



Vanuatu Climate Information Services for Resilient Development Project  
Vanuatu Klaemet Infomesen Blong Redy, Adapt mo Protekt (Van-KIRAP)

# Traditional Knowledge Strategy and Implementation Plan

November 2020



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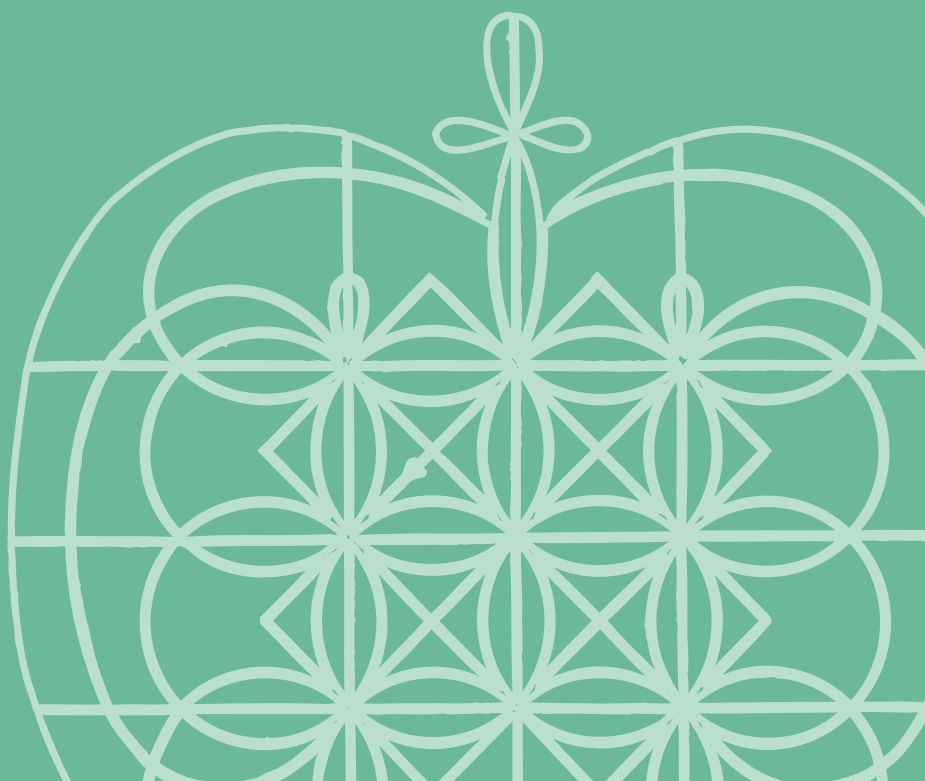
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# Acronyms

Acronym	Meaning
<b>CIS</b>	Climate Information Services
<b>CISRDP</b>	Climate Information Services for Resilient Development in Vanuatu
<b>COSPPac</b>	Climate and Ocean Support Program in the Pacific
<b>NGO</b>	Non-governmental organisation
<b>NMHS</b>	National Meteorological and Hydrological Services
<b>SPREP</b>	Secretariat of the Pacific Regional Environment Program
<b>TK</b>	Traditional Knowledge
<b>TKEC</b>	Pacific Regional Framework for the Protection of Traditional Knowledge and Expressions of Culture
<b>Van-KIRAP</b>	Vanuatu Klaemet Infomesen Blong Redy, Adapt Mo Protekt
<b>VKS</b>	Vanuatu Cultural Centre
<b>VMGD</b>	Vanuatu Meteorological and Geohazards Department
<b>WMO</b>	World Meteorological Organization



# Executive Summary

The increasing recognition of the valuable contribution traditional knowledge brings to address climate resilience and disaster related challenges has seen an influx of interest by donors and partners to support the development of traditional knowledge activities at the national level.

Experience has shown that communities with strong traditional knowledge on weather and climate indicators are able to respond and adapt better to extreme climate and geo-hazardous events. However, these skills are starting to disappear, for a number of reasons including knowledge holders not able to pass the information on to the next generation, and the impact of land-use and climate change on the traditional indicators<sup>1</sup>.

The 'Climate Information Services for Resilient Development in Vanuatu' project (Vanuatu Klaemet Infomesen Blong Redy, Adapt Mo Protekt, or Van-KIRAP) is supporting the regional efforts to capture existing traditional knowledge used for forecasting and produce an integrated forecast which uses both traditional knowledge and western data for Vanuatu. The traditional knowledge collected will be used as a tool for communicating climate messages to local communities.

Traditional knowledge provides an advantage in the provision of downscaled information, which is more relevant to communities, operates at different lead times and can add additional information that is not available from broader scale forecasting models. When added to modern forecasting tools, traditional knowledge can enhance community based early warning systems by adding information that is relevant and understandable.

Traditional knowledge also provides the platform for both the National Meteorological and Hydrological Services (NMHS) and communities to engage and build resilience and increase the uptake by communities of warnings and information, through the use of local languages and traditional knowledge to explain complex scientific information.

The Van-KIRAP Traditional Knowledge Strategy and Implementation Plan outlines the approach to be undertaken, ensuring an integration and coordination with current and emerging partners in the traditional knowledge space, and to ensure projects and activities are aligned and enhanced. This strategy established the priorities to facilitate engagement and implementation of traditional knowledge activities beyond the timeframe of Van-KIRAP project.

The Traditional Knowledge Strategy aims to promote:

- Strengthened engagement and coordination of traditional knowledge;
- Effective implementation of activities and sharing of information and data;
- Harmonized traditional knowledge activities that are needs-based, relevant, user-oriented and clearly aligned to the VMGD and Van-KIRAP objectives and goals;
- Enhanced processes for the effective development of traditional knowledge communication products and channels in Vanuatu;
- Expansion and enhancement of the utility of the traditional knowledge and seasonal climate products to facilitate community level capacity development for relevant community resilient development planning and implementation outcomes.

This Strategy will be implemented in coordination with Vanuatu Meteorological and Geo-hazards Department (VMGD), the Vanuatu Cultural Centre, Secretariat for the Pacific Regional Environment Program (SPREP) and the Australian Bureau of Meteorology (BOM), along with other key partners.

<sup>1</sup>COSPPac 2020, <http://cosppac.bom.gov.au/traditional-knowledge/>





# Purpose of the Strategy

The purpose of the Climate Information Services for Resilient Development in Vanuatu/Vanuatu Klaemet Infomesen Blong Redy, Adapt Mo Protekt (Van-KIRAP) Traditional Knowledge Strategy 2019 – 2024 is to establish the strategic direction for strengthening coordination and implementation of traditional knowledge (TK) related activities for the Van-KIRAP project, the Vanuatu Meteorological and Geo-hazards Department (VMGD) and its key stakeholders.

The Van-KIRAP Traditional Knowledge Strategy provides a guiding framework to enhance the capacity of VMGD to coordinate and ensure that all traditional knowledge relating to weather, climate and disaster risk responses activities are delivered effectively in partnership with government agencies, NGOs, regional technical agencies, donor partners and research institutions.

The Strategy defines the traditional knowledge process to be undertaken and highlights the roles of the partners in the project, in managing and coordinating traditional knowledge activities. Furthermore, it defines the linkages between the different components and key sectors, highlighting the value adding due to the inclusion of traditional knowledge in climate information services (CIS).

This Strategy builds on best practices, processes and lessons learned from the Climate and Ocean Support Program in the Pacific (COSPPac) and will adopt the key principles under the Vanuatu National Sustainable Development Plan 2016-2030 – focusing on building a stable, sustainable and prosperous Vanuatu, supporting the empowerment of women, young boys and girls, people living with disabilities and vulnerable groups, and; establishing and fostering strong mutually beneficial working relationships with traditional knowledge holders.

# Background

**“ [Vanuatu] was founded on Melanesian values of respect, harmony, unity and forgiveness. These values shape our cultural heritage, which is the country’s strength. They are expressed through our oral traditions, languages, performing arts, social practices, rituals, festive events, traditional knowledge, and our deep connections with our ancestors, land and place, as well as the skills to be productive with our natural resources. ”**

**Department of Strategic Policy,  
Planning and Aid Coordination (2016)**

Over thousands of years, the Ni-Vanuatu have adapted to changing climatic conditions and natural hazards, such as cyclones, floods, droughts, earthquakes and tsunamis. This has been achieved by developing kastom (traditional custom) practices and traditional knowledge (TK) to maintain sustainable livelihoods and to deal with the socio-economic and environmental stressors from a changing environment. The use of such knowledge, including traditional knowledge associated with weather and climate forecasting, is very common in Vanuatu, particularly among communities reliant on subsistence farming and fishing.

It is important to note that communities use their traditional knowledge of weather and climate to make their planning. Although traditional farmers and fishers may listen to contemporary weather and climate forecasts via radio broadcasts, they often ignore this advice due to their strong reliance on traditional knowledge and this has the potential to reduce community resilience to extreme weather and climate events.

A study carried out by SPREP and Met Services in six countries including Vanuatu, published in 2018 – Traditional or Contemporary Weather and Climate Forecast: reaching Pacific Communities (<http://link.springer.com/article/10.1007/s10113-019-01487-7>) – showed only 3.3 percent of the surveyed population in the communities of Vanuatu use contemporary forecast, whereas 43.4 percent of the surveyed community members rely solely on TK information. During Cyclone Pam, a mini-census carried out by Vanuatu National Statistics Office (<https://bit.ly/2ZemksJ>) highlighted over 8,000 households in Vanuatu that did not have access to radio or mobile phone services relied on traditional knowledge during the Severe Tropical Cyclone Pam (Category 5).

The following table outlines the responses from the community on types of sources they received disaster information during cyclone Pam. The survey was conducted by the Vanuatu National Statistics office in collaboration the National Disaster Office (NDMO). A total of 151,697 households were interviewed, and 5.5 percent of all the households used traditional knowledge as a source of disaster information.

**Table 1: Household by source of receiving disaster information by region (source: VNSO)**

Region	Radio	SMS	Phone call	TV	Internet / social media	Newspaper	Friends/ relatives	Traditional knowledge	Other	None
VANUATU	27,946	33,841	30,860	3,776	4,429	3,025	35,872	8,312	3,022	614
URBAN	11,829	11,358	8,863	2,963	2,967	2,206	8,117	685	2,836	29
RURAL	16,117	22,483	21,997	813	1,462	819	27,755	7,627	186	585

There is a recognised need for the Vanuatu Meteorological and Geo-hazards Department (VMGD) to provide climate information services at a scale relevant to the needs of their end-users, including farmers and fishers. While VMGD is working towards establishing long-term locally relevant climate data, there is also recognition of the role traditional knowledge plays in increasing the relevance, accessibility and local accuracy of climate products, including forecasts.

This approach acknowledges that neither indigenous or western strategies alone are likely to successfully address environmental problems, and by embracing the strengths and weaknesses of these different knowledge systems, we can develop improved disaster risk reduction strategies that reduce the vulnerability of indigenous communities to environmental hazards through the production of products that are based upon collaborative end-user driven relationships and mutually agreed benefits.

In the past decade, there has been significant development in the collection and application of traditional knowledge in Vanuatu, the development in legislation and the standardized methodology for the collection and storage of traditional knowledge. However, there still is a lot more to do.

Over the past years, VMGD has experienced a growth of actors and resources around TK in the climate and disaster resilience sphere since the expansion of its main competencies to include TK. Activities have been mainly project and budget driven, ad hoc and operate at a much smaller scale based on the resources available.

Limited weather station coverage around Vanuatu means the climate information collected does not cover the whole of the country and to the scale at which is needed. Furthermore, the lack of effective communication networks or systems to remote, rural areas of the country is also challenging in providing climate information services to the communities. This can have implications on sectors such as agriculture whereby TK is the only source of information farmers rely upon in the absence of weather and climate information from VMGD. Traditional knowledge information guides the day to day activities of the farmers as handed down through many generations.





# Van-KIRAP Traditional Knowledge Strategy

**This section of the Strategy provides guidance on the core principles framing the implementation of the traditional knowledge under the Van-KIRAP project.**

It is very important to note that the Van-KIRAP traditional knowledge strategy although implemented in Vanuatu, will be part of a regional network of TK sites established across the region. Lessons learned and good practises must be shared with other countries where TK owners of that knowledge allow. The coordination of this work will be managed by the Traditional Knowledge Officer in collaboration with the SPREP Traditional Knowledge Officer. This is due to the regional importance of TK to the meteorological services community and the Pacific Meteorological Council (PMC).



## Coordinate to avoid duplication

For current and emerging partners in the TK on weather, climate disaster risk and resilience space, it is highly recommended that they engage VMGD to ensure activities are harmonized, aligned and key findings and best practices are shared to avoid duplication and waste of resources

The focal point for coordination of TK activities in all the Van-KIRAP components should be the Traditional Knowledge officer. This role is cross-sectoral and will be working closely with the Van-KIRAP PMU, local stakeholders (Vanuatu Cultural Centre, Red Cross Society, faith-based organizations) and regional agencies (SPREP and Australian Bureau of Meteorology). Since the TK data collection is related more to weather, climate, disaster and response techniques, it is best that the coordination role is driven by VMGD with support from other key TK partners and stakeholders.

For the Van-KIRAP Sector activities, the sector coordinators who have TK in their sector case studies will need to work with the focal point as well as adhere to protocols in place such as 'prior informed consent'. The operational tools for the collection of traditional knowledge will follow the processes and forms developed and available at VMGD.


## Formalize institutional arrangements

To actively engage and get the buy-in from other partners and sectors, formalized arrangements in the form of Memorandum of Understanding (MoU) or a form of legally binding agreement to facilitate the sharing of resources, expertise and data collected is a step towards the right directions. Formalised arrangements between the Cultural Centre and VMGD on the collection and documentation of TK has been mutually beneficial for the two government ministries. Having a formalized arrangement in place facilitated the sharing of resources, expertise and allowed both ministries to collaborate and strengthen their working relationship. It is of great benefit if this formalised arrangement is replicated across all partners to not only strengthen engagement but also align with government policies and process and to ensure the integrity of the data collection and the protection of sensitivity around TK is maintained.

## Capacity Enhancement

VMGD will continue to work towards strengthening its partnership and seek targeted capacity development opportunities to ensure all partners involved in the TK data collection are trained in the TK data collection methodologies, analysis of data collected and integrated forecasting processes so that partners and stakeholders fully understand the landscape of ongoing works, partners involved and the resourcing required to implement TK activities.

Communication resource development for outreach and community engagement training will be carried out for all key partners with technical support and guidance provided by SPREP and other key partners. A joint communication development and review team will be formed to ensure appropriate and relevant communication materials are produced, shared and reviewed prior to dissemination for sectors to use nationwide or communication materials developed specifically for targeted community. This joint communications development and review team can be made up of representatives from VMGD, Van-KIRAP PMU Communication and TK officer, Van-KIRAP sectors, Cultural Centre and other implementing partners where appropriate. All TK communication related activities will be included in the Communications Strategy.



The climate centres will be important public hubs to be used for dissemination of all the communication products and project outputs, with additional capacity development trainings required for climate center staff or volunteers. For sustainability, consistency across all climate centres, administrative, management and community outreach training are options for considerations for the climate center staff, volunteers and field officers.

There is a recognised need for the Vanuatu Meteorological and Geo-Hazards Department (VMGD) to provide climate information services at a scale relevant to the needs of their end-users, including farmers and fishers. Whilst VMGD is working towards establishing long-term locally relevant climate data, there is also recognition of the role traditional knowledge plays in increasing the relevance, accessibility and local accuracy of climate products, including forecasts.

This approach acknowledges that neither indigenous or western strategies alone are likely to successfully address environmental problems, and by embracing the strengths and weaknesses of these different knowledge systems, we can develop improved disaster risk reduction strategies that reduce the vulnerability of indigenous communities to environmental hazards through the production of products that are based upon collaborative end-user driven relationships and mutually agreed benefits.

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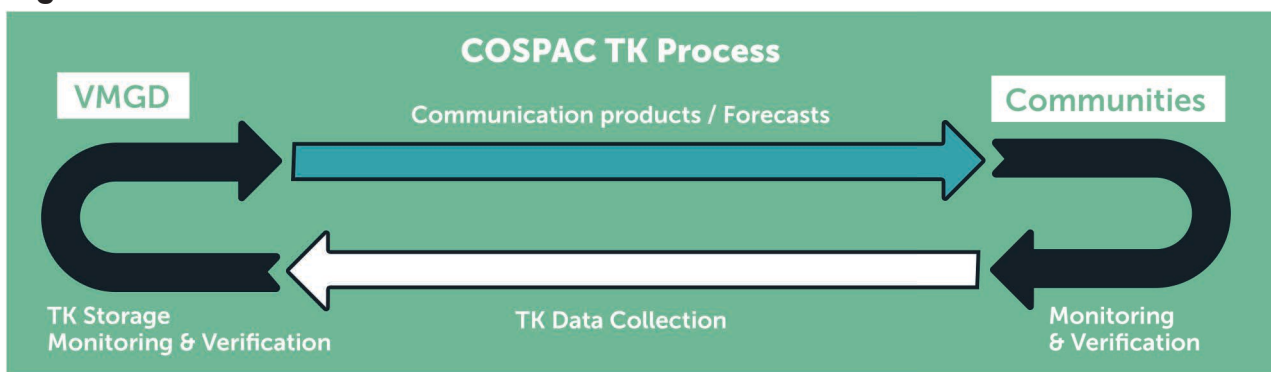
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# Building upon the current knowledge base

The Van-KIRAP project will build upon the current knowledge base from past and existing projects in both developing and implementing this traditional knowledge strategy. In particular, it will continue to build on the partnership between the Climate and Oceans Support Program in the Pacific (COSPPac). The COSPPac is currently working with the National Meteorological Services (NMS), including VMGD, to develop tools to increase community resilience to climate events.

Whilst the COSPPac currently collects and documents traditional knowledge (Figure 1), it is done so on a small scale and does not cover all six Provinces in Vanuatu.

**Figure 1: Boundaries of COSPPac TK data collection**



As part of this project, VMGD works with communities and other stakeholders to determine the extent of traditional knowledge of weather, climate and geo-hazard use and to provide a secure means of preserving that knowledge. Importantly, the COSPPac Traditional Knowledge projects are driven by the national NMS to ensure that the projects meet the needs of the NMS, their stakeholders, and their communities.

The VMGD-COSPPac Traditional Knowledge Project has five key aims or components:

- Identify local communities that use traditional knowledge for weather and climate forecasting;
- Document the traditional indicators used, e.g. behaviours of plants and animals, wind direction, stars;
- Ensure a secure, culturally sensitive, and easy to use system is available to store the collected information;
- Integrate traditional and contemporary seasonal forecast methods. This required development of a local traditional indicator monitoring network to assess the reliability of the forecasts and the spatial extent of their accuracy;
- Develop climate communication products incorporating traditional climate knowledge.

During the initial phases of the COSPPac project, protocols and procedures for the documentation and storage of traditional knowledge were developed that respect and acknowledge the rights of the community members and consider existing and emerging international best practice.

Key partnerships were also formed with other stakeholders, including the Vanuatu Red Cross, GIZ and the VKS (Vanuatu Cultural Centre) – the last of which is a necessary partner when working on traditional knowledge within Vanuatu. Much can be gained from Van-KIRAP building on these processes and tools developed under the COSPPac project.



# Van-KIRAP traditional knowledge sites

The traditional knowledge sites for the Van-KIRAP project will be situated in all six Provinces of Vanuatu and include the four provinces already established under COSPPac (Torba, Penama, Malampa, Tafea) and two additional provinces under Van-KIRAP (Shefa and Sanma) (Table 2).

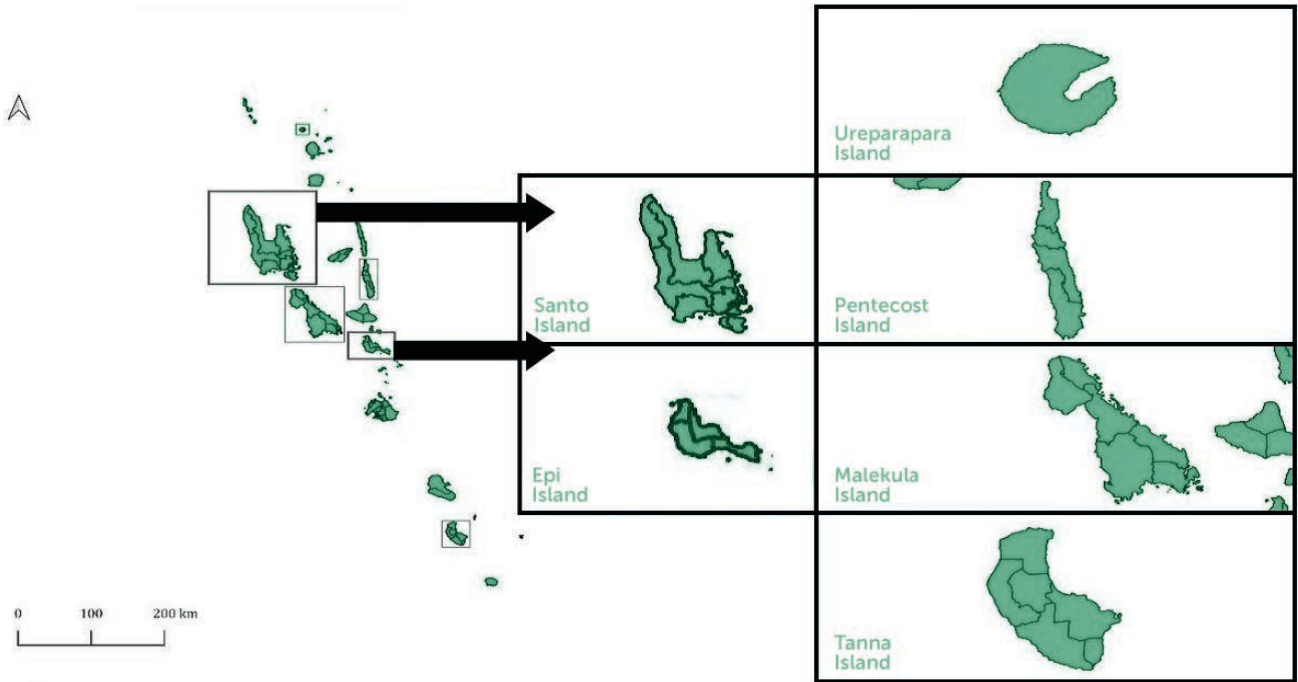
**Table 2. Van-KIRAP Traditional Knowledge sites**

Province	Island	Villages
Torba Province	Ureparapara Island	Lehali Moi Tano Lekwyangle Diverse Bay (Lesireplag)
Penama Province	Pentecost Island	Lamoru Arongbwaratu Atabulu Atamburu Amatbobo Lavatmangemu
Malampa Province	Malekula Island	Tautu LitzLitz Uri Uripiv
Tafea Province	Tanna Island	Latabu Tatikwe Etapu Imaiou Isarkei Irepuow Fatarapa Ekupen Latukey
Shefa Province	Efate Island	North Efate (Paunangisu) North Efate (Sama) North Efate (Takara) North Efate (Eton) North Efate (Epau) North Efate (Siviri)
Sanma Province	Espiritu Santo Island	North of Santo (Mantantas) North of Santo (Hog Harbour) North of Santo (Port Olry) North of Santo (Kole)

TK expansion to the two remaining sites, Espiritu Santo in Sanma Province and Epi Island in Shefa Province, provides sites in all provinces of Vanuatu.

**Figure 2:**

## Vanuatu Traditional Knowledge

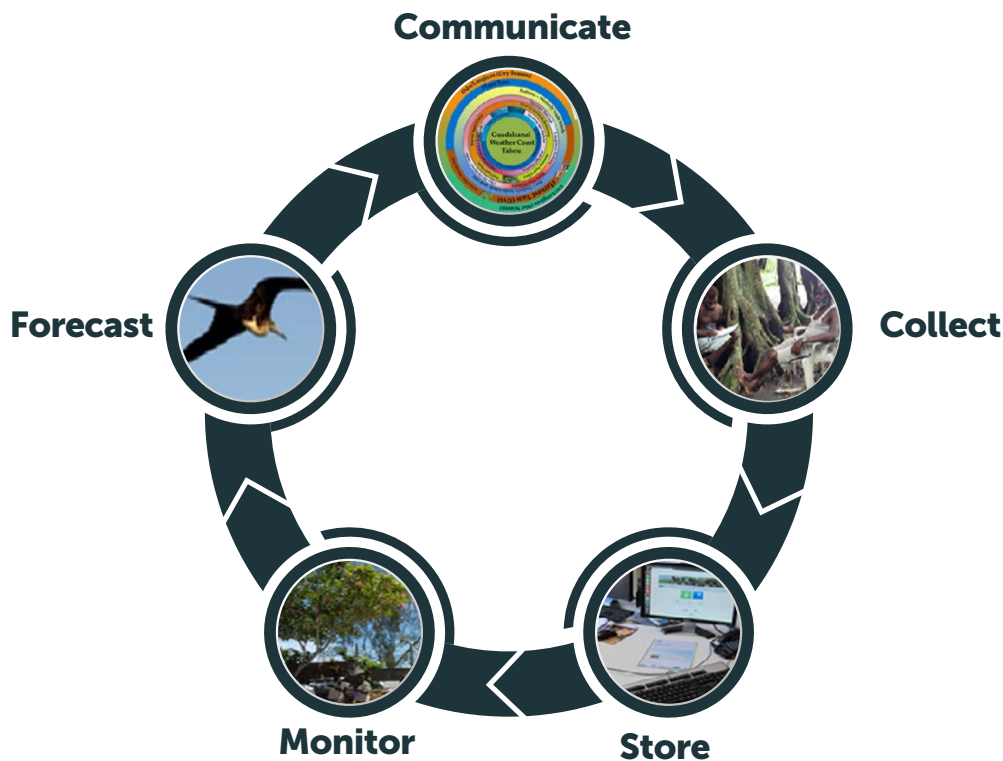


### Van-Kirap Tk Sites

# Van-KIRAP activities and process

The following step by step process (Figure 3) is well established based on the COSPPac Traditional Knowledge project and will be utilised by Van-KIRAP during this activity. The COSPPac Traditional Knowledge Project Guideline attached at Annex 1 provides the full guide detailing the process to be utilised.

**Figure 3:**



## COSPPac Traditional Knowledge Process

In implementing this process, the Van-KIRAP traditional knowledge activities will involve the following:

1. Expansion of traditional knowledge collection into the priority sectors and stakeholders
2. Facilitate a robust and systematic monitoring, verification and forecasting system
3. Tailor climate information that is relevant and user-friendly for communities and sectors.

## 1. Expansion of traditional knowledge collection into the priority sectors and stakeholders

The proposed integrated process for data collection has factored in that TK operates on different spatial levels. For a systematic approach to be sustainable and robust, it should include the role of other development sectors as well as the different governance (political and cultural) structures that drive the flow of information to communities in its processes.

### Data collection

Before collecting any traditional knowledge, it is important to be aware of any legal frameworks (laws and policies) that may apply. This includes those related to cultural and intellectual property (IP). There

are three legal instruments for the Pacific region that focus on the protection of culture and traditional knowledge which have been used to guide the development of national policies and legislation:

1. The Pacific Regional Framework for the Protection of Traditional Knowledge and Expressions of Culture (TKEC);
2. Traditional Biological Knowledge, Innovations and Practices Model Law (Model Law);
3. Melanesian Spearhead Group draft Treaty on Traditional Knowledge 2011 (MSG Framework).

In Vanuatu legislation – The Protection of Traditional Knowledge and Expressions of Culture Act 2019 – has been developed to provide protection for traditional culture and knowledge and intellectual property (IP). References within the Bill which has particular relevance to the collection, storage and use of traditional knowledge associated with the Van-KIRAP project are outlined in Box 1.

**Figure 4a. & 4b:**


<div style="text-align: center;">  </div> <p><b>Traditional Knowledge Project Information and Protocol Form</b></p> <p><i>People being interviewed should have the opportunity to make an informed decision before traditional knowledge is shared. Before the interview, the person being interviewed must be fully informed about how and why their traditional knowledge is being collected, who will have access to it, and how it will be used.</i></p> <p><b>Project title:</b> Assessment of Traditional Knowledge for Seasonal Weather and Climate Forecast Applications in Vanuatu.</p> <p><b>Project Managers:</b> The project will be managed in-country by the Vanuatu Meteorology and Geo-Hazards Department (VMGD). Project partners include the Vanuatu Cultural Centre (VKS), SPC-GIZ, Vanuatu Red Cross and the Climate and Oceans Support Program in the Pacific (COSSPPAC - Australian Bureau of Meteorology).</p> <p><b>Project Purpose:</b> This project has been designed to assess the use of Traditional Knowledge (TK) indicators for seasonal weather and climate forecast applications. The information collected will be stored (in-country) in an electronic database that project managers will use to compare with standard seasonal forecasts.</p> <p><b>Research methods used to collect TK:</b> Audio devices (sometimes video) will be used in conjunction with a survey form to collect the TK weather and climate information from participants that will be stored in an electronic database. Please note that the TK survey form is designed to look at one TK indicator at a time. If the person being interviewed would like to talk the interviewer about more than one TK indicator, then extra survey forms will need to be filled out. There should be one survey form for each TK indicator.</p> <p><b>Tapu / Sensitivity:</b> The interviewer will consider and discuss issues regarding cultural tapu (i.e., sensitivity) before starting the interview and categorise information as one of the following:</p> <ol style="list-style-type: none"> <li>1. <b>LOW TAPU (SENSITIVITY):</b> information commonly known outside local community and / or open to the public.</li> <li>2. <b>MEDIUM TAPU (SENSITIVITY):</b> information known only to those with local knowledge – to be used only by project managers and shared publicly if this is agreed to.</li> <li>3. <b>HIGH TAPU (SENSITIVITY):</b> spiritual information tied to customary laws which could harm community or local holders of information if it is shared publicly – held by in-country project managers but will not go any further.</li> </ol> <p><b>Who is allowed access:</b> Privacy requirements need to be identified by the person being interviewed (i.e., holder of TK) per the level of information tapu (sensitivity) categorised (LOW/ MEDIUM/ HIGH). All project managers will respect any privacy requirements at all times.</p> <p><b>Project dissemination:</b> TK tapu (sensitivity) categories and privacy requirements as identified by the person being interviewed will guide the communication of findings by project managers using a variety of mediums, such as printed reports, radio, TV, online and meetings.</p> <p><b>Benefit Sharing:</b> The Project Managers and partners recognise the rights of indigenous peoples and local communities. Each Party shall, as far as possible and as appropriate, subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant to this project and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.</p>	<div style="text-align: right;">  <table border="1" style="float: right; margin-top: 10px;"> <tr> <td style="padding: 2px;">DATABASE RECORD #:</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">FORM VERSION #:</td> <td style="padding: 2px;">5.0</td> </tr> </table> </div> <p style="text-align: center;"><b>Prior Informed Consent Statement</b></p> <p><b>Project Title:</b> Assessment of Traditional Knowledge for Seasonal Climate Forecast Applications in the Pacific</p> <p><b>Project Purpose:</b> Use of Traditional Knowledge for seasonal weather and climate forecast applications.</p> <p><b>Interviewer:</b> ..... (Please include name as well as any company, employer or institution)</p> <p><b>Person being interviewed:</b> ..... <b>Tribe:</b> .....</p> <p><b>Date of interview (d/m/y):</b> ...../...../20..... <b>Time of interview:</b> .....</p> <p><b>Location of interview:</b> .....</p> <p><b>What will this information be used for?</b> Seasonal climate and weather forecasts to improve local climate adaptation.</p> <p><b>Who will have access to the information (include tabu category):</b> .....</p> <p><b>Names of people present during interview:</b> .....</p> <p><b>How will information be documented and / or recorded during and after the interview?</b> A combination of a survey form, photographs, audio, video during interview and electronic TK Database (after interview). Other: .....</p> <hr/> <p><b>PARTICIPANT STATEMENT OF CONSENT:</b></p> <p>I, _____, understand the information in this form and agree to participate in the interview. I agree that the traditional knowledge I have provided can be used for this project in the ways identified in the attached protocol. I understand that I do not have to answer any questions I do not want to and that I may choose to end the interview at any time. I may also later withdraw information provided during the interview.</p> <p>Signature _____ Date (d/m/y) _____</p> <hr/> <p>Witness (name) _____ Signature _____ Date (d/m/y) _____</p>	DATABASE RECORD #:		FORM VERSION #:	5.0
DATABASE RECORD #:					
FORM VERSION #:	5.0				

**COSSPPAC traditional knowledge project information and protocol form that is used to obtain prior informed consent.**

Within Vanuatu, traditional knowledge relating to climate and disaster risk reduction belongs to individuals, families, lineages, and communities, and any research on TK must respond to, and respect, the needs and desires of those people to whom the knowledge belongs ([www.wipo.int/export/sites/www/tk/en/databases/creative\\_heritage/docs/vanuatu\\_policy.pdf](http://www.wipo.int/export/sites/www/tk/en/databases/creative_heritage/docs/vanuatu_policy.pdf)).

Ideally (and as stipulated in the Vanuatu Cultural Research Policy), TK research should be a





collaborative venture involving researchers, individuals and groups of knowledge holders, local communities, chiefs and community leaders, cultural fieldworkers, cultural administrative bodies, and local and national governments.

People being interviewed should have the opportunity to make an informed decision before they share their traditional knowledge, and as such should be informed of their rights and of these tools or forms prior to sharing their knowledge. It is important that communities and individuals can decide on what levels of information they may be willing to disclose and any potential risks associated with the sharing of traditional knowledge, including how the risks will be mitigated. This should be communicated clearly to the knowledge holders and their communities and may be undertaken in the form of a Participant Information Sheet or other mechanism culturally appropriate. Traditional knowledge holders therefore, are informed that participation is not compulsory, and they can determine the level of information provided. In a contemporary context, written consent for the access and use of TK can assist with the mitigation of any potential disputes, acknowledging that recorded consent in oral or video form is considered a form of written consent. Ideally, this consent explicitly documents the levels of and procedures around, storing and use of any confidential or taboo knowledge and rules around ownership of IP.

The COSPPac project has developed a standardised methodology, protocols and consent forms to assist with the collection of narratives of traditional knowledge on weather climate, forecasting and response techniques. These tools are consistent with the Vanuatu Protection of Traditional Knowledge and Expressions of Culture Act 2019. The tools were designed to enable Vanuatu NMS staff and stakeholders to collect enough information on how the TK experts produce forecasts while keeping recording to a minimum and maintaining international best practices for intellectual property and respecting cultural sensitivities of stories. The Van-KIRAP project will utilise these tools in the collection of TK.

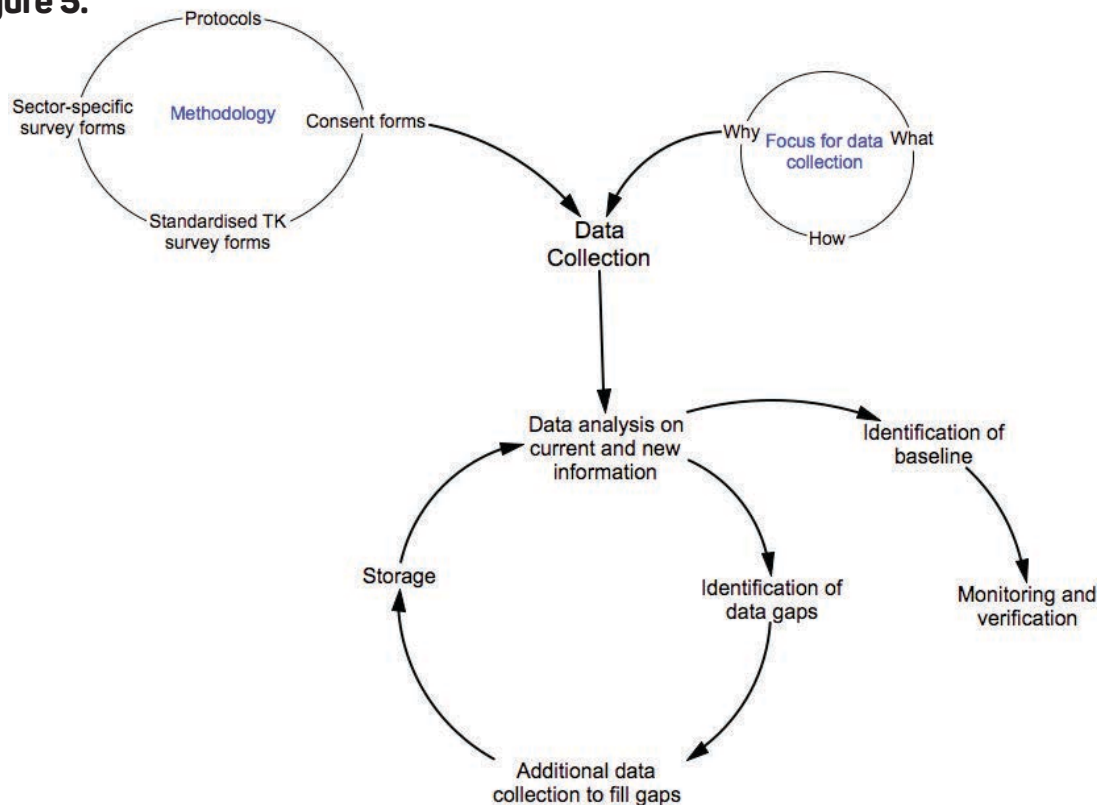
Data collection will be undertaken by trained Traditional Knowledge Officers based in VMGD and partner with networks including the Vanuatu Cultural Centre, Vanuatu Red Cross, GIZ, Vanuatu Rainfall Network, Vanuatu Cultural Centre, Tafea Cultural Centre, and fishermen's associations etc.

The COSPPac standardised methodology to collect the data will be utilised to develop sector specific survey forms– this has been designed to ensure the collection of enough information for the formulation of the forecasts while keeping recording to a minimum and maintaining international best practices for intellectual property and respecting cultural sensitivities of stories.

The methodology involves the use of both community discussions and questionnaires developed to assist in the data collection, along with the consent and protocol forms. The data collection will focus upon the 'what', 'how' and 'why' in order to capture the full range of information. For example, for the infrastructure sector traditional knowledge can be gathered from the construction of dwellings, and information gathered as to why it is constructed in a certain manner and how it is being constructed.

The data collection will be undertaken in a two-staged process involving current COSPPac sites and the additional new sites. For the COSPPac sites, the first step will be the analysis of the currently available data to (1) ascertain the baseline climate data and (2) identify any data gaps which exist. Current data identified as the baseline will undergo further monitoring and verification whilst additional data collection will be undertaken at the sites to complete the information gaps. Once stored the data will be analysed and move through to the monitoring and verification stage (Figure 5).

**Figure 5.**



### Step process in the collection, storage and analysis of data

For the additional sites in Shefa and Sanma province, the team will undertake the data collection, storage and analysis prior to the data moving through to the monitoring and verification stage.

At each of the sites, Sector-specific (i.e. agriculture, fisheries, infrastructure, water and tourism) traditional knowledge data along with standardised climate-related traditional knowledge will be collected following the process outlined in Figure 4. Specially prepared questionnaires and training will be provided to the TK Officers, Sector Coordinators and network partners.

### TK agriculture sectoral plans

The Agriculture case study and APCC will not collect any TK data in their activities. This means TK data collection will be undertaken by the TK Officers with support from the TK Committee and the PMU. However APCC will provide the following activities to targeted stakeholders such as:

1. Stakeholder consultations, will be for gathering/understanding information around traditional farming practices, etc. with a wide range of participants.
2. Technical workshops will be for VMGD and DARD to receive training on how to use the Crop Climate Diary (CCD) and the Vanuatu Climate Services for Agriculture (VaCSA). We can also include discussions on designing the agro-met bulletin with VMGD and DARD during these technical workshops.

Selected TK data collected from current and new TK sites that is already digitized and stored in the VMGD TK database will be extracted and incorporated into the VaCSA system. This means the farming practices and traditional knowledge data and recommendations will be available to users of VaCSA. The development of VaCSA will include the integration of TK data into the final operational prototype and training will be build in to the roll-out of the VaCSA tool to users.

Additionally, TK data from the database will be incorporated into the new Agrometeorology bulletin. The agrometeorology bulletin will have two main components which include: (a) Climate forecasts and outlooks; and (b). Traditional knowledge information on environmental indicators of severe weather and climate. A multi-agency team consisting of APCC, DARD, SPREP and VMGD will discuss how these two components will be shaped into the new agrometeorology bulletin. Furthermore, technical discussions will be undertaken to clarify the roles and responsibilities of the partners e.g. VMGD and DARD; as well as ways to operationalise the routine roll-out of this new CIS.

Van-KIRAP will expand the TK observations network developed under the COSPPac project. This expansion of the TK network involves the Vanuatu Rainfall Network to assist in the collection of TK data from more than 80 sites across Vanuatu covering all six provinces. The project will provide some allowance payments for the VRN volunteers and tools to support their functions. The VRN network will receive training by the Van-KIRAP Traditional Knowledge Coordinator and the Traditional Knowledge Officer (in the use of Prior Informed Consent and other technical requirements/considerations).

## **Box 1 Recognising IP and cultural sensitivities in data collection: Laws and policies**

The Protection of Traditional Knowledge and Expressions of Culture Act 2019 has been developed to provide protection for traditional culture and knowledge and intellectual property. Specific references for the collection, storage and use of traditional knowledge include:

Part 2, 4(1): Traditional owners have exclusive rights: (a) in respect of all traditional knowledge, to: (i) control, exploit and utilize their traditional knowledge; or (ii) grant prior informed consent to the access and use of their traditional knowledge; or (iii) the access and use of traditional knowledge based on fair and mutually agreed terms

Part 2, 6(5): If a derivative work, traditional knowledge or expressions of culture is to be used for a commercial purpose, the user agreement must: (a) contain a benefit sharing arrangement providing for equitable monetary or non-monetary compensation to the traditional owners; and (b) provide for identification of the traditional knowledge or expression of culture on which the derivative work is based in an appropriate manner, in connection with the exploitation of the derivative work, by mentioning the traditional owners and the geographical place from which it originated

Part 2, 10(2): The moral rights of traditional owners of traditional knowledge and expressions of culture are: (a) the right of authorship, ownership or integrity to their traditional knowledge and expressions of culture; and (d) the right to decide when, where and in what form their work will be disclosed to any other person

Part 4, 21(1): A person that intends to use any traditional knowledge or expression of culture for a non-customary use (whether or not of a commercial nature) must apply to the Authority to obtain the prior informed consent of the traditional owners. (2) The application must: (a) be in the prescribed form; and (b) be accompanied by the prescribed fee. (3) The Authority must refer the application to the Malvatumauri Council of Chiefs to conduct the identification process of owners.

Part 8, 39(1): A person must not have access to, acquire or use traditional cultural rights of traditional holders including: (a) where a third party has claimed legitimate access or use to associated biological or genetic materials with traditional knowledge and expressions of culture; or (b) traditional knowledge and expressions of culture associated with other materials, covered by a safeguard clause, without the consent of traditional owners.



## Data Analysis

Traditional knowledge related to climate forecasting: Basic steps in data analysis will consist of:

- collating available data and identifying what data has been collected and any gaps in data availability;
- matching of data collected through the TK monitoring process with existing TK climate forecasting narratives;
- developing forecasts based on the TK monitoring data and the TK forecast narratives;
- assessing the accuracy of the TK forecasts based on the monitoring data;
- over time, determining the relative accuracy of the TK and contemporary climate forecast systems at different locations and times of the year;
- develop methodology to optimally combine and communicate TK and contemporary climate forecasts. Additional details of the proposed analysis methodology is given in Section 2.

VMGD, through the Research Development officer will lead this work on the TK data analysis with assistance from BoM and SPREP.

The initial analysis of data of TK data related to climate forecasting, including the identification of sufficient data and any data gaps, will be conducted by VMGD. VMGD will also be responsible for the second data analysis step. SPREP and the Bureau of Meteorology will work with VMGD to develop the most appropriate methodology for assessing TK forecasts and the combined TK and contemporary forecasts. Wherever possible relevant community members will be consulted and given the opportunity to participate in the data analysis.

## Data Storage

The storage of traditional knowledge collected should respect the IP of the knowledge providers and the desires of the communities involved, including restrictions on who can access what information and for what purpose.

It is therefore recommended that any traditional knowledge collected through the Van-KIRAP project should be treated with respect and securely stored e.g. in password protected computers (digital versions) and hard copies are safely archived, scanned and locked in cabinets accessed only by those with Manager privileges. It is acknowledged that all TK information collected by Van-KIRAP will be accorded the same protection and respect beyond the lifecycle of the project.

The traditional knowledge collected under the Van-KIRAP project will be stored within the Traditional Knowledge Database developed under the COSPPac project and housed at VMGD. The Traditional Knowledge Database provides partner countries with a central register to manage and store their climate-related traditional knowledge records. Whilst the database is currently established and utilised in the Pacific region as the key repository of traditional knowledge, it will require some upgrading to accommodate the Sector-specific data collected under the Project.

This database has restricted access through the use of password protection. In addition, the database has been developed to further restrict access to sensitive traditional knowledge records according to attributes specified by the original traditional knowledge holders e.g. according to gender, tribal status or community. Each record in the database acknowledges the owners of the knowledge and restrictions around the data usage, thus protecting individual's IP.



## 2. Facilitate a robust and systematic monitoring, verification and forecasting system

Integrated forecasts have numerous advantages over either traditional knowledge forecasts alone or the National Meteorological and Hydrological Services (NMHS) forecasts on its own. TK forecasts are spatially smaller than NMHS forecasts but considers localised climate differences and other factors which NMHS forecasts do not. In addition, NMHS forecasts tend to relate to the amount of rainfall (over a three-month period) whereas the TK information may provide additional information as to when it is likely to start and when it ends. This information combined, can provide a much more useful forecast to local communities. By acknowledging the validity of the TK forecast through integration between both methods, it has been shown to increase the community uptake and engagement in NMHS climate products.

There are multiple approaches to integrating traditional knowledge weather, climate and geohazards forecasts with routinely developed forecasts developed by NMHS. Some of the more common methods include consensus forecasts and other technical approaches are described in detail in Plotz et al. (2017) and the COSPPac Traditional Knowledge Guideline. These two guidelines were developed to aid NMHS to select the most appropriate method suitable to them. Once the integrated forecast is developed, the next step in the process is to verify and assess the performance of the forecast. This method can be as simple as counting how the forecast correctly predicted the events. For the COSPPac project, this process is still ongoing and a few countries are in the early stages of Forecast integration.

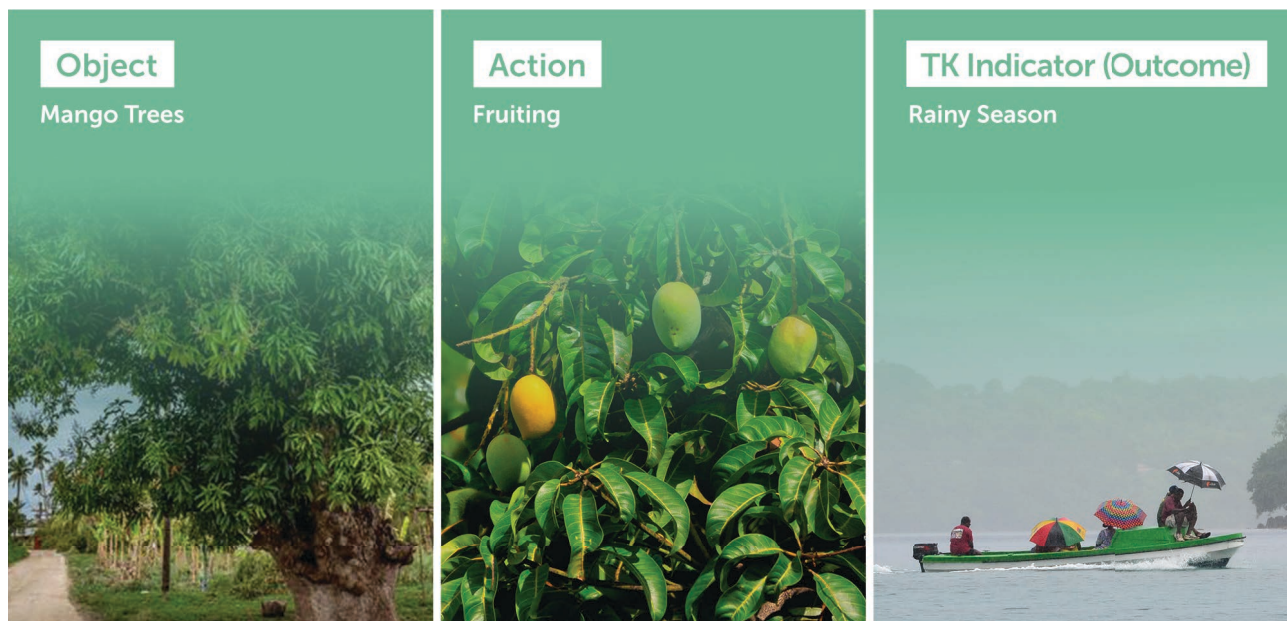
The Van-KIRAP TK approach takes into consideration the flow of information to communities and the feedback from communities. This needs to be accounted for since the flow of information differs based on the timing and the onset of each event. Linkages between VMGD as the provider of early warning information will be strengthened through direct and indirect interactions. Access to timely data and verification of forecast is needed for a robust Early Warning System (EWS).

Traditional knowledge narratives collected may apply to several locations throughout Vanuatu, however the full extent of how widely this knowledge is applied and how reliable the TK indicators are, particularly in the face of loss of knowledge, land use change and climate change, is unknown. By monitoring TK indicators over a longer period of time, we can understand more and improve our understanding of how to use them with other forecast methods.

After identifying key TK climate forecasting indicators from the TK narratives or other information, the spatial extent of their application can be tested through regular monitoring of these identified 'objects' and 'actions'. Figure 6 provides an example of how object plus actions provides an indicator of an expected climate outcome.

**Figure 6: TK indicators are made up of an object (what you need to observe as part of the weather or climate forecast) and an action (what is it about that object that allows you to make a forecast). In this example the amount of fruiting (action) of a mango tree (object) is an indicator of the rainy season.**

(Source: COSPPac TK Guideline)



Prior to integrating TK narratives into forecasting products, a monitoring program will be established to monitor, test and to quantify critical components of the TK narrative and various aspects of the TK. Parts of the forecast that often need quantifying or clarifying are to do with the 'action' e.g. how much of a tree needs to be flowering for it to be considered 'heavy' flowering, and the 'outcome' e.g. how much rainfall would be considered 'heavy' by the TK experts.

A Traditional Knowledge Monitoring Form designed to capture information to assist with all of these issues and includes sections on the observed climate conditions as well as information on the status of objects identified as indicators of climate conditions during the TK survey process. The Monitoring Form is closely linked to the Traditional Knowledge Database – the database has been designed to easily and securely store the information collected via the form.

To ensure that the monitoring program successfully supports the TK forecast system, regular and timely returns on TK indicators and climate outcomes is required. Existing data collection processes e.g. VMGD's current rainfall network and the community climate centres, will be used.

The Van-KIRAP project will utilise the current VMGD developed questionnaire form to collect traditional knowledge on indicators for weather and climate to enable their verification and integration of this knowledge with the contemporary information. Six indicators – that are common throughout Vanuatu and they are using their network of rainfall collectors to monitor these indicators against the observed weather and climate – have been selected for use under the Project.

### 3. Tailor climate information that is relevant and user-friendly for communities and sectors

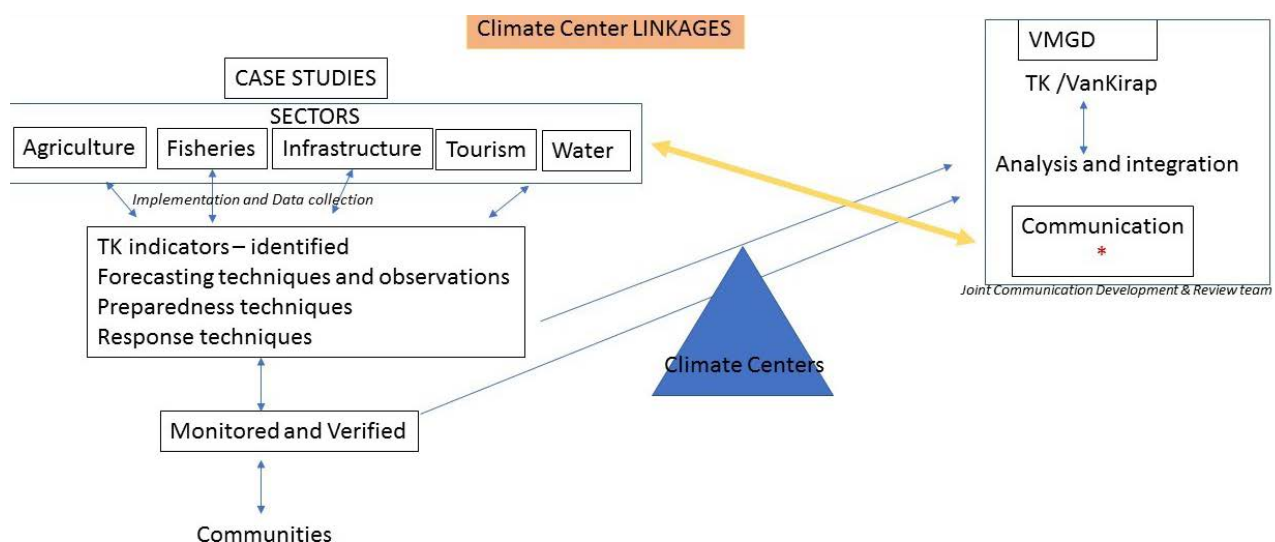
Vanuatu has over 100 languages and the culture varies from islands. The traditional knowledge component of the Project therefore, is a core mechanism to bridge the information provided by VMGD and ensure their relevancy for community uptake of weather and climate information (Figure 7).

In addition to the TK narratives on weather and climate and response techniques – through this process – traditional seasonal calendars, weather and climate terminologies in different local languages (wind directions, cloud and rainfall types) which local communities are more familiar with, will be collected.

TK narratives that are low sensitive will be used to develop community-based Traditional Knowledge and local language (Bislama) resources designed to complement technical CIS outputs, to facilitate community level capacity development for relevant community resilient development planning and implementation. Examples of community-based traditional knowledge resources include:

1. Plants/animal calendars utilising the data collected from local communities;
2. Traditional knowledge forecasting statements in national climate updates (e.g. timing for fruiting of mangoes in the coming months) to increase community understanding and acceptance of the forecasts;
3. Seasonal wheels for awareness/information sessions in schools and in local communities / community climate centres;
4. Traditional knowledge booklets;
5. Traditional website of Vanuatu with location of sites, videos and traditional knowledge calendars for each site;
6. Annual traditional knowledge forums to enable communities and TK practitioners to share TK knowledge and information as well as validating the TK and new TK products produced.

**Figure 7.**



**Schematic diagram of how TK narratives are collected, monitored and verified and then used to produce tailored information at the sectoral level**

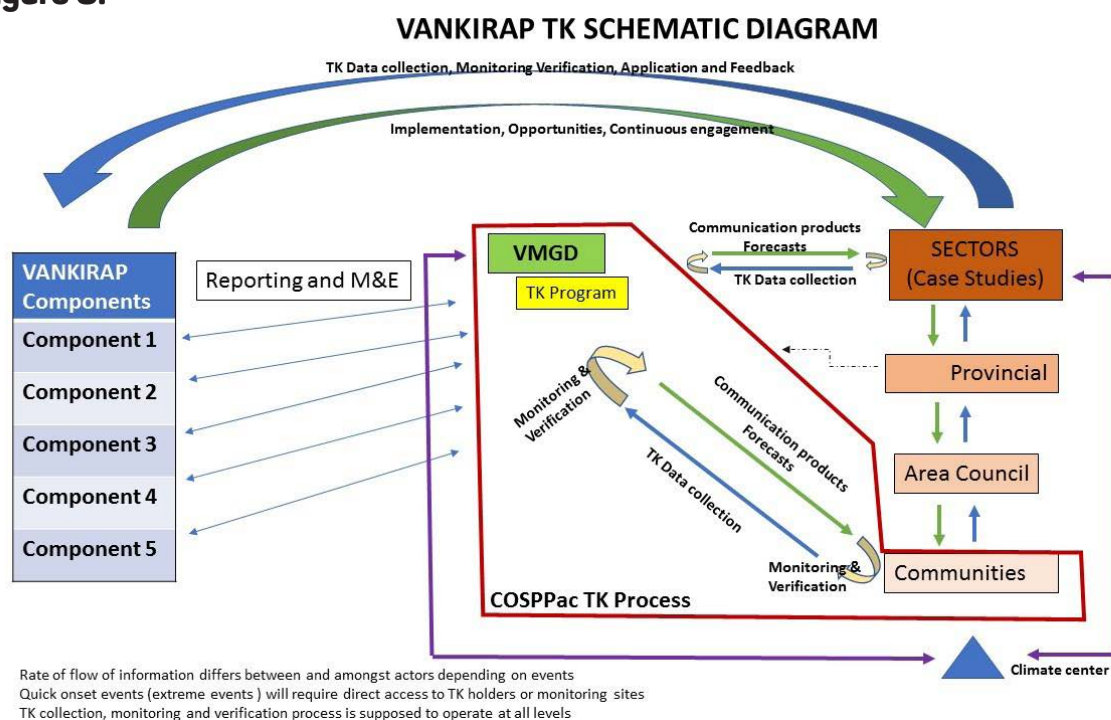
# Role of community climate centres in traditional knowledge

Van-KIRAP will establish community climate centres and / or demonstration sites in all six Provinces to facilitate access to and use of Climate Information Services (CIS) by local communities impacted by climate e.g. communities that are subject to known climate hazards such as extreme sea level events/ storm surge and coastal inundation and erosion, extreme rainfall, etc. This activity will enhance citizen capacity at community levels for the use of CIS and integration with Traditional Knowledge to support resiliency.

Traditional knowledge information can be collected at the community climate centres with climate centre provincial officers working with local communities within the vicinity of the centres. This way the project can support 'citizen science' capacity at local community level (e.g. school and church groups etc.) for undertaking data collection, communication and awareness raising aligned with sector specific case studies e.g. fisheries and fish preservation/other food preservation; agriculture and farming traditional practices; tourism and change in locations to visit based on climate forecasts (e.g. drought and Mele Cascades; to be linked to development and application of Vanuatu Traditional Knowledge (TK) climate database at VMGD. The activity will support on-going training and support, coordination of stakeholders and dissemination of information with a focus on ensuring community-based development (with a focus on the 5 sectors) incorporates and applies CIS in appropriate ways.

For site/locations where the community centres are far away and non-existent, the data collection of traditional knowledge will be undertaken with village Chiefs and Traditional Knowledge Focal points selected by village Chief and Elders in each village allocated by them.

**Figure 8.**



Van-KIRAP TK Schematic showing the linkages between the Community Climate Centres to the TK work (Data Collection Component, Verification Component and Seasonal Prediction/Awareness Components). The TK Data Collection Component, the Community Climate Centres will be a multi-purpose hub in the communities to facilitate the collection of new traditional knowledge data and information (stories, environmental indicators).



# Partnership, engagement and coordination of traditional knowledge

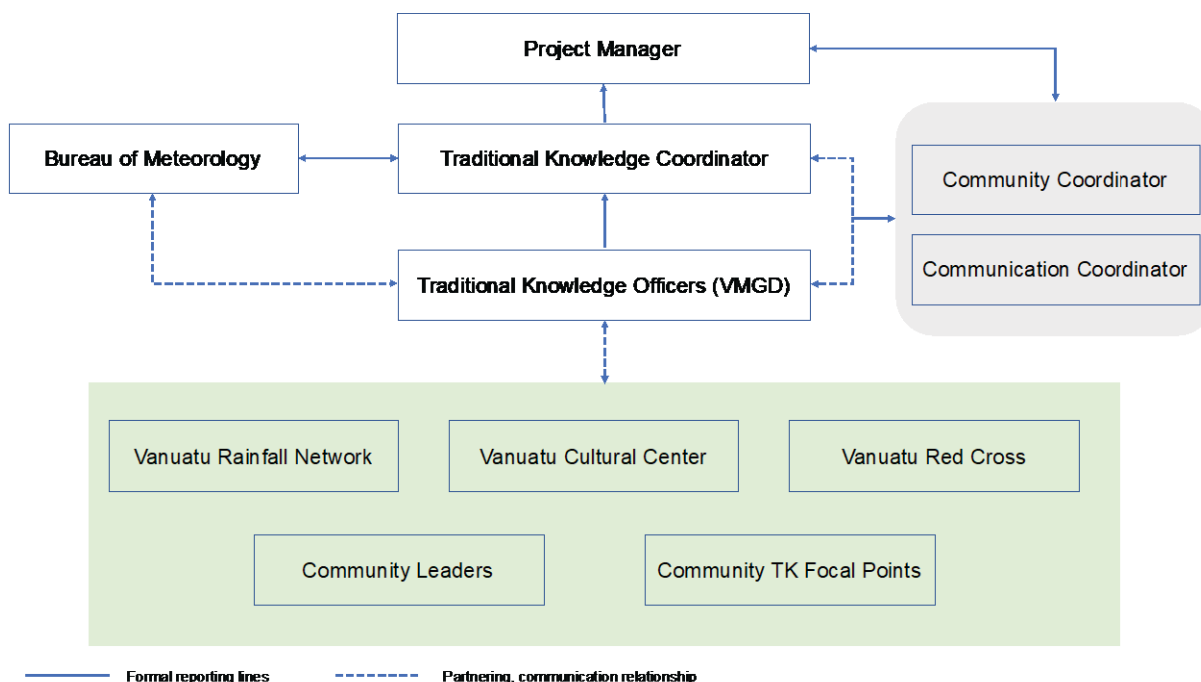
The coordination of traditional knowledge activities in the weather, climate and disaster management space is currently managed by VMGD in partnership with the Vanuatu Cultural Centre at the national level. Information exchange, and TK data collection is well coordinated, however there is limited coordination and engagement of other NGOs and key partners in the Climate Early Warning and Disaster Resilience space. The current struggle with implementing activities and sharing best practices on the collection and documentation of TK at the national level is that most government agencies and NGOs still work in silos.

Across all levels, most national partners struggle with the implementation of its core functions due to availability of human and financial resources. It is therefore important that TK activities are coordinated and integrated into current work processes so that TK activities are not seen as additional activities but more as an extension of current work. The expansion of activities and adding additional functions and role on top of the core competencies puts pressure on technical capacities and resourcing. Integrating TK into the core competencies for government agencies like VMGD will require additional resourcing and strategic partnership. Current formalised partnerships for the collection and document of TK exists between VMGD and Vanuatu Cultural Centre and Red Cross.

## Roles and responsibilities

The traditional knowledge component of the Van-KIRAP project will be led by a Traditional Knowledge Coordinator, based within the Climate Change Resilience Programme at the Secretariat of the Pacific Regional Environment Programme. On-ground in Vanuatu, the traditional knowledge effort will be coordinated and led by, the Traditional Knowledge Officers based in the Vanuatu Meteorological and GeoHazards Department (VMGD). An outline of the key responsibilities and functions of the positions and the partners working with the Executing Entities in this component is outlined in Table 2.

**Figure 9.**



**Reporting and partnership structure for the traditional knowledge component**

**Table 3. Outline of the positions and core functions of personnel and partners in the Traditional Knowledge process**

Position	Function
<p><b>Traditional Knowledge Coordinator</b></p>	<p>The Traditional Knowledge Coordinator will be responsible for overseeing, guiding and managing the traditional knowledge activities and core partnerships. The role has responsibility for ensuring TK Officers and the data collection networks in Vanuatu are properly and adequately trained and mentored in the traditional knowledge process and principles.</p> <p>The TK Coordinator will work closely with the COSPPac project within the Australian Bureau of Meteorology and ensure all data complies with the standards and principles aligned to the COSPPac guidelines and is embedded within the broader Pacific regional traditional knowledge system.</p> <p>Coordination will be under the responsibility of Albert Willy (TK Officer). He will be supported by Allan (Climate Manager &amp; John Ruben Research Development Officer) and Mickey Jella second TK officer. Any communications regionally will go through Allan cc Albert/John, any communications locally will be through Albert cc Allan/John. All three staff will have TK activities incorporated into their quarterly work plans.</p> <p>A VMGD Traditional Knowledge Working Group, will consist of the Climate team will be guiding decision making, providing support to the VMGD Director in matters relating to the work of TK.</p>
<p><b>Traditional Knowledge Officers</b></p>	<p>Situated in the Vanuatu Meteorological and Geo-Hazard Department, the Traditional Knowledge Officers will be responsible for the implementation of the strategy's activities on-ground. The Traditional Knowledge Officers will be responsible for the data collection and storage of TK collected from the communities, and for training the local data collection networks.</p> <p>The TK Officers will work closely with other project personnel i.e. Sector coordinators, Community Coordinator and Communications Coordinator to ensure integration and coordination across these related activities.</p>
<p><b>Bureau of Meteorology</b></p>	<p>Scientific support role to both the Traditional Knowledge Officers and the Traditional Knowledge Coordinator.</p>
<p><b>Vanuatu Cultural Centre</b></p>	<p>Coordination of resources for TK activities will be undertaken in partnership between VMGD, the Vanuatu Cultural Centre and the key sectors implementing TK related activities. The inclusion of the Cultural Centre is key for sustainability and planning purposes and to ensure that this strategy while developed specifically for Van-KIRAP, elements of it can be used beyond the lifecycle of the project.</p> <p>Furthermore, the inclusion of the Vanuatu Cultural Centre provides the key linkage needed for national government budgeting purposes so that these activities can be integrated into planned and nationally funded activities in the future.</p>

<p><b>Vanuatu Rainfall Network</b></p>	<p>The VRN will be utilized to collect TK data, as well as carry out monitoring of indicators in addition to their current responsibilities.</p> <p>VRN has a well establish network coordinated by VMGD across the country and also has a good background knowledge on meteorology. VRN has been part of several trainings organise by VMGD in the past. In any location trips the Vanuatu Cultural Centre (VKS) accompanies the TK officers (MOU established to ensure traditional protocols/good governance are followed.</p>
<p><b>Traditional Knowledge Focal Points</b></p>	<p>In the new sites within the Village Council, a Traditional Knowledge Focal point will be appointed by the village Chief. The TK focal point will be the person most knowledgeable in the traditional practises &amp; beliefs. During TK data collection they will be the person whom the TK officer will approach to collect data.</p> <p>Focal points will work with the Cultural Centre and VMGD regarding TK data collection. The Chief in the village will provide the endorsement to allow TK project to enter the community.</p> <p>The Village chief will appoint someone who has very good knowledge of TK. There is a possibility that the chief will also be the focal point.</p>
<p><b>Village elders/ chiefs</b></p>	<p>Chief has power of governance in the village and keeps law and order. He knows who the best person whom TK officer can go to collect TK data. He provides security for ownership for all village custom rights and property.</p>
<p><b>TK Working committee</b></p>	<p>TK working committee consists of the Climate team Manager (Allan), Research officer (John) , TK officer (Albert) and SPREP (Siosina) and BOM (Lynda)</p>
<p><b>Other Project Partners</b>  (e.g. APCC and CSIRO, who have TK components in their component plans)</p>	<p>APCC will not be collecting any traditional knowledge on climate and weather indicators. They will undertake (a) Stakeholder workshop will be for gathering/ understanding information around traditional farming practices, etc. with a wide range of participants; (b). The technical workshops will be for VMGD and DARD to receive training on how to use the Crop Climate Diary (CCD) and the Vanuatu Climate Services for Agriculture (VaCSA). We can also include discussions on designing the agro-met bulletin with VMGD and DARD during these technical workshops.</p>



# Monitoring and evaluation

A robust results-based monitoring and evaluation (M&E) system will be established as part of the overall Van-KIRAP project, including linkages to the Project's Key Results Framework. Traditional knowledge activities and elements of this strategy will be included in this Strategy.

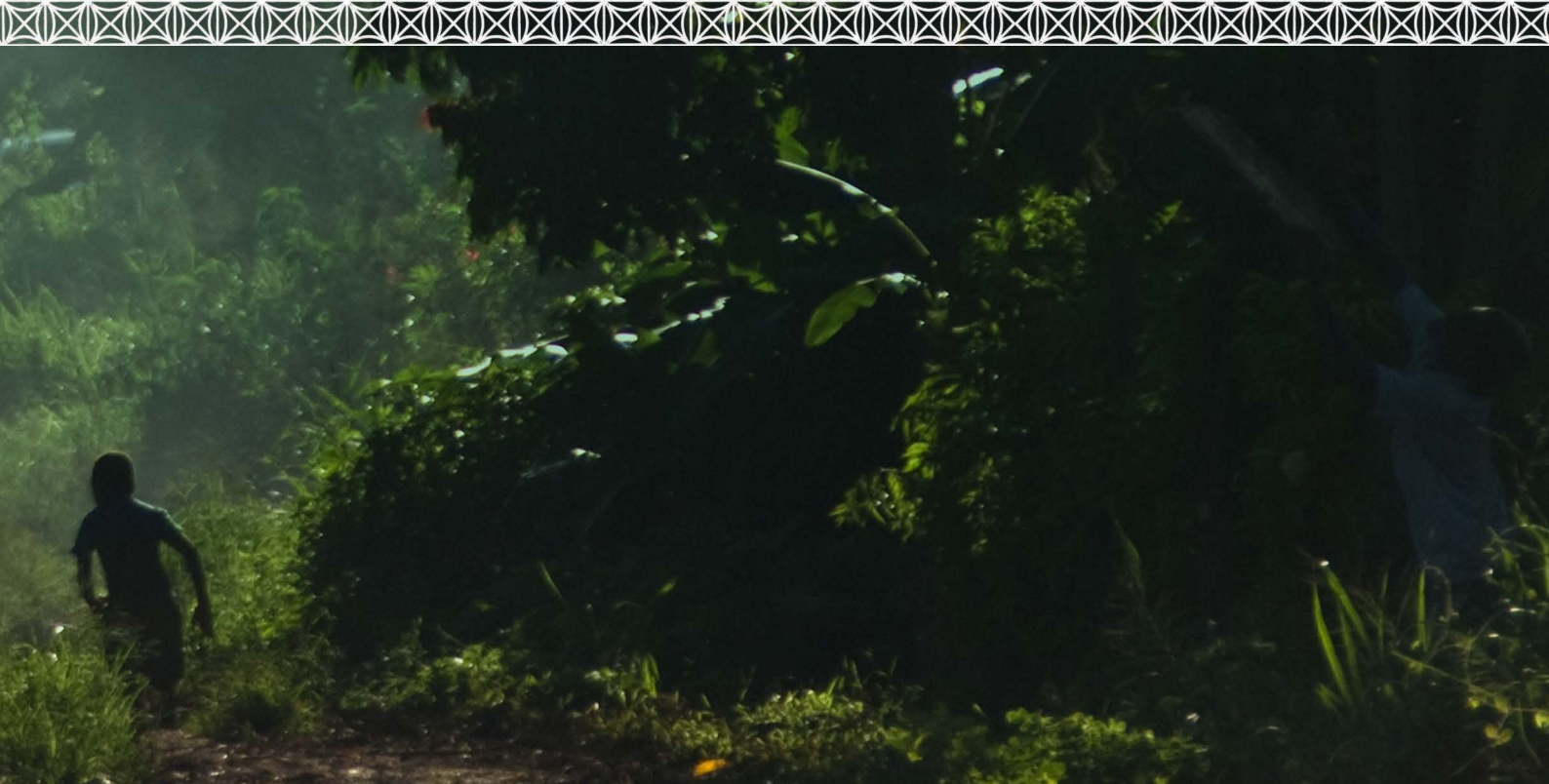
## Workplan

Workplans will be developed on an annual basis and submitted to the Van-KIRAP Project Manager for approval, enabling for the activity to adapt to changes as required.

## Resource mobilisation

Implementation of this Traditional Knowledge Strategy requires resourcing both human resources and operational resources. Dedicated staff will be appointed to lead the component and its activities, to ensure the identified outcomes and outputs are achieved. Activities will be supported through the mobilisation of operational resources to cover fieldwork (i.e. travel, community engagements), data collection (i.e. allowances for community data collectors), database upgrading, and the development of awareness and information products as aligned to the Project's communication strategy.





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