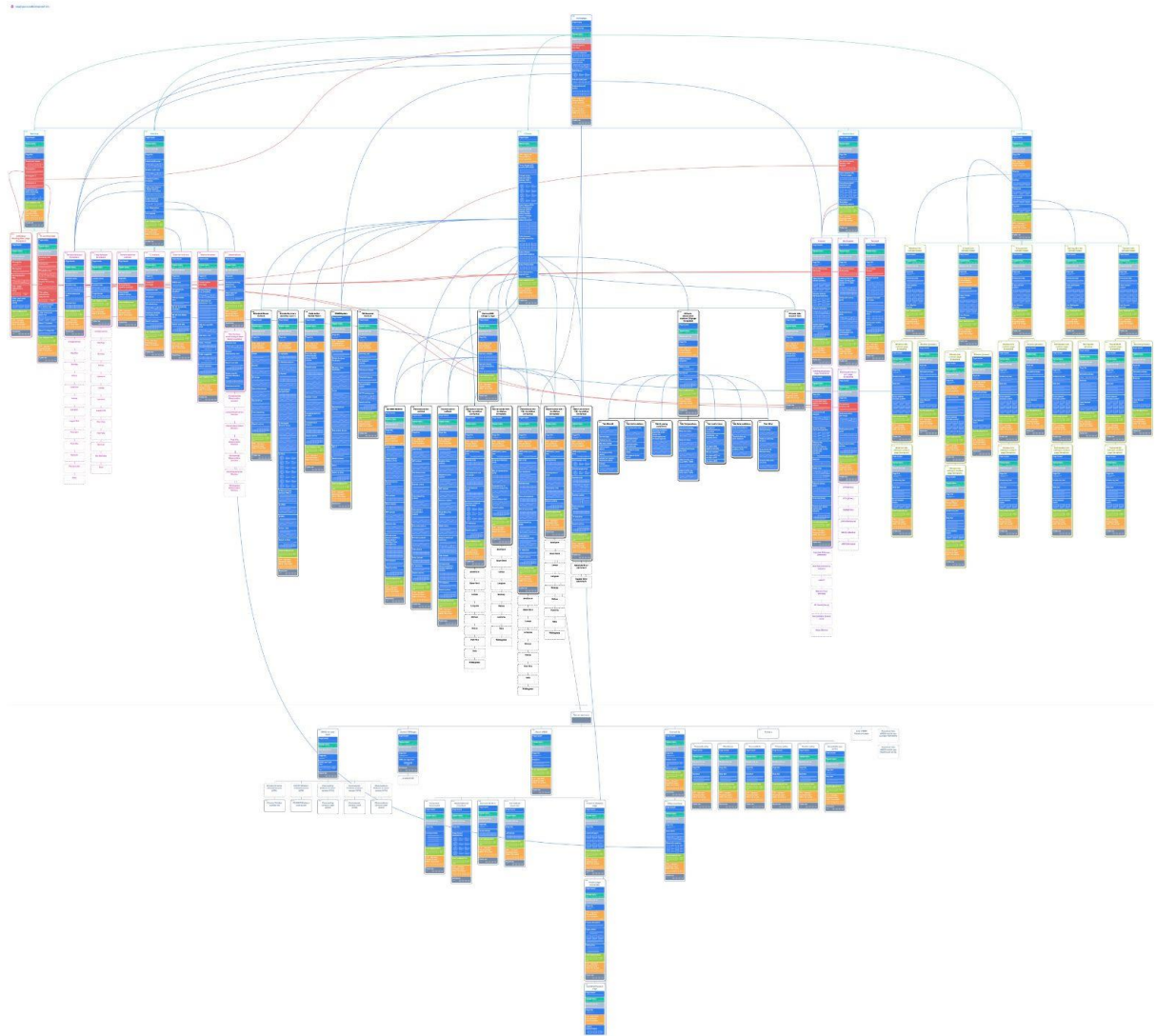
Annex 3: VMGD mobile app sitemap

https://octopus.do/ina0edpupy

n.b. this sitemap is still in development (as of 5/5/23) – content may change.

Glossary

ACCESS-S	BOM's climate modelling system (Australian Community Climate and Earth-System Simulator – Seasonal)
APCC	APEC Climate Centre (a VanKIRAP partner organisation)
ARFOR	Aviation Area Forecast
AWS	Automatic Weather Station
BI	Bislama (one of Vanuatu's 3 official languages)
BOM	(Australian) Bureau of Meteorology (a VanKIRAP partner organisation)
CCDRR	Climate Change and Disaster Risk Reduction (a Division of VMGD)
CIS	Climate Information Services
CMS	Content Management System
CSIRO	(Australian) Commonwealth Scientific and Industrial Research Organisation (a VanKIRAP partner organisation)
CTA	Call to action – a website element that prompts, requests or encourages the user to perform an action
EN	English (one of Vanuatu's 3 official languages)
ENSO	El Niño Southern Oscillation
EQ	Earthquake
EWS	Early warning system
FMP	Flood Management Plan (for Sarakata River, a VanKIRAP CIS product being developed by Tonkin + Taylor)
FR	French (one of Vanuatu's 3 official languages)
METAR	Meteorological Aerodrome Report
MSLP	Mean sea level pressure
MTD	Month-to-date
NGS	National Geohazard Service
NIWA	(New Zealand) National Institute of Water and Atmospheric Research (a VanKIRAP partner organisation)
NMS	National Meteorology Service
OSCAR	tailOred System of Climate services for AgRiculture – CIS product being developed by APCC for VanKIRAP
OWASP	Open Worldwide Application Security Project
Product	A product is a web page or part of a web page that contains

	weather/climate/geohazard data that is updated on a regular basis. For example, the ENSO Update Page (https://www.vmgd.gov.vu/vmgd/index.php/climate/reports-and-summaries/enso-update) is a product. The Tropical Cyclone Page (https://www.vmgd.gov.vu/vmgd/index.php/forecast-division/tropical-cyclone/information) is also a product (even when no warnings are current).
SPCZ	South Pacific Convection Zone
SPREP	Secretariat of the Pacific Environment Program
SST	Sea surface temperature
TAF	Terminal Area Forecast
TBC	To be confirmed *OR* To be completed
TBD	To be developed
TC	Tropical cyclone
TCO	Total cost of ownership
TK	Traditional Knowledge (in VanKIRAP's context, climate or weather knowledge)
UI	User interface
USD	United States Dollar
UV	Ultraviolet radiation
UX	User experience
VanKIRAP	Vanuatu Klaemet blong Redy, Adapt mo Protekt (Bislama name for the Climate Information Services for Resilient Development in Vanuatu Project.
VMGD	Vanuatu Meteorology and Geo-Hazards Department – the national meteorological and geohazards service for Vanuatu.
VU	Vanuatu (ISO country code)
WCAG	Web Content Accessibility Guidelines
WMO	World Meteorological Organisation