POST DISASTER NEEDS ASSESSMENT

Vanuatu Tropical Cyclones Judy and Kevin

22 June 2023

Produced by
The Department of Strategic Policy, Planning and Aid Coordination
Ministry of the Prime Minister
Government of Vanuatu
PMB 9053, Port Vila
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Acronyms

ACNU	Aid Coordination and Negotiation Unit
ALFF	Agriculture, Livestock, Fisheries and Forestry
BBB	Building Back Better
CAA	Climate Change Adaptation
CAB	Current Account Balance
CAVAA	Committee Against Violence Against Women
CCDRM	Climate Change and Disaster Risk Reduction Policy
CDCCCs	Community Disaster and Climate Change Committees
CPI	Consumer Price Index
DOE	Department of Energy
DOL	Department of Labour
DOT	Department of Tourism
CRC	Convention on the Rights of the Child
DOL	Department of Lands
DRM	Disaster Risk Management
DRR	Disaster-Risk Reduction
DRRU	Disaster Recovery and Resilience Unit
DSPPAC	Department of Strategic Policy, Planning and Aid Coordination of the Prime Minister's Office
DUAP	Department of Urban Affairs and Planning
DWA	Department of Women's Affairs
DEPC	Department of Environmental Protection and Conservation
DRR	Disaster Risk Reduction
ECCE	Early Childhood Care and Education
ECD	Early Childhood Development
EOC	Emergency Operation Centre
EPR	Employment-to-Population Ratio
EU	European Union
ESCAP	Economic and Social Commission for Asia and the Pacific
GBV	Gender Based Violence
GDP	Gross Domestic Product
GEDSI	Gender Equality, Disability and Social Inclusion
GoV	Government of Vanuatu
HCF	Health Care Facilities
HFRSA	Health Facility Readiness and Service Availability
HH	Household
ICCPR	International Covenant on Civil and Political Rights
IFRC	International Federation of the Red Cross
ILO	International Labour Organization
IOM	International Organization for Migration
JPOC	Joint Planning Operation Centre
LBFFV	Locally Based Foreign Fishing Vessels
LFL	Local Fishing License
LFPR	Labour Force Participation Rate
MALFFB	Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity

MCH	Maternal and Child Health
MFEM	Ministry of Finance and Economic Management
MJCS	Ministry of Justice and Community Services
MoCCA	Ministry of Climate Change Adaptation
MoET	Ministry of Education and Training
MoF	Ministry of Finance
MoIA	Ministry of Internal Affairs
MIPU	Ministry of Infrastructure and Public Utilities
MoH	Ministry of Health
MoJCS	Ministry of Justice and Community Services MLNR Ministry of Land and Natural Resources
MoYS	Ministry of Youth and Sports
MTTCNVB	Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business
NAB	National Advisory Board on Climate Change and Disaster Risk Reduction
NBV	National Bank of Vanuatu
NCC	National Council of Chiefs (Malvatu Mauri)
NDMO	Vanuatu National Disaster Management Office
NDRF	National Disaster Recovery Framework
NEET	Employment, Education or Training
NEOC	National Emergency Operations Centre
NGO	Non Governmental Organization
NPL	National Poverty Line
NRC	National Recovery Committee
NSDP	Vanuatu's National Sustainable Development Plan
NWG	National Women's Group
NYC	National Youth Council
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OGCIO	Office of the Government Chief Information Officer
PDC	Provincial Disaster Councils
PDCCCs	Provincial Disaster and Climate Change Committees
PDNA	Post Disaster Needs Assessment
PDPs	Provincial Disaster Plans
PEOC	Provincial Emergency Operations Centre
PMW	Police Maritime Wing
PSEAH	Prevention of Sexual Exploitation, Abuse and Harassment
PSET	Post-Secondary Education Training
PVMC	Port Vila Municipal Council
PWD	Public Works Department
ROC	Recovery Operations Centre
RSE	Recognized Seasonal Workers Scheme
SDG	Sustainable Development Goals
SPC	Secretariat of the Pacific Community
SSP	Societe De Service Petroliers
SWP	Seasonal Worker Programmes
TC	Tropical Cyclone
TLAC	Tripartite Labour Advisory Council
UN	United Nations
UNCT	United Nations Country Team

UNDP	United Nations Development Programme
UNELCO	Union Électrique du Vanuatu
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UNISDR	United Nations Office for Disaster Risk Reduction
UNOSAT	United Nations Satellite Centre
UNWTO	United Nations World Trade Organization
UPU	Urban Planning Unit
VANGO	Vanuatu Association of Non-Government Organisations
VCAN	Vanuatu Climate Change Adaptation Network
VCC	Vanuatu Council of Churches
VCCDRRP	Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030
VCCI	Vanuatu Chamber of Commerce & Industry
VMF	Vanuatu Mobile Force
VMGD	Vanuatu Meteorology and Geo-hazards Department
VNCC	Vanuatu National Cultural Council
VNLUPZP	Vanuatu National Land Use Planning and Zoning Policy 2013
VNPF	Vanuatu National Provident Fund
VNSO	Vanuatu National Statistics Office
VSTS	Vanuatu Sustainable Tourism Strategy
VUVO	Vanuatu Tourism Office
VUVUC	Vanuatu Trade Union Combine
VUI	Vanuatu Utilities & Infrastructure
VWC	Vanuatu Women's Centre
WASH	Water, Sanitation, and Hygiene
WB	World Bank

Foreword by the Prime Minister of Vanuatu

On behalf of the people and Government of Vanuatu, I extend sincere sympathy to those families most affected by TC Judy and Kevin. The devastation and trauma caused by the twin cyclones has been further compounded by the economic, social and environmental impacts of climate change, TC Harold, high La Nina rainfall, the cyber-attack on Government servers and all on the back of the COVID-19 pandemic. Together, these events have threatened the lives and livelihoods of many people across our country. In such difficult circumstances we again draw strength from our collective resilience and determination to attain the development aspirations we have set for ourselves in Vanuatu 2030 - The People's Plan, our National Sustainable Development Plan.

In the aftermath of the twin tropical cyclones, Judy and Kevin devastating Vanuatu in March, my cabinet commissioned PMO Corporate Services and DSPPAC to establish the Recovery Operation Centre (ROC). The ROC was to carry out a Post-Disaster Needs Assessment (PDNA) to ascertain the damages and losses of the cyclones. However, based on lessons learnt from the past where assessments and recovery projects took too long to implement (leaving the country susceptible to risks), my government requested ROC to release an Early Recovery Plan. The Council of Ministers through COM decision 069 approved this Recovery Plan a month after the cyclones and 3 months after my cabinet took office. The Early Recovery needs amounted to over 3 billion vatu. Sectors could re-prioritize and re-allocate funds to commence the early recovery process while awaiting the completion of PDNA and Recovery Strategy for medium to long-term recovery needs.

I am proud to announce the finalization of the PDNA and the Recovery Strategy just 3 months after the cyclones hit Vanuatu in March. The PDNA was a multidimensional process that determined the physical, economic, and cost recovery of the twin disasters. As Vanuatu is situated in the 'Pacific Ring of Fire' and dubbed as the most vulnerable country to natural disasters, the PDNA process also identified risks and vulnerabilities to reduce future hazards which are captured in the Recovery Strategy.

In response, my government is determined to shorten the time it takes for Planning and implementation of response and recovery. This requires emphasis on the preparatory phase of disaster. Thus, Government business planning for each year will have a focus on planning and budgeting for service delivery during normal times and business continuity under extreme disaster conditions. This should see sectors play a more leading role in the response and early recovery of disasters. We will still rely on Development Partners to support medium- and long-term recovery but these will be considered as priority development projects rather than recovery. To ensure the implementation of these directives, my government is sponsoring the legislation of Recovery and Resilience to not only support swift response and recovery but build the people's resilience to future disaster shocks.

Finally, I take this opportunity to thank my DG and Director for the strategic and technical oversight in ensuring that the PDNA and Recovery Strategy were developed according to the approved timeframes. The country is indebted to the UNDP and Pacific Community for standing with us and ensuring that a true report is produced to assist in our recovery. The total amount of the recovery needs is just over 20billion vatu. While Vanuatu, through its ministries, has already started the early recovery efforts, we will continue to rely on the Goodwill and strategic friendships to shoulder the medium to long term recovery efforts. I thank our Development Partners in anticipation. Finally, I thank the sectors for supporting the call of COM to support the PDNA process and DSPPAC for your tireless efforts in implementing the decision.

Together we can and will recover, rebuild and emerge stronger and more resilient.

God bless,

.....

Hon. Alatoi Ishmael KALSAKAU MAAU'KORO

The Prime Minister

Acknowledgements

The TC Judy and Kevin Post Disaster Needs Assessment (PDNA) Report is a Government of Vanuatu publication. It is a documentation of the impact that the two cyclones have had on the people and economy of the Republic of Vanuatu and also the planned recovery plan to transition us back on our development pathway.

The PDNA Report was prepared under the leadership and guidance of Ms. Cherol Ala Lanna, Director General, Office of the Prime Minister; Mr. John Ezra, Director Department of Strategic Planning, Policy and Aid Coordination; and Mr. Peter Korisa, Coordinator, Recovery Operations Centre.

The Government of the Republic of Vanuatu values the commitment by the United Nations Development Programme in the Pacific and the Pacific Community in having Dr Asha Kambon, international PDNA expert; and regional PDNA technical experts Paula Cirikiyasawa, UNDP and Litea Biukoto, SPC, Ms. Monica Trujillo, UNDP consultant to work with the Department of Strategic Planning, Policy and Aid Coordination and sector leads from Line Ministries, Central Government, and the Reserve Bank of Vanuatu throughout the assignment.

The PDNA Coordination team acknowledges the dedication and commitment of senior officials from Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity; Ministry Of Climate Change, Ministry of Education & Training; Ministry of Finance and Economic Management; Ministry of Foreign Affairs, International Cooperation & External Trade; Ministry of Health; Ministry of Infrastructure & Public Utilities; Ministry of Internal Affairs; Ministry of Justice & Community Services; Ministry of Lands, Geologies & Mines & Water Resource; Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business; Ministry of Youth Development & Sports; Prime Minister; Reserve Bank of Vanuatu.

The PDNA Coordination team is grateful for the support from: Asian Development Bank (ADB), Government of Australia (DFAT), Food and Agriculture Organization (FAO), German Agency for Technical Cooperation (GIZ), European Union (EU), International Labour Organization (ILO), Government of New Zealand (MFAT), the Pacific Community (SPC), United Nations Development Programme (UNDP), United Nations Economic and Social Commission for Asia and the Pacific Programme, (UNESCAP), United Nations Children Fund (UNICEF), UN Women, World Bank Group (WBG). A full list of the PDNA contributors is included in Annex 1. To all the contributors, the team would like to express its deepest gratitude and appreciation.

Executive Summary

Introduction

Tropical Cyclone Judy (TC Judy) struck the archipelago of Vanuatu on 01 March 2023, making landfall on Efate Island, where the capital city of Port Vila is located. On 03 March, 2023, Vanuatu was hit by Tropical Cyclone Kevin (TC Kevin). Both TC Judy and Kevin were Category 4 cyclones that caused significant damage due to wind, heavy rains, flooding and storm surge. Early on March 3rd Vanuatu was also affected by two earthquakes, of magnitude 6.5 and 5.4, with the epicenter around 30 km west off the island of Espiritu Santo, although their impact was fortunately not significant.

According to the National Disaster Management Office (NDMO), a total of 197,388 people (43,623 households) were affected by TC Judy and Kevin, representing approximately 66 percent of the total population. However, more than 80 percent of the population (251,346 people) were affected by cyclone winds of Category 2 to 3. To date, there are no reports of casualties.

TC Judy and Kevin follow on the footsteps of TC Harold which struck Vanuatu on April 2020, which affected 188,000 people. The impact of TC Harold was felt in Vanuatu in parallel to the effects of the Covid-19 crisis, a double impact that had serious consequences for the country. Combined TC Harold and the Covid-19 crisis cost VUV 68 billion (USD $617 million) in damage and losses, equivalent to about 61 percent of GDP in 2020.[1] Not long before, in 2015 Vanuatu was struck by another disaster, TC Pam which affected 160,000 people.

The Government of Vanuatu (GoV) declared a State of Emergency on March 02, 2023 (Order No 29 of 2023) in the provinces and districts of Mere Lava, Penama, Ambrym, Paama, Shefa, and Tafea, which was subsequently amended to include the whole country on March 05, 2023 (Order 30 of 2023). Rapid assessment teams were deployed by the GoV on March 7th, initially to 39 Area Councils and subsequently expanded to multisectoral rapid needs assessments in all provinces covered under the state of emergency.

These assessments helped to inform the initial humanitarian response and the development of the National Response Plan with a budget of 6.7 billion Vatu. In addition, the GoV developed an Early Recovery Plan to 1) provide an overview of the sectoral early recovery needs and priorities, and 2) ensure a smooth transition from humanitarian response to recovery. Early recovery needs were estimated to be 3.3 billion Vatu for a period of six months.

The Government of Vanuatu, with the guidance of the Recovery Operations Centre (ROC) conducted a Post Disaster Needs Assessment (PDNA) with support from the UN Development Programme (UNDP) and the Pacific Community (SPC). The PDNA, which took place during the months of April and May 2023, was implemented in collaboration with ADB, FAO, UNFPA, UNWOMEN, UNICEF, WHO, ILO, the World Bank.

The purpose of the PDNA was to identify the damage and loss caused by TC Judy and Kevin across all sectors, to assess the macro-economic and human impact of these disasters, to estimate the recovery needs in all sectors, and to inform Vanuatu's short-, medium- and long-term recovery and reconstruction process through a well-planned Recovery Plan aligned to the country's National Sustainable Development Plan 2016-2030. This report presents the final results of the PDNA.

[1] GoV, 2020, Post Disaster Needs Assessment: TC HAROLD & COVID-19

Summary of Disaster Impact

Summary of Macro-Economic Impact

Gross Domestic Product: Following the twin cyclones, Vanuatu's GDP growth forecast for 2023 has been revised down from 3.6% to 3.0%. The two cyclones hit the southern provinces of Shefa and Tafea the most severely, with the damages felt most acutely in the agriculture sector, as has been the case historically when cyclones hit. Added to this, supply constraints remain a problem following the Covid-19 pandemic, exacerbated in certain sectors by labour drain. Such factors will further hold back growth in 2023, over and above direct cyclone related impacts. Set against this however, 2023 will be the first full year of fully open borders, which will likely boost growth in certain sectors related to tourism, albeit coming from a very low base level of output following two and a half years of border closures.

In agriculture, the sector most impacted by the twin cyclones, growth for 2023 has been revised down from 3.8% to -1.2%, with downgrades across all four main subsectors. Based on sector reporting, the crop production subsector appears to have been the most severely hit, with an expected contraction of 2.1% in 2023 reflecting widespread reports of damage across southern provinces. Overall, growth in the **industrial sector** for 2023 has been revised downwards from 9.4% to 4.7%, solely driven by slower expected growth in construction. While there is likely to be some reconstruction efforts this year, much of this will be spread over the next three years (with growth for 2025 in particular revised up). Growth in **services** has been revised upwards, from 3% previously to 4.9%. There are two main factors driving this – direct cyclone impacts as well as revised projections following the reopening of borders. The cyclones are expected to have directly boosted the wholesale and retail sectors, due to increased purchases in preparation for the cyclones, as well as for recovery following them. Accordingly, growth in these sectors have been revised up, from 1.7% and 3.2%, to 2.6% and 3.8% respectively.

Fiscal Balance: In 2023, the Government's position excluding donor financing has estimated a slight fiscal deficit of VUV 685.1 million, which will be financed entirely by domestic bonds issuance. However, the donor financing is estimated to run a fiscal deficit of VUV 5,336.5 million, which will be financed entirely by external loan drawdowns. Thus, the overall Government and Donor financing is estimated to run a fiscal deficit of VUV 6,021.5 million, which will be financed entirely by both domestic bonds and external loans. However, in contrast, the overall Government and Donor financing position is estimated to improve and run a fiscal surplus in 2025 to 2027.

Inflation: the forecast for inflation in 2023 has been revised upward, from 10 percent to 13.5 percent, reflecting an expected increase in domestic prices of food particularly prices of fruits, root crops and vegetables due to supply shocks from the twin cyclones. Upside risks to the forecast includes: the intensification of the Russia/Ukraine war that could trigger a new rise on international commodity prices, a strong recovery in domestic demand of goods and services against a more gradual supply, and the El Niño season that could affect the supply of fruits, root crops and vegetables.

Balance of Payments: the pre-disaster BOP forecast would not change much in the long term, but revision was mainly on goods exports and inflows of recovery funds. The impact of the cyclones was limited in some provinces, as many export crops come from the northern province that were less affected by the cyclones. Despite higher import forecasts for 2023, external disaster recovery funds are expected to sustain official reserves in 2023. Post disaster forecast for official reserves still remains above RBV threshold for end of 2023.

Summary of the Human Impact

Tropical Cyclones Judy and Kevin had a significant impact on human development in Vanuatu, particularly in Priority Areas 1 and 2. A total of 197,388 people or 43,623 households were affected, representing 66 percent of the total population. In terms of livelihoods, the twin cyclones affected 25,933 workers or 67% in the informal economy and 9,691 self-employed, of which 45% were women micro entrepreneurs. In rural areas, crop losses were significant for farmers growing temporary, seasonal and cash crops, while 1,444 fishers and aquaculture farmers were affected. The resulting income losses risks increasing poverty and food insecurity in Vanuatu, especially for the most vulnerable.

The twin cyclones also increased deprivations: about 19,152 households had their homes damaged or destroyed, and 185,000 people were affected by disruptions to healthcare services, including 26,000 children under 5 deprived of maternal and child healthcare, immunization, and health & nutrition promotion. School children will not have access to in-class education until schools are rebuilt and distance learning is not available to all. In addition to the risk of an increase in multi-dimensional poverty in the country, there are particular groups who are highly vulnerable such as children, female-headed households, informal workers, families living below the poverty line, and an estimated 7,447 people with disabilities who live in Priority Areas 1 and 2. The overall impact on human development is considerably high yet it is not limited to this event but rather adds to the human impacts caused recently by heavy La Nina rainfall in 2022-23, TC Harold in 2020 and the Covid-19 crisis. Below in Table 1 is a summary of the human impacts from the two cyclones.

Table 1: Summary of the Human Impact of TC Judy and Kevin

185,000 people faced disruptions in essential **healthcare services**, including: -80,000 children under the age of 8 -46,250 women of reproductive age -3,450 pregnant women.	The **livelihoods** of 38,764 people were affected, including: -25,933 workers or 67% in the informal economy; -9,691 self employed, of which 4,351 (45%) were women micro entrepreneurs (the "*mamas*").	6,384 households had their **houses destroyed**, and another 12,768 households had their houses damaged across Malampa, Shefa, and Tafea.	As a result of **disruptions to ECCE centers**, young children lost over 500,000 in class learning hours. 3,658 young children between 3 and 5 years of age were affected by **disruptions in early learning** and education services.
26,000 **children under 5** were affected by disruptions in maternal and child health, immunization, and health & nutrition promotion.	**Farmers** growing temporary and seasonal crops were the most affected by crop losses, followed by farmers growing cash crops	An estimated 7,447 **people with disabilities** live in Priority 1 and 2 affected areas, which requires disability inclusive recovery measures.	Children, exposed to cyclone-related stress and deprivation risk dropping out of school or experiencing academic failure.
Trauma among very young children may lead to cognitive, behavioural, emotional and developmental difficulties, with long-term implications.	84% of people had their **home gardens destroyed**, and 42% did not have enough food, according to a survey.	**Gender-based violence** and child protection cases may have increased after the cyclones.[2]	Women and children are at **risk of sexual exploitation, abuse** and harassment due to lack of privacy and security in bathing and sanitation facilities.

[2] Based on anecdotal incidents, but no data could be obtained

Summary of Disaster Effects

Disaster Effects by Sector

Agriculture, Livestock, Fisheries and Forestry: In the crops-subsector, the greatest damage and loss relate to temporary and seasonal crop, at 40% of the value of pre-cyclone expected income. This was followed by cash crops, at 24.1% of expected pre-cyclone income, with the least impact to permanent/ multi-year crops at 14.1%. Total damage and loss for crops is estimated at VUV 89.8 billion in all affected areas. In the livestock sub-sector, the total damage and loss is VUV 2.5 billion for all affected areas. In the fisheries sub-sector, the total damage and loss caused by the twin cyclones was 5.4 billion Vatu, including aquaculture, coastal and national fisheries. Coastal Fisheries was the most affected with VUV 3.8 billion in damage and losses. In forestry, the total effects are VUV 15.5 billion.

Commerce and Industry: The total damage and loss for the commerce and industry sector is VUV 259 million, of which VUV 197 million relates to industry and VUV 62 million to cooperatives.

Tourism: Disaster effects relate mainly to the damage to buildings, roofs of traditional island bungalows, furniture, wharf and other Port of Entry facilities, communication infrastructure, roads, and natural vegetation, causing significant loss of income in the overnight and cruise sectors. The total damage in the sector amounted to VUV 110 million and losses were estimated at VUV 472 million.

Employment and Livelihoods: in this sector an estimated 38,764 people were affected by the twin cyclones, of which 25,933 were workers or 67% in the informal economy, and 9,691 were self-employed of which 4,351 (45%) were women micro entrepreneurs (the "*mammas*"). It is estimated that collectively they lost 484,550 work days.[3]

Culture: The twin cyclones caused direct damage to cultural sites and cultural institutions, and had broader impacts on community livelihoods, resulting in constraints on cultural production (e.g., handicrafts) and performance (e.g. ceremonies, cultural tourism). Total damage and loss was estimated to be VUV 5.2 million.

Education: The level of damage caused by the twin cyclones on education infrastructure, resources and equipment was extensive.[4] The total disaster effect on the education sector has been estimated to be VUV 3.44 billion, with damage corresponding to VUV 1.68 billion due mainly to damage (both major and minor) to classrooms, toilet and handwashing facilities, and learning resources, while losses were estimated to be VUV 1.76 billion.

Governance: in the judiciary sub-sector 14 buildings were damaged, such as magistrate courts, especially in Efate. The offices were not operational for almost a month due to damages on the buildings, resulting in the suspension of court hearings. A total of VUV 36.45 million is estimated in damage and loss. In the securities sub-sector, there were damages to 354 Security Buildings, the total effects were VUV 291 million.

Health: An estimated 59 health facilities sustained some level of damage, while WASH services in HCF were also significantly damaged, compromising the quality of health care service delivery in the affected areas. Damage and losses for the health sector were estimated at VUV 1.45 billion.

Housing: A total of 6,384 houses were destroyed and an additional 12,768 were partially damaged across the Provinces of Malampa, Shefa, and Tafea. Total damage and loss for the sector is estimated to be VUV 19 billion.

Youth and Sports: 51,535 youths were affected by the twin cyclones (PA 1 and 2), which includes effects resulting from the damage to youth informal businesses as well as to sports facilities. Total damage and loss is VUV 187 million.

Energy: Total damage and loss for the energy sector is VUV 16 million and relates to private infrastructure and buildings, losses in revenue, higher operating costs and additional costs as a result of the event, and focused on the provinces most affected, Tafea and Shefa. The only loss estimation was attributed to the Natai Fish Market.

Telecommunications: Total damage and loss for the sector is estimated to be VUV 862 million. The most substantial damage was on the communication distribution networks, such as destroyed or damaged towers for cellular systems and microwave networks. Loss refer to the loss of sales of telecommunications services.

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[3] Assuming that it would take all the entrepreneurs on average six weeks to re-construct and four weeks to repair their private workplaces/dwellings.

[4] In this sector assessment, the focus was narrowed to the classroom facilities (ECCE/PRI/SEC & PSET), the toilet/hand washing facilities (for ECCE/PRI/SEC &PSET), and the learning resources (particularly for PRI & SEC).

Transport: Damage to the transport sector was mainly to parts of the northern provinces of Penama and Malampa, and the whole of the southern provinces of Shefa and Tafea. Overall damage and losses in the transport sector totalled VUV 6.4 billion.

Water, Sanitation and Hygiene: This sector saw damage to household community based water systems and household rainwater systems as well as to 33,648 sanitation facilities. Total damage and loss to water infrastructure was estimated to be VUV 1,28 billion, and for sanitation and hygiene VUV 2.07 billion.

Summary of Damage and Loss

At the centre of the assessment process is the estimation of the values of Damage and Loss by each sector. This is undertaken by an examination of the pre and post disaster situation utilising two data sets, the baseline data that represents existing conditions before the event and the data sets detailing the effects of the event in the sector and its geographic spread. Such estimations allow for the most efficient and effective strategies and recommendations for recovery to be developed.

Damage data are presented in the replacement value prevailing at the time of the event and the Loss data represents current values. Damage refers to the value of the total or partial destruction of physical infrastructure and assets; and Loss the change in flows as a result of the disruption caused to the production of goods and services or access to goods and services, costs of reducing risk as a result of the event or the disruption to governance processes. Loss value takes into account higher operational costs and reduced income or revenue as a result of the disaster.

Table 2 presents the estimates of damage and loss by Sector and sub sectors, found in Priority Areas 1 & 2 identified as the most affected areas of the county, as a result of TC Judy/Kevin (Refer Annex 2 on summary).

The total effects of the event which amounts to some 51.2 billion (VUV) or USD$433 million presents a distribution of Damage and Loss, in which Damage amounted to 68.9% or 35.3 billion VUV and Loss accounted for 31.1% or 15.9 billion VUV.

Table 2: Total Damage and Loss by Sector (VUV)

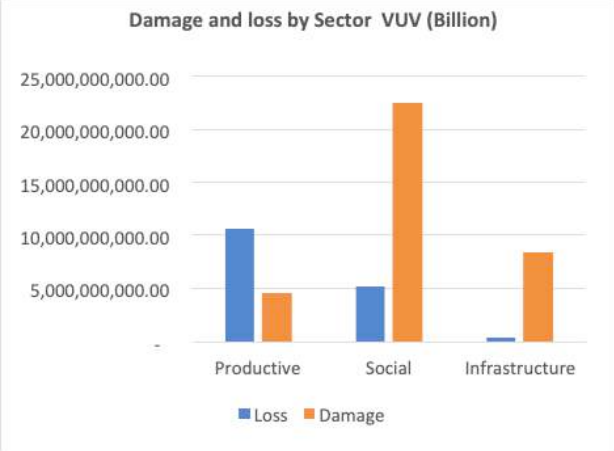
Sectors /	Damage			Loss		
Sub-sectors	Public	Private	Total Damage	Public	Private	Total Loss
Productive						
Tourism	1,766,667	110,160,000	111,926,667	21,836,327	339,602,669	361,438,996
Agri- crops					1,431,756,716	1,431,756,716
Plantation		1,567,957,106	1,567,957,106		3,899,748,194	3,899,748,194
Agri- Fishery	68,239,875	204,751,878	272,991,753	1,445,188,024	2,479,496,640	3,924,684,664
Agri-Forestry	1,954,604,930	48,492,586	2,003,097,516	41,935,000	-	41,935,000
Agri-Livestock	17,850,000	356,858,000	374,708,000		817,873,867	817,873,867
Industry		175,672,461	175,672,461		84,163,846	84,163,846
Sub Total	**2,042,461,471**	**2,463,892,031**	**4,506,353,502**	**1,508,959,351**	**9,052,641,932**	**10,561,601,283**
Social						
Housing		19,149,455,001	19,149,455,001		-	
Health	1,235,734,888		1,235,734,888	216,201,340	4,409,514,099	4,625,715,439
Education	1,647,811,669		1,647,811,669	282,506,473		282,506,473
Culture	3,211,810		3,211,810	2,612,685		2,612,685
Youth	88,679,645	89,942,147	178,621,792	93,105,645	93,592,425	186,698,070
Governance	247,844,500		247,844,500	2,375,000		2,375,000
Sub Total	3,223,282,512	19,239,397,148	22,462,679,660	596,801,143	4,503,106,524	5,099,907,667

Sectors /	Damage			Loss		
Sub-sectors	Public	Private	Total Damage	Public	Private	Total Loss
Infrastructure						
Energy	7,221,000		7,221,000			
Transport	6,421,740,307		6,421,740,307	57,020,000		57,020,000
Telecoms	118,280,000	613,998,984	732,278,984	104,800,000	24,451,354	129,251,354
WASH	533,012,089	659,119,246	1,192,131,335	93,776,272		93,776,272
Sub Totals	7,080,253,396	1,273,118,230	8,353,371,626	255,596,272	24,451,354	280,047,626
Totals	**12,345,997,379**	**22,976,407,408**	**35,322,404,787**	**2,361,356,766**	**13,580,199,810**	**15,941,556,576**

Source: Estimates based on Government data

Although the value of Loss may be challenging to estimate, the findings reinforce the significance of estimating loss as a component of the assessment, as in the case of Vanuatu and TC Judy/Kevin demonstrates that almost a third of the value of the effects of the disaster, would have gone unaccounted for, had only damage value been estimated. In addition, an analysis of the Loss value assists the macro-economic team in their analysis of the impact of the event on the economy.

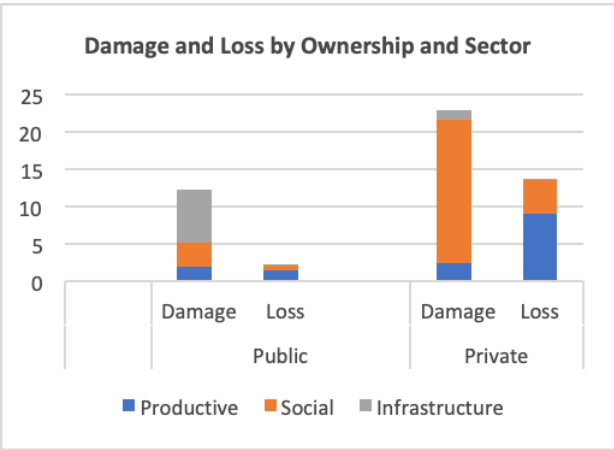
Figure 1: Damage and Loss by Sector (VUV billions)



The Summary of Damage and Loss allows for an analysis of damage and loss by sectors, as illustrated in **Figure 1**. It is clear to see that the loss value is highest in the Productive sector and lowest in Infrastructure. Figure 1 also illustrates that Damage although significantly present in the Social Sector which encompass the sub-sectors of Housing, Health and Education, also had occurred across all sectors, evident in Infrastructure, and in the Productive Sector.

The summary of Damage and Loss also allows for an analysis of the distribution of ownership by the public and private sector or domain, thus allowing Government an opportunity to design recovery measures suitable to the needs of the private and public sectors. For example, the largest proportion of damage 54% or 19.2 Billion (VUV) can be found in the Social sector (Housing) and the largest share is in the private domain. The Transport sub sector of Infrastructure accounts for second largest component of the damage value, 18% or 6.4 billion VUV, and is part of the public sector or domain.

Figure 2: Distribution of Ownership of Damage and Loss by Sector



In the case of Loss, the largest share, 66% or 10.5 billion (VUV) can be attributed to the Productive sector with Agriculture accounting for 96% of the value, thus making the private sector or domain, the largest ownership of Loss as seen in **Table 2** and illustrated by Figure 2.

Loss value in the Social Sector comprises the second largest component accounting for 32% or 4.5 billion VUV, while the share of loss in the Infrastructure sector, is not unexpectedly, a mere 2% or 0.024 billion VUV, as Infrastructure is not a high revenue earning sector.

It can be concluded that the largest proportion of damage is in the Social Sector, found particularly in the Housing sub-sector (54%), while the largest proportion of Loss value is in the Productive Sector. Both of these subsectors are found in the private domain (86%). Suggesting that the effects of TC Judy/Kenny would be felt most among the people in the affected areas of Vanuatu.

Summary of Recovery

Recovery Needs

Total recovery needs were estimated to be VUV 91.6 billion or USD $773 million.[5] The Infrastructure Sector has the highest recovery needs as a whole with VUV 40.6 billion or USD 343 million. The Social Sector has the second highest with VUV 34.5 billion or USD $291.5 million.

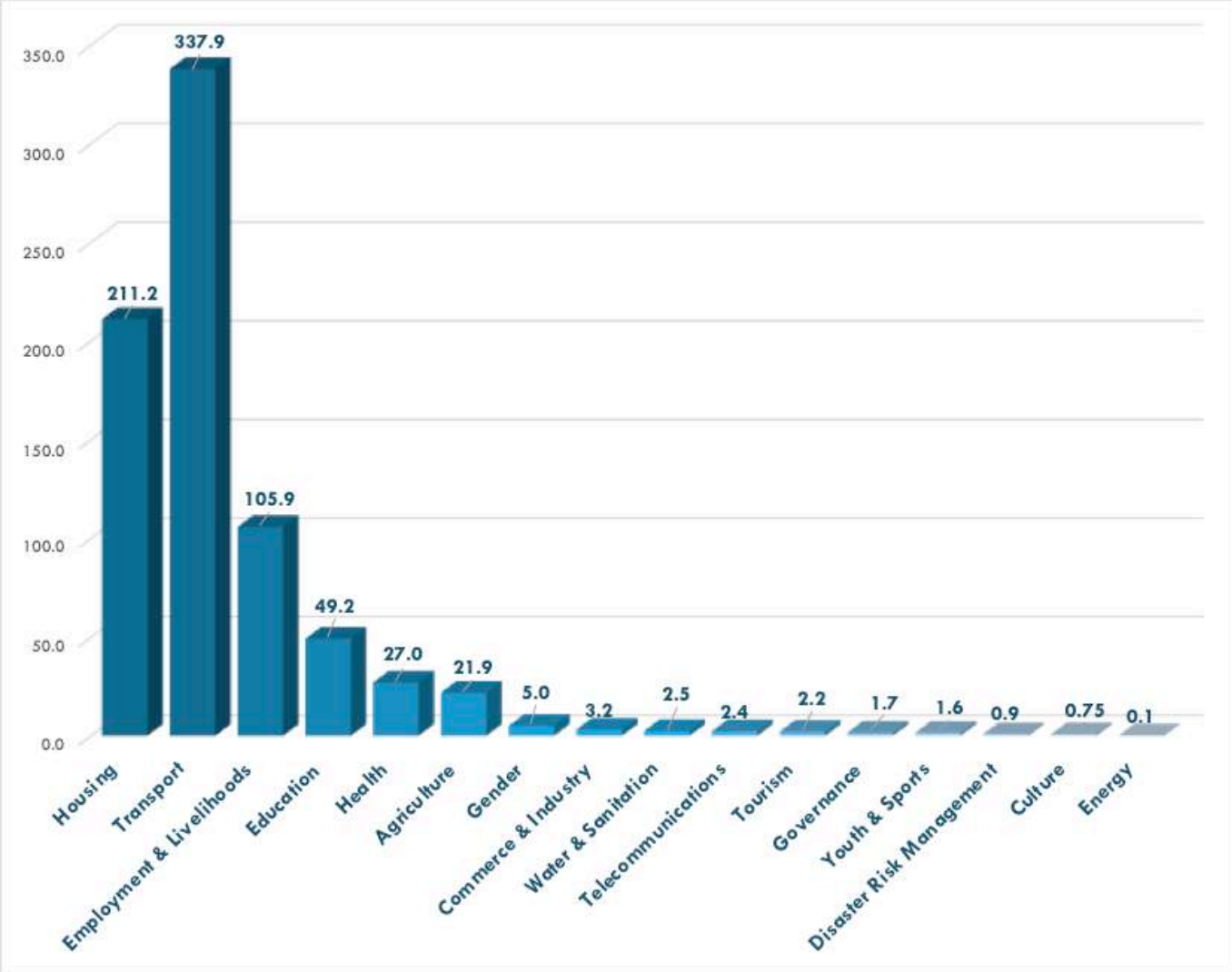
Table 3: Total Recovery Needs

SECTOR	RECOVERY NEEDS				
	Short Term	Medium Term	Long Term	Total VUV	Total USD
Productive Sector	**396,597,440**	**1,212,571,053**	**1,615,361,426**	**3,224,529,919**	**27,241,108**
Agriculture	277,238,419	800,743,990	1,514,111,426	2,592,093,835	21,898,233
crops	62,000,000	251,200,000	150,250,000	463,450,000	3,915,266
livestock	67,400,000	30,000,000	109,500,000	206,900,000	1,747,909
fisheries	137,838,419	472,543,990	1,241,761,426	1,852,143,835	15,647,071
forestry	10,000,000	47,000,000	12,600,000	69,600,000	587,987
Commerce & Industry	69,359,021	206,827,063	101,250,000	377,436,084	3,188,613
Tourism	50,000,000	205,000,000	-	255,000,000	2,154,262
Infrastructure Sector	165,273,159	40,129,613,500	**303,208,000**	**40,598,094,659**	**342,976,216**
Energy	16,388,159			16,388,159	138,449
Telecommunications	5,500,000	106,300,000	175,000,000	286,800,000	2,422,911
Transport		40,000,000,000		40,000,000,000	337,923,460
WASH	143,385,000	23,313,500	128,208,000	294,906,500	2,491,396
Social sector	**3,492,042,780**	**25,669,853,497**	**5,338,060,816**	**34,499,957,093**	**291,458,622**
Culture	12,152,705	25,000,000	52,000,000	89,152,705	753,170
Education	1,381,695,950		4,442,300,000	5,823,995,950	49,201,622
Governance	199,225,660			199,225,660	1,683,076
Health	934,830,681	1,420,103,497	843,760,816	3,198,694,994	27,022,852
Housing	775,250,000	24,224,750,000		25,000,000,000	211,202,163
Youth & Sports	188,887,784			188,887,784	1,595,740
Cross-cutting Issues	**4,402,408,354**	**4,460,142,467**	**4,369,228,542**	**13,231,779,363**	**111,783,217**
Employment & Livelihoods	4,177,800,000	4,177,800,000	4,177,800,000	12,533,400,000	105,883,247
Disaster Risk Management	19,408,354	36,342,467	45,428,542	**101,179,363**	854,772
Gender	205,200,000	246,000,000	146,000,000	597,200,000	5,045,197
TOTAL	8,456,321,733	71,472,180,517	11,625,858,784	91,554,361,034	**773,459,162**

[5] Note that under the Commerce, Industry and Cooperatives sector, the needs reflect only those on Coops, since we have not yet received the reports on Commerce and Industry.

As shown in the diagram below, the highest recovery needs by sub-sector are in transport with USD $337.9 million, followed by the housing sector with USD $211.2 million, and thirdly by the employment & livelihoods sector with USD $106 million.

Figure 3: Recovery Needs by Sub-sector (USD millions)



Recovery -The Way Forward

The Government of Vanuatu is preparing a Recovery Plan based on the results of this PDNA, which will outline the country's vision and guiding principles for recovery, as well as the policy frameworks, institutional coordination and implementation arrangements, financial arrangements, including needs and gaps, sector recovery priorities, and monitoring and evaluation arrangements. The Recovery Plan, as recommended by this PDNA, will be aligned to the National Sustainable Development Plan (The People's Plan) 2016-2030 to ensure consistency and continuity. Refer to the Vanuatu Recovery & Resilience Plan (2023-2027) for further details.

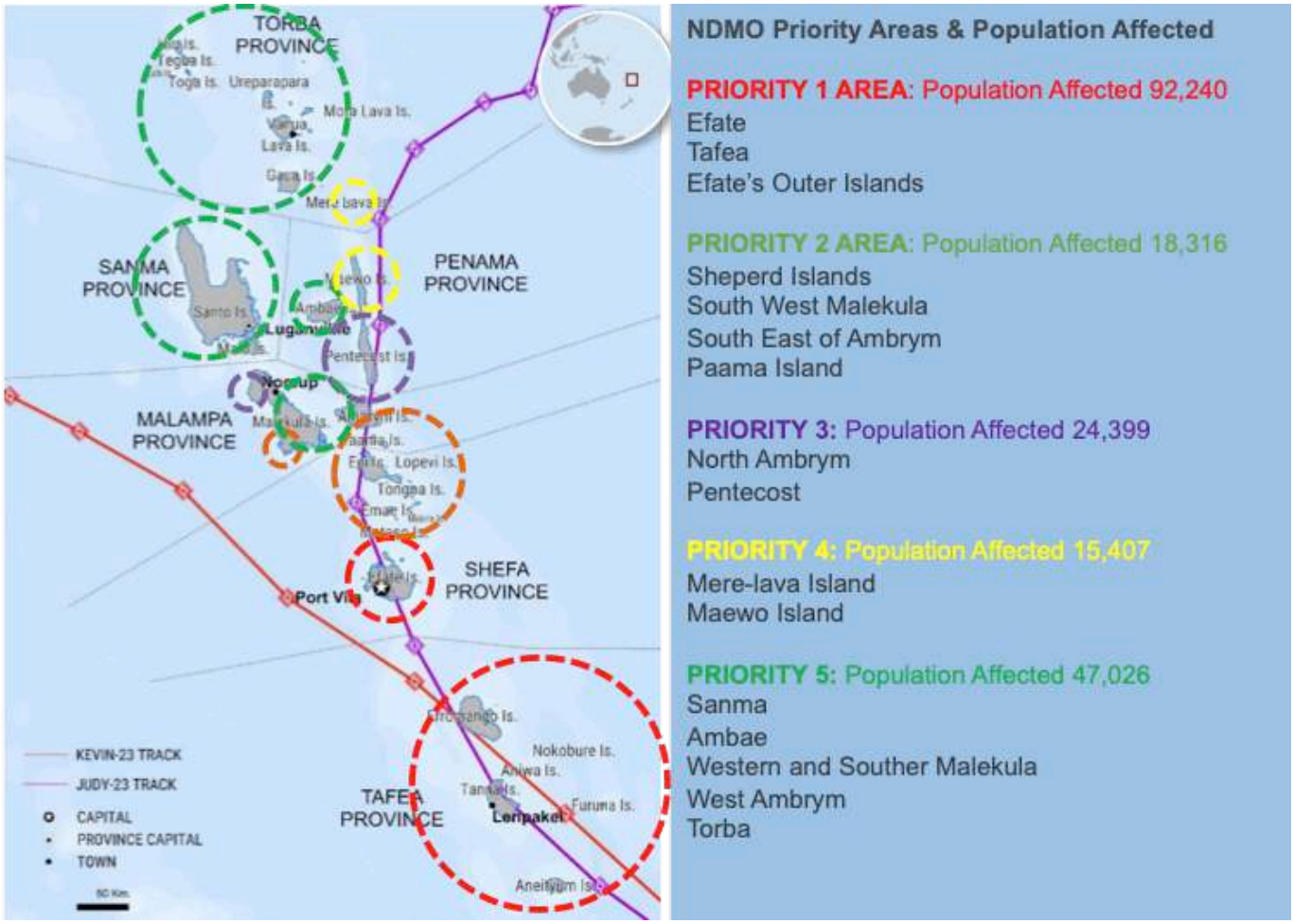
1. Introduction

Overview of Tropical Cyclone Judy and Kevin

Tropical Cyclone Judy (TC Judy) struck the archipelago of Vanuatu on 01 March 2023, making landfall on Efate Island, where the capital city of Port Vila is located. On 03 March, 2023, Vanuatu was hit by Tropical Cyclone Kevin (TC Kevin). Both Judy and Kevin were Category 4 cyclones that caused significant damage due to wind, heavy rains, flooding and storm surge. Early on March 3rd Vanuatu was also affected by two earthquakes, of magnitude 6.5 and 5.4, with the epicenter around 30 km west off the island of Espiritu Santo, although their impact was fortunately not significant.

According to the National Disaster Management Office (NDMO), a total of 197,388 people (43,623 households) were affected by TC Judy and Kevin, representing approximately 66 percent of the total population. However, more than 80 percent of the population (251,346 people) were affected by cyclone winds of Category 2 to 3. To date, there are no reports of casualties. The Government of Vanuatu (GoV) designated two priority areas: Priority 1 consists of Tafea and Efate (including Outer Islands) where the population affected was 92,240; Priority 2 consists of the Shepherd Islands, South West Malekula, South East Ambrym and Paama Island. Other areas and populations affected are indicated in **Figure 4** below.

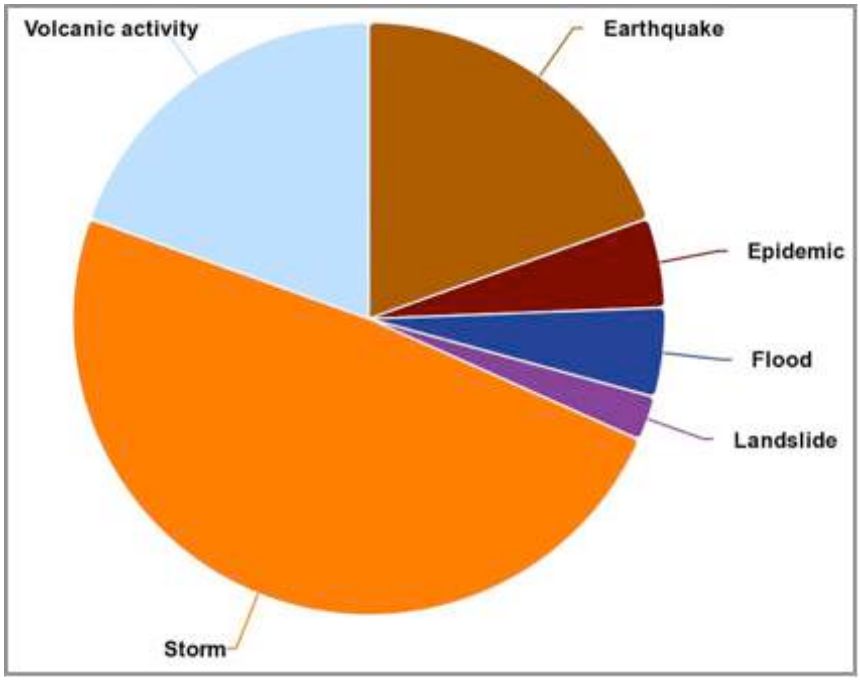
Figure 4: Map of Tropical Cyclones Judy and Kevin, Priority Areas and Populations Affected



Previous Disasters and Climate Change in Vanuatu

TC Judy and Kevin follow on the footsteps of TC Harold which struck Vanuatu in April 2020. The country's recovery and reconstruction from TC Harold is still underway. The impact of TC Harold was felt in Vanuatu in parallel to the effects of the Covid-19 crisis that gripped the world, a double impact that would have serious consequences for the country. Not long before, in 2015 Vanuatu was struck by another disaster, TC Pam. Both TC Pam and TC Harold were category 5 tropical cyclones that affected 188,000 and 160,000 people respectively.

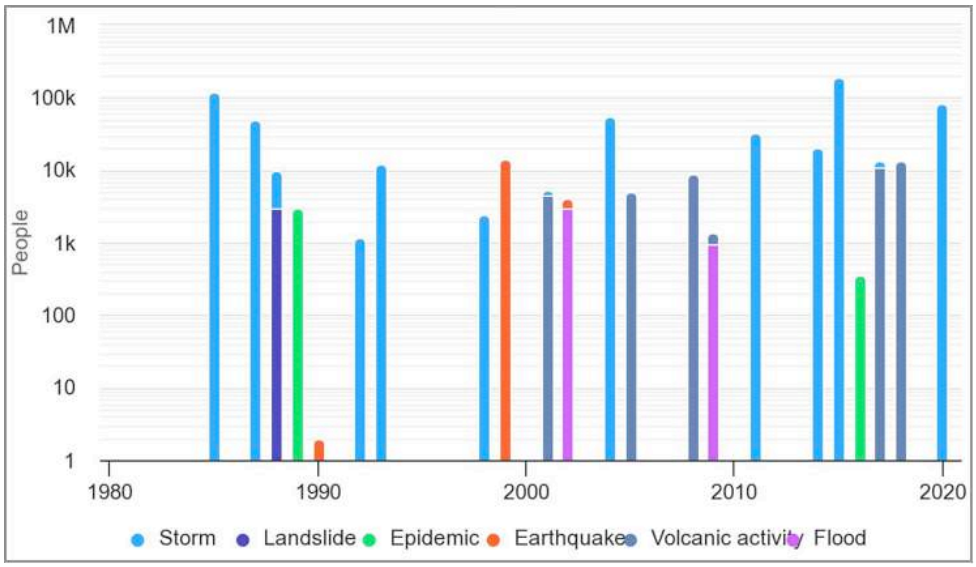
Figure 5: Average Annual Natural Hazard Occurrence 1980-2020[6]



Vanuatu is highly exposed to natural hazards, and disasters significantly impede socio-economic development, costing an estimated 6% of GDP every year on average. The country has a very high exposure and vulnerability to the impact of flood, tropical cyclones, and storm surge. According to its Second National Communication to the UNFCCC around 20 to 30 cyclones pass over Vanuatu every decade, of which 3 to 5 cause severe damage.[7]

Source: Source: WB Climate Change Knowledge Portal

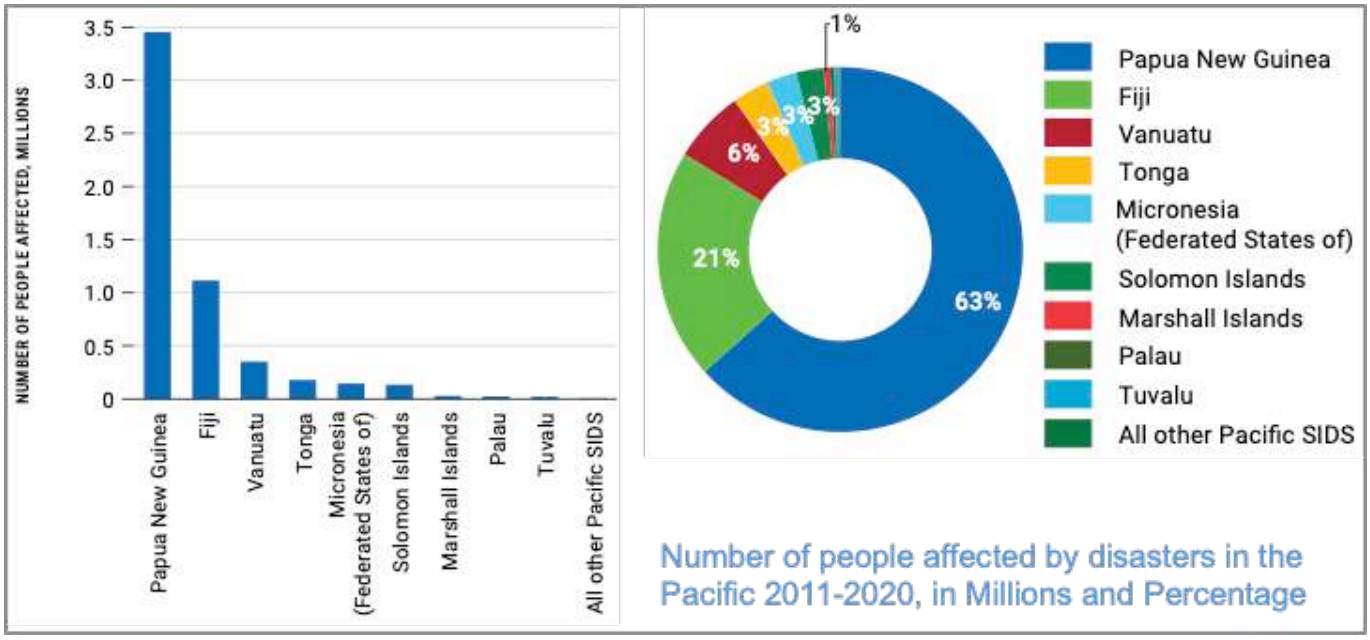
Figure 6: Population Affected by Natural Hazards in Vanuatu 1980-2020



Source: WB Climate Change Knowledge Portal

[6] WB Climate Change Knowledge Portal -Vanuatu (accessed on 27 April 2023) https://climateknowledgeportal.worldbank.org/country/vanuatu/vulnerability

[7] World Bank, 2021, Vanuatu: Climate Risk Country Profile



Source: ESCAP Asia Pacific Disaster Report 2022: Pathways to Adaptation and Resilience in the Pacific SIDS

In addition, Vanuatu is likely to experience increasingly frequent and severe disasters as a result of climate change. It is ranked as the country with the highest disaster risk according to the 2021 World Risk Report. Yet, it is also an example of good practice in disaster risk reduction (DRR) and climate change adaptation (CCA) policies and strategies. In years to come, it is expected that Vanuatu will face the following climate-change related threats according to the country's Climate Change and Disaster Risk Reduction Policy 2016-2030[8]:

- Daily temperature increase from 1995 levels by 1.2°C by 2040;
- Sea level rise will continue and accelerate;
- Ocean acidification will degrade 80% of coral reefs within 20 years;
- Extreme temperatures will reach higher levels and become more frequent;
- Extreme weather events, including cyclones and storms, will increase in intensity;
- Dry periods will last longer; and
- Extreme rainfall will be more frequent and intense.

The projected consequences of climate change in Vanuatu include:

- Reduced availability of fresh water;
- Shifts in crop seasonality of harvest, planting and fruiting;
- More pests and diseases of animals, crops and trees;
- Saltwater inundation and intrusion of coastal land and groundwater;
- Compromised food security;
- Coral reef deterioration;
- Reduced fisheries productivity;
- Increased risk of human disease and health problems;
- Damage to infrastructure;
- Loss of coastal land; and
- Reduced economic growth and revenue generation.

[8] Government of the Republic of Vanuatu, 2015, Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030

The Socio-Economic Context

The Republic of Vanuatu consists of six provinces, Torba, Sanma, Penama, Malampa, Shefa and Tafea with a total land area of 12,281 km² spread over an area of 612,300 km² in the South Pacific. It includes 83 main islands, of which about 63 are permanently inhabited. Port Vila, the capital, is located on the island of Efate in Shefa province. Efate is the most populated island, although Santo Island (Sanma province) is the biggest in terms of land area. The country has a population of over 300,019 people (2020), 78% of which reside in rural areas.[9] The nation is culturally diverse, with 138 distinct languages, although there are only three languages officially recognized (English, French, and Bislama). The country has extensive natural resources, such as forests, uplands, corals, and atolls which provide biodiverse habitats and supplement the livelihoods of the population.[10]

The economy of Vanuatu is based primarily on the service sector (64% of GDP), followed by agriculture (19%) and industry (10%).[11] Over 40% of its GDP is linked to the tourism sector.[12] Vanuatu is an agriculture-based society, where 78% of the population lives in rural areas and about 98 percent of rural households engage in agriculture, fisheries and forestry, which provides about 65 percent of subsistence household income.[13] The vast majority of employed people -42%- in Vanuatu work in the agriculture, forestry, and fishing sector.[14] Food products constitute around 85% of Vanuatu's exports yet the country has a food trade deficit and dependence on imports for food security equivalent to over $50 per capita, giving it high vulnerability to price shocks and disaster events.[15]

As indicated in Table 1, the national poverty headcount ratio (% of population below the total poverty line) in Vanuatu is 12.3% which is relatively low, although the poverty rates are substantially higher in some areas, such as around North Malekula, Maewo, Pentecost and Tanna.

Table 4: Key Socio-economic Indicators

Indicator	Value (Date and Source)
Total Population	300,019 (2020, GoV)
Urban Population (22%)	66,753 (2020, GoV)
Rural Population (78%)	233,266 (2020, GoV)
National Poverty Headcount Ratio	12.3% (2020, GoV)
Population Undernourished	9.8% (2017–19, WB)
Human Development Index	0.607 (2021, UNDP)
Infant Mortality Rate (Between Age 0 and 1)	2.2% (2015–20, WB)

Sources: GoV Household Wellbeing Survey 2020; GoV National Population Census 2020; World Bank, 2021, Vanuatu: Climate Risk Country Profile; UNDP Human Development Summary Vanuatu (updated sept 2022)

9 GoV National Population and Housing Census 2020

10 World Bank, 2021, Vanuatu: Climate Risk Country Profile

11 GoV National Statistics Office, Statistics Release: Gross Domestic Product 2020, 2020.

12 World Bank, 2021, Vanuatu: Climate Risk Country Profile

13 GoV, Census of Agriculture, 2007.

14 GoV National Population and Housing Census 2020

15 World Bank, 2021, Vanuatu: Climate Risk Country Profile

In 2020, TC Harold and the Covid-19 related crisis had a significant impact on the country's economy. The fall in tourism severely affected the service sector, crop losses devastated the agriculture sector, and a pause in construction shrank the industry. Visitor arrivals by air contracted by 82% in 2020, and cruise ship arrivals by 60% due to the government-imposed travel restrictions in response to the COVID-19 crisis. By April 2020, the tourism industry suffered a 70% reduction in full-time employment, with part-time employment down by a third. In the first week of April, Cyclone Harold hit Vanuatu, causing major damage in and around Luganville, the second-largest city. Agriculture contracted significantly as the storm damaged root crops and other staples.[16] Combined TC Harold and the Covid-19 crisis cost VUV 68 billion (USD $617 million) in damage and losses, equivalent to about 61 percent of GDP in 2020.[17]

Vanuatu's real GDP fell from 3.2% in 2019 to - 4.99% in 2020, a sharp contraction of 9.8%. In 2021 real GDP recovered slightly to 1% and to 1.9% by 2022.[18] The country's human development index (HDI) saw progress between 2005 and 2019. However, the HDI dropped from 0.611 in 2019 to 0.608 in 2020, and to 0.607 in 2021. Similarly, Vanuatu's gross national income per capita increased steadily between 2005 and 2019, but dropped from $3418 in 2019 to $3085 in 2021.[19]

By 2022 the reopening of international borders in July restored some semblance of growth to the country's economy, particularly in tourism-related areas such as trade, real estate, restaurants and accommodation. However, growth still lags behind the pre-2020 figures. Visitor arrivals in July 2022 were only 30% of the average in July 2017–2019, and visitors in the second half of 2022 from Australia and New Zealand, the two biggest markets, were about 48% of that baseline. Furthermore, inflation doubled from 2.3% in 2021 to 4.8% in 2022, driven mainly by price increases for food, transportation, housing and utilities, education, and alcoholic drinks and tobacco.[20]

TC Judy and Kevin arrived in Vanuatu at a time when the country was still battling to overcome the vestiges left by TC Harold and Covid-19. As will be presented in this assessment report, these newer disasters are expected to lower tax collections and increase expenditure for recovery and reconstruction, widening the fiscal deficit. Inflation is expected to remain at 4% through 2023 and the external debt will rise further.

Response from the Government and Partners

The Government of Vanuatu declared a State of Emergency on March 02, 2023 (Order No 29 of 2023) in the provinces and districts of Mera Lava, Penama, Ambrym, Paama, Shefa, and Tafea, which was subsequently amended to include the whole country on March 05, 2023 (Order 30 of 2023).

Satellite imagery and aerial assessments by UN and FRANZ partners were conducted over the affected islands to identify priority assessment areas, with support also from the Australian Defence Force and coordinated by the Joint Police Operations Centre (JPOC) at the request of the NDMO. Rapid assessment teams were deployed by the GoV on March 7th, initially to 39 Area Councils and subsequently expanded to multisectoral rapid needs assessments in all provinces covered under the state of emergency.

These assessments helped to inform the initial humanitarian response and the development of the National Response Plan with a budget of 6.7 billion Vatu. The emergency response supported the population affected with food rations, water, health care, emergency shelter among other critical support, and helped to restore power lines for essential services, to repair transportation infrastructure, public buildings, schools and other buildings in coordination with the Vanuatu Police Force, the Ministry of Public infrastructures and the military and surge capacity capabilities of neighbouring countries.

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16 ADB, Asian Development Outlook 2021

17 GoV, 2020, Post Disaster Needs Assessment: TC HAROLD & COVID-19

18 ADB, Vanuatu Profile (accessed 27 April 2023) https://aric.adb.org/vanuatu/overview

19 In constant 2017 ppp$. Source: UNDP Human Development Summary Vanuatu (updated sept 2022) https://hdr.undp.org/data-center/specific-country-data#/countries/VUT

20 ADB, Asian Development Outlook 2023

For this initial emergency response, Vanuatu received financial support from the Governments of Fiji, New Zealand, Australia, the USA, France, the European Union, Japan, the United Nations and the World Bank. The UN's Central Emergency Response Fund approved US$1.7 million in funding for life-saving assistance, targeted at the most vulnerable and most affected populations in Vanuatu.

In addition to the early emergency response, the GoV developed an Early Recovery Plan to 1) provide an overview of the sectoral early recovery needs and priorities, and 2) ensure a smooth transition from humanitarian response to recovery. Early recovery needs were estimated to be 3.3 billion Vatu for a period of six months. Furthermore, the Recovery Operations Centre (ROC) was activated to coordinate and collaborate with the NDMO, clusters, Provincial Emergency Operation Centres, international partners and donors, and other recovery partners on the PDNA and medium to long-term recovery from TC Judy and TC Kevin.

The Post Disaster Needs Assessment Methodology

The Government of Vanuatu, with the guidance of the Recovery Operations Centre (ROC) conducted a Post Disaster Needs Assessment (PDNA) with support from the UN Development Programme (UNDP) and the Pacific Community (SPC). The PDNA, which took place between the 11th of April and 11th May 2023, was implemented in collaboration with UNICEF, WHO, ILO, the World Bank.

The purpose of the PDNA is to identify, and present in this report, the damage and loss caused by TC Judy and Kevin across all sectors, to assess the macro-economic and human impact of these disasters, to estimate the recovery needs in all sectors, and to inform Vanuatu's short-, medium- and long-term recovery and reconstruction process through a well-planned Recovery Framework aligned to the country's National Sustainable Development Plan 2016-2030.

The following sectors and sub-sectors were covered by the PDNA:

Productive Sector: Agriculture, Tourism, and Commerce, Industry & Cooperatives;

Social Sector: Culture, Governance, Housing, Health, Education, and Youth and Sports;

Infrastructure Sector: Energy, Telecommunications, Transport, and WASH;

Cross-cutting Issues: Livelihoods and Employment, Gender and Disaster Risk Management.

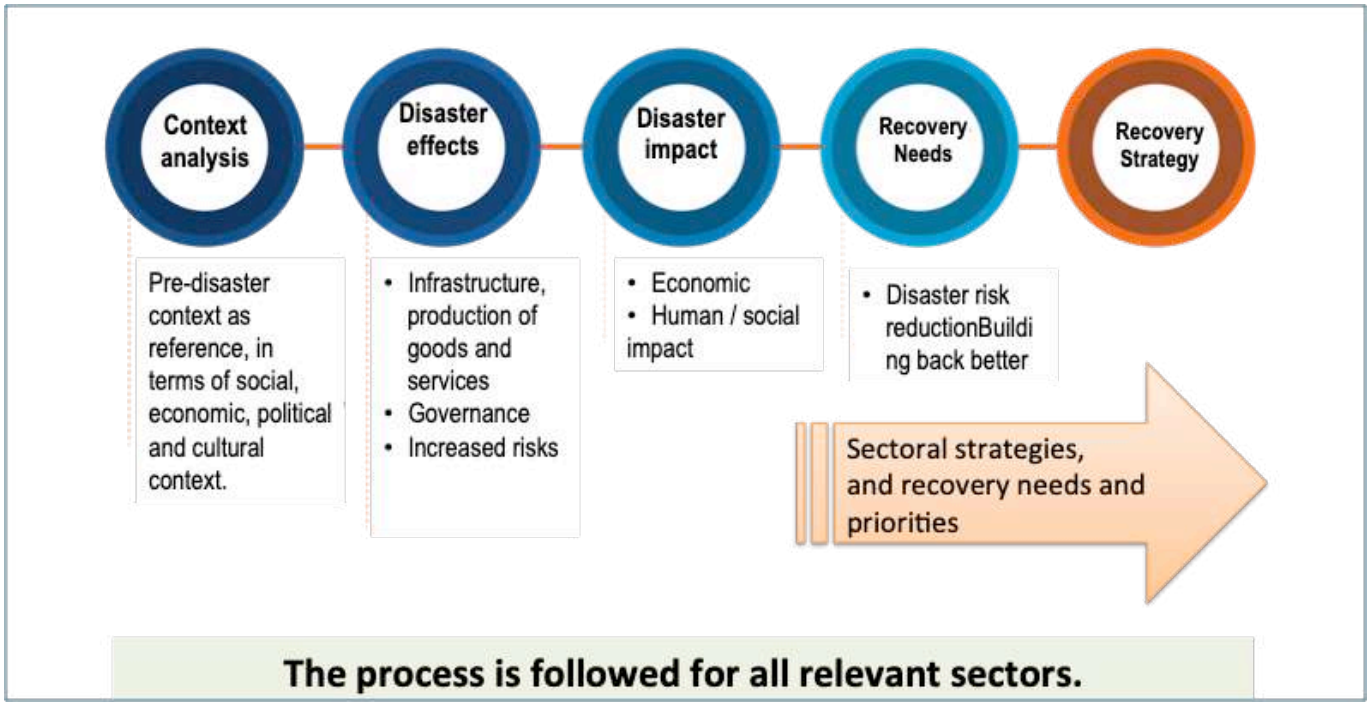
The PDNA in Vanuatu followed the standard methodology developed by the UN System, World Bank and the European Union, which builds on primary and secondary data provided by the Government of Vanuatu and development partners and was based on interviews and field visits to affected areas.

The PDNA considered the context prior to TC Judy and Kevin, particularly the socio-economic conditions and other factors that need to be considered to do a comparative analysis with post-disaster conditions. The effects of both cyclones on each sector were assessed in terms of damage and loss, as follows:

Damage refers to the total or partial destruction of physical assets in the disaster-affected areas. Damage occur during and immediately after the disaster and are measured in physical units (i.e., number of damaged houses, roads, crops, land, etc.). Their monetary values are expressed as the replacement costs according to prices prevailing just before the event.

Loss refers to changes in economic flows arising from the disaster. They occur until full economic recovery and reconstruction is achieved. Typical losses include the decline in output in productive sectors such as agriculture, industry and services.

Figure 7: Summary of the PDNA Methodology



Furthermore, the PDNA assessed the overall **human impact** of the cyclones, as well as the potential impact on the country's **macro economy**.

Based on the analysis of both the effects of the cyclone (damage and loss) and the impact of the disaster, the PDNA estimated the country's recovery needs and cost. **Recovery needs** include interventions that are necessary to rebuild livelihoods and infrastructure on a sector-by-sector basis, and an estimate of the cost to achieve the proposed recovery.

Recovery includes: the reconstruction needs estimated as the requirements for financing reconstruction, replacement or repair of the physical assets that were damaged or destroyed by the disaster; and recovery needs estimated on the basis of the financial resources required for the rehabilitation of basic services, reactivation of productive activities, or immediate reactivation of personal or household income. Recovery needs also include capacity building and operational costs for service delivery that are necessary for the implementation of interventions. Costing for recovery needs include differentials for building back better to consider quality improvements and risk reduction measures to be implemented to increase resilience against future disasters.

2. Disaster Impact

The Macro-economic Impact

In 2023, following the reopening of its borders in July 2022, Vanuatu's economy faced a significant setback when the country was struck by a dual cyclone on the 1st and 3rd of March, presenting formidable challenges to its recovery and growth prospects. TC Judy and TC Kevin passing through the Shefa and Tafea, with devastating damage caused by the cyclones, Vanuatu's GDP is being revised downward as the country grapples with the immense task of rebuilding infrastructure, restoring livelihoods, and addressing the immediate and long-term impacts on various economic sectors. This assessment of the macroeconomic impact of the disasters incorporates the impact of the two disasters on inflation, Balance of Payments, pre/post fiscal balance and the forecasted fiscal measures to maintain consumer demand and sustain economic growth.

Gross Domestic Product

In January 2023, the Macroeconomic Committee[21] released a GDP growth estimate of 3.6 per cent for 2023, and an average growth rate of 3.4 per cent for the period 2024 to 2027. Broad-based economic recovery was forecast in the post-pandemic period, owing to, *inter alia*, pick-up in construction and tourism activity. Downside risk to the outlook were new variants of COVID-19, the Russia-Ukraine war, dampened growth prospects in major trading partner economies, and higher fuel and food prices. Growth over the medium term is expected to remain stable, with the agriculture sector expected to support growth over the medium term.

Table 5: Pre-disaster GDP Summary Projections

	Actual		Estimate			Projection			
	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Agriculture, Fishing & Forestry Sector	6.2	-2.7	2.3	3.8	3.8	3.7	3.3	3.0	2.3
Industrial Sector	-8.3	4.0	10.3	10.2	10.2	10.6	4.0	3.4	3.4
Services Sector	6.1	-6.7	1.9	3.0	3.0	3.8	2.9	2.7	2.2
Real GDP (2006 prices)	***3.2***	***-5.0***	***2.7***	***3.2***	***3.6***	***4.8***	***3.3***	***3.0***	***2.6***

Source: PDNA-Macroeconomic Team forecast

Following the twin cyclones, Vanuatu's GDP growth forecast for 2023 has been revised down from 3.6 per cent to 3.0 per cent. Agriculture production recorded significant damage and loss in the southern provinces of Shefa and Tafea. Added to this, supply-side constraints remain a risk following the COVID-19 pandemic, exacerbated in certain sectors by shortage of labour. On the upside, the reopening of borders is expected to boost growth in certain sectors related to tourism, albeit from a very low base level of output following two and a half years of border closures and dormant economic activities. Finally, the increased resilience of the Vanuatu economy, lessons learnt from previous cyclones, and recovery and response measures are expected to mitigate the impact of the disasters to an extent.

Growth has been revised up over 2024-26, as the economy recovers further from the COVID-19 pandemic and cyclones. In 2024, this will be driven by strong services sector growth, as the tourism activity continues to bounce back from the pandemic. In 2025 and 2026, improved growth is expected in agriculture and construction, as the productive capacity of Vanuatu's economy is rebuilt. Growth is then expected to normalise by 2027, in line with historic trends.

21 A national Committee (comprising Office of Prime Minister, Reserve Bank of Vanuatu, Ministry of Finance and Economic Management, Vanuatu National Statistics Office) which meets periodically to produce macro-economic forecast estimates.

Table 6: Post-disaster GDP Summary Projections

	Actual		Estimate			Projection			
	2019	2020	2021	2022	2023	2024	2025	2026	2027
Agriculture, Fishing & Forestry Sector	6.2	-2.7	2.3	2.3	-1.2	2.8	6.0	4.9	2.3
Industrial Sector	-8.3	4.0	10.3	-3.9	4.7	9.7	6.8	3.3	3.3
Services Sector	6.1	-6.7	1.4	3.7	4.9	4.6	5.0	2.6	2.0
Real GDP (2006 prices)	***3.2***	***-5.0***	***2.4***	***2.0***	***3.2***	***4.9***	***5.3***	***3.2***	***2.4***

Source: PDNA-Macroeconomic Team forecast

Agriculture Sector

The Agriculture sector was the most impacted by the twin cyclones. Growth for 2023 has been revised down from 3.8 per cent to -1.2 per cent, The crop production subsector is expected to contract to 2.1 per cent in 2023, reflecting widespread reports of damage across southern provinces. Coffee, commercial fruit and vegetable sectors were significantly impacted, however, these account only for a small part of total output. The main driver of the fall was an estimated 3.2% fall in the subsistence garden and food crops sector, which accounts for around 70% of the total gross value added of crop production, was estimated to decline by 3.2 per cent, driving the overall fall in crop output.

Animal production is estimated to slow from 3.0 per cent previously to 1.4 per cent. Damage have only been modest in terms of overall production, particularly for beef, with northern provinces much less impacted by the twin cyclones. A similar scenario is estimated in the forestry and fishing sectors, where growth has been downgraded from 7.5 per cent to 3.1 per cent, and 2.1 per cent to 1.3 per cent respectively.

Industrial Sector

Overall, growth in the sector for 2023 has been revised downwards from 9.4% to 4.7%, solely driven by slower expected growth in construction. While there is likely to be some reconstruction efforts this year, much of this will be spread over the next three years (with growth for 2025 in particular revised up), especially traditional dwellings and smaller businesses which take more time to recover. Further, recent data on infrastructure loan disbursement suggests such projects are taking longer than anticipated to complete, ultimately leading to slower growth in the sector.

Services Sector

In contrast to agriculture and industry, growth in services has been revised upwards, from 3.0 per cent previously to 4.9 per cent. There are two main factors driving this – direct cyclone impacts as well as revised projections following the reopening of borders. The cyclones are expected to have directly boosted the wholesale and retail sectors, due to increased purchases in preparation for the cyclones, as well as for recovery following them. Accordingly, growth in these sectors have been revised up, from 1.7 per cent and 3.2 per cent, to 2.6 per cent and 3.8 per cent respectively. The sectors are also expected to be boosted by government policies such as Value Added Tax exemption for domestic construction materials and Vanuatu National Provident Fund withdrawals by members to support post-cyclone needs. In this regard, the finance sector is expected to benefit, as consumers demand more cash to facilitate transactions, while overseas workers increase remittances sent home. Meanwhile, growth in the telecommunications sector has been revised up due to increased demand for these services following the natural disaster, while the professional, scientific and technical sector sees an upwards revision due to development partner support provided for disaster recovery.

Outside of these sectors, growth has also been revised up in accommodation and food services, transport and real estate. The accommodation and food services sub-sectors are driven by an anticipated partial recovery in tourist arrivals in 2023. While tourism activity was impacted during and immediately after the cyclones hit, many operators remain cautiously optimistic of the outlook for the remainder of 2023 – particularly the still to come peak season – is broadly positive when compared to 2022. However, output in these sectors is expected to remain substantially below pre-COVID levels, due to structural challenges such as the availability of labour, weakening demand from the key Australian and New Zealand markets, and some damage to tourist accommodation in southern provinces and partial closure of two large hotels on Efate. The upward revision to real estate is driven by the reopening of borders, leading to increased demand for properties for rent and for sale, as the sector returns to pre-pandemic levels.

Fiscal Balance

In 2023, the Government's position excluding donor financing has estimated a slight fiscal deficit of VUV 685.1 million, which will be financed entirely by domestic bonds issuance. However, the donor financing is estimated to run a fiscal deficit of VUV 5,336.5 million, which will be finance entirely by external loan drawdowns. Thus, the overall Government and Donor financing is estimated to run a fiscal deficit of VUV 6,021.5 million, which will be financed entirely by both domestic bonds and external loans. However, in contrast, the overall Government and Donor financing position is estimated to improve and run a fiscal surplus in 2025 to 2027.

Table 7: Fiscal Outlook

	Actual			Budget	Forecast			
	2020	2021	2022	2023	2024	2025	2026	2027
Recurrent and Donor								
Revenue	**39,938**	**43,529**	**37,389**	**48,202**	**48,897**	**50,478**	**51,484**	**52,651**
Tax	14,732	16,339	18,557	20,741	21,679	22,415	23,099	23,732
Tax on property	495	468	451	583	612	635	657	677
Tax on goods and services	11,097	11,909	14,130	15,978	16,680	17,227	17,736	18,205
Tax on international trade and investment	3,140	3,963	3,976	4,180	4,387	4,552	4,706	4,850
Grants	8,498	11,757	8,454	14,292	13,400	13,723	13,562	13,642
Other revenue	16,707	15,433	10,378	13,168	13,819	14,340	14,824	15,277
Expense	**36,225**	**38,235**	**38,705**	**46,746**	**45,975**	**46,883**	**47,019**	**47,809**
Compensation of employees	15,471	16,774	17,583	19,342	19,575	19,979	20,374	20,794
Use of goods and services	10,169	10,742	11,991	17,444	16,660	16,938	16,679	16,894
interest payments	861	905	1,002	1,065	1,073	1,112	1,135	1,142
subsidies	1,510	428	332	212	214	218	221	225
Grants	4,646	4,585	4,228	5,423	5,271	5,386	5,450	5,542
Social benefits	1,315	501	1,296	1,585	1,538	1,573	1,451	1,468
Other expense	2,253	4,300	2,273	1,676	1,645	1,677	1,710	1,743
Net operation Balance	**3,713**	**5,294**	**- 1,316**	**1,456**	**2,922**	**3,595**	**4,465**	**4,842**
Net Investment in non financial assets (fixed assets)	6,793	6,243	6,018	7,477	4,041	2,885	1,642	2,608
Net lending/borrowing	**- 3,081**	**- 949**	**- 7,334**	**- 6,022**	**- 1,118**	**711**	**2,824**	**2,235**
Net acquisition of financial assets	*- 448*	*- 3,976*	*- 7,287*	*- 1,185*	*- 1,949*	*- 667*	*- 333*	*- 147*
Domestic	- 448	- 3,976	- 7,287	- 1,185	- 1,949	- 667	- 333	- 147
External								
Net incurrence of liabilities	*2,633*	*- 3,026*	*47*	*4,837*	*- 831*	*- 1,378*	*- 3,157*	*- 2,382*
Domestic	2,448	137	2,344	3,552	-	-	-	-
External	184	- 3,164	- 2,297	1,285	- 831	- 1,378	- 3,157	- 2,382

Inflation

In 2022, inflation remained well below the Reserve Bank of Vanuatu's (RBV) 0-4% internal target during the two first quarters and rose above the target within the two last quarters of the year. In the December quarter of 2022, the Consumer Price Index (CPI) rose by 11.4 percent over the same quarter of the previous year, up from 8.2 percent over September quarter respectively (see table 1). The high price over the December quarter was predominantly driven by the persistent spill over effects of the global supply chain disruptions due to the global pandemic, and more recently the Russia/Ukraine war. The lag effect of the rise in international prices of commodities continued to sink into the domestic economy during the third and fourth quarter of the year thus shifted domestic prices upward. Amidst the high prices, the RBV continued to maintain its Rediscount rate at 2.25 percent and inter-bank rate at 1.75 percent down from 2.9 percent and 2.4 percent during pre-COVID-19 (2019) period, respectively. It was projected that Pre disaster annual inflation would increase by 10 percent in March 2023 reflecting the ongoing lag effect of increased in international prices of commodities which expected to last until the third quarter of 2023.

Table 8: Pre-disaster Inflation, actual and forecast.

PERIOD	Headline INFLATION RATE (%) Q-O-Q	Headline INFLATION RATE(%) Y-O-Y	*Underlying* INFLATION RATE(%) Y-O-Y	PERIOD	Headline INFLATION (%) Q-O-Q	Headline INFLATION (%) Y-O-Y	*Underlying* INFLATION RATE(%) Y-O-Y
2019 Q1	0.9	2.1	1.1	**2022 Q1**	1.6	2.8	0.1
2019 Q2	0.7	2.4	0.7	**2022 Q2**	1.0	3.7	0.5
2019 Q3	1.2	3.0	1.0	**2022 Q3**	5.2	8.2	1.1
2019 Q4	0.6	3.5	0.5	**2022 Q4**	4.2	11.4	8.5
2020 Q1	0.5	3.1	0.6	**2023 Q1f**	**2.5**	**13.5**	**8.6**
2020 Q2	3.2	5.3	-0.4	**2023 Q2f**	**0.1**	**12.5**	**9.3**
2020 Q3	1.7	5.7	-1.0	**2023 Q3f**	**0.3**	**7.3**	**8.6**
2020 Q4	1.1	6.2	-0.9	**2023 Q4f**	**1.4**	**4.4**	**1.0**
2021 Q1	-0.5	5.2	-1.7	**2024 Q1f**	**0.4**	**2.3**	**1.0**
2021 Q2	0.1	2.4	-1.1	**2024 Q2f**	**0.2**	**2.4**	**1.0**
2021 Q3	0.2	0.9	-0.7	**2024 Q3f**	**0.3**	**2.4**	**1.0**
2021 Q4	0.9	0.7	-0.4	**2024 Q4f**	**0.9**	**1.9**	**1.0**
Source: VBoS , Real Sector Forecast							

As result of TC Kevin and Judy, the forecast for inflation in 2023 has been revised upward, from 10 percent to 13.5 percent, reflecting an expected increase in domestic prices of food, in particular, prices of fruits, root crops and vegetables due to supply shocks.

Upside risks to the forecast includes: the intensification of the Russia/Ukraine war that could trigger a further rise on international commodity prices; a strong recovery in domestic demand of goods and services against a more gradual supply; and the expected El Nino season that could affect the supply of fruits, root crops and vegetables.

The implementation of Monitoring and Consumer Affairs (new price control law), a 14.0 per cent reduction in Utilities Regulatory Authorities (URA) surcharges and the reweighting of the overall CPI basket could partially offset the overall CPI forecast in 2023.

Balance of Payments

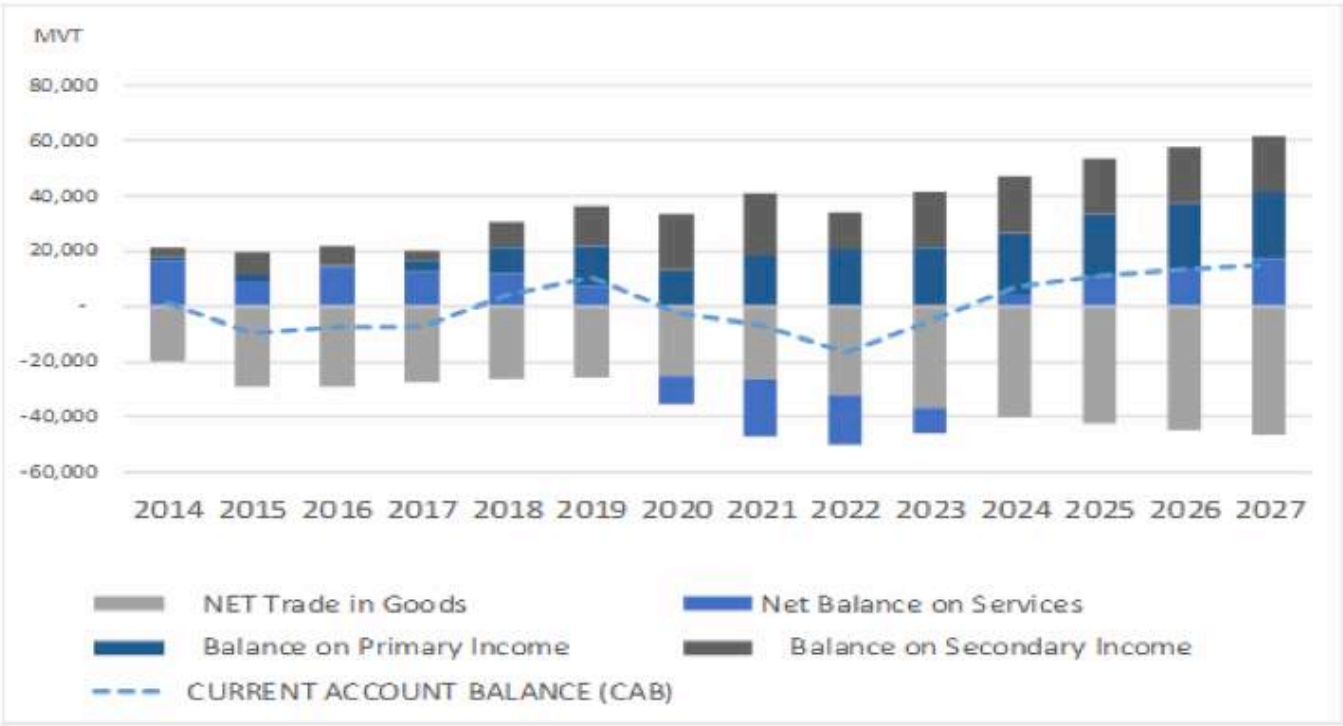
Economic shocks emanated from the Ukraine-Russia war, geopolitical uncertainties, and the ongoing adverse impact of the pandemic continues to affect the Vanuatu current account balance (CAB). The CAB deficit was projected to increase in 2022 as major external payments driven mainly by higher import costs was estimated to outweigh external receipts. In addition, the CAB deficit was forecasted to slightly ease in 2023 underpinned mainly by improved export receipts, inward remittances, improved tourism earnings and external government revenue outweighing higher import payments. Pre-disaster forecast for official reserves in 2022 still remains above RBV's internal target of more than four months of imports.

Figure 8: Pre-Disaster Current Account Balance Forecast (VUV millions)

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027
Current Account Balance	10,693	- 2,202	- 6,672	-16,578	- 5,673	7,183	11,262	13,087	14,959
Net Trade in Goods	-25,741	-25,343	-26,464	-31,893	-37,528	-40,244	-42,635	-44,627	-46,702
Net Trade in Services	7,273	-10,058	-20,816	-18,456	- 9,489	4,381	10,838	13,701	16,922
Balance - Primary Income	14,668	12,957	18,339	20,805	20,937	21,765	22,625	23,519	24,449
Balance - Secondary Income	14,493	20,242	22,270	12,966	20,407	21,281	20,435	20,494	20,290

Post-Disaster Economic Outlook for the Balance of payments shows that the pre-disaster BoP forecast would not change much in the long term but revision was mainly on goods exports and inflows of recovery funds. The impact of the cyclones was limited in some provinces, as many export crops come from the northern province that were less affected by cyclone Judy and Kevin. Despite higher import forecasts for 2023, external disaster recovery funds are expected to sustain official reserves in 2023. Post disaster forecast for official reserves still remains above RBV threshold for end of 2023. RBV stands alert in monitoring domestic and external developments and will amend forecasts accordingly in the short to medium term.

Figure 9: Post-Disaster Current Account Balance forecast (VUV millions)



Source: RBV

The Human Impact

The Human Impact assessment considered the impact of TC Judy and Kevin on 1) people's living conditions 2) livelihoods, 3) food security, 4) social inclusion, 5) gender 6) poverty and 7) the SDGs. The results are presented in this chapter.

A total of 197,388 people or 43,623 households were affected by TC Judy and Kevin, representing 66 percent of Vanuatu's total population.[22] However, more than 80 percent of the population (251,346) were affected by cyclone winds of Category 2 to 3. In relation to the country's total population, just under half are female (49.5%)[23]; while 45% are under 18 years old [24]; and 2.5% are aged 70 or more[25]. In addition, there are 72,970 women of reproductive age (aged 15-49), representing 24% of the population[26].

The Impact on People's Living Condidtions

Health: There are increased risks of water borne disease outbreaks affecting the population as a result of disruption to health services, water and sanitation facilities. In Early Childhood Care and Education (ECCE) centres, damage to handwashing and toilet facilities increases the prevalence of diarrhea among children and the risk of other diseases. Moreover, healthcare system disruptions make it challenging for people to access emergency and medical care when needed. To reach health services, some families may borrow or get into debt, leading to changes in choices available for healthy living, impacting future health. These developments may affect the implementation of the SDG 3 (Good health and wellbeing) for the affected population in Vanuatu.

The stress of dealing with the aftermath of a cyclone can also increase the risk of mental health conditions such as anxiety and depression. Most Rapid Assessment teams reported anxiety, stress and signs of trauma[27] as a result of the cyclone's devastating impacts on people's lives and livelihoods. The experience of the cyclones may also trigger trauma for people who already lived through TC Harold in 2020 and TC Pam in 2015 and are facing other on-going natural disasters[28]. This may have longer term mental health impacts and can also exacerbate household and relationship level stress, a risk factor for violence against women and children particularly. It is worth noting that community leaders who can support Gender/Protection work (e.g. assist with protection of children, people with disabilities and at-risk men and women) were reported to be available only in 43.5% of assessed communities, including the Vanuatu Women's Centre's network of rural committees on violence against women (CAVAW).

Education: Children's education was disrupted for almost a month by the damage to school infrastructure and will continue until school infrastructure is repaired or rebuilt. Reports confirmed disruptions in early learning and education services for 3,658 young children between 3 and 5 year-old (973 in Malampa, 1,477 in Tafea, and 1,208 in Shefa). As a result of this disruptions to ECCE centres, young children lost over 500,000 in class learning hours. Home schooling has been regarded as an option to ensure continued education. However, not all schools have been equipped with home-schooling modules, and the absence of mobile networks (due to power cuts) and damaged antennas makes home schooling difficult. Access to materials for home-schooling also requires a conducive learning environment at home or in the community, which is not likely until recovery is achieved. As a consequence, students may have limited access to education while the schools are not rebuilt and fully equipped. Therefore, the reeling impact of the cyclones will likely affect the country's achievement of SDG 4 on "quality education", as well as the fulfilment of the right of every child to education, as it is provided for under articles 28 and 29 of the Convention on the Rights of the Child (CRC)[29], which was ratified by Vanuatu in 1993.

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22 Based on report from the National Disaster Management Office

23 2020 Census, Basic Tables Volume 1, Vanuatu National Statistics Office

24 disaggregated for male and female children 0-19 (data only available in 5 year blocks); females of reproductive age 15-49; and male and female over 60 years.

25 2020 Census, Basic Tables Volume 1, Vanuatu National Statistics Office

26 2020 Census, Basic Tables Volume 1, Vanuatu National Statistics Office, p.32-24, calculated from data table 'Total female population by 5 year age groups and region.'

27 References to trauma are based on untrained assessors observations on signs of trauma during rapid assessments rather than based on clinical diagnosis.

28 including drought and volcanic ash fall.

29 Convention on the Rights of the Child, adopted by UN General Assembly Resolution 44/25, of 20 November 1989.

Housing: an estimated 6,384 households had their homes destroyed, and an additional 12,768 households had their homes damaged in Malampa, Shefa, and Tafea. The Displacement and Evacuation Centre Management Cluster identified over 5,150 displaced persons across 106 locations in Shefa and Tafea provinces, although these numbers change with time. Across Vanuatu there is an estimated 20% of households that are female headed. Female-headed households often have no ownership of the land they live on and face significant constraints in accessing finance and manpower to repair or reconstruct their homes. Urban communities may face similar challenges due to not owning the land on which they live, the disruption caused to their livelihoods, and reliance on landlords whose livelihoods have also been affected to carry out necessary housing repairs. Overall, the loss of homes and prolonged displacement increases distress and risks, particularly for the most vulnerable such as people under the poverty line, children, women, people with disabilities, people in informal settlements and the elderly. A fundamental human right and basic need, the loss of housing creates enormous distress and burden for individuals and families depriving them of basic dignity, privacy, health, shelter and security and inducing psychological distress.

The Impact on Livelihoods

It is estimated that the twin cyclones affected approximately 38,764 workers or 49.2% of total employment.[30]

Of the total affected workers, 9,691 are self-employed of which 45 percent or 4,351 are women micro entrepreneurs (the "mamas"). The cyclones also affected approximately 67 percent or 25,933 workers in the informal economy, across the three disaster-affected provinces. This includes the majority share of 68 percent or 2,996 mamas in the informal sector. Among the employed and affected, 8,140 were subsistence workers, of which 49 percent or 3,989 were women. Across the three disaster affected provinces, approximately 10 percent of income from agriculture, forestry and fishing was affected.

Overall, the impacts were on the already vulnerable population, such as informal workers, self-employed, micro-businesses including those operated by women, and subsistence workers, and this may lead to poverty and hardship rates in Vanuatu to escalate further, particularly in Tafea where the highest rates of hardship are found and one of the most affected areas. This greatly puts at risk the attainment of SDGs 1 (No poverty), 2 (No hunger), 5 (Gender Equality), 8 (Good jobs and economic growth) and 10 (Reduced Inequalities).

The Impact on Food Security

In the agriculture sector, the greatest economic impact fell on farmers growing temporary and seasonal crops (40% of the value of pre-cyclone expected income), followed by farmers growing cash crops, (24.1% of expected pre-cyclone income). The areas most affected by TC Judy and Kevin (priority areas 1 and 2) are home to 47% of farming households and 59% of farming businesses [31]. Crop losses are likely to create hardship until the next harvest, with possible food insecurity among the most vulnerable population groups.

In Vanuatu 1 in 10 people are undernourished, 20.9% of ni-Vanuatu experience moderate levels of food insecurity, and an additional 2.4% experience severe levels of food insecurity[32]. More than half of the dietary energy consumed is purchased, with 39% from their own production.

Following the cyclones, there were reports of people around Efate Island rationing existing food reserves. Communities in the Shepherd Islands also reported 100% damage to all crops and food stores and requested immediate assistance from the Food Security and Agriculture Cluster.

The nutritional needs of pregnant women and children are of particular concern. According to the Rapid Gender and Protection Analysis, "only 6.5% of communities assessed reported an adequate supply of food and water for pregnant women, nursing mothers, mothers of children under five and elderly people."

Vanuatu is committed to work towards the achievement of the SDG 2 (Zero Hunger). However, the impacts of the twin cyclones on food security, in addition to the previous yet recent impacts from TC Harold and the Covid-19 crisis is likely to compromise its achievement.

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30 Based on the findiings of the Employment and Livelihoods sector of the PDNA

31 Priority 1 and 2 areas (denoted as P1 and 2) covers 3 area councils in Malampa province, 18 in Shefa province, and 11 in Tafea province, based on the scope of PDNA established by the ROC.

32 https://www.fao.org/3/cb3785en/cb3785en.pdf

Social Inclusion and Gender

Children and Early Childhood Development (ECD)

The impact of emergencies like Tropical Cyclone Judy and Kevin on young children can be severe, debilitating and with lifelong consequences. This is because the early years – from conception to around 8 years of age – are a time of monumental growth, especially in brain development. When young children are exposed to toxic stress and deprivation, they are more likely to struggle with cognitive, behavioural and emotional difficulties and experience delays in their development, which can have multi-dimensional and long-term impacts into adulthood.[33] With climate change, these vulnerabilities even worsen, as slow-onset and extreme weather events become more frequent, intense, durable and overlapping. With their whole life ahead of them, any deprivation resulting from climate change at a young age can result in a lifetime of lost opportunity.

The twin cyclones have had adverse effects on young children in Vanuatu, with an estimated number of 45,000 children from prenatal to age 8 directly impacted. The effects are seen across the dimensions of physical and mental health, nutrition, WASH, and education. Together, the various adversities can create considerable delay in the overall development of young children, setting back their potential for future productivity and success and ultimately impacting broader socio-economic goals for Vanuatu.

From the rapid assessment teams deployed following the cyclones, there were reports of children not attending school, children not being supervised, child labour, physical and emotional violence against children. In all locations visited, children were not attending school and assessment teams widely reported displacement and household stress - all risk factors for violence against children. An assessment team in Tafea mentioned that with adults away on seasonal work, children are in the care of relatives, separated from their siblings, or living unaccompanied. Vanuatu has a high prevalence of sexual abuse against girls under the age of 15 at almost 30%[34]. The Ministry of Justice and Community Services (MJCS) Child Desk is aware of an overall increase in child protection cases; however, exact numbers were not available.

TC Judy and Kevin have also resulted in food insecurity, with extreme shortages of essential nutrients and overall calories for young children (screening is ongoing). This malnutrition can lead to stunting, delayed motor development, impaired cognitive function, and poor school performance. Pre-disaster the stunting rate was 28.9% in Vanuatu for children under 5 years of age[35].

As noted above, disruptions to essential health services such as maternal and child health, immunization, and health and nutrition promotion have increased the risk of morbidity and mortality rates for under-5 children. The cyclones damaged 104 handwashing and toilet facilities systems and sanitation facilities in early childhood care and education (ECCE) centres, increasing the prevalence of diarrhea among children under five and placing young children at increased risks of other diseases. Psychological health and wellbeing are also a risk for children, especially children under 8. When young children are exposed to stress and deprivation, they are more likely to struggle with cognitive, behavioural and emotional difficulties, and experience delays in their development, which can have long-term impacts into adulthood.

The cyclones have also disrupted education services for 3,658 young children between 3 and 5 year-old (973 in Malampa, 1,477 in Tafea, and 1,208 in Shefa). Out of 368 pre-existing ECCE centres in the affected areas (priority 1 & 2), 108 centres have been damaged or destroyed.

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[33] https://www.unicef.org/early-childhood-development-emergencies

[34] Vanuatu Women's Centre (2011) Vanuatu National Survey on Women's Lives and Family Relationships, p.17 https://pacificwomen.org/research/vanuatu-womens-centre-overview-on-violence-against-women/

[35] https://globalnutritionreport.org/resources/nutrition-profiles/oceania/melanesia/vanuatu/

People with Disabilities

An estimated 5% of the population has a disability in Vanuatu (likely underreported[36]) with walking and seeing the most common difficulties reported, with more women (5.30%) than men (4.66%) and more people in rural areas (5.28%) than in urban areas (3.90%) reporting difficulties.

People with disabilities in Vanuatu are more likely to experience higher levels of poverty – over 30% of people with severe disabilities and nearly 30% of those with mild and moderate disabilities are among the country's poorest (compared to 16% of people with no disabilities)[37].

In the Priority 1 and Priority 2 areas, there are an estimated 7,447 people with disabilities or approximately 4.74% of the affected population. This number is likely to be much higher given that disability is commonly underreported. This indicates a significant need for disability inclusive initiatives and tailored support in recovery.

Gender

Gender relations in Vanuatu tend to be culturally specific and characterized by unequal distribution and/or access to power and resources, differences in mobility and in the ability to make life decisions and to voice priorities and needs, as well as to explore and use individual potential and capacities[38].

Vanuatu has one of the highest prevalence rates of violence against women and girls globally. Gender based violence occurs in all provinces and islands and is higher in rural (63%) than in urban (50%) areas. Social values held by both women and men reinforce the acceptability of violence towards women and girls - 60% of women agree with at least one "reason" for men to be violent with their wives[39]. Following TCs Judy and Kevin, Vanuatu's toll free helpline managed by Vanuatu Women's Centre (VWC) was down and not fully operational again for approximately two weeks. The VWC, the provider of GBV counselling services in Vanuatu, had some interruption to services after the cyclones, but was operational again within a week. It was not possible to quantify the impact of the cyclones on gender based violence, however previous disasters in Vanuatu have shown that initial reporting of gender based violence is low.

For women whose livelihoods are home-based such as mat and basket weaving—the destruction of their homes and raw materials has a significant economic impact. Damage to such agro-based microenterprises—which mainly comprise food processing, handicrafts, and weaving produce income loss while women do not have the protection of insurance or access to finance. Furthermore, women are often excluded from decision-making on access to and the use of land and resources critical to their livelihoods.

Seasonal work among men in Vanuatu leave families with female-headed households, at-risk and less resourced to respond and recover. These circumstances also increase protection risks for women and children. It also points to the need for support for the workers who are overseas, whose homes and families may be affected.

Vanuatu acceded the Convention on the Elimination of Discrimination against Women (CEDAW) in 1995[40], therefore assumed international legal obligations to respect, protect and fulfill the rights of women in Vanuatu, by adopting a legal and policy framework aimed at ending any form of discrimination against women. Additionally, the country is also committed to achieving "gender equality", as reflected in the SDG 5, by 2030. However, the fulfilment of Vanuatu's commitments may be compromised by the two cyclones.

Refer to the chapter on Gender in this PDNA report for details on the impact of the twin cyclones on gender equality.

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36 Due to limited technical capacity and not using internationally recommended methods to identify persons with disability in national data systems, in 'Are Persons with Disabilities Included in the Effort to Leave No one Behind?' Mapping Disability Data in Development in the Asia Pacific, ASEAN Disability Forum, Pacific Disability Forum, CBM and UNFPA, February 2022, p.5-6. https://asiapacific.unfpa.org/sites/default/files/pub-pdf/cbm.6.1.pdf

37 Nguyen, A. CARE Rapid Disability Analysis: Vanuatu. March 2022

38 https://documents1.worldbank.org/curated/en/270841493643065229/pdf/114671-WP-PUBLIC-pdna-guidelines-vol-b-gender.pdf

39 World Vision, 2020, Evaluation report: PTL Reducing Gender-based Violence Project Vanuatu Counseling Approach https://reliefweb.int/report/vanuatu/evaluation-report-ptl-reducing-gender-based-violence-project-vanuatu-counselling

Poverty

Vanuatu's frequent climate related disasters such as TC Judy and Kevin illustrate the direct link between climate vulnerability and poverty. The cumulative impact of the cyclones and previous events have driven poverty and hardship rates in Vanuatu to remain relatively high and continue to be exacerbated by the twin cyclones, particularly in the Tafea province where hardship rate continues to be highest in the country at 35.3%. Using the latest national measures 15.9% of the population- or approximately 47,000 people- lived below the basic-needs poverty line in 2019/2020.[41] Assessed in terms of vulnerability to external shocks, of which climate disasters are primary shocks, an estimated 36 % of households are at risk of falling into poverty, situation that may jeopardize the achievement by Vanuatu of the SDG 1 (No poverty).

The rate of hardship for Vanuatu, defined as those individuals living below the "National Poverty Line" (NPL), is estimated to be 15.9%, with 96.7% of people in hardship living in rural areas. The rate of hardship is based on a national "cost of basic needs poverty line" constructed using the 2019-20 NSDP baseline data. This translates to approximately 47,000 individuals living in hardship nationwide. The measure is based on an annual per adult equivalent (AE) NPL of Vanuatu Vatu (VUV) 147,944 or approximately VUV 405 per AE per week (US$0.58 per day). The rate of hardship in urban areas is 2%, compared to 20.8% in rural areas. The highest rates of hardship are found in the rural provinces of Tafea and Torba (35.3% and 31%, respectively).

Impact on Justice

TC Judy and Kevin disrupted the process of timely justice to citizens. There were 219 cases that were suspended by the Supreme Court after the cyclones and 52 of them (23.7 %) were criminal cases, increasing the risk of further crimes post disaster. In evacuation centres, there were reports of overcrowding and lack of personal space and privacy. These issues elevate protection related incidents, including fighting amongst evacuees, unwelcomed intrusion of personal spaces, and even theft of personal belongings and properties[41]. The most vulnerable people that are faced with these protection issues were children, women and girls and people living with disabilities. Earlier research has shown that 60% of women and girls between the ages of 15 and 49 have experienced some form of physical, and or sexual abuse, and the rates tend to increase during or post disasters[43]. Promptly restoring rule of law in Vanuatu is essential to uphold justice, and to ensure that the Government's commitment to SDG 16 (peace, justice, and strong institutions), **is not compromised.**

Recovery Recommendations

Addressing the above human impacts throughout all relevant sectors in the recovery process is imperative for ensuring no one is left behind, to mitigate increasing inequities and poverty, and prevent secondary impacts on living conditions, food security, livelihoods and social inclusion, especially among the most vulnerable population which include women, children, people with disabilities, informal workers, subsistence farmers, families living below the poverty line in the most affected areas.

Livelihoods: recovery programmes supporting livelihoods should give priority to those most impacted and vulnerable, ensuring no one is left behind, this includes informal workers, the self-employed, female micro-entrepreneurs (mamas), and subsistence farmers.

Health: It is vital that essential health services such as maternal-and-child health, immunization and nutrition are restored to protect children and mothers, and that psychosocial support and psychological first aid are integrated into recovery.

Education: recovery should provide the necessary school equipment and supplies to ensure that alternative distance learning opportunities are available to all, while damaged schools are repaired or rebuilt.

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40 Convention on the Elimination of all forms of Discrimination Against Women (CEDAW), adopted by UN General Assembly Resolution 34/180, of 18 December 1979.

41 World Bank. October 2021. Poverty and equity brief: Vanuatu.

42 TC Pam PDNA

43 https://documents1.worldbank.org/curated/en/270841493643065229/pdf/114671-WP-PUBLIC-pdna-guidelines-vol-b-gender.pdf

Housing rehabilitation and reconstruction and recovery programmes should be positively adjusted to prioritize female headed households as well as people living with disabilities and the elderly. Similarly, early recovery and livelihood programmes should also provide specific support to female headed households to enable them to find resources for rebuilding.[44]

Mainstreaming of Gender Equality, Disability and Social Inclusion (GEDSI) in recovery will ensure that recovery efforts reduce, rather than reinforce, inequalities by avoiding assumptions, generalizations and stereotypes, and by promoting positive change. Recovery programmes that effectively consider GEDSI will also increase and broaden ownership and sustainability of recovery initiatives by ensuring equal involvement of the population as a whole[45]. Understanding different gender roles, responsibilities, needs, and capacities is therefore critical in ensuring all people in Vanuatu benefit from recovery programming.

Capacity building mainstreamed across sectors, to strengthen people's coping mechanisms and their social and cultural networks, such as women's networks (church groups, savings groups, emergency preparedness groups), youth groups and first responders such as Community Disaster and Climate Change Committees (CDCCCs), Vanuatu Women's Centre (VWC) CAVAW network, pastors and chiefs.

Aligning recovery with Vanuatu's National Early Childhood Development Policy, which identifies strategic priority number 7 as "Safeguarding Our Children during Emergency situations", the following recommendations are outlined here:

Integrate ECD into response mechanisms regarding sectors, coordination mechanisms and information management: As per the National ECD Policy, "Vanuatu utilises the cluster system across administrative levels (Central, Provincial, Community) to capture emergency response data and plans. The same cluster mechanism can be used to capture ECD data, plan and coordinate response in times of disasters. To ensure the needs of children, pregnant and lactating women and their families and caregivers are met, ECD will be integrated into each cluster's response plan as part of their added value".

Incorporate/Prioritize ECD in the Recovery Plan: Integrate ECD into health, nutrition, WASH, education, social protection and child protection sectoral activities for a more comprehensive approach – e.g., nutrition surveillance and provision of micronutrient food, positive parenting, immunization catch up campaign/booster in affected areas to recover losses in immunization, increased hygiene promotion at community level to prevent diarrhea outbreaks, catch-up birth registration. Build the capacity and resources of line ministries to design and implement emergency preparedness, climate adaptation, resilience building, and risk reduction strategies with ECD-centred approaches.

Elevate child-centred resilience and adaptation: Focus on strengthening climate resilience and adaptation in recovery efforts, ensuring that solutions contribute to building resilience and adaptative capacities of young children, their parents and caregivers, and the social services they depend on.

Strengthen government ownership: Align recovery work with National and Provincial government activities, such as the social service system, and encourage government and community ownership of ECD interventions for sustainability.

Coordinate ECD service delivery, with ECD-focused Focal Points within technical ministries: Ensure that each ECD related-line ministry has a faction addressing ECD, setting standards for climate and disaster-resilient services for young children, their parents and caregivers including pregnant and lactating mothers. As per the ECD Policy, establish a dedicated ECD analyst under the Prime Ministry Office to coordinate interventions implemented by various sectors for quality control during implementation, progress and outcome tracking. Strengthen the capacities of technical ministries to design and implement emergency preparedness, climate adaptation and risk reduction actions and strategies with early childhood-centred approaches.

Prioritize ECD related activities within the sectors funds allocations: Include climate resilient ECD activities in sector budgets or establish funding mechanisms for sustaining ECD activities and ownership across sectors. Advance in connecting ECD-related spaces with Early Warning Systems and information services to reduce the risk of disasters, save lives and avoid economic losses. Advance better understanding and tracking of trends relating to the risks that younger children - and the key services and systems they depend on- face as a result of climate change, environmental degradation and disasters.

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[44] TC Pam PDNA

[45] https://documents1.worldbank.org/curated/en/270841493643065229/pdf/114671-WP-PUBLIC-pdna-guidelines-vol-b-gender.pdf


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Cafe

3. Disaster Effects

Productive Sector

Agriculture, Livestock, Fisheries and Forestry

The Crops Sub-Sector

Pre-disaster Baseline Context

The Agriculture, Livestock, Fisheries and Forestry (ALFF) Sector is responsible for roughly 19 per cent of Vanuatu's annual GDP, equivalent to almost VUV 12.5 billion in 2020. The importance of this Sector cannot be understated, with up to 75 per cent of the population engaging in or relying on agriculture to some degree, mostly subsistence farming, which is crucial for ensuring the nation has sufficient food, but which is not fully captured within the GDP.

The 2022 Agriculture Census data[46] shows that 85% of households engage in some sort of agricultural activities. Within the sector, a significant share of households in rural areas are primarily engaged in subsistence farming particularly for food and nutrition security, followed by a smaller segment of small-scale or semi-commercial farmers that sell some of their produce to the local markets in urban centers. Subsistence agricultural activities account for almost 75% of the total agricultural production, 15% from semi-commercial production and 10% comes from commercial activities. In Vanuatu, women play a critical role in the subsistence and semi-commercial activities such as crop production and fishing. The commercial farmers are mainly market or export-oriented producers.

The 2022 Agriculture Census data shows that 55,336 households and institutions in Vanuatu are engaged in the production of crops (Table 9). This includes permanent, temporary and cash crops. In addition, a total of 43,983 households and commercial farms are involved in the production of plantation crops (cash crops) such as kava, coconut,

[46] The Vanuatu, Agriculture Census 2022, conducted.

cocoa, coffee, vanilla, Tahitian lime, pepper and noni (out of which approximately 44% are from the priority 1 and 2 areas).

Table 9: No. of farming households and institution, and key income generating activities.

Priority Area	# of Agric HH	# of Farming HH	# of Farming institutions	Main activities (Percentage of households)				# of Commercial Farming Businesses	# of people residing in Commercial Farming Businesses
				Growing / Selling of Crops	Paid work in non-agric occupation	Remittances	Own non-agricultural business		
PA 1	21,898	21,742	149	40%	38%	6.4%	3.5%	149	3,319
PA 2	4,120	4,110	33	77%	4%	1.8%	4.1%	33	340
PA 3	5,179	5,168	15	89%	2%	1.5%	0.7%	15	603
PA 4	1,120	1,115	7	73%	8%	1.4%	2.7%	7	117
PA 5	23,000	22,894	103	63%	18%	2.1%	3.9%	103	4,751
Total	**55,316**	**55,029**	**307**	**58%**	**23%**	**3.7%**	**3.4%**	**307**	**9,130**

Table 10: Expected Income from Production by Household and Institution by Priority Area

Expected Income	PA 1	PA 2	Total (PA 1 & 2)	PA 3	PA 4	PA 5	Total (PA 1-5)
Temporary / Seasonal Crops	7,646,537,786	1,667,960,049	9,314,497,835	4,694,858,816	328,866,693	50,867,543,891	65,205,767,234
Cash Crops	21,087,375,993	24,762,944,900	45,850,320,893	66,229,696,429	6,874,655,501	209,537,501,762	328,492,174,585
Multi-Year / Permanent Crops	4,955,767,769	1,482,974,390	6,438,742,1	1,594,648,763	316,009,683	9,199,721,217	17,549,121,823
TOTAL	**33,689,681,548**	**27,913,879,339**	**61,603,560,887**	**72,519,204,008**	**7,519,531,877**	**269,604,766,870**	**411,247,063,642**

Disaster Effects

Summary of Damage and Loss

In Priority Area 1 and 2, the total value of damage and loss for the crop sub-sector is VUV 19,498,952,718. An estimated 47% of farming households and 59% of farming businesses are located within priority areas 1 and 2[47], the most affected by TC Judy and Kevin. The greatest economic impacts from damage and loss relate to temporary and seasonal crops, at 40% of the value of pre-cyclone expected income. This was followed by cash crops, at 24.1% of expected pre-cyclone income, with the least impact on permanent / multi-year crops at 14.1%. While temporary and seasonal crops experienced the greatest impact from the cyclone, they are also the crops that return to production the quickest, with market vegetables ready for harvest in 3 months.

[47] Priority 1 and 2 areas (denoted as P1 and 2) covers 3 area councils in Malampa province, 18 in Shefa province, and 11 in Tafea province, based on the scope of PDNA established by the ROC.

Table 11: Damage and Loss in the Crop Sub-sector

	Priority Area #1	Priority Area #2	Total
Private Damage & Loss from Temporary/Seasonal Crops	4,023,998,452	748,523,934	4,772,522,386
Private Damage & Loss from Cash Crops	7,141,559,519	5,857,601,126	12,999,160,645
Private Damage & Loss from Multi-Year/Permanent Crops	1,466,233,732	232,985,953	1,699,219,685
Private Damage & Loss from ALL Crops	12,631,791,704	6,839,111,014	19,470,902,718
Public infrastructure damage	21,281,250	6,768,750	28,050,000
Damage Public + Private	**12,653,072,954**	**6,845,879,764**	**19,498,952,718**

Recovery needs for the crop-subsector is VUV 463,450,000, with the details on short, medium and long-term needs described in the table below.

Recovery Needs

Table 12: Recovery Needs for the Crops Sub-sector

Recovery Needs	Short Term (2 - 6 months)	Medium Term (6 - 18 months)	Long Term (12 - 36 months)	Total Recovery Cost
Reconstruction of office buildings, staff house, farm & warehouse			35,250,000	35,250,000
Funding for a Project Management Unit Recovery Agriculture Officer in support of permanent DARD staff to ensure proper implementation of recovery activities.	2,000,000	3,000,000		5,000,000
To rebuild and repair agriculture station building of affected areas in priority 1 & 2: office, staff house, warehouse, dock and storage.			100,000,000	100,000,000
To Rebuilt 10 standards nurseries for agricultural crops	10,000,000			10,000,000
Maintenance (weeding/replanting) of existing **8** Food Basket (Efate- Eton, Teouma Avocado, Teouma Academy, Rangorango, Mele, Banana Bay and Siviri and Emae)		3,200,000		3,200,000
National and Provincial Seed Bank fully operational Construction of 2 new seedbanks.		12,000,000		12,000,000
Kits dryer/test humidity/vacuum machine/solar freezer for each seed bank (2M VUV a kit) and Data system seeds production / distribution / storage		3,000,000		3,000,000
To Support plant health clinic and develop a pest & diseases management plan			5,000,000	5,000,000
Backyard Gardens for food security in recovery – Port Vila/Lenakel/ Tafea outer islands/Efate offshore islands/ Shepherds/Paama/South East Ambrym		200,000,000		200,000,000
Procurement and distribution of planting material	10,000,000			10,000,000
Cleaning, replant and rehabilitation of demonstration plot, multiplication plot,	10,000,000			10,000,000

Recovery Needs	Short Term (2 - 6 months)	Medium Term (6 - 18 months)	Long Term (12 - 36 months)	Total Recovery Cost
Bush-clearing support to restart semi-commercial and commercial farming. (1 hectare support only - develop assessment criteria)		30,000,000		30,000,000
Support for DARD tractors for servicing of machinery (for tractor accessories, plough, slash hill)			10,000,000	10,000,000
Distribution cutting and seedling Tahitian lime/Coffee/Cocoa/Vanilla/Pepper/Coconut/Kava in affected areas.	30,000,000			30,000,000
Total	**62,000,000**	**251,200,000**	**150,250,000**	**463,450,000**

The Livestock Sub-Sector

Pre-disaster Baseline Context

The livestock sub-sector is mainly comprised of cattle farms, pigs, poultry, goats, and ducks produced by household and commercial oriented producers. Commercial livestock producers include large scale cattle plantations, with forward linkages to the abattoirs and international markets through the production of beef has accounted for the significant share of Vanuatu's exports which stands at 3% in 2020. The local butcheries in both rural and urban areas have a strong backward linkage with the small-scale farmers producing livestock. The 2022 Agriculture Census data conveys that about 55% of households in Vanuatu participate in various livestock production activities. This includes dairy cattle, beef cattle, sheep, goat, pigs, poultry/ducks, apiculture, horse, and others.

Table 13: Stock numbers by Priority Area (Household and Institutions Combined)

Stock	PA 1	PA 2	PA 3	PA 4	PA 5	Total (PA 1-5)
Dairy Cattle	2,414	302	1,252	38	10,692	**14,696**
Beef Cattle	14,144	11,350	9,482	1,612	58,247	**94,835**
Sheep	458	71	0	0	33	**562**
Goat	4,241	1,503	39	131	1,079	**6,993**
Pigs	33,863	7,298	13,787	2,995	21,658	**79,600**
Poultry/Ducks	118,426	47,940	57,483	13,379	180,912	**418,140**
Apiculture	20	0	0	0	177	**197**
Horses	473	106	60	0	1,828	**2,467**

Disaster Effects

Damage and Loss Estimates

The total effects for Priority Areas 1 and 2 in the livestock sub-sector amounted to VUV 1,192,581,867. According to the National Agriculture Census 2022 data, 45% of Households and 43% of Commercial Farms involved in livestock are located within Priority 1 and 2 areas. These areas account for 33% of the monetary value of livestock production across all five priority areas. Of the overall monetary value of the damage and loss, 99% is attributed to the private sector and 1% is attributed to the public sector.

Table 14: Damage and Loss in Livestock Sub-sector

	Public		Private		TOTAL
	Damage	Loss	Damage	Loss	
Priority Area #1	13,312,500		291,117,800	629,980,413	**934,410,713**
Priority Area #2	4,537,500		65,740,200	187,893,454	**258,171,154**
					1,192,581,867

Recovery Needs

Total recovery needs for the livestock sub-sector total VUV 206,900,000. The breakdown of these needs are presented in the table below.

Table 15: Recovery Needs for the Livestock Sub-sector

Recovery Needs	Short Term (2 - 6 months)	Medium Term (6 - 18 months)	Long Term (12 - 36 months)	Total Recovery Cost
Reconstruction of office buildings, staff house, farm and warehouse			26,500,000	26,500,000
Repair and restart 2 government hatchery and breeding centers in both affected province			20,000,000	20,000,000
Support repair and restart 2 private hatchery and breeding centers: machinery, infrastructure, breeder restocking.	15,000,000			15,000,000
Funding for a Livestock Recovery Officer.	1,200,000			1,200,000
Funding for National Stock Feed Secretariat.			20,000,000	20,000,000
Repair 2 government hatchery and network of brooder house in both affected province - Poultry & Duck Value chain		30,000,000		30,000,000
Support repair and restart 2 private hatchery and breeding centers: machinery, infrastructure, breeder restocking.	15,000,000			15,000,000
Funding for a Hatchery coordinator.	1,200,000			1,200,000
Repair 2 government provincial piggery breeding center:	15,000,000			15,000,000
Import new piggery genetics.			15,000,000	15,000,000
Support private piggery breeding center rebuilt and piggery production infrastructure: building and fence.			20,000,000	20,000,000
Support repair infrastructure for 50 keys farmers: fence and building – Goat and Sheep	8,000,000			8,000,000
Upgrade rural butchery and storage facilities with supply of solar freezer and slaughtering facilities.			8,000,000	8,000,000

Recovery Needs	Short Term (2 - 6 months)	Medium Term (6 - 18 months)	Long Term (12 - 36 months)	Total Recovery Cost
Pasture replanting and weed control	15,000,000			15,000,000
Clearance budget to support private farmers and NFI fence support.	12,000,000			12,000,000
Total recovery	67,400,000	30,000,000	109,500,000	206,900,000

The Fisheries Sub-Sector

Pre-disaster Baseline Context

Figure 10: Four-year trend on wild capture fisheries production and Three-year trend in national fisheries

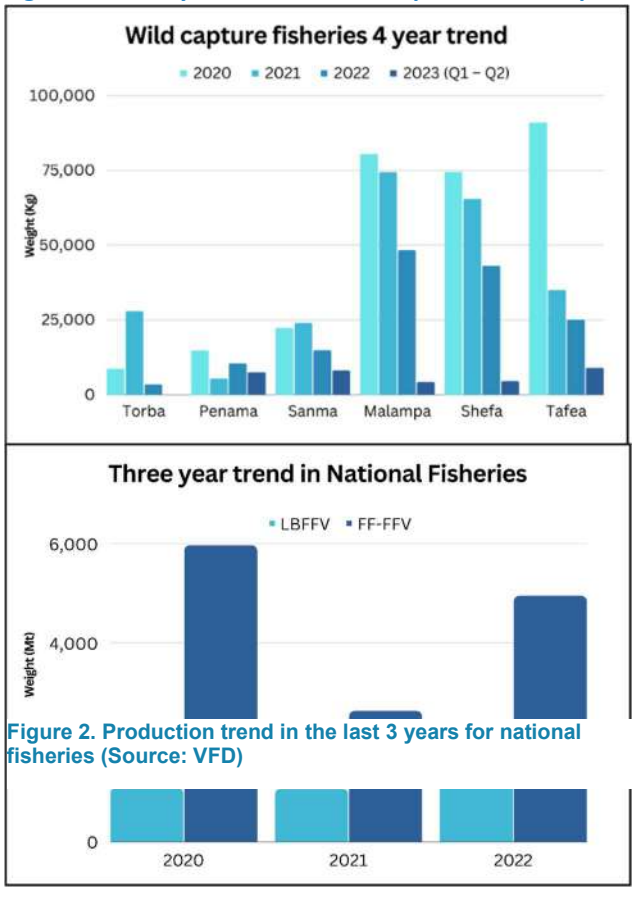


Figure 2. Production trend in the last 3 years for national fisheries (Source: VFD)

Vanuatu has a diverse fisheries sector focused around aquaculture farming and wild capture fisheries within an 827,000Km^2 area (Zylich et al. 2014); inclusive of Vanuatu's 200nm Exclusive Economic Zone and excluding Vanuatu-flagged vessels' (international fisheries) area of operation.

Typically, coastal fisheries, including aquaculture, accounts for 4% of Vanuatu's local production. The 2022 VNAC survey depicts that 12.1% of people living in Vanuatu are engaged in fishing and aquaculture activities. Small-scale commercial fishers which are mostly men and subsistence fishers which are mostly women contribute to overall coastal production where varying quantities of products end up on different markets. The average Ni-Vanuatu consumes 15kg of fish annually.[48]

Commercial activities require either a Local Fishing License (LFL) and/or a processing and export license. Shefa and Tafea province have consistently high licensing rates, averaging 61% of all licenses and license revenue. Malampa, Shefa and Tafea province account for over 50% of the overall coastal wild capture production.

Vanuatu, like many other small island developing states, license industrial sized foreign fishing vessels to fish our waters which accounts for 96% of production that is locally caught. Based on licensing alone, Vanuatu's national fisheries industry averages 177 million vatu.[49] With other associated permits, the total revenue can be as high as 230 million vatu or more.

Locally Based Foreign Fishing vessels (LBFFV) offload 100% of their catch in Port Vila. In 2020, a total of 1091.17Mt of fish was offloaded and processed for export.[50] Of this, 26% ended up on the local market.

[48] Zylich et al. 2014
[49] VFD annual production report, 2021
[50] *VFD Annual production report, 2021*

Disaster Effects

Damage and Loss Estimates

The twin cyclones affected both the private and public sectors across Malampa, Shefa and Tafea province, with significant damages and losses to the Coastal and National fisheries sub-sectors. According to the VNAC 2022 data, 5,422 subsistence and commercial fishers are located within Priority 1 and 2 areas.

Loss and damage surveys conducted by the Fisheries Department showed that approximately 1,096 fishers and 348 aquaculture farmers were affected by the storm. Damage to boats, gears, safety equipment, cold storage units and outboard engines were identified whilst losses were attributed primarily to loss of revenue and increased operational costs. Additionally, LBFFV vessels were moved to Fiji as storm surge had destroyed their landing pontoon. This will have repercussions for local markets, exports and, also, revenue for the company and government.

The total effects of the twin cyclones for fisheries as calculated using the PDNA methodology amounted to VUV 5.3 billion. The largest sub-sector that was affected was the Coastal Fisheries sub-sector with VUV 3.7 billion, followed by the National Fisheries sub-sector with VUV 1.5 billion and finally, the Aquaculture sub-sector with VUV 57 million in damage and losses. When interviewing fishers, there was a split opinion of how destructive TC Judy and TC Kevin were in comparison to TC Pam in 2015: 43% of interviewees said it was less destructive and 42% said it was more destructive.

Table 16: Damage and Loss in the Fisheries Sub-sector (VUV)

Sub-sector	PUBLIC		PRIVATE		Total
	Damage	Loss	Damage	Loss	
Aquaculture	52,797,200	2,300,000		1,900,000	56,997,200
Coastal Fisheries	15,442,675	1,456,713	199,305,364	3,445,795,388	3,662,000,140
National Fisheries		82,285,138	5,446,515	1,445,188,024	1,532,919,676
TOTAL	**68,239,875**	**86,041,851**	**204,751,878**	**4,892,883,412**	**5,251,917,016**

The total damages sustained by the Vanuatu government amounted to VUV 68 million which includes the repair or replacement of FADs, solar freezers, ponds, and government facilities. In the Aquaculture sub-sector, all damages sustained are repaired or replaced by the government as part of its farm establishment programme. On the other hand, the Private sector incurred the larger cost of damages amounting to VUV 205 million and includes the repairs and replacement of fisher's assets and private company assets. Disruption of production, cold-chain systems and government services is expected.

The government's total losses come up to VUV 86 million which is significantly less than what the private sector will encounter (VUV 4.9 billion). It is estimated that government revenue for the fisheries sector will decrease by approximately 30% post-disaster using reported 2020 production and market data as the baseline. The private sector will need to further inject a large sum of money into their business to counter higher operational costs and improve their situation. Shefa province had the highest damage and loss.

Recovery

Recovery Needs

The cost of recovery for the fisheries sub-sector amounts to VUV 1.85 billion. This includes costs that private entities may take to improve their resilience. There are 10 overarching recovery needs for the sector. Recovery needs incorporate the early recovery needs that were identified by the Fisheries Department.

In the short term, the recovery focus should be on ensuring the resumption of fishing and farming activities (through the provision of gears, FADs, solar freezers and the repair of hatcheries, farms and lightly damaged boats). Setting up of fisher's groups, integrated farming and extending the Tails resource monitor network are key initiatives that the government will lead. Groundwork for national fisheries disaster response policies and cold-chain systems will start within the short term and continue into the long-term recovery.

In the medium and long term, improvements on infrastructure and setting-up of centralized government bodies under the productive sector should be a priority. Trust funds for disaster relief and response in the productive sector should be established to reduce food insecurities post-disaster. Activities to improve privately owned assets and infrastructure through subsidies, grants, and store houses will help to build back better the private sector.

Table 17. Fisheries Sector recovery needs 2023 – 2028 (VUV)

RECOVERY NEEDS	RECOVERY COST			
	Short Term (2 – 6 months)	Medium Term (6 – 24 months)	Long Term (12 - 60 months)	Total
Repair and replacement of physical assets public assets	2,158,571	121,207,137	36,176,333	159,542,042
Repair and replacement of physical assets private assets	7,846,515	185,670,186	397,085,093	461,101,794
Strengthen and improve current awareness programmes centring around seafood related health risks	2,500,000	5,000,000	1,000,000	8,500,000
Build a community of practice for sustainable fisheries management	2,500,000	6,250,000	6,250,000	15,000,000
Restore farmer's and fisher's livelihoods and food security by providing subsidies, aid materials and institutional support	50,000,000	22,500,000	12,500,000	85,000,000
Strengthen nation-wide cold chain systems through the establishment of post-harvest, processing and preservation programmes	47,833,333	136,250,000	102,916,667	287,000,000
Develop relevant policies, SOPs and Disaster Risk Management strategies to promote recovery of a resilient fisheries sector	25,000,000	25,000,000		50,000,000
Set-up and fund a centralized government body (PMU) to coordinate disaster relief and recovery efforts within the productive sector		39,000,000	691,000,000	730,000,000
Continue to build capacity within the sectors to conduct the PDNA and develop centralized database systems for disaster information such as loss and damage		8,000,000	18,000,000	26,000,000
Strength research and development within the productive sector to better understand the impacts of natural disasters and promote climate resilience, new technology and resource management practices		10,000,000	20,000,000	30,000,000
Total	137,838,419	472,543,990	1,241,761,426	1,852,143,835

Recovery Strategy

Fisheries is important for food security, nutrition and livelihoods. In order to streamline and transform the fisheries sector's recovery, the following interventions are envisioned:

- Support and assist the reactivation of activities through the promotion of subsidies and other income generating activities;
- Promote early warning systems and contingency plans for farmers and fishers in terms of cyclone preparedness;
- Design and promote simple technology and disaster projection software to improve preparedness and data collection of disaster information;

- Develop a centralized database system and establish a framework around existing networks to collect pertinent baseline information;
- Establish a government entity within the productive sector to coordinate disaster relief and continue capacity building of officers in PDNA;
- Establish a trust fund for the fisheries sector that will only be used during disaster relief and response;
- Improve existing cold chain systems and extend coverage to remove areas with heavy fishing to promote increase production;
- Conduct detailed ecological assessment of affected areas to better direct reef rehabilitation and restoration programmes.

Forestry Sub-Sector

Pre-disaster Baseline Context

The Forest of Vanuatu covers 76% of the total land mass of the country which includes both natural and planted forests occupying a total area of 926,315.13 ha of land. About 23% of these forests are accessible and they occupy a total area of 216,430.57 ha.

About 70,000 people or 25% of the total agricultural households in Vanuatu, which is 276,580 people, rely on 23% of the accessible forests for social and economic livelihoods. Timber and Sandalwood alone accounts for 5% of accessible forests while the remaining accounts for social and economic livelihood needs unaccounted for in the forestry administration which contributes significantly to the welfare of communities in Vanuatu. The main markets for the forestry sector for timber is basically the domestic market, earning an annual revenue of more than VUV 4 million from saw millers, with an estimated production of 5100 cubic meters of wood. About 200 metric tons of sandalwood are exported, generating 41 million in revenue. This export value contributes 1.4% of the country's GDP. Vanuatu's forestry sector encompasses natural forests and plantation forests, it provides resources for timber, firewood, food and handicraft.

Table 18: No of forestry households and institutions, and key income generating activities.

Priority Area	# of Agric HH	# of HH	Total Population living in Forestry HH	Main Activities / Sources of income (Percentage of Forestry households)					# of Forestry institutions	# of people residing in Forestry institutions
				Growing / Selling of Crops	Paid work in non-agricultural occupation	Own non-agricultural business	Paid work in agricultural occupation	Remittances		
PA 1	21,898	3,826	21,586	65.7%	16.5%	4.4%	1.9%	1.9%	22	351
PA 2	4,120	1,042	4,723	85.9%	3.5%	5.2%	0.3%	1.0%	1	6
Total PA 1 and 2	26,018	4,868	26,309	70.0%	13.7%	4.6%	1.5%	1.7%	23	357
PA 3	5,179	2,710	13,174	92.0%	2.8%	0.7%	0.5%	0.2%	3	346
PA 4	1,120	895	4,196	74.2%	8.0%	2.6%	0.1%	1.7%	2	50
PA 5	23,000	5,568	26,162	72.7%	9.4%	4.7%	3.6%	1.9%	20	672
Total (PA 1-5)	**55,316**	**14,041**	**69,842**	**75.6%**	**9.5%**	**3.8%**	**2.0%**	**1.5%**	**48**	**1,425**

Disaster Effects

Summary of Damage and Loss

The total effects for the forestry sub-sector in Priority Areas 1 and 2 amounted to VUV 10,922,768,056. According to the National Agriculture Census 2022 data, 35% of forestry Households and 48% of Forestry institutions are located within Priority 1 and 2 areas.

Table 19: Damage and Loss in the Forestry Sub-sector (VUV)

PRIVATE	Priority Area #1	Priority Area #2	Total
Loss	6,801,846,685	2,075,888,855	8,877,735,540
Damage	43,922,815	4,569,771	48,492,586
Damage and Loss	6,845,769,500	2,080,458,626	8,926,228,126
PUBLIC			
Loss	41,935,000	0	41,935,000
Damage (forests)	1,373,781,585	572,773,344	1,946,554,929
Damage (Infrastructure)	5,687,500	2,362,500	8,050,000
Damage and Loss	1,421,404,085	575,135,844	1,996,539,929
TOTAL			
Loss	6,843,781,685	2,075,888,855	8,919,670,540
Damage	1,423,391,901	579,705,615	2,003,097,516
Total Damage and Loss	**8,267,173,586**	**2,655,594,470**	**10,922,768,056**

Recovery Needs

The total recovery needs for the forestry sub-sector is estimated to be VUV 69,600,000.

Table 20: Recovery Needs for the Forestry Sub-sector (VUV)

Recovery needs	Short Term (2 - 6 months)	Medium Term (6 - 18 months)	Long Term (12 - 36 months)	Total
Reconstruction of office buildings, staff house, farm & warehouse, vehicle and machinery			12,600,000	12,600,000
To established Infrastructure of Timber Treatment Plant on Efate and Tanna		5,000,000		5,000,000
To Transport and install of Timber treatment Plant on Tanna		5,000,000		5,000,000
To Transport and install of Timber treatment Plant on Efate		2,000,000		2,000,000
To Repair and Maintain Forestry Nurseries		30,000,000		30,000,000

Recovery needs	Short Term (2 - 6 months)	Medium Term (6 - 18 months)	Long Term (12 - 36 months)	Total
Forestry Farmer need Assessment		5,000,000		5,000,000
Hiring of existing saw millers to utilize wind fell trees for forestry farmers on cyclone affected areas for rebuilding and reconstruction of homes	10,000,000			10,000,000
Total recovery	**10,000,000**	**47,000,000**	**12,600,000**	**69,600,000**

The Human Impact

Food security

Many Pacific Island Countries such as Vanuatu have historically been considered food secure due to the access to fertile, arable land and marine resources. Though much of Vanuatu's population continues to have access to fresh, locally produced and affordable foods, natural disasters such as Tropical Cyclones Judy and Kevin continue to threaten Vanuatu's food security. With 75% of rural communities participating in subsistence agriculture, livestock, and fisheries activities, a shock to these sectors can have a resounding impact on people's food security.

In Vanuatu, 1 in 10 people are undernourished and 20.9% of ni-Vanuatu experience moderate levels of food insecurity and an additional 2.4% experience severe levels of food insecurity[51]. Also, 32% of the population are food secure, 52% marginally food secure, and 15% moderately food insecure[52]. However, rural communities are more prone to food insecurity.

Immediately following the cyclones, there were reports of people around Efate Island rationing existing food reserves. This is of particular concern when considering pregnant women and children. According to the Rapid Gender and Protection Analysis, "only 6.5% of communities assessed reported an adequate supply of food and water for pregnant women, nursing mothers, mothers of children under five and elderly people." Lack of food for marginalized populations can have long-lasting effects, particularly on children who are malnourished for an extended period of time.

According to one survey, prior to the cyclones, 39% of people had gardens near their homes but after the cyclones 84% had their gardens completely destroyed. Following the cyclones, only 16% of those surveyed were able to eat fruits and vegetables at least once a day. 71% of respondents had not eaten any fruits or vegetables in the past week and overall 42% of respondents indicated they did not have enough food. The lack of access to fresh foods in the markets, or the significant increase in prices of fresh foods were the main contributing factors to the unhealthy diets following the cyclones.

Across both Priority Areas 1 and 2, food and agriculture were significant concerns, according to the PDNA survey conducted between May 1 to 23. When asked if the household required recovery assistance, 92.8% and 97.2% of respondents replied yes for Priority Areas 1 and 2 respectively. Of those who require recovery assistance, agriculture seeds or inputs and food assistance were some of the highest priority needs.

As people dealt with food shortages, some resorted to alternative food crops for consumption such as wild yam, wild navia, taro comb, tree leaves, and wild birds and other wild animal meat. In Priority Area 1, 15.3% of households resorted to these alternatives for food consumption and in Priority Area 2, 32.7%.

According to a vulnerability study in Vanuatu, the two key factors to resilience for communities in Vanuatu are food gardens and traditional social support systems. Indeed, lack of local crop production can lead to significant stress on families. As indicated by the Rapid Gender and Protection Analysis report, communities around Tanna and Efate were already reporting increased household stress and domestic violence due to food insecurity. Women and children are

[51] According to Vanuatu's Food Security Profile published in 2020 https://www.fao.org/3/cb3785en/cb3785en.pdf
[52] The Vulnerability Analysis and Mapping (mVAM) data collected in September 2022 https://analytics.wfp.org/t/Public/views/PACOmVAM/FoodSecurityCoping?paco=Vanuatu&%3AisGuestRedirectFromVizportal=y&%3Aembed=y

particularly at risk of experiencing extreme hardships following disasters. Women around Efate reported fear of traveling to their gardens following the cyclones as they would have to travel long distances, putting themselves and their children at risk of violence. A report of sexual assault against a woman in a food garden was made in Tafea following the cyclones.

Change in employment

Many fishers living on the western and southern parts of islands in Malampa, Shefa and Tafea provinces, reported extreme storm surge along their coastlines. Some even report storm surge coming in as far as 200 m inland. Aerial photos, Facebook photos and satellite images all confirm their reports. Because of this, many did not escape the destruction of boats, engines and safety gear. Some of these people rely heavily on their boats for transport, food security and income. Cost of replacement is high and government subsidy processes are slow and require an extensive vetting. Most men may seek to go overseas in the Seasonal Worker Programmes (SWP), leaving women, children and elderly family members to fend for themselves and rebuild their homes. This may lead to other compounding social issues.

Food security and nutrition

Fish is a rich source of protein and is particularly required by pregnant women, lactating women and children within the first 2 years (1000 days) of their life (Longley et al, 2014). Fish has high levels of essential omega 3-fatty acids and is a key source of micronutrients such as calcium, iron and zinc which helps in a child's growth and development. Children after the cyclone may experience a change in micronutrient intact which may affect their growth and brain development later in life.

Many other people in the community may, also, experience a shift in diet from fresh fish to tinned meat which for some people with pre-existing health risks may exacerbate their conditions. While most communities close to commodities may experience this, other communities that are remote with limited access to shops and markets, may experience a food deficit. This means that there is no protein to supplement their diets which can increase non-communicable disease indexes.

Ciguatera and other seafood borne diseases

After a cyclone, there is increased eutrophication of coastal waters. The increase in nutrients acts as a fertilizer for microscopic planktonic algae whose population then grows exponentially and start to produce a toxin called ciguatoxin. Some of the algae floats in the water column while others settle on seagrass and other substrate. As reef fish or invertebrates graze on the seagrass or other substrates, the toxin in the algae enters the food web. Humans then feed on affected reef fish or invertebrates and then become sick. There is no treatment except to receive IV fluids.

Commerce and Industry

Pre-disaster Baseline Context

The Department of Industry (DOI) was setup to promote and support primary industry development and manufacturing industries (MTTCNVB, 2020). In Vanuatu, industries are classified as cottage, small or large. There are currently 372 registered industry permit holders of which 67% are in Shefa, 7% in Tafea, 6% in Malampa and the remaining 20% shared across Penama, Sanma and Torba Provinces.

The PDNA on Industry only considers industry permit holders, potentially only 25% of all involved (pers. Comm. VCCI) and does not take into account the informal sector and related activities already considered in Tourism and Agriculture.

Though not a direct effect of the disaster, Industry has been challenged by human resourcing. A recent report commissioned by the Vanuatu Chamber of Commerce and Industries conveys the impact of the labour mobility

programmes with skills shortages, job vacancies and the need for employment of foreign workers (Orozo,L and Spencer, J. 2023[53]). This needs to be considered in recovery programming.

Over 70% of registered industries in Vanuatu operate for the domestic market. A small subset also caters for export. In addition to the direct impact of the cyclones on industries, its impact on tourism, transportation and agriculture would further affect those involved in making value added products.

Table: Industry Typologies

Type	Description	Example	Gross Annual return
Cottage Industry	small scale businesses or economic activities that are operated from homes or small establishments	handicrafts production, weaving, traditional pottery, small scale agriculture or home-based food processing	< 1,000,000VUV
Small Industry		small manufacturing units, small scale agricultural processing plants	> 1,000,000VUV - < 10,000,000VUV.
Large Industry	substantial production capacity, larger workforces and broader market reach		> 10,000,000VUV

Cooperatives in Vanuatu are made up of Consumer Cooperative Societies, Savings and Loans Cooperative Societies and Small Businesses. There are currently 312 active co-operative societies throughout the country with a total of around 13,000 members. The Office of the Registrar of Cooperative & Ni-Vanuatu Business Development Services was set up to strengthen, develop and regulate cooperatives across the country (MTTCNVB, 2020). This was to ensure that products and services provided by cooperatives were competitive for the local market and for export.

Table 21: Number of Active Cooperatives by Province

Province	No. of active societies
Penama	26
Sanma	63
Malampa	77
Shefa	51
Tafea	80
Torba	15
Total	**312**

Co-operatives contribute largely to the economic development of the two worst affected provinces i.e. Shefa and Tanna, in terms of GDP. The co-operatives provide important services to remote places, for instance: 1) Retail consumer & wholesale coops provide retail services of basic merchandise to members, including the trade of such crops as taro, yam, kava, coffee, cassava; and 2) Producer cooperative societies group farmers together to trade their produce in main market centers through co-operative platforms for trade.

Table 22: Members of Cooperatives by Province

Province	Retail Wholesale	Producers cooperatives	Members	Members with Disabilities
Tafea	24	17	1,411	536
Shefa	34	16	2,890	12
Total	58	33	4,301	548

Disaster Effects

Summary of Damage and Loss

The total damage and loss for the commerce and industry sector is VUV 258,752,973. In the Industries sub-sector, there were severe impacts in Shefa and Tafea and parts of Malampa (Priority Areas 1 and 2) with damage to buildings, machinery, assets, existing inventory and crops for value addition. The total disaster effects for Industry in Vanuatu is VUV 196,756,597.

[53] Orozco, L., Spencer, J. (2023) Vanuatu Skills Needs Industry Survey Report. Vanuatu Chamber of Commerce and Industries

Table 23: Damage and Loss in Commerce and Industry (VUV)

Province	Damage	Loss	TOTAL
Industry			
Shefa	41,195,513	133,903,136	175,098,649
Tafea	3,125,000	18,532,948	21,657,948
Subtotal	44,320,513	152,436,084	196,756,597
Cooperatives			
Tafea	11,566,376	19,560,000	31,126,376
Shefa	11,670,000	19,200,000	30,870,000
Subtotal	23,236,376	38,760,000	61,996,376
TOTAL	**67,556,889**	**191,196,084**	**258,752,973**

In relation to Cooperatives, there were severe impacts in Shefa and Tafea and parts of Malekula (Priority 1 and 2), causing widespread damage to facilities, businesses, produce and buildings and gardens, resulting in food insecurity (NDMO, 2023). The total disaster effects for Cooperatives in Vanuatu is VUV 61,996,376.

Recovery Needs

The total recovery needs in the commerce and industry sector is estimated to be VUV 377,436,085. In the Industries sub-sector, the recovery cost is VUV 277,436,085, mainly to support the following key recovery priorities:

1) The repair and rebuild of damaged facilities, the replacement of damaged machinery and equipment and rebuilding of inventories. These activities will focus on Shefa and Tafea, the two worst affected provinces. The sole poultry farm and the Teouma Valley Farms were prioritised also.

2) Awareness and Capacity Building to enable the Department of Industry to provide advice and support to their clients in assessing and mitigating future risks, disaster preparedness and business continuity planning. This activity will include working with the Vanuatu Business Resilience Council, the Vanuatu Chamber of Commerce and Industry and other key stakeholders. The involvement of NDMO, VMGD and other technical agencies is needed to assist businesses manage future risks. This activity will build on learnings from this PDNA as well as other reviews undertaken to support business resilience.

3) The establishment / strengthening of a microfinance fund that could support businesses and their producer networks recover faster as well as establishing a contingency fund.

4) Product development support (Technical expertise, packaging & labelling and sourcing).

Table 24: Total Recovery Needs for the Commerce and Industry Sector (VUV)

Recovery intervention	Short Term	Medium Term	Long Term	Total
Industry				
1. Repair and rebuild of damaged facilities, replacement of damaged merchandise and raw materials	38,109,021	114,327,063		152,436,085
2. Awareness and Capacity Building for business regrowth and for preparation for future risks including contingency planning and partnerships	16,250,000	32,500,000	16,250,000	65,000,000
3. Establishment/strengthening of a new microfinance facility.	12,500,000	25,000,000	12,500,000	50,000,000

Recovery intervention	Short Term	Medium Term	Long Term	Total
4. Product development support (Technical expertise, packaging & labelling and sourcing)	2,500,000	5,000,000	2,500,000	10,000,000
Subtotal	69,359,021	176,827,063	31,250,000	277,436,085
Cooperatives				
Reconstruction of damaged facilities, replacement of damaged merchandise and raw materials		30,000,000		30,000,000
Refinancing Small Business Co-operatives Development Fund to provide financial support to producers co-operative societies			70,000,000	70,000,000
Subtotal		30,000,000	70,000,000	100,000,000
TOTAL	**69,359,021**	**206,827,063**	**101,250,000**	**377,436,085**

For Cooperatives, total recovery is estimated to be VUV 100,000,000, mainly to support the following two key recovery priorities:

1) The reconstruction of damaged facilities will include the repair and/or rebuilding of damaged buildings, the replacement of damaged merchandise and rebuilding of nurseries for local producers. These activities will focus on Shefa and Tafea, the two worst affected provinces.

2) The Refinancing of Small Business Development Fund and Cooperatives Development Fund will provide much needed resourcing to societies. The activity includes promoting micro and small enterprise recovery through short-cycle business management cash grants, improving access to microfinance schemes and training. Therefore, recovery will provide much needed capacity strengthening for societies to access microfinance and manage businesses and will also bolster the Officer of the Registrar of Cooperative & Ni – Vanuatu Business Development Services to better support its clients.

All co-operatives across the six provinces and its membership of about 13,000 people will benefit from these recovery activities. It is expected that societies will be in a better position to withstand future impacts that may affect their livelihoods. The *Office of the Registrar of Cooperative & Ni-Vanuatu Business Development Services* will lead these medium to long term recovery priorities and will work closely with societies in the provinces.

Tourism

Pre-disaster Baseline Context

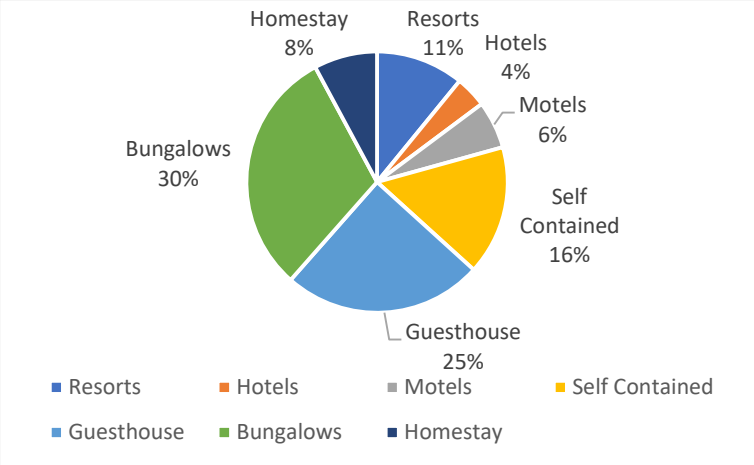
Sector Overview

In 2019, the Vanuatu Government through the Department of Tourism (DoT) launched the Vanuatu Sustainable Tourism Policy (VSTP), with a vision to 'protect and celebrate Vanuatu's unique environment, culture, custom and people through sustainable and responsible tourism'. The policy focuses on improving the livelihoods of Ni-Vanuatu through tourism business development that is culturally, environmentally and economically sustainable. Subsequently, the Vanuatu Sustainable Tourism Strategy (VSTS) 2021-2025 was launched, to implement the action plan of the Vanuatu Sustainable Tourism Policy.

Vanuatu's growth as a South Pacific tourism destination can be attributed to its beaches, accessible volcanoes, blue holes, world-class snorkelling & diving, and vibrant custom and culture. Due to its close proximity to Australia, this market has traditionally been the strongest tourist generating region, accounting for just over 50% of Vanuatu's total visitor arrivals, followed by New Caledonia and New Zealand.

Over the years, connectivity by air and sea through infrastructure development has enabled tourism activity to spread across the provinces, thus giving rural communities in the outer islands of Vanuatu the opportunity to participate in the Tourism industry and contribute to the sector's overall growth. The tourism industry is comprised of accommodation, tours and activities and other tourism services, presenting an overall total of about 1,247 tourism businesses. The accommodation sector in Vanuatu in 2022 comprised of 561 formally registered accommodation businesses with the largest proportion in Shefa province where Port Vila is located. Accommodation services in the Outer islands is predominantly locally owned bungalows and guesthouses, which tend to have lower occupancy rates and inconsistent guest flows.

Destination Marketing



The Vanuatu Tourism Office [VUVO], which is responsible for Vanuatu's destination marketing, promotes the islands as an ideal holiday destination for 'experience collectors' and 'adventure seekers' for both short-haul and long-haul travellers. This market segment is perceived as having high potential to increase overall numbers and outer island visitation to further spread the benefits of tourism. Vanuatu is promoted internationally with the slogan 'Answer the Call of Vanuatu', positioning Vanuatu as a 'rough diamond' which is not choreographed or polished (VUVO, 2021).[54]

Tourism Sector Pre COVID-19

Prior to the COVID-19 Pandemic, the tourism sector dominated Vanuatu's economy. Tourism generated around 35% of total employment [SPTO, 2019] and tourism receipts accounted for 23% of GDP [SPTO, 2020]. [55]

2019 was the strongest growth year for Vanuatu after the devastation of TC Pam in 2015, which saw damage to infrastructure, tourist facilities and the international airport in Port Vila.

While arrivals by sea were not as steady as air arrivals, the Cruise segment remained just as significant in terms of economic benefits through private sector income and government revenue (daily visitor spend and Cruise ship berthing fees).

Table 25: Distribution of visitor arrivals by air and sea

International Visitor arrivals	2019 Visitor arrival numbers	2019 economic contribution (VUV)	2019 visitor spend per person, per stay (VUV)
Arrivals by Sea	135,357	2.1 billion[56]	14,145[57]
Arrivals by Air	120, 513	19.5 billion[58]	161,625[59]
TOTAL	**255,870**	**21.6 billion**	**175,770**

Tourism and COVID-19

[54] Vanuatu Tourism Office, 2020, Vanuatu Tourism Market Development Plan, Port Vila.
[55] PSDI The Pacific Private Sector Development Initiative, Vanuatu Pacific Tourism Sector Snapshot | November 2021
[56] Government of Vanuatu., Department of Tourism. 2020. *Vanuatu Sustainable Cruise Tourism Development Strategy*. Port Vila.
[57] Government of Vanuatu., Department of Tourism. 2020. *Vanuatu Sustainable Cruise Tourism Development Strategy*. Port Vila.
[58] New Zealand Tourism Research Institute 2019. *Vanuatu International Visitor Survey*, Jan – Dec 2019. Auckland.
[59] New Zealand Tourism Research Institute 2019. *Vanuatu International Visitor Survey*, Jan – Dec 2019. Auckland.

Unlike some Island destinations who have experienced exponential growth in their tourism industry, Vanuatu's growth has been somewhat uneven and challenged by its high vulnerability to the effects of climate change and most recently the COVID-19 health pandemic.

The sector was still recovering from the effects of TC Pam when COVID-19 saw travel restrictions being put in place and international flights suspended, putting a halt to arrival of international visitors. This was followed by Tropical Cyclone Harold which caused further damage to homes, schools, medical facilities, infrastructure and agriculture. As a result of COVID-19 and TC Harold businesses closed or went into hibernation, there was loss of income felt by employees and businesses and loss of government revenue from the standstill in the tourism industry.

Vanuatu re-opened its borders to international tourists on July 1st, 2022. This has opened up economic activity in the sector as consumer confidence returned. In an Airport Consumer Survey carried out in October 2022, some of the insights showed that 82% of respondents were here on holiday, a strong indication of the industry bouncing back from the 2 years break.

Cruise ship arrivals commenced later in November 2022 with just over 20 calls planned for 2023. However, this is bound to pick up as the season opens for future bookings with anticipated increase in number of calls for 2024-2025.

Disaster Effects

Damage and Loss Estimates

Disaster effects identified were damage to buildings, roofs of traditional island bungalows, furniture, wharf and other Port of Entry facilities, communication infrastructure, roads, and natural vegetation. Significant loss of income was felt in the overnight and cruise sectors as a result of these effects. At the main Port of Call, there was damage to the bollards, wave breakers and build-up of sea mounds on the seabed, which authorities saw as a major risk to Cruise Ships. In the surrounding area, rocks and debris from the hillside or rockface along the main road to the Wharf posed a threat to vehicles on the road and pedestrians. As a result, Cruise ships were unable to berth during the month of March and the local handicraft markets relocated. The table below presents the effects of the two Tropical Cyclones on the physical infrastructure in the accommodation and tours & activities sector in Shefa Province and on Tanna.

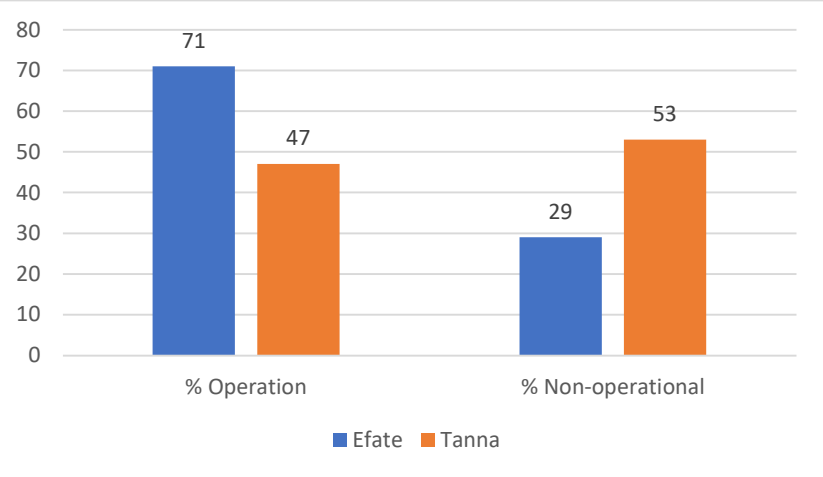
Table 26: Effects of TC Judy & Kevin on Infrastructure of Tourism Businesses

Island	No. Tourism Business		Medium & Low Damage	Destroyed	Major Damage
SHEFA					
Efate	31	Accommodation	10	3	8
		Tours	2	1	1
		Tourism services	3	2	1
Efate outer islands (Pele, Nguna, Epi, Tongoa, Emae)	11	Accommodation	5	1	5
		Tours			
		Tourism services			
TOTAL	**42**		**20**	**7**	**15**
TANNA					
Tanna	40	Accommodation	6	14	16
		Tours		1	2
		Tourism services		1	
TOTAL	**40**		**6**	**16**	**18**

Three levels of damage were identified in the assessment of damage and loss on tourism business infrastructures/assets; medium & low damage, major damage and destroyed. Post event, 40% of tourism businesses in Shefa and Tanna were not operational, while the remaining 60% have re-opened either full or partially and recommenced operations. Majority of these fully operational businesses are in Shefa province. The "Fully Operational" status referred to businesses having electricity (power) and water supply restored, roads cleared of debris or damage and telecommunications reinstated. It also considered that the business has manpower (staff) in operations and have or continue to receive customers.

The "Fully Operational" status referred to businesses having electricity (power) and water supply restored, roads cleared of debris or damage and telecommunications reinstated. It also considered that the business has manpower (staff) in operations and have or continue to receive customers.

Figure 11: Percent of operational tourism businesses, 7 days after TC Judy and Kevin



Damage to physical infrastructure and assets was estimated based on the actual total number of rooms not operational, and the estimate total cost of construction of new room / standard bungalow [VUV 30,000/m2 x average room size 9m2]. The total damage in the sector amounted to VUV 110,160,000. All damage occurred in the private sector while the loss occurred in the Public and Private sectors. Damage in the public sector was to infrastructure that facilitates the movement of people in the tourism industry but is under the authority of Ministry of Public Utilities and Infrastructure [Ports and Harbour, Airport and Roads].

Table 27: Number of rooms damaged and estimated value of damage.

Rooms	Shefa	Tanna	Total
Total number of rooms	967	326	1293
Total number of rooms currently operational	688	197	885
Total number of rooms not operational	279	129	408
Cost per room [VUV]			270,000
Total cost per damaged room [VUV]			**110,160,000**

As for overnight visitors from air arrivals, estimate loss of income from visitor spend was calculated based on expected visitor arrivals for March [taken from average for March arrivals from 2016-2019].

Loss in the cruise ship subsector amounted to an estimated VUV 122,173,387, which includes forgone tax revenue [wharfage and port dues] and expected expenditure[60] of cruise ship passengers who did not arrive during the period of disruption. Loss in the overnight tourist sector[61] is estimated at VUV 239,265,609. This aspect of the loss is attributed

[60] *Expected expenditure was calculated based on 2014 average spend pp for Port Vila and Mystery Island and best estimate of 85% rate of disembarkation as advised by Port Agent. Estimate spend is based on a 2014 Report by ADFAT, IFC and Carnival Australia on Assessment of Economic Impacts of Cruise Ships to Vanuatu*

[61] *Expected visitor spend calculation based on 2019 average spend for air arrival visitor per stay VUV161,625 [NZTRI Vanuatu-IVS-Annual-Report-Jan2019-Dec2019]*

to the tourism spend foregone as a result of no overnight tourist arrivals 7 days from time of cyclone until international flights were restored. No expenditure was noted in areas of risk reduction such as action to address water contamination, reduce temporary erosion and support temporary road repairs. Total loss in the sector amounted to an estimated VUV 361,438,996.

The Detailed Tourism Impact Assessment gave an overall estimate value of tourism businesses physical assets after the Tropical Cyclones at VUV 86,926,000 as opposed to VUV 936,947,510 prior to the TC Judy and Kevin. This was based on tourism operators' individual assessments.

Table 28: Estimated Loss on Private and Public sector (VUV)

Location	Expected visitor spend	Expected revenue from wharfage	Total cruise loss	Total air arrivals loss	Total cruise and air losses
Cruise arrivals Port Vila	93,909,700	19,477,782	113,387,482		
Cruise arrivals Mystery Island	6,427,360	2,358,545	8,785,905		
Air arrivals Port Vila	239,265,609			239,265,609	
Total	**339,602,669**	**21,836,327**	**122,173,387**	**239,265,609**	**361,438,996**

The Human Impact

According to the UNWTO, the tourism industry supports one in every 10 jobs, which can be seen as the main source of income to support individual's livelihoods. Jobs in Vanuatu's tourism sector include roles in hospitality operations, food and beverage, and the provision of tours and activities experiences. Indirectly the local handicraft market and transport service providers can also be considered as tourism services that would be affected in any disruption in the tourism sector.

A disruption in the Tourism sector would negatively impact the livelihoods of persons employed in the sector, as a result of loss of employment and loss of income, therefore putting pressure on households in being able to meet basic needs and impacting on the quality of people's lives. This was evident during COVID-19 border closures when the tourism industry came to a standstill. This human impact could further exacerbate an already hard situation, particularly for single parent households or single women in an industry that is largely dominated by women.

A positive impact can be that the event strengthens individual's resiliency and forces them to look beyond the tourism sector for other opportunities, and in the process develop new skills.

A potential response to such human impact would be to offer options of additional financial support to tourism businesses to either carry out immediate repairs for businesses to become operational again or to continue supporting staff on wages in the period of no operations, and in this process retain staff and mitigate the risks of no access to basic needs employees and their families.

Recovery

Recovery Needs

The majority of the accommodation businesses affected in the outer islands of Shefa province and on Tanna are island bungalows and guesthouses that were built using local materials but not built to the recommended standard to withstand tropical cyclone impacts. In addition to that, most operators do not have private funds to tap into for recovery

from disaster and there is no designated disaster fund to support the recovery of tourism operators in Vanuatu after a crisis. Having a Crisis Response Plan in place to outline actions that need to be taken as an immediate response, would benefit the industry in the event of a Crisis.

Another challenge faced by Tourism operators is the lack of insurance. This would go a long way to alleviate the cost of recovery that most operators are unable to meet as a result of no access to capital.

A significant component of recovery to be considered by the Tourism Sector is the need to 'build back better' and increase the Industry's level of resiliency to be able to withstand whatever form of hazards are encountered. Through rebuilding for resilience, the sector may be better equipped and respond differently and bounce back quicker than anticipated, unlike other sectors. These efforts can be implemented through the development of a Disaster Risk Management Plan for the sector. This in turn reduces the vulnerability of the tourism sector to natural hazards.

Recovery needs are estimated at a total of VUV 255,000,000. The order of prioritization of needs is also outlined and indicates that all actions be implemented in the short to medium term.

Table 29: Recovery Needs in Tourism (VUV)

Recovery intervention	Description	Priority level	Short term	Medium term	Long term	Total
Reconstruction of Damage to physical infrastructure	Repair physical damage to infrastructure immediately to get businesses ready in time for upcoming peak season	1	50,000,000			50,000,000
Banking loan facility / Soft term credit line for repair of those without insurance	Opportunity for business with no insurance, who have sustained major damages to obtain a loan to properly rebuild	2		200,000,000		200,000,000
Capacity building in resilience management, financial literacy, strengthen CIS capacity, and other relevant skills to support the transition into resiliency	Build capacity to strengthen resiliency and reduce sector's vulnerability to natural hazards	3		5,000,000		5,000,000
Total			**50,000,000**	**205,000,000**	**0**	**255,000,000**

Recovery Strategy

Based on the tourism sector's experience from past Tropical Cyclones and the increasing frequency and intensities at which they happen, there needs to be considerable thought put into the below recommendations:

- Government to consider a dedicated budget line for Immediate Disaster Risk and Crisis Response to foster priority support towards recovery on an annual basis, through the recurrent departmental budget support.
- Develop a standard Tourism Crisis Response and Recovery Plan and identify key priorities areas of support, depending on the nature of the crisis (i.e. Health Crisis, Natural Disaster Crisis, Social Unrest etc.).
- Better coordination with Accommodation sub-sectors, particularly Island Bungalows in the outer islands [majority family-owned / operated] for construction of cyclone reinforced structures

- Capacity development of small tourism businesses to encourage better business management and being able to bounce back without requiring immense government support, increasing business resiliency.
- Work in close collaboration with aviation and maritime transportation partners and agencies, to facilitate the return of tourism, both locally and internationally.
- Develop the long-term sustainability and product diversification strategy to minimize the impact of the crisis on the tourism sector.

Implementation of the above-mentioned recommendations will require on-going collaboration with existing support network of key Government agencies, Development Partners, and non-government organizations for these outcomes to be achieved.

SOCIAL SECTOR

Culture

Pre-disaster Baseline Context

Vanuatu's "ethnic, linguistic and cultural diversity", its "struggle for freedom", and its "traditional Melanesian values, faith in God and Christian principles" are enshrined in its Constitution. The country is recognised as the most linguistically diverse and one of the most culturally diverse countries in the world. Dances, ceremonies, status and systems of authority, artistic styles, animal and crop husbandry vary from province to province, and even from island to island or within an island. These cultural traditions are referred to in Vanuatu as *kastom* (or custom).

The importance to Vanuatu's many cultures of *kastom* knowledge, religious traditions, museums, community gathering sites, and traditional learning cannot be overstated. Traditional *nakamal*, buildings that serve as centres for community governance, also act as cyclone shelters, and as schools for transmitting customary knowledge. The people of Vanuatu have faced a changing environment for centuries, and monitoring and adapting to these changes is a fundamental part of their heritage.

Cultural heritage is the cornerstone of community identity in Vanuatu and has a critical role to play in maintaining social cohesion and reducing disaster risk. Two national government institutions do important work on behalf of the nation in safeguarding the cultural heritage of Vanuatu. These are the Vanuatu Cultural Centre (VCC) and the Malvatumauri National Council of Chiefs.

The VCC works under the authority of the Vanuatu National Cultural Council (VNCC), which is established by the Vanuatu National Cultural Council Act. This Act defines roles for and mandates the VCC to act on behalf of the VNCC to protect, promote, and preserve the cultural heritage of Vanuatu. The VCC is also responsible for the National Heritage Register, which implements the Preservation of Sites and Artifacts Act (CAP39), addressing sites and artifacts of cultural, historical, archaeological and artistic value.

The Malvatumauri National Council of Chiefs is a formal advisory body of chiefs established under the National Council of Chiefs Act No. 23 of 2006 and recognized by the Constitution. The Council of Chiefs works to strengthen, maintain, promote and ensure the integrity of the traditional governing systems of Vanuatu.

Disaster Effects

Summary of Damage and Loss

Severe cyclones, such as TC Judy and TC Kevin, and before them TC Harold (2020) and TC Pam (2015), directly threaten the culture sector through impacts to 1) cultural sites; 2) cultural institutions; 3) and community livelihoods. Impacts to key sites and cultural resources can limit or threaten the continued practice of *kastom*, but *kastom* preparation for and management of cyclone activity usually ensures that people, including significant cultural bearers, survive most cyclones.

TC Judy and TC Kevin have impacted the cultural sector through direct damage to cultural sites and cultural institutions, as well as broader impacts to community livelihoods, resulting in constraints on cultural production (e.g. handicrafts) and performance (e.g. ceremonies, cultural tourism). At this stage in the aftermath of TC Judy and TC Kevin, and in the national programme of cultural development, our ability to identify, assess and quantify damage and loss is limited largely to cultural sites and cultural centres in priority areas, including Efate and its nearshore islands, and Tanna.

Total damage and loss for the culture sector has been estimated to be VUV 5,199,175. Damage and loss at each of these key sites and institutions was identified and quantified through the Rapid Technical Assessment coordinated by the NDMO, and reporting by the cultural site managers and cultural institutions themselves.

Table 30: Damage and Loss in the Culture Sector (VUV)

Province	Island	Area Council	Sites	Damage	Loss	Total
Shefa	Efate	Port Vila	Vanuatu Cultural Centre	1,166,500	799,000	1,965,500
Shefa	Efate	Port Vila	Vanuatu National Library and National Archives	791,885	836,790	1,628,675
Tafea	Tanna	West Tanna	Nikoletan Council of Chiefs and Tafea Cultural Centre (TKS)	1,500,000		1,500,000
Shefa	Lelepa / Retoka	Malorua	Chief Roi Mata's Domain	105,000		105,000
TOTAL				**3,563,385**	**1,635,790**	**5,199,175**

Note: losses refer to higher operating cost + revenue loss.

Given constraints on access and time, and the previous experience of TC Pam and TC Harold, the priority focus for recovery and reconstruction in the cultural sector is on the key national and provincial cultural institutions that have been directly affected. These institutions play a central role in safeguarding and promoting *kastom* for the country as a whole, and their full recovery will be critical to the management and coordination of cultural safeguarding initiatives more widely, particularly through the national *Filwoka* (cultural fieldworker) network, which plans to resume its annual meetings at the VCC in September 2023. These key institutions include:

- Vanuatu National Museum and Cultural Centre / *Kaljoral Senta*, Port Vila, Efate (VCC / VKS): The Vanuatu Cultural Centre is the nation's leading cultural institution, housing the country's cultural heritage in its collections, leading the implementation of cultural policy, and serving as the forum for engagement with international partners as well as communities and cultural practitioners across Vanuatu. The damage included the VCC roof and entrance, and loss of computer equipment due to rain damage.

- Vanuatu National Library and National Archives, Port Vila, Efate: These are housed together within a single building. Together, they care for and make available the nation's key library and archival treasures and resources. Despite considerable preparation prior to the arrival of TC Judy and TC Kevin, ceilings, windows, electrical equipment including computers and books and journals from the collections were damaged; flooding and humidity also impacted on the building and its collections.

- The Nikoletan Island Council of Chiefs and Tafea Cultural Center / *Kaljoral Senta*, Lenakel, Tanna (TKS): These are one of the leading provincial cultural and custom governance centres in Vanuatu. The complex of buildings houses the Nikoletan Island Councils of Chiefs, as well as the Tafea province cultural centre (TKS) and its collections and staff. All of the buildings sustained damage, to roofing, amenities, ceilings, equipment and furniture. Loss was sustained to stationery, computers and camera equipment.

- Chief Roi Mata's Domain World Heritage site, Lelepa / Mangaliliu, Efate (CRMD): this is Vanuatu's only UNESCO World Heritage site. The site consists of a cultural landscape linking the islands of Retoka and Lelepa to the adjacent Efate mainland, on lands owned entirely by the Lelepa and Mangaliliu communities, who care for and manage the site through the Lelema World Heritage Committee. Structural features of the site include the ancient settlement of Mangaasi, the chamber cave of Feles, and the burial site at Retoka Island, as well as infrastructure associated with the community-owned Roi Mata Cultural Tours business. Damage and loss at CRMD included damage to the shoreline (the sea moving further inland and digging up the coastline) and fallen trees that had to be cleared. The loss incurred from clearing the bush amounted to VUV 105,000 spent on fuel for clearing the fallen trees and branches, food for the working group and labour for the workers.

The Human Impact

Cyclones Kevin and Judy have had and will continue to have a sustained impact on the individuals and communities who are critical to the Culture Sector, and on their ability to contribute to disaster recovery. These impacts are experienced in several different ways that overlap and compound each other, through: a) the temporary loss through injury or

disease of culture bearers and practitioners; b) the loss of housing and resulting dislocation of culture bearers and practitioners; c) the loss of access to places and spaces essential for the performance and practice of culture, such as damaged nakamals, churches and other community buildings, or tourism sites; d) loss of material resources, or access to them, essential for the performance and practice of culture, such as pandanus (*natangura*) thatch for mat weaving and house construction; e) impact on markets for cultural production, including impact on supply chains, reduced tourism, disruption to local markets; and f) diversion from cultural practices and performances due to loss of market income, combined with the investments of cash and labour required to re-establish subsistence and cash-crop gardens.

Recovery Needs

Total recovery needs are estimated to be VUV 89 million. The cultural sector focused on the following two major aspects of recovery:

1) Repair and reconstruction of Traditional infrastructure: This would include museums, meeting houses (nakamals), cultural sites, etc. These structures would help to promote and preserve the traditional practices which can assist to mitigate disasters. For example, the Nikoletan meeting house in Tanna is where the chiefs come to meet and discuss traditional issues whether it be land boundaries, or an upcoming cultural event such as the Toka Dance, etc.

2) Strengthening of Traditional community knowledge and practices: This would involve research and revival of cultural traditions such as food preservation methods, cyclone preparedness through traditional weather forecasting, etc.

Table 31: Total Recovery Needs in the Culture Sector (VUV)

Recovery Needs	Intervention	Short Term	Medium Term	Long term	Total
Repair and reconstruction of Traditional infrastructure	Repair of the National Museum and Vanuatu Cultural Centre Building - Renovation to strengthen the weakening structure to safeguard the artifacts, equipment, cultural heritage of Vanuatu	1,785,500	6,500,000	15,000,000	23,285,500
	Repair of the Vanuatu National Archives and Library and the development of the Digital library project (Digitize the library collection ensure that books, journals, information etc… are safeguarded).	1,793,205	4,500,000	10,000,000	16,293,205
	Repair of the Vanuatu Cultural Centre Farea	1,074,000	2,000,000	5,000,000	8,074,000
	Tafea Cultural Centre and Nikoletan Council of Chiefs	1,500,000			1,500,000
Strengthening of Traditional community knowledge and practices	Siloa Slow Food initiatives - Festivals, revival/exchange activities that promote TRADITIONAL aspect of agriculture	2,000,000	4,000,000	10,000,000	16,000,000
	Research and development of Cultural resilience program/revival of cultural resilience practices through the VCC Fieldworkers network (to meet annually to discuss research and carry out revival of cultural practice programmes and workshops to discuss different cultural traditions).	4,000,000	8,000,000	12,000,000	24,000,000
Total		**12,152,705**	**25,000,000**	**52,000,000**	**89,152,705**

Recovery Strategy

The recovery strategy proposed would involve the following:

Immediate – Focus and prioritize immediate recovery to ensure that services are delivered. This would include the repairing damage to infrastructure, reviving existing fieldworker's network for the research and development of mitigation strategies through the revival of knowledge, skills and expressions of culture.

Mid-term – Upgrade service delivery, improve systems, upskill cultural practitioners through workshops, local and national cultural events to promote exchange of traditional knowledge and skills, renovate and expand existing cultural institutions to allow more service delivery to a wider community/group of people.

Long-term – Establish new networks, expanding existing networks, resource allocation such as cultural material/plant source establishment (Cultural inventory/mapping) for a wider and more accurate range of cultural baseline data. Construction and establishment of cultural institutions to promote and preserve culture but also to adapt in times of disasters, such as community hall becoming and evacuation centre, etc.

Education

Pre-disaster Baseline Context

More than 50% of Vanuatu's population is of schooling age, which influences and places significant pressure on the education system. Primary provision continues to account for the larger proportion (59%) of students in the system in a given year. There is slightly less participation in the pre-school and the secondary school components. A large proportion of pupils are recorded as dropping out or leaving the education system in the junior secondary level.

The establishment of the current Vanuatu Education and Training Sector Strategy (VETSS) 2020-2030, provides a coherent framework that supports the policy directives of the government and is aligned to support the National Sustainable Development Plan 2016 to 2030. School Improvement Plans (SIPs) and Provincial Plans are a focus for the Ministry and the VETSS 2020-30. The VETSS supports the overall decentralization process and the development of SIPS and Provincial Plans are a core product of that support.

The Formal Education Structure comprises the following categories:
- Early Childhood Care and Education (Ages 4 and 5),
- Primary School Education Years 1 to 6 (Ages 6 to 11),
- Junior Secondary School Years7 to 10 (Ages 12 to 15),
- Senior Secondary School Years 11 to 13 (Ages 16 to 18).

Post-Secondary Education and Training (PSET) (Age 19 and over) programmes include all training activities that occurs outside the formal public and private schooling system. The programme providers range from rural training centres to technical colleges and universities.

Education and training are by far one of the most far-reaching services of the government of Vanuatu. The education and training system consist of the Early Childhood Care & Education (ECCE) centres, the Primary (PRI) Schools, the Secondary (SEC) Schools and the Post-Secondary Education Training (PSET) institutions. The table below shows the number of schools by school types (ECCE/PRI/SEC & PSET) that are scattered throughout the six provinces in Vanuatu in 2021.

Table 32: Number of schools and PSET providers by Sector.

School Type	2019	2020	2021
ECCE	863	876	779
Primary School (1-6)	479	482	461
Secondary School (7+)	111	114	110
PSET	-	-	37
Total	1453	1472	1387

Source: MoET statistical report 2021

Enrolment in the formal schooling sector (ECCE/PRI/SEC) has been on the rise over the past three to four years, and the trend is expected to continue in the years to come.

Table 33: Enrolment by school type and by province (2019 – 2021)

Year	School Type	Torba	Sanma	Penama	Malampa	Shefa	Tafea
2019	ECCE	838	3,870	1,832	2,450	4,700	2,755
	PRI	2,084	12,296	5,976	8,693	15,015	10,756
	SEC	511	5,238	1,781	2,974	7,854	3,021
2020	ECCE	682	3,553	1,955	2,373	5,001	2,689
	PRI	2,059	12,320	6,471	8,589	16,452	10,742
	SEC	539	5,270	1,977	3,072	9,688	3,381
2021	ECCE	654	3,728	2,060	2,281	4,981	2,867
	PRI	2,021	12,316	6,862	8,614	16,477	10,782
	SEC	635	5,698	2,370	3,306	10,148	3,563

Source: Educational Statistics – Basic tables of 2021

The Education and Training Sector is also one of the largest government services and employer in Vanuatu. The Education Sector has between 2,500 to 3,200 employees (2019). The difference throughout the year is explained by the contract awards of the ECCE teachers for the period July-December.

Education is funded by parents and communities, churches, and the government with support from donor partners. Christian values have a strong presence in most communities. The national budget increased so much over the years that even a drop in percentage of the proportion to the MoET budget means a greater value. The MoET recurrent budget was VUV 9.4 billion in 2022.

Disaster Effects

Summary of Damage and Loss

The level of damage caused by the twin cyclones on education infrastructure, resources and equipment was extensive. However, in this sector assessment, the focus was narrowed to the classroom facilities (ECCE/PRI/SEC & PSET), the toilet/hand washing facilities (for ECCE/PRI/SEC &PSET), and the learning resources (particularly for PRI & SEC). Assessments were conducted across the six provinces, in 779 ECCE centres, 461 primary schools, 110 secondary schools and 37 PSET centres.

Overall, the disaster effect on the education sector has been estimated to be VUV 3,446,660,465, reflecting the sum of both damage and losses, as summarized in the tables below by type of education facility and by province.

Table 34: Total Disaster effect by school type

Subsector	Damage (VUV)	TC Judy & Kevin Losses (VUV)	Total effects (VUV)	Private (%)	Public (%)
ECCE	224,112,101	163,921,991	388,034,092	40%	60%
Primary	969,955,394	900,686,822	1,870,642,217	5%	95%
Secondary	401,819,436	605,945,018	1,007,764,454	5%	95%
PSET	88,757,710	91,461,991	180,219,701	80%	20%
Total	**1,684,644,642**	**1,762,015,823**	**3,446,660,465**	**20%**	**80%**

Table 35: Total Disaster effect by province

Province	Damage (VUV)	TC Judy & Kevin Losses (VUV)	Total effects (VUV)	Private (%)	Public (%)
Torba	85,498,314	114,039,710	199,538,024	2%	98%
Sanma	134,479,938	151,701,153	286,181,091	5%	95%
Penama	149,592,151	189,773,278	339,365,429	5%	95%
Malampa	199,906,931	208,790,640	408,697,571	5%	95%
Shefa	731,302,896	721,430,564	1,452,733,461	10%	90%
Torba	383,864,412	376,280,476	760,144,889	5%	95%
Sub-Total	**1,684,644,642**	**1,762,015,823**	**3,446,660,465**	**20%**	**20%**

Losses are usually the unbudgeted cost that is associated cost of repairs, resources reprinting, response logistics and so forth. The analysis of losses in this section is focused on permanent classrooms and toilet/hand wash basin repairs, learning resource reprinting and the associated cost of response.

The Ministry of Education and Training's approach to classroom repair is that minor and major repair works will be carried out to damaged permanent classroom or engineered classrooms only. Therefore the analysis of the classroom loss is focus on the repair cost of the permanent classroom facilities (in ECCE, PRI, SEC and PSET).

The permanent toilet/hand was basin damage is also considered as a loss because the repairs are not budgeted for. Similarly, to the classroom, the value of loss for the toilet/hand wash basin is focused on the cost of the permanent toilet/hand wash basin repairs.

The Human Impact

Most of the schools (in the most affected provinces of Malampa, Shefa and Tafea) were closed for almost a month. Many schools in remote parts of these three provinces were unreachable in the first 2 weeks, due to the road conditions and also the unavailability of mobile networks.

Home schooling has been regarded as an option to keep the children's focus on his/her education, during the aftermath of the twin cyclones. However, not all schools have been equipped with home-schooling modules, and the absence of mobile networks due to power cuts and damaged antennas make home schooling difficult. Consequently, students who are not supported by the parents at home could easily lose concentration and may end up involved in other unwanted social activities.

Delays in recovery could result in higher demand for more basic needs. Given the damage, households need shelter, water and food. Shelter becomes the main priority for education to consider because it can provide schooling for the children in remote areas. For example, the delay to provide shelter in Shefa and Tafea could affect student learning. School who children study in temporary learning spaces such as tents, tarpaulin or constructed shelter built with local material could be impacted especially during cold and rainy weather.

Risks and Vulnerabilities

Given Vanuatu's exposure to multiple hazards, disaster risk reduction in the education sector should be a core component of the Ministry's planning. It is important to take stock of lessons learnt on the past and present disasters, in order to plan and prepare for possible disasters that may occur in the future. Disaster preparedness and the capacity to adapt to such situations are core to the ministry's implementation plan.

Considering past and present disasters, the risk and vulnerability of the recovery programme is high because of the following:

- Many schools are not in locations that are safe from cyclones and other natural hazards and this exposes them directly or indirectly to disaster risk.
- Building standards is another contributing factor that increases vulnerability. Poor construction make schools more vulnerable or exposed to disaster risk than the cyclone proof buildings. The MoET recovery program focuses on anti-disaster building code (BBB) in order to reduce risk of classroom damages in the future.
- Sea level rise is also a threat to the education sector because this will lead in the future to the displacement or the movement of people and the relocation of some schools in coastal areas to safer locations. The movement or relocation of schools will come at a cost for the MoET and the government.

Another risk that may affect the sector during the recovery process is the socio-political risk which means some recovery fund or projects may not reach their objectives due to:

- Political interference,
- The diversion of funds to another purpose, and
- The cancelation of donor funding in some recovery projects as experienced in the past.

The timeframe for recovery may have some impact on the sector's ability to operate again. Many schools affected by TC Judy & Kevin are waiting the implementation of the recovery program so that their school may fully function again.

Recovery

Recovery Needs

The recovery objectives of the Ministry of Education with regards to TC Judy and Kevin include the following:

1. To repair and rebuild damaged school infrastructure to improve access to education;
2. To ensure damaged learning materials in the schools are re-printed, purchased and re-distributed to schools to improve learning; and
3. To Build Back Better by using appropriate structural building designs, to increase resilience.

The total recovery needs of the MoET is estimated to be VUV 5,823,995,950, as summarized in the tables below. The proposed priority early recovery strategies were indicated by the respective government units, divisions and directorate within the ministry of education. The units are yet to provide us with the details of these strategies.

Table 36: Recovery Needs for the Education Sector (VUV)

Recovery Needs (interventions)	Short Term	Medium Term	Long Term	Total
Early recovery	1,381,695,950			1,381,695,950
Reconstruction			4,442,300,000	4,442,300,000
Total	**1,381,695,950**	**-**	**4,442,300,000**	**5,823,995,950**

Table 37: Detailed reconstruction needs by province (VUV)

Reconstruction Needs	Torba	Sanma	Penama	Malampa	Shefa	Tafea	Total
Permanent Classroom Repair Cost	67,100,000	103,300,000	140,500,000	159,400,000	664,000,000	319,900,000	***1,454,200,000***
Parmanent Toilet Repair Cost	160,000	1,100,000	2,120,000	1,420,000	7,040,000	8,060,000	***19,900,000***
New Permanent Classroom Cost	342,000,000	420,000,000	138,000,000	575,000,000	743,000,000	681,000,000	***2,899,000,000***
New Permanent Toilet Cost	4,600,000	12,200,000	3,400,000	7,400,000	14,000,000	27,600,000	***69,200,000***
Total Reconstruction Cost	***413,860,000***	***536,600,000***	***284,020,000***	***743,220,000***	***1,428,040,000***	***1,036,560,000***	4,442,300,000

Table 38: Detailed reconstruction needs by sub-sector (VUV)

Reconstruction Needs	ECCE	PRI	SEC	PSET	Total
Permanent Classroom Repair Cost	158,400,000	836,000,000	374,000,000	85,800,000	***1,454,200,000***
Parmanent Toilet Repair Cost	1,560,000	10,440,000	6,200,000	1,700,000	***19,900,000***
New Permanent Classroom Cost	952,000,000	1,683,000,000	253,000,000	11,000,000	***2,899,000,000***
New Permanent Toilet Cost	27,400,000	36,200,000	4,600,000	1,000,000	***69,200,000***
Total Reconstruction Cost	**1,139,360,000**	**2,565,640,000**	**637,800,000**	**99,500,000**	**4,442,300,000**

The reconstruction needs of the Ministry of Education and Training include the repairs to permanent classroom facilities (ECCE, PRI, SEC & PSET), to permanent toilet (ECCE, PRI, SEC & PSET), to the new permanent classrooms (ECCE, PRI, SEC & PSET), and the new permanent toilets (ECCE, PRI, SEC, & PSET). The MoET intends to only repair all damage permanent classrooms. The MoET in its approach to "*Building Back Better*" intends to replace all damaged semi-permanent and traditional classrooms (either minor or major) with a new permanent classroom.

Health

Pre-disaster Baseline Context

There are 142 official government health facilities excluding aid posts and private clinics comprising 6 hospitals, 37 health centres and 99 dispensaries. A Community Health post is a community run facility managed outside the

government system. Most clinics are run by private practitioners. The total number of both government owned facilities, community aid posts and private clinics is 348.

The Ministry of Health (MoH) has been facing shortages of human resources for some time prior to TC Judy and Kevin with 954 staff. Many health facilities were in poor structural condition. The table below shows the distribution of health facilities in Vanuatu prior to the twin cyclones.

Healthcare services are implemented through a decentralized health system that caters to integrated health care at the primary and secondary care levels. The administration and management of human resources, finance, and drugs and medical supplies are centralized. The private sector's provision of healthcare services consists mainly of outpatient services through general practitioners and the sale of medicine by retail pharmacies. The health sector assessment in this chapter does not include private sector data.

Table 39: Key Health Baseline Indicators

Health Indicators	Baseline
Number of skilled health workers per 10,000 population	15.7 (2020)
Deliveries with skilled birth attendants (%)	91.9% (2020)
Malaria annual parasitic incidence (API)	1.1/1000 (2022)
TB Incidence per 100,000 population	41/100,000: 93 cases (2020)
Prevalence of obesity amongst the adult population	23.5%" WHO GHO estimates
Prevalence of high blood pressure in adult population	"2011: 29% (NCD
Prevalence of stunting	"2013: 28.5%
people with access to improved water supply	2019: 92%
People with access to improved sanitation facilities	2019: 69%
Proportion of infants 0-5 months exclusively breast-fed	2013: 73%
# of maternal deaths per year	MMR: 72 (2017) (UNICEF, 2019) # deaths: 6 (2017) estimate (UNICEF, 2019)
U5MR: # deaths in children under 5 years of age/1000 live births/year	25.9 (WHO 2019)
% of facilities reporting no stock outs of family planning commodities in the previous 6 months	N/A
# live births to women aged 15-19 years/1,000 women of the same age	census data 45/1000 (urban 31, rural 50)
# GBV survivors presenting to health facilities within 48 hours of the incident/province/year	N/A
% of girls aged 9-15 fully HPV vaccinated/ province/year	N/A
Access to RDP facilities	11% HFRSA (2021)
Essential Health services access	60%
Disability requiring wheelchair access to a HF examination room	4% (HFRSA (2021)

In Vanuatu, a huge proportion of Health Care Facilities (HCFs) are struggling to provide quality healthcare services due to limited WASH services. In 2020, the Health Facility Readiness and Service Availability (HFRSA) survey shows that 71.1 % of HCFs had basic access to water service and 8.2 % of HCFs had access to basic sanitation service. Twenty-seven percent (27%) of HCFs had access to basic hygiene services with functional hand hygiene facilities available at one or more points of care and within 5 meters of toilets. About 13.2% of HCFs have access to basic waste management services. Only 11.9 % of HCFs have basic environmental cleaning services. WASH was greatly affected by TC Judy and Kevin.

Disaster Effects

Summary of Damage and Loss

This PDNA focused on priority affected areas, P1 and P2, covering the whole of Tafea and Shefa provinces and the Area Councils of South-West Malekula, South-East Ambrym and Paama in Malampa Province. Health facility assessments were prioritized in hospitals, health centres and dispensaries in provinces which sustained the most damage. The results are compiled for 58 health facilities in 3 provinces, Shefa (44), Tafea (12), Malampa (2). Over ⅓ of health facilities are moderately or severely damaged or have moderately or severely damaged medical equipment. Water supply and quality is an issue in approximately half of the facilities assessed and non-functioning toilets in about ⅔ of health facilities.

Tropical Cyclones Judy and Kevin caused tremendous damage and losses in the health sector especially in Shefa, Tafea and parts of Malampa Province. The total damage and loss estimated for the health sector is VUV 1,446,436,228.

Table 40: Total Damage and Loss for the Sector by Type of Facility (VUV)

Subsector	Damage	Loss	Total effects	Private (%)	Public (%)
Administration	331,150,000		331,150,000		100
Hospitals	108,000,000		108,000,000	0	100
Health Centres	311,608,718	450,000	312,058,718	0	100
Dispensaries	400,776,170	60,000	400,836,170	0	100
Aid posts	78,700,000		78,700,000	0	100
National		215,691,340	215,691,340		100
Total	1,230,234,888	216,201,340	1,446,436,228	0	100

Note: losses refer to revenue loss and additional expenditure

Damage to infrastructure was VUV 1,230,234,888, mostly in Shefa and Tafea provinces. In Malampa, only two facilities reported minor damages. An estimated 59 health facilities sustained some level of damage due to TC Judy/Kevin, with all of them prioritized by the government for immediate repair works. Infrastructure damage costs include damage related to water, power and telecommunications.

The twin cyclones caused significant damage to WASH services in HCFs, compromising the quality of health care service delivery in the affected areas. WASH in HCFs is an essential service to keep them operational. Where WASH infrastructure was damaged, essential healthcare services were disrupted and those affected had to travel long distances to access basic health services. The Health Cluster assessed 145 health facilities in three affected provinces. Of the 145 HCFs, 65% reported non-functioning toilets, 53% reported contamination in the water source, and 40% of the facilities reported damage to the water supply systems. The total estimated costs of WASH in HCF infrastructure damage caused by the twin cyclones was estimated at VUV 43,000,000. Please note the cost of hygiene facilities and cleaning supplies were not included in the cost analysis as not captured in the assessment.

The overall count of human resources in priority areas remains as per pre-disaster levels, with the addition of short term surge support in the response period through the re-engagement of retirees and professionals coming from neighbouring countries. No major damage was reported to Provincial health offices. However, the personnel of the MoH and Provincial Health Offices have dedicated some time to monitoring the situation and to participate in health cluster meetings.

Table 41: Total Damage and Loss for the Sector by Province (VUV)

Province	Damage	Loss	Total effects	Private (%)	Public (%)
National		215,691,340	215,691,340	0	100
Malampa	64,700,000	150,000	64,850,000	0	100
Shefa	190,179,593	360,000	190,539	0	100
Tafea	975,355,295	-	975,355,295	0	100
Total	**1,230,234,888**	**216,201,340**	**1,446,436,278**	**0**	**100**

Total losses for the health sector were estimated to be VUV 216,201,340. Loss incurred include psychosocial support and psychological first aid provided by development partners, NGOs and MoH to affected populations. Retired nurses were reengaged and international health providers including midwives, nurses, medics and mental health specialists were brought in for short term support to assist medical teams that provided immediate medical care to affected communities in the aftermath of TC Judy/Kevin. Loss include: costs associated with additional outreach activities conducted following Judy/Kevin; and increased operational costs associated with such activities that were calculated as increased expenditure by the health sector during the disaster emergency period. Approximately VUV 215,691,340 was used by MoH to purchase additional fuel, drugs and supplies and additional service delivery costs.

The Human Impact

The human impacts from damage and losses to health care services are largely linked to increased health risks due to disruptions to health services. In addition to injuries sustained from the direct impact of the cyclones, the main human impacts include:

- 185,000 people faced disruptions in essential healthcare services. This includes about 80,000 children under the age of 8, an estimated 46,250 women of reproductive age and estimated 3,450 currently pregnant women. Interruptions to family planning services is likely to have increased the early pregnancy numbers, therefore leading to increased need for antenatal and child birth services while services remain disrupted. The same population may also face disruptions in access to clean water, proper hygiene & sanitation and inadequate healthy diets and living conditions due to displacement and loss of livelihoods, which has additional impacts on health.
- Disruptions to essential services such as Maternal and Child Health (MCH), immunization, and health and nutrition promotion. This includes about 26,000 young children under the age 5 (13,508 in Shefa province, 7,270 in Tafea Province, and 5,653 in Malampa province). As a result, morbidity and mortality rates for under-5 children are likely to increase, with higher risks of acute respiratory infections, diarrheal disease, malaria, measles, newborn causes of death, neglected tropical diseases, and severe malnutrition.
- Water and food-borne illnesses: disruptions to water and sanitation systems have led to contamination of drinking water and an increased risk of water-borne illnesses. There were reports of Watery diarrhoea cases for several facilities including the main referral hospital and Evacuation centres.
- Vector-borne diseases: the cyclones created ideal breeding conditions for mosquitoes and other disease-carrying insects, leading to a higher risk of vector-borne diseases (e.g., malaria and dengue).
- Mental health: the twin cyclones caused significant psychological distress, especially for those who experienced trauma or lost loved ones. The stress has also increased the risk of mental health conditions such as anxiety and depression.
- Healthcare system disruption: damage to healthcare facilities disrupted the delivery of health services, making it more difficult for people to access the care they need.
- Limited access and affordability of a healthy quantity and range of food consumed by children, pregnant and lactating women and persons with pre-existing conditions and disabilities. At times there may be sufficient foodstuffs being grown, but a focus on selling produce for economic purposes for rebuilding, or prioritisation of adult male family members can result in continued nutritional deficit. This will further impact health status through malnutrition, vulnerability to disease and complications of pregnancy and childbirth.
- With the costs to attend health facilities as a significant barrier after loss of livelihoods, families may resort to traditional, locally available methods to treat health concerns. This may exacerbate health issues, delay appropriate care, and worsen outcomes. This is particularly significant among youth, with expected increases in adolescent pregnancies, kava, drug and alcohol use as a coping mechanism, and mental health challenges. In addition, persons with a disability have even higher barriers to care, with treatable health issues likely to go unaddressed or worsen significantly.
- In order to reach health services, some families may borrow or get into debt, leading to changes in choices available for healthy living, impacting future health.
- With the stress caused by the disaster and rebuilding, rates of gender-based violence are known to increase, including against children and persons with a disability. The lack of access to emergency contraception and appropriate response mechanisms within the health service can lead to pregnancy as a result of rape, psychosocial challenges, mother-infant bonding issues, and subsequent poor child health.

Recovery Needs

This section describes the priority short-medium- and long-term recovery and reconstruction needs with an estimate of the resources required to 'Build Back Better from multi-hazards' perspective. The recovery needs are based on assessment and discussions with MoH, while information from the health cluster and development partners such as WHO, UNICEF and UNFPA supported the PDNA process including estimating damage/losses and recovery needs and priorities.

It is estimated that the health sector's recovery will require VUV 3,198,694,994 to implement the planned activities, mostly in the short to medium term.

Table 42: Health Sector Recovery Needs (VUV)

Intervention (Project or Activity)	Province	Recovery Costs			Total
		Short-term	Med-term	Long-term	
Infrastructure		130,000,000	613,760,816	603,760,816	1,347,521,632
Review health facility standards to include DRR component	All	-	10,000,000	10,000,000	20,000,000
Comprehensive audit of all health care facilities in Vanuatu for DRR, climate resilience and BBB with a costed implementation plan	All	-	20,000,000	10,000,000	30,000,000
Build back moderately/severely damaged hospitals with sufficient space according to coverage and the Role Delineation Policy	PA 1 &2	130,000,000	583,760,816	583,760,816	1,297,521,632
Medical equipment and cold chain		100,000,000	-	-	100,000,000
Repair and replacement of damaged cold chain and medical equipment's	PA 1 &2	100,000,000			100,000,000
Human Resources for health		556,830,681	566,830,681		1,123,661,362
Capacity building in the risk assessment, prevention, identification and treatment of health consequences of an emergency, with a focus on medium and long term impacts.	All		10,000,000		10,000,000
Meet RDP minimum HR levels in all facilities and increase the midwifery workforce in health centres in priority areas to ensure 24/7 coverage, inclusive of training national midwives, relocation and international recruitment	PA 1 &2	556,830,681	556,830,681		1,113,661,362
Health care services		90,000,000	114,512,000	65,000,000	269,512,000
Continued surveillance & public health programming	PA 1 &2	10,000,000	10,000,000	10,000,000	30,000,000
Environmental health /community engagement/ health promotion	PA 1 &2	10,000,000	10,000,000	10,000,000	30,000,000
Mental health /psychosocial support	PA 1 &2	10,000,000	10,000,000	10,000,000	30,000,000
Strengthen community surveillance for communicable diseases	PA 1 &2	10,000,000	10,000,000	5,000,000	25,000,000

Intervention (Project or Activity)	Province	Recovery Costs			Total
		Short-term	Med-term	Long-term	
Scale up community and outreach program for non-communicable diseases	PA 1 &2	10,000,000	10,000,000	5,000,000	25,000,000
Scale up nutrition services	PA 1 &2				-
Health interventions and outreach services inclusive of ANC, PNC, FP, child health, immunisation, child and maternal nutrition, GBV and CMR services, incorporating remote health advice/telemedicine	PA 1 &2	30,000,000	10,000,000	10,000,000	50,000,000
Establishment of maternity waiting homes	PA 1 &2		10,000,000	10,000,000	20,000,000
Outreach of Dental care including school dental promotion programmes	PA 1 &2	10,000,000	10,000,000	5,000,000	25,000,000
Undertake a health facility readiness and service availability assessment	All		34,512,000		34,512,000
WASH in health care facilities		58,000,000	125,000,000	175,000,000	358,000,000
Repair/rehabilitation and maintenance of WASH services in healthcare facilities	PA 1 &2	43,000,000	80,000,000	120,000,000	243,000,000
Undertake detailed assessment and audit of WASH services in healthcare facilities	PA 1 &2	15,000,000	35,000,000	45,000,000	95,000,000
Scale up menstrual hygiene services	PA 1 &2		10,000,000	10,000,000	20,000,000
Total		**934,830,681**	**1,420,103,497**	**843,760,816**	**3,198,694,994**

Recovery Strategy

The following are the main recommendations for recovery implementation:

- Policy and regulatory framework: The Health Policies, Role delineation Policy, and, correspondingly, the Vanuatu Health Sector Strategy 2021-2030, may need to be reviewed and updated to addressing disaster risk management more comprehensively. The MoH should adopt an evidence-based human centred approach to health sector risk reduction, putting women's and children's safety and wellbeing at the centre of national, sub-national and local levels efforts.
- Knowledge management: Government of Vanuatu, development agencies and regional bodies have to increase prioritisation, funding and focus on understanding the impacts of disasters on health, risk reduction, preparedness and response for the health sector. Such studies can identify policy, implementation, data and knowledge gaps that will provide an evidence base to inform program and advocacy strategies.
- Institutional capacity building: building capacities to increase disaster risk management of health professionals through the assessment of risks and vulnerability conditions of all health facilities (to multi-hazards), the preparation of disaster risk management plans and safety plans, training of health care workers, admin staff, communities, as well as strengthening MoH and Provincial Health Offices in disaster risk management. This includes investing in human resources, through pre-service training and international recruitment schemes.
- Partnerships: strengthening partnerships with other Central Government institutions, Provincial Governments, UN agencies and specialized NGOs.
- Financing: Increase resource mobilization to support the implementation of the recovery plan and building resilience strategy with Government, donors and other multilateral agencies

- Articulate the health sector recovery intervention to other sectors, such as WASH, Education, Human Impact, and Infrastructure. Particular emphasis should be placed to the construction of climate resilient health facilities to minimize impact and enhance continuity of health care services during emergencies.
- Monitoring and evaluation: closely monitoring of the implementation of the strategy, monitor standards and regulations for Build Back better and comply environmental and social safeguards, accountability of affected populations
- Develop an emergency response and recovery preparedness and assessment mechanism at the MoH along with a national database to track vital data on the impact of disasters on health care services, damage & losses and recovery needs, at provincial and national levels.

The Ministry of Health will lead the planned activities using its own resources in collaboration with other line ministries, UN agencies, NGOs and Community Organizations. The MoH will monitor the recovery process to ensure the use of BBB principles and to identify and address potential gaps along the process.

The recovery strategy will build on the efforts already made by the communities, development partners, provincial government and Central Government. During response phase, the MoH, Provincial government, and health committees have already undertaken immediate actions to restore health care services, with the involvement of the health committees. The NDMO with support from Australian Defense and other partners has supported the rehabilitation of some health care facilities, particularly those with higher level of damage.

In the recovery strategy, special attention will have to be paid to community surveillance and continuity of essential health care services for vulnerable/high risk population such as children, women, elderly, people with disabilities, and people with co-morbidity especially NCDs, who have been affected by the disasters. In all construction-related work, focus should be on the fact that they need to be made disabled friendly and easily accessible by communities.

The MoH will continue to collaborate with organizations such as UNICEF, UNFPA, WHO and other agencies in implementing activities focusing on improving quality of health care and child centred DRR in health care facilities. The UNFPA, WHO and UNICEF have been supporting the MoH and relevant stakeholders during the past decade in promoting inclusive, climate resilient healthcare services and planning processes with emphasis on the human centred and Child-Friendly Approach, including DRR and Social Cohesion. UNICEF, WHO and UNFPA continue to support health care facilities and communities to become climate smart resilient including upgrade of WASH facilities, procurement of WASH supplies and other initiatives that create an enabling environment.

The MoH will continue to advocate for DRR, using a family-centred approach with emphasis on social behavioural change where families interests and rights are given high priority, recognized as change agents, rather than mere victims of disasters.

Housing

Pre-disaster Baseline Context

According to Vanuatu's 2020 Population and Housing Census,[62] the country has a population of 300,019, including 148,354 men and 145,609 women, and has a total of 63,365 households (HHs). The cyclone-affected provinces that are the focus of this PDNA, make up nearly half (48 percent) of the total households in Vanuatu with 30,505 HHs. These include Tafea (8,239 HH) and Shefa (11,148 HH, which includes the capital Port Vila [11,118 HH]). The national average HH size is 4.64 persons. Port Vila averages 4.36, Shefa province 4.27 and Tafea 5.45 persons per HH.

About four of every five HHs across Vanuatu (80 percent) occupy a detached private house. In Tafea and Shefa, a slightly higher proportion of HHs are in this category at approximately 87 percent while Port Vila residents are lower with 54 percent because it is in an urban environment, with 39 percent residing in houses attached with one or more houses. The national average is 2.5 rooms per HH.

In terms of urban/rural distribution, Vanuatu has a predominantly rural population, with 78 percent of the total population live in rural areas. As an island, Efate has the largest urban population at 49 percent, due to the presence of Port Vila, the largest urban centre in Vanuatu.

[62] Government of Vanuatu, National Statistics Office, 2020, Population and Housing Census.

The 2020 Census found that at the national level, the most popular materials for constructing the outer walls of dwelling units were concrete/brick accounting for 34 percent and traditional (bush) materials with 32 percent. Other wall materials include corrugated iron with 21 percent and wood with 13 percent. However, in Port Vila, 54 percent of walls are cement/brick and 34 percent are corrugated iron.

Countrywide, 68 percent of households had concrete as the main flooring material, while 15 percent had earth/sand floors and 10 percent had wooden floors. Unsurprisingly, Port Vila had the highest percentage of households with concrete flooring at 92 percent.

Until recently, there has been no government department responsible for housing. The National Disaster Management Office is the government agency that leads the Shelter Cluster. The Building Act places responsibility for private housing compliance with the provincial and municipal councils. The newly created Department of Urban Affairs and Planning (DUAP) has recently been given the mandate for housing policy and has a dedicated Housing Officer. Overall planning for longer term recovery is coordinated through the Department of Strategic Policy Planning and Aid Coordination (DSPPAC) within the Prime Minister's Office.

Disaster Effects

Summary of Damage and Loss

Three private housing types were identified for use in the PDNA based on Census categories for wall materials and flooring, as shown in the table below.[63] Houses with concrete, cement or brick walls were categorized as Permanent Houses; houses with earth or sand floors were categorized as Traditional Houses, while all other material combinations were categorized as Semi-permanent. (These 3 categories have been used in prior PDNAs).

Table 43: Census housing categories

Census categories used	Resulting PDNA categories
Concrete, cement or brick walls →	**Permanent house**
Traditional (bush) material floors →	**Traditional house**
All others →	**Semi-permanent house**

Table 44: Distribution of Affected Units by Province and Housing Type

	Permanent House		Semipermanent House		Traditional House		Total units affected by Province	Province share of affected	Private HHs in Province (2020 Census)	Share of private HHs affected
	Destroyed	Damaged	Destroyed	Damaged	Destroyed	Damaged				
Malampa	37	74	168	335	79	157	849	4%	9,715	9%
Shefa	1,619	3,238	2,675	5,349	160	319	13,360	70%	22,266	60%
Tafea	179	358	711	1,422	758	1,515	4,943	26%	8,239	60%
Total	1,835	3,670	3,553	7,107	996	1,992	19,152	100%	40,220	

The Housing sector assessment produced an estimate that 6,384 houses were destroyed, and 12,768 houses were damaged across the Provinces of Malampa, Shefa, and Tafea. The replacement cost for the destroyed and damaged houses, which includes a factor for local infrastructure, is estimated at VUV 9.36 billion and VUV 7.49 billion, respectively, for a total replacement cost of VUV 16.85 billion. The damages were valued based on replacement costs per square meter used in PDNAs from TCs Pam (2015) and Harold (2020), adjusted to 2023. The loss of household goods is estimated to be equivalent to 15 percent of housing replacement costs. The total damage and loss for the housing sector is estimated to be VUV 19,149,456,000.

[63] Non-private (institutional) housing represents less than 0.6% of all households nationally and 0.5% in the affected areas. Because no specific data were available on damage to non-private housing, these data were excluded from the tables.

The number of housing units destroyed and damaged is based on the United Nations Satellite Centre (UNOSAT) damage level tables, which included the identification of affected Area Councils. The damage and loss assessment only includes UNOSAT's Priority Areas 1 and 2. The housing type data (permanent, semi-permanent, and traditional) were compiled using housing materials (floor and walls) data from the 2020 Vanuatu Population and Housing Census. (**Error! Reference source not found.** shows the correlation between materials and housing type.

Few studies have been carried out on building types in Vanuatu with regards to their capacities to withstand disasters such as earthquakes and cyclones, and so an assumption was made that a semi-permanent house was 1.66 times more likely to be damaged than a permanent house and a traditional house was twice as likely to be damaged than a permanent house when subject to the same conditions.

Using these assumptions and the building destruction ratio in each Area Council provided by UNOSAT, weighted averages were calculated to assign the destroyed and damaged houses to each typology by Area Council.

Table 45: Distribution of Damage and Loss in Private Housing Sector by Province (VUV)

	Damage	Loss	Total Effects	Private (%)	Public (%)[64]
Malampa	480,699,000	65,550,000	546,249,000	94%	6%
Shefa	13,786,411,000	1,879,965,000	15,666,376,000	94%	6%
Tafea	2,584,411,000	352,420,000	2,936,830,000	94%	6%
Total	**16,851,521,000**	**2,297,935,000**	**19,149,456,000**		

Only one damage category was utilized in the assessment (Partial Damage), and it is assumed that on average there is damage to 40% of the house, so repairs cost 40 percent of the cost of replacing the house. The loss of personal effects was assumed to be 15 percent of the replacement cost for both the destroyed and damaged categories.

As shown in **Error! Reference source not found.**, VUV 1.5 billion was added to account for the replacement cost of local infrastructure (water tanks, retaining walls, drainage, etc.). This was derived by applying a factor of 10 percent to housing destruction and damage. Infrastructure damages were assumed to be 50 percent private and 50 percent public.

The only Loss item included in the estimates is for damaged household goods, as shown in **Error! Reference source not found.**. No estimate for lost rental income was included. Fewer than 2 percent of rural households pay rent; however, nearly 38 percent of urban households do so. No data was available on market rents that would allow a calculation of rental income losses, and so the assumption was made that landlords' rental losses and household savings from not paying rent are equivalent, and thus have no net economic effect.

Table 46: Total Damage and Loss in the Private Housing Sector by Type (VUV 1,000)

Subsector	Damage	Loss[a]	Total Effects	Private (%)	Public (%)
Destroyed Houses	8,510,869	0	8,510,869	100%	0%
Partially Damaged Houses	6,808,695	0	6,808,695	100%	0%
Damaged water tanks and other infrastructure at housing sites [b]	1,531,956	0	1,531,956	50%	50%
Damaged Household Goods		2,297,935	2,297,935	100%	0%
Rental income losses [c]	0	0	0	100%	0%
Sector Total	**16,851,521**	**2,297,935**	**19,149,456**		

[a] Loss includes only personal effects. Sheltering and demolition/disposal costs are included in the DRM chapter

[b] A factor equivalent to 10% of damage is added for water tanks, drainage, and other infrastructure at housing sites.

[c] Fewer than 2% of rural households pay rent; however, nearly 38% of urban households do so. No data were available on market rents that would allow a calculation of rental income losses, so the assumption is made that landlords' rental losses and household savings from not paying rent are equivalent, and thus have no net economic effect.

[64] **Non-private (institutional) housing represents less than 0.6% of all households nationally and 0.5% in the affected areas. Because no specific data were available on damage to non-private housing, these data were excluded from the tables.**

The Human Impact

Prolonged displacement, accommodation in temporary shelter, and delays in repair and reconstruction of housing places significant strain on the security, safety, privacy, family life, and health of vulnerable people.

Losing a home or having one's home damaged creates a financial burden for individuals and families and creates. Uncertainty about recovery and prolonged displacement, create stress that can affect family relationships, and educational and health outcomes affected families.

Certain families are especially vulnerable. For example, an estimated 20 percent of households in Vanuatu are headed by females. Female-headed households often do not own the land they occupy and face significant constraints in accessing finance and manpower to repair or reconstruct their homes. Many urban households also do not own the land on which they live, and face both the disruption of their own livelihoods and reliance on landlords whose livelihoods have also been affected to carry out housing repairs. Delays may also result because many urban houses are constructed of imported materials and can be more expensive and technically complex to repair.

The Housing, Land and Property Law mapping carried out for Vanuatu by IFRC and Australian Red Cross provides further information on key laws and actors, common types of tenure, security of tenure of vulnerable groups, and information on eviction, expropriation and relocation.[65] Housing rehabilitation and reconstruction/recovery programmes should be positively adjusted to prioritize female headed households as well as people living with disabilities and the elderly. Similarly, early recovery and livelihood programmes should also provide specific support to female headed households to enable them to find resources for rebuilding[66].

Recovery Needs

The total recovery needs are estimated to be VUV 36 billion.[67] The following table summarizes housing recovery activities during Early, Medium- and Long-Term Recovery and their corresponding financial requirements including to build back better (BBB).[68] For more details on the calculations and assumptions made refer to the housing sector annex.

The successful implementation of a housing recovery program depends on a number of ancillary activities to support requirements such as beneficiary selection, training of builders and households, construction oversight, and program monitoring and evaluation.

The Recovery Strategy assumes that Early Recovery activities will be carried out by the non-governmental organizations (NGOs), as outlined in the Vanuatu Shelter Cluster TC Judy and Kevin strategy[69]. It assumes that households will largely finance reconstruction, unless international donor support presents itself and that the financing and coordination of medium-to-long-term technical assistance, training, and policy activities are the responsibility of the government.

[65] IFRC, 2023, Housing, Land and Property law https://sheltercluster.org/tc-judykevin-vanuatu-2023/documents/housing-land-and-property-law-vanuatu
[66] Government of Vanuatu, 2015, Tropical Cyclone Pam Post-Disaster Needs Assessment. https://www.gfdrr.org/en/vanuatu-rapid-post-disaster-needs-assessment-tropical-cyclone-pam.
[67] This amount for housing recovery needs has been adjusted to VUV 25 billion for the final calculations of total recovery needs across all sectors.
[68] Note that these estimates are limited to the current event, even though–as explained in this section–many other households need assistance to strengthen their housing and some may even need repair and reconstruction assistance to address the effects of previous disaster events. BBB principles involve building structures that will withstand agreed levels of future hazards, and doing so in ways that address social and economic vulnerabilities, while building social capital that contributes to resilience.
[69] Vanuatu Shelter Cluster, 2023, "TC Judy and Kevin Strategy." https://sheltercluster.org/tc-judykevin-vanuatu-2023/documents/shelter-cluster-vanuatu-tc-judy-kevin-strategyv1

Table 47: Estimated Cost Summary of Housing Recovery Needs (VUV)

	Recovery Need	Description	Number of Households	Government Agency	Funding required VUV	Potential Overseas Development Assistance
Medium to Long-term Recovery	In kind/cash/market-based programming	Assist affected people with environmentally friendly/sustainable repair and reconstruction of houses, through the provision of materials (eg repair kits, roofing materials etc) ensuring that basic sanitation services are- integrated in the response in close coordination with WASH cluster, in the mid to long term.	1,500	Min. Finance DUAP NDMO DSPPAC DLA	740,000,000	IFRC NGOs
	Professional development	Vocational training of community carpenters to support housing programmers.		DLA PWD	23,500,000	IFRC NGOs
	Technical support/cash/in-kind	Technical assistance to those rebuilding their heavily damaged and destroyed houses. (distribution of IEC materials, physical support for elderly, single headed households, persons with disability, by trained carpenters, technical trainings, awareness)	1,500	DWA DUAP Min. Finance	11,750,000	IFRC NGOs
Medium to Long-term Recovery	Owner self-led reconstruction	Owner self-led/self-reliant incremental housing reconstruction in all areas, making use of simple, low-cost measures to improve resilence of new housing stock		DUAP PVMC Dept. Water	35,164,377,000	Private households
	Housing Policy	The governance arrangements in this sector need to be clarified and assigned to a specific department as part of the policy development. Housing policy should cover both rural and urban housing incorporating: Land Tenure; Building Codes and guiding design principals; zoning and development control plans and; Recovery and Recontruction		DUAP DSPPAC PVMC Dept. Lands PWD	5,000,000	World Bank Habitat ADB NBV IFRC VNPF
	House plans and demonstration houses	Various example house designs including BoQs developed. Demonstration houses based on these designs to be showcased for the public to view. Traditional knowledge		DUAP DSPPAC PVMC Dept. Lands PWD	70,000,000	World Bank NBV Chinese Gov NGOs VNPF
	Government capacity improvement in housing sector	Data collection and analysis improvements for area councils across Vanuatu and; Rapid assessment templates revised		DUAP VMGD NDMO	2,000,000	IFRC
	Building industry analysis	Analysis of the building industry to understand better the skills gaps and materials availability across Vanuatu in order to propose longer-term solutions to building affordability, resilience and employment in Vanuatu, including traditional designs.		DUAP DSPPAC Municipal Dept. Lands PWD	2,500,000	VEA Academic Institutions Multilateral Banks
				TOTAL	36,019,127,000	

Note: The total amount for housing recovery needs has been adjusted to VUV 25 billion for the final calculations of total recovery needs across all sectors.

Recovery Strategy

Goals and Objectives

The following goals and objectives will guide the post TC Judy and Kevin reconstruction process.

Goal: Vanuatu households and communities effectively and appropriately self-recover and have strengthened, sustained resilience and Government ownership and guidance is developed to support households for future disasters and in times of peace.

Objective 1 (Support to Early Recovery, linking relief with inclusive recovery): Support housing self-recovery processes through the provision of socio-technical assistance and durable building materials and or financial support and for both households as well as community evacuation shelters. Housing rehabilitation and reconstruction/recovery programmes should be positively adjusted to prioritize female headed households as well as people living with disabilities and the elderly.
Objective 2 (Training): Investment in education, training, and socio-technical support on Build Back Safer, local and traditional designs and techniques. This could involve community members and/or local carpenters in collaboration with official training certification authorities. Utilise trainings to build examples of fit for purpose house designs in a range of budgets and material accessibility.
Objective 3 (Investment in community resilience): support to household resilience-building through investment in inclusive, participatory, and community-led recovery and longer-term resilience processes (such as Participatory Approach for Safe Shelter Awareness, and support to sustainable CDCCCs and Shelter Focal Points).
Objective 4 (Area-based approaches): investment in area-based approaches that encompass the broader impact on shelter and housing of access to water, sanitation, electricity, livelihoods, health facilities, education and places of cultural importance. Ensure that the participation of women, people with a disability, the elderly and vulnerable groups is prioritised in the participatory process[70].
Objective 5 (Understanding housing as an industry) Analysis of the building industry to understand better the skills gaps and material availability across Vanuatu (rural and urban) in order to propose longer-term solutions to building affordability, resilience and employment.
Objective 5 (Housing governance): development of a housing policy within a mandated government department. The policy should cover both rural and urban housing, incorporating: Land Tenure; Building Codes and guiding design principals; zoning and development control plans and Recovery and Reconstruction.
Objective 6 (Informed decision making through better data): Data collection and analysis improvements within area councils across Vanuatu; Post-disaster rapid assessment templates revised to include housing information relevant to PDNAs.

Key Players and Implementing Agencies for Housing Recovery

Governmental and non-governmental agency contributions are both needed in order to carry out housing recovery and to enhance and improve the overall housing sector in Vanuatu. These agencies must have support for institutional strengthening and budgetary resources to carry out programmes.

Urban Planning Unit (UPU) of the Department of Urban Affairs and Planning (DUAP). UPU is responsible for all urban planning policies, urban strategies, urban designs and effective implementation of all urban planning policies within all urban centers in Vanuatu. It also deals with matters concerning Housing and Informal Settlements and works with both Government and Private sector to bring investments in the housing sector. The dedicated Housing Officer leads DUAP's mandate for housing policy.

Housing and Settlement Section (HSS). HSS is a component of the urban planning unit, the Housing and Settlement section is responsible for developing and overseeing housing standards, policies and regulations for affordable and adequate housing for communities suitable for the country's climatic conditions and socio-economic environment[71]. DUAP has already engaged technical support to commence the process to develop a housing policy.

Department of Lands (DOL). DOL is located within the Ministry of Land and Water Resources manages land use by allocating and administering land leases and facilitating the resolution of land disputes. Land tenure in Vanuatu has historically been a very sensitive issue and support from the department will be key to implementing the recovery housing strategy.

[70] International Federation of the Red Cross, [2020], "Vanuatu Shelter Recovery Guidance." https://sheltercluster.org/response/tc-judykevin-vanuatu-2023/documents
[71] Department of Urban Affairs website

Ministry of Finance and Economic Management (MFEM). MFEM is the focal point in Vanuatu for multilateral Banks. It monitors and analyses economic and social trends in Vanuatu and their implications on national development, fiscal and monetary policies; advises on macro and microeconomic policies to enhance private sector investment and employment; and advises on sector development priorities, including the fiscal implications of proposed projects. Development assistance for the housing recovery strategy must meet MFEM requirements.

Building Unit (BU) of the Public Works Department (PWD). BU is responsible for ensuring all new builds, refurbishments and modifications comply with the national building code in Municipal zones. All recovery activities related to rebuilding of houses, including prototype/model designs in municipal zones must comply with the current or revised Building codes. Construction outside of Municipal zones is not subject to building codes.

Port Vila Municipal Council (PVMC). PVMC oversees the compliance to the national building code in the Port Vila Municipal Boundary.

Shelter Cluster (SC). The SC is co-led by the National Disaster Management Office and the International Federation of the Red Cross (IFRC). The SC has identified the early recovery activities outlined below and has developed key resources over the years to support the BBB concept. It also advocates for owner-driven recovery with the technical and material support. Several NGOs that make up its membership have extensive experience within the Vanuatu context from previous disasters, particularly the IFRC, Butterfly Trust and CARE. SC's remit is primarily on disaster response and early recovery, after the state of emergency lapses, it meets every couple of months and focuses on disaster preparedness.

Department of Strategic Policy and Aid Coordination (DSPPAC). DSPPAC houses several units that will play a role in the housing recovery strategy. As the Secretariat of the National Recovery Committee (NRC), which coordinates, monitors and allocates funding for recovery activities, DSPPAC plays a significant role in the coordination of all disaster recovery activities. The **Disaster Recovery and Resilience Unit** (DRRU) supports the NRC as the Secretary in coordinating recovery programming and the development of the PDNA. The **Policy and Planning Unit** (PPU) has a dedicated Sector Analyst to work with the Ministry of Internal Affairs where it works with DUAP in the development of housing policy and planning initiatives. The **Aid Coordination and Negotiation Unit** (ACNU) coordinates, monitors, and reports on all development assistance.

Table 48. Overview of current or Proposed Partner Activities

Government Partners	Focus of Activities
Governance for Growth	Policy and planning – currently in Min. Internal Affairs
CARE	Technical guidance / training and provision of shelter materials post TC Judy and Kevin to increase resilience through BBB in Tafea
World Vision	Technical guidance / training and provision of shelter materials post TC Judy and Kevin to increase resilience through BBB in Tafea
People's Republic of China	Prefab housing development in Port Vila (proposed activity - unrelated to TC Judy and Kevin recovery)
ADB	Emergency shelters under « Greater Port Vila Urban Resilience Project » [72] (approved project) Urban water and sanitation under « Luganville Urban Water Supply and Sanitation Project."[73] (in preparation)
World Bank / IFC	Vanuatu Affordable Resilient Settlement Program (approved project) – Focusing on new settlements, settlement infrastructure and institutional strengthening, including housing and planning policy and community resilience, in Port Vila

[72] Greater Port Vila Urban Resilience Project: Report and Recommendation of the President | Asian Development Bank (adb.org).
[73] 51335-001: Luganville Urban Water Supply and Sanitation Project | Asian Development Bank (adb.org).

Governance

Pre-disaster Baseline Context

The Judiciary in Vanuatu is the third arm of the government with the constitutional mandate to resolve all the disputes according to law. The Judiciary comprises a hierarchy of 4 courts:

- The Court of Appeal of Vanuatu
- The Supreme Court of Vanuatu
- The Magistrates Court of Vanuatu
- The Island Courts in different Island Jurisdictions

The Judiciary was declared an essential service during the COVID-19 pandemic and is also the case in post-disaster events. The Constitution must be upheld to maintain the rule of law, to provide equal protection for all citizens, including the vulnerable, and to ensure due process of law is upheld.

In relation to Security, the Joint Planning Operation Centre (JPOC) combines the three elements of the Security Forces in Vanuatu that operate as Joint Forces in times of disasters. JPOC is the joint operation centre that disseminates and delegates immediate requests that come through the National Disaster Management Office (NDMO). In the aftermath of the twin cyclones, the JPOC delivered immediate relief supplies to affected islands, to provide water, medical assistance and temporary shelter. The Vanuatu Police Force (VPF) ensures Law and Order, it has two specialized arms, a para-military force known as the Vanuatu Mobile Force (VMF) and the Police Maritime Wing (PMW) which provide the VPF with logistical and technical support such as the VMF engineering platoon work on the quick fixings of Schools, Health centres, and public buildings around Shefa and Tafea.

Disaster Effects

Summary of Damage and Loss

In relation to Vanuatu's Judiciary, the twin cyclones caused different levels of damage (from minor to fully destroyed) to its physical infrastructure. In Shefa, there was damage to one Island Court, a Supreme Court, a Magistrate Court and Efate Island Court, while in Tafea there was damage to a Magistrate Court and an Island Court. The Judiciary also had losses due to higher operational costs to provide relevant services, and to disruption to its collection of government revenue. The offices were not operational for almost a month (3 ½ weeks) due to damages on the buildings and to the wider electrical power cuts. The total damage and loss for the judiciary sub-sector is VUV 36,450,450.

The damages caused by the cyclones prompted the Judiciary to suspend 219 judicial cases since March 2023, of which 52 were criminal cases. This situation has aggravated the backlog of pending judicial cases, affecting the fulfilment of the right to "to be tried without undue delay", provided for under article 14 3 (c) of the International Covenant on Civil and Political Rights (ICCPR). Therefore, the impact of the cyclones on the judicial services will slow the clearance rate further.

Table 49: Damage and Loss in the Governance Sector (Judiciary and Security) (VUV)

Judiciary Sub-sector	Damage	Loss	Total Effects
Supreme Court	590,596		590,596
Efate Island Court	1,274,622		1,274,622
Magistrate Court Office & Hearing Room	24,355		24,355
Dumbea Hearing Room No. 3	781,376		781,376
Chief Justice Official Residence	183,913		183,913
Chief Registrar Official Residence	12,000,000		12,000,000
Chief Magistrate Official Residence	10,000,000		10,000,000
Tanna Court House – Clerk Residence	4,865,000		4,865,000
Tanna Court House – Magistrate Residence	4,865,000		4,865,000
Court Fees, Fines and Enforcement		1,491,592	1,491,592
Generator Hire & Batch Material Payments		221,996	221,996
Debris removal & labour Costs		152,000	152,000
Subtotal	34,584,862	1,865,588	36,450,450

Security Sub-sector	Damage	Loss	Total Effects
Shefa Province Houses	230,921,640	2,375,000	233,296,640
Shefa Province Public Buildings (Police Post / Station etc.)	16,654,660		16,654,660
Shefa Antenna VHF – AM Radio Station	134100	2,375,000	2,509,100
Shefa -Increase crime awareness program		480,000	480,000
Tafea province houses	8,000,000		8,000,000
Tafea province public buildings	29,600,000		29,600,000
Subtotal	285,310,400	5,230,000	290,540,400
Total	**319,895,262**	**7,095,588**	**326,990,850**

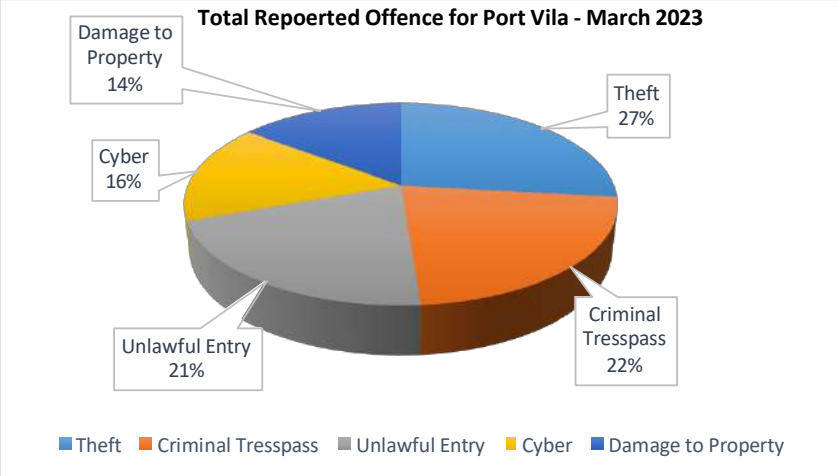
In the Security sub-sector, 354 Security Buildings were affected, of which 188 were offices, 57 were officer's houses and 185 were private houses in Port Vila that sustained severe to light damages. In addition, there was damage to a solar panel on Emau island repeater site and one generator that could not provide significant signal to Port Vila. The Vanuatu Police Force arranged with telecommunication providers to provide refill card for officers assigned in the operations to assist with mobile phones. The Radio network is the only reliable source of communication that was set up in Vanuatu to assist in times of disaster operations, in its final phase to be fully completed and operational but got affected during this cyclone. The ADF Signaller reprogramed the radio antenna at Tongoa Island Police Post with the cost below, but the effects are with the JPOC cost to charter a Commercial ship while MV Mateweli is in service to transport the officer to repair the antenna. The total damage and loss for the security sub-sector is VUV 290,540,400.

The Human Impact

As noted above, the cyclones disrupted the process of timely justice to citizens. Normal listings, including court hearings, were suspended after the cyclones until utilities were fully restored, and temporary adjustments were made to the damaged facilities. The Judiciary recorded that 24% of suspended cases after the cyclones were criminal cases, and the delay of justice increases the risk of further crimes post disaster. In evacuation centres, there were reports of overcrowding and lack of personal space and privacy. These issues elevate protection related incidents, including fighting amongst evacuees, unwelcomed intrusion of personal spaces, and even theft of personal belongings and properties[74]. The most vulnerable people that are faced with these compounding issues were children, women and girls and people living with disabilities. Earlier research shows that 60% of women and girls between the ages of 15 and 49 have experienced some form of physical, and or sexual abuse, but the rate is exacerbated during or after disasters[75].

In relation to security, during the response phase period there was an increase in the number of theft (27%), unlawful entry (22%), criminal trespassing, unlawful entry (21%), and damage to property (14%). Security forces had to re-plan to provide additional services on top of their normal and budgeted activity program to public schools around Port Vila.

Figure 12: Rise in crimes during the month of March in Port Vila



[74] *Displacement and Evacuation Centre Management Cluster to Post Disaster Needs Assessment for TC Judy/Kevin*
[75] *https://pacific.un.org/en/107647-spotlight-initiative-launches-vanuatu*

Recovery Needs

Total recovery needs for the governance sector is estimated to be VUV 199.2 million, of which VUV 138.5 million is for recovery needs in the Judiciary sub-sector and VUV 60.7 million for the Security sub-sector.

Table 50: Recovery Needs in the Governance Sector (Judiciary and Security) (VUV)

Judiciary sub-sector	
Premises	Recovery Cost
CJ Residence	19,800,000
CJ Servants quarter	2,880,000
Chief Registrar	17,100,000
CR Servants quarter	2,880,000
CM Residence	10,080,000
SC Admin and Registry	37,800,000
AC & M Chambers	4,900,000
Hearing room 1 & 2	2,100,000
Efate Island Court	19,665,000
Storage House	966,000
Court Room 1	8,400,000
Court Room 2	5,600,000
Court Room 3	6,300,000
Subtotal	138,471,000
Security sub-sector	
Rehabilitation of residential structures and assets (with BBB)	56,254,660
Restoration of service provision (demolition/debris removal)	3,500,000
Strengthen governance capacities for recovery	1,000,000
Subtotal	60,754,660
TOTAL	199,225,660

In the judiciary sub-sector, the recovery needs refer to the reconstruction of the damaged infrastructure and physical assets, which will focus on Building Back Better. Facilities include the court rooms, hearing rooms, administration, and other court chambers. The assets refer to the residential properties of the courts occupied by the Chief Justice, Registrar and other Court Heads, and are regarded as state owned assets. The medium to long term recovery needs refer to the construction of modern, resilient buildings that should meet cyclone standards. The other courts are in need of upgrade or total reconstruction to ensure the legal system in Vanuatu is of high quality, efficient and effective.

In the securities sub-sector, recovery relates to rebuilding security buildings including BBB, and strengthening governance capacities for recovery.

Recovery Strategy

Within Vanuatu's National Sustainable Development Plan (NSDP), Goal number 5 of the Society Pillar is to have a society where the rule of law is consistently upheld, and access to timely justice is available to everyone[76]. The relevant policy objectives are:

SOC 5.1 Ensure all people have timely and equitable access to independent, well- resourced justice institutions.

[76] Vanuatu 2030: The People's Plan, National Sustainable Development Plan 2016 - 2030

SOC 6.4 Strengthen national institutions to ensure they are cost-effective and well-resourced to deliver quality public services.

The national vision, aspiration and goals remain the same, in spite of any disasters or disruptions to the process of law. Therefore, preparedness and Disaster Risk Management are fundamental components that need to be embedded into the planning process of Building Back Better for the Judiciary.

The Vanuatu Government must take lead in the upgrade of the Judiciary infrastructure and assets. External partners and donors can complement this effort through financial and technical support. The Judiciary should device a strategy of total reconstruction through a concept paper and present it to the government. The paper should outline the challenges currently faced due to deteriorating buildings and assets, and provide recommendations on building back better, including disaster risk management.

Youth And Sports

Pre-disaster Baseline Context

There are approximately 98,176 youth in Vanuatu, according to the 2020 population census. The youth population represents 33% of the country's population and youth organization are well established across the country. There are 300 proper youth facilities or centers and about 300 to 400 Young Entrepreneurs (informal) in Porty Vila, Shefa and Tafea alone. Youths are represented in the area council development committee of the 72 area councils under the DLA, and the youth network platform is a very effective medium to interact with the youth clubs and members throughout the country.

The most common sports in the country are soccer, volleyball, basketball and rugby, and the two main centers in Port Vila and Luganville have representation of the 26 National Sports federations including Sports facilities. Large sports facilities are primarily located in the two urban centers which were badly affected by the twin cyclones.

Disaster Effects

Summary of Damage and Loss

The physical assets which sustained damage from the twin cyclones, as well as the estimated damage and losses across the youth and sports sector are presented in the table below. The total damage is estimated at VUV 89,942,147. In addition, losses across both sectors are estimated at VUV 97,201,425.

Table 51: Summary of Damage and Loss in the Youth and Sports Sector

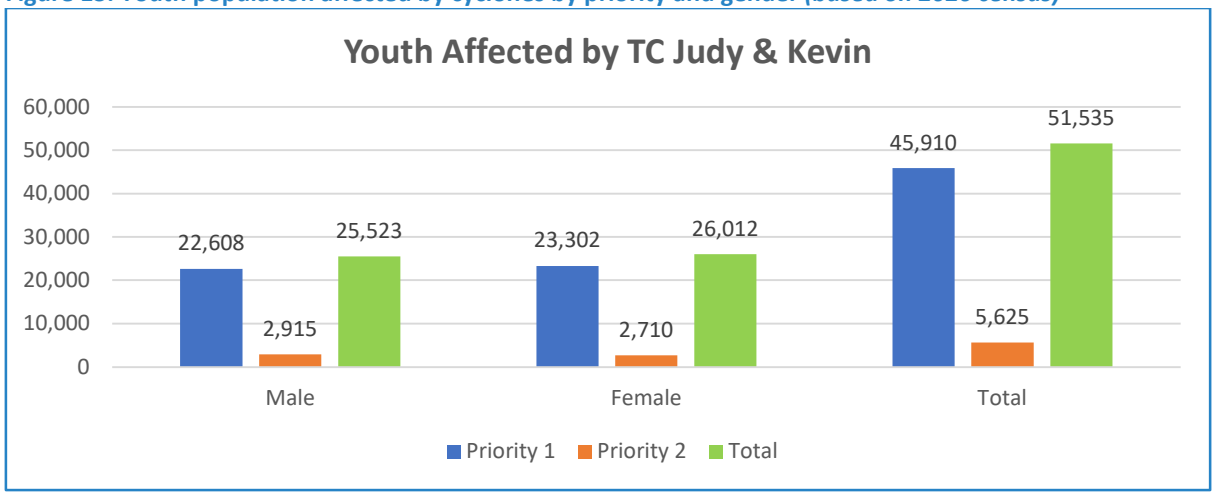
Sub-sector	Disaster Effects		
	Damage	Loss	Total
Youth Sub-sector (Youth informal businesses)	1,262,502	486,780	1,749,282
Store	140,278	33,600	173,878
Kava Bar	140,278	21,000	161,278
Kava bar/20VUV	140,278	4,760	145,038
Ice block & Juice sale	140,278	5,320	145,598
Kava whole sale	140,278	168,000	308,278
Lending scheme	140,278	140,000	280,278
Snacks sale	140,278	5,600	145,878
Rent house	140,278	0	140,278
Rent house/Store/Kava bar	140,278	108,500	248,778

Sub-sector	Disaster Effects		
	Damage	Loss	Total
Sport Sub-sector	88,679,645	96,714,645	185,394,290
Soccer (Korman sports complex)	7,000,000	23,820,000	30,820,000
Vanuatu Beach Volleyball	17,134,000	7,529,000	24,663,000
Basketball	320,000	320,000	640,000
Vanuatu Netball Centre	7,479,075	7,799,075	15,278,150
Tennis	3,000,000	3,000,000	6,000,000
Table Tennis	2,000,000	2,000,000	4,000,000
Cricket	14,611,900	14,611,900	29,223,800
Rugby Union	1,500,000	1,500,000	3,000,000
Rugby League	500,000	1,000,000	1,500,000
Boxing	28,546,819	28,546,819	57,093,638
Vanuatu Athletics	3,305,950	3,305,950	6,611,900
Vanuatu Dart	54,901	54,901	109,802
Vanuatu Golf	2,000,000	2,000,000	4,000,000
Port Vila Rowing Club	702,000	702,000	1,404,000
Vanuatu Archery	525,000	525,000	1,050,000
Total	89,942,147	97,201,425	187,143,572

The Human Impact

In priority 1, the number of youths affected by TC Judy and Kevin is estimated at around 45,910, and in priority 2, there are 5,625 youth affected by the cyclones, with a total of 51,535 (Figure 13).

Figure 13: Youth population affected by cyclones by priority and gender *(based on 2020 census)*



TC Judy and Kevin caused significant impacts to informal youth business. About 78 youth were identified to have a small business in Shefa, all of which have been affected causing disruptions to their businesses for over a period of three weeks. The MYDS assessment report also shows trauma and psychological distress in young entrepreneurs which needs to be addressed as soon as possible. The most affected/impacted are the single youth female headed households who make their living from their small businesses. Overall, many young entrepreneurs face difficult situations, especially those with insufficient resources.

Sporting events are part of life and provide significant economic, social and psychosocial benefits to sports people and the youth population at large. Unfortunately, this year, TC Judy and Kevin affected the planned sporting events in the damaged sports facilities. Furthermore, it has vastly affected the country's preparation towards the upcoming Pacific

Games in Honiara, Solomon Islands in November 2023. The prolonged delays to repair those sporting infrastructures could have a negative impact on young people. Most sporting facilities require major infrastructure repairs and rehabilitation.

Recovery Needs

The recovery objectives of the Ministry of Youth Development and Sports is to assist disaster affected youth by repairing damaged sports infrastructure and equipment in priorities 1 and 2 in Shefa and Tafea. The recovery cost for the sector is estimated at VUV 188,887,784. The table below present recovery needs by sub-sector as identified during the post disaster needs assessment with related recovery costs.

Table 52: Summary of Recovery Needs and Costs

Recovery Needs		Recovery Cost
		Youth informal businesses
Store	Infrastructure repair	789,166
Kava Bar	Infrastructure repair	789,166
Kava bar/20VUV	Infrastructure repair	789,166
Ice block & Juice sale	Infrastructure repair	789,166
Kava whole sale	Infrastructure repair	789,166
Lending scheme	Infrastructure repair	789,166
Snacks sale	Infrastructure repair	789,166
Rent house	Infrastructure repair	789,166
Rent house/Store/Kava bar	Infrastructure repair	789,166
Subtotal		7,102,494
		Sport Sub-Sector
Soccer (Korman sports complex)	Infrastructure repairs	30,820,000
Vanuatu Beach Volleyball	Replace roofing sheets and other damaged structures/equipment	21,054,000
Basketball	Rehabilitation of courts	640,000
Vanuatu Netball Centre	Infrastructure repairs, rehabilitation of courts	15,278,150
Tennis	Rehabilitation of courts & purchase new tennis net.	6,000,000
Table Tennis	Replacement of table tennis equipment	4,000,000
Cricket	Replacement of office equipment and utilities repair	29,223,800
Rugby Union	Infrastructure repair (replacement of rugby posts)	3,000,000
Rugby League	Replacement of office and games materials.	1,500,000
Boxing	Replacement of Gym and other equipment	57,093,638
Vanuatu Athletics	Replacement of damaged equipment and supplies	6,611,900
Vanuatu Dart	Provision of new dart boards	109,802
Vanuatu Golf	Rehabilitation of golf course and landscaping, and other repairs	4,000,000
Port Vila Rowing Club	Infrastructure repair	1,404,000
Vanuatu Archery	Infrastructure repair and improvement.	1,050,000
Subtotal		181,785,290
TOTAL		**188,887,784**

INFRASTRUCTURE SECTOR

Energy

Pre-disaster Baseline Context

Vanuatu has been diversifying electricity generation provided by public and private investments to meet its NDC target of "close to 100% renewable energy in the electricity sector by 2030" (NERM, 2016). This has been supported with the installation of solar farms, mini grid systems and pico hydropower plants in rural areas as well as for key public public buildings, which also aligns to Government's policy to decentralise services to promote development in the provinces. Electricity service provides in Vanuatu include private utility operators such as Union Électrique du Vanuatu (UNELCO) and Vanuatu Utilities & Infrastructure (VUI), electricity cooperatives, community management and Government through the Department of Energy. A classification of uses and users of electricity from the Utility Regulatory Authority is indicated in the table below.

Table 53: Classification of uses and users of electricity in Vanuatu

Classification	Details
Industrial	Private High Voltage Users, Government High Voltage Users, Port
	Vila Water Usage
Commercial	Business Users
Non-Commercial	Small Domestic Customers, Prepaid Users, Other Low Voltage Users,
	Government Low Voltage
Others	Street Lights, Sports Field, Energy not invoiced (utility office usage, utility employees and installations)

For households, energy is needed for both lighting and cooking. About 67.3% of people use solar as the main source of energy for lighting whereas only 30% access electricity from the main grid. The latter is predominantly in urban areas and Shefa province where utility companies provide grid access. For cooking, 74.8% of households use open fire with only 12% using LPG. The latter was also predominantly in urban areas and Shefa province (Census 2020).

Disaster Effects

Summary of Damage and Loss

The assessment considered the damage to public infrastructure and buildings only. Damage and loss estimates relate to private infrastructure and buildings, losses in revenue, higher operating costs and additional costs as a result of the event and focused on the provinces most affected from the two cyclones, Tafea and Shefa. However, only damage and loss related to public assets and services were considered as there were no estimations forthcoming from electricity concessionaires, Societe De Service Petroliers (SSP) and Origin Energy. Unfortunately, this means that the actual impact to the energy sector is grossly underestimated and represents only the urbanised developed areas on Efate and Tanna.

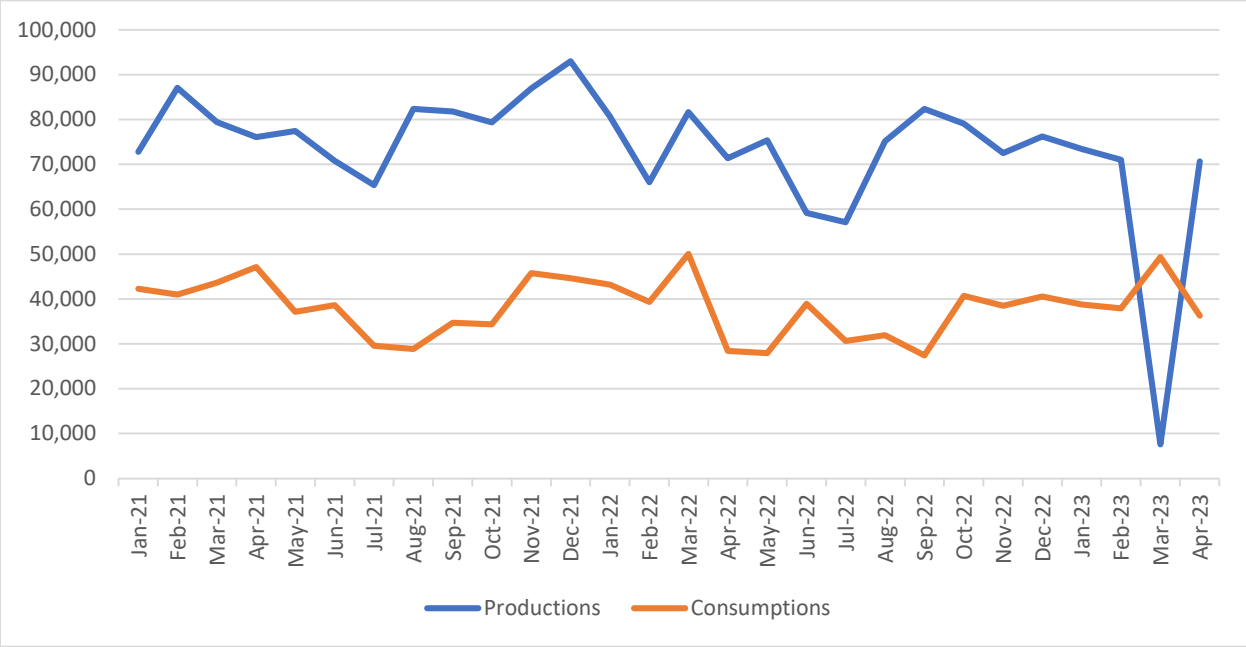
The assessment only covered the Department of Energy managed energy initiatives in Shefa and Tafea. It included the solar farms at the Parliament house and Ministry of Climate Change headquarters in Port Vila and Natai Fish market plus the Tanna concession area. Origin Energy submitted evidence of damage to the sea wall and jetty within their facility but did not include any related estimations. Also not considered in the assessment was the flow on effect to economic and social activities as a result of the public services being disrupted. These are accounted for in their respective sector assessments.

Table 54: Facilities operated and maintained by the Department of Energy

Facility	Location	Province	System	Users (URA)	Annual offset
Natai Fish Market	Port Vila	Shefa	Solar photovoltaic system	Commercial	3.4 M
Ministry of Climate Change PV Plant	Port Vila	Shefa	Solar photovoltaic system	Non-Commercial includes Government	Calculated monthly
Parliamentary Complex	Port Vila	Shefa	Solar photovoltaic system	Non-Commercial	Calculated monthly
Tanna Concession	Lenakel	Tafea	Diesel-powered stations and small-scale grid-connected Solar PV	Industrial, Commercial, Non-Commercial and Others	N/A

A drop in production was evident with the solar farms at the Ministry of the Climate Change and Parliamentary Complex following the cyclone. In February 2023, the farms generated 70,992KWh compared to March 2023 when production dropped significantly to 7,614 KWh. That drop in production resulted in a variation of VUV 4,000,736 in March as opposed to VUV 987,648 for February.

Table 55: Solar Production & Consumption by Solar Farms at the Parliamentary Complex and Ministry of Climate Change



The total effects for the Energy sector is VUV 16,135,199, with details presented in the table below. The disaster effects reported was from damage to public infrastructure. At the time of reporting, the loss estimations were based on the downtime and lost offset benefit at the Natai Fish Market and the bill paid to UNELCO by the Ministry of Climate Change on account of the solar farm not being operational.

Table 56: Damage and Loss in the Energy Sector

Province	Facility	Damage	Loss	Total
Shefa	Natai Fish Market	7,221,000	566,667	7,787,667
Shefa	Climate Change PV Plant	35,000	474,373	509,373
Shefa	Parliament Complex	3,195,600		3,195,600
Tafea	Tanna Concession	4,642,560		4,642,560
Grand Total		**15,094,160**	**1,041,039**	**16,135,199**

The Human Impact

Most people actively involved in this sector including consumers and suppliers located both in the urban and remote areas were impacted by TC Judy/Kevin. Post TC Judy/Kevin, the main suppliers -UNELCO, Pacific Petroleum (SSP), Origin Energy and Tanna Concession- in this sector were disrupted and suffered significant damage and loss. Essential government services such as healthcare education, government financial system and telecommunication were disrupted.

Businesses located at the Natai Fish Market and within the Tanna Concession areas would not have had access to electricity thus affecting their ability to produce and/or sell, reducing cash flow as a result of not being able to operate and damaged goods in shops and warehouses. These power outages would have also affected access to communications, water and bank services (ATMs).

Recovery Needs

The Department of Energy prioritized the restoration of electricity services across the four facilities affected for sector recovery. This includes the replacement of damaged infrastructure and assets to restore the service plus improvements to provide additional stability to the Parliament Complex solar farm. The total recovery needs for the energy sector is VUV 16,388,159. Details on the infrastructure to be replaced and strengthened is in the energy sector's annex.

Table 57: Recovery Needs for Energy (VUV)

Province	Facility	Recovery description	Cost
Shefa	Natai Fish Market	Restore energy service and access, Replace damaged infrastructure and physical assets	7,221,000
Shefa	Climate Change PV Plant	Restore energy service and access, Replace damaged infrastructure and physical assets	35,000
Shefa	Parliament Complex	Restore energy service and access, Replace damaged infrastructure and physical assets	3,395,600
Shefa	Parliament Complex	Protect energy infrastructure, Strengthening infrastructure	150,000
Tafea	Tanna Concession	Restore energy service and access, Replace damaged infrastructure and physical assets	5,586,559
Total			**16,388,159**

Telecommunications

Pre-disaster Baseline Context

The Office of the Government Chief Information Officer (OGCIO) is responsible for managing the private network that services government traffic. The Office of Telecommunications and Radio Communications Regulator (TRR) is the independent statutory regulatory agency responsible for regulating and developing the telecommunications sector. Telecommunications in Vanuatu relies on contributions and cooperation from both the public and private sectors. Over 95% of the population have access to network coverage, thus the telecommunications sector is a significant direct contributor to the national GDP.

Recovery operations in the telecommunications sector has a heavy cross reliance on other sectors. This includes the restoration of reliable power supply to locations and the logistical requirements of transporting telecommunication components and workers to remote areas throughout Vanuatu. The telecommunications sector is in turn critical to all other sectors. This includes during recovery planning and throughout recovery operations. It is likely that sectors such as Education, Gender and Protection and Health may identify additional telecommunications needs. Additionally, the private sector relies heavily on telecommunications for continuity of business operations.

Communications infrastructure that is critical to operations is by nature both fragile and continually exposed to the elements. It is essential that the principles of Building Back Better are used during recovery and rebuilding to ensure maximum resilience against seasonal events and avoid the sector being regularly impacted by natural disasters.

Disaster Effects

Summary of Damage and Loss

The most substantial damage in the communications sector was sustained by the communication distribution networks. This included damage to public and private physical assets within the distribution networks, such as destroyed or damaged towers for cellular systems and microwave networks. Loss to the communications sector include the loss of sales of telecommunications services, due to the time required to re-establish, replace, or rebuild the system assets, along with the decline in consumer demand while assets are being rebuilt. Loss also include higher operational costs, due to the temporary utilization of alternative telecommunications systems (such as portable transmission equipment) and costs involved in establishing and maintaining these short-term solutions. Cyclones Judy and Kevin resulted in total damage and loss to the telecommunications sector of VUV 861,530,338. The breakdown of damage and loss is presented in the table below.

Table 58: Damage and Loss in Telecommunications (VUV)

Subsector	Damage	Loss	Total Effects
OGCIO	107,600,000	104,800,000	212,400,000
Vanuatu Broadcasting and Television Corporation	10,680,000		10,680,000
Vodafone	412,367,184	24,451,354	436,818,538
Digicel	201,631,800		201,631,800
Total	**732,278,984**	**129,251,354**	**861,530,338**

The worst impacted areas in the communications sector were the provinces of Shefa and Tafea, however substantial damage was also sustained in Malampa, Penama, and Sanma. The most severe damage was sustained by the communication distribution networks. Transmission towers in Shefa and Tafea were destroyed and towers and equipment in all affected provinces were damaged, resulting in a loss of service across both mobile phone and data services operators as well as radio and TV broadcasting. This affected communications services during the period immediately after the first cyclone impacted until services could be restored in the days and weeks afterwards. The Government Broadband Network was not restored in some areas until 16 March 2023.

Recovery Needs

As a result of the damage sustained, the transmission networks must be rebuilt in some locations, and significant investment in new towers and equipment will be required to ensure resilience against future events and comply with the principles of Building Back Better.

The needs for the Government Broadband Network is presented in the table below. The short-term recovery needs for the communications sector have been captured in the Early Recovery Plan. This includes funding for higher-than-normal operational costs immediately after the cyclones, due to the losses incurred in reconnecting and re-establishing communications services. The medium to long term needs reflect funding for the rebuilding of the affected infrastructure of the network. The most critical matter for the OCGIO is to ensure that the principle of BBB, with enhanced resilience and redundancy, is built into recovery. Total recovery needs in the sector is estimated to be VUV 286,800,000.

Table 59: Recovery Needs in Telecommunications

Loss	106,300,000
Recovery Needs Short Term	5,500,000
Recovery Needs Long Term	175,000,000
Total	**286,800,000**

Recovery Strategy

Private sector telecommunications / ICT services are critical enablers and link people and businesses in all other sectors. They therefore have a key role to play in the preparation, response and recovery phases of any natural disaster. Accordingly, it should be noted that both before and after any cyclone or other event that results in a state of emergency declaration, telecommunications operators may need the government to support them through coordination of logistics for an approved period of time, to assist them in returning telecommunications services following a disaster event.

Telecommunications operators can be largely expected to recover the cost of damage from insurance. There is however an immediate impact on their expenditures and a significant loss of revenue in this period. Telecommunications operators may therefore need assistance through other channels such as exemptions on duty and value-added tax as well as prompt processing of relevant permits / legal instruments to support their rebuilding and to cater for the replacement / upgrade of the technology in the damaged areas. Additionally, the government's support in the timely processing of building and rebuilding permits, land permits, and assistance to fast-track processing of the relevant visas/permits allowing international experts entry to Vanuatu for recovery activities.

Transport

Pre-disaster Baseline Context

The transport sector is an integral part of the economic and social development of Vanuatu. Transport systems are critical in the operations of both government, support services and private enterprise. They are also pivotal in providing connectivity for households and communities to access essential goods, maintain contact with families and attend social and cultural events. The transport sector can be broken down into 3 main subsectors.

The aviation system, supporting both domestic and international travel, underpins public administration of services for the dispersed populated provinces and the important tourism sector. The country has 29 aerodromes, including three that are internationally certified (Category A): Bauerfield International Airport in Port Vila, Pekoa International Airport in Luganville, and White-grass International Airport in Tanna. There are 3 certified domestic aerodromes (Category B), which are at Norsup, Longana, and Lonorore, and a further 23 certified remote aerodromes (Category C) serving the domestic routes through all provinces.

The maritime sector comprises multipurpose (carrying passengers and cargo) international seaports at Luganville, and Port Vila under the responsibility of the ports authorities. Other maritime infrastructure consists of around 36 small wharves, jetties, and landing stages, of which 22 are public ports and wharves. Marine transport is not only critical to international tourism but is particularly important to domestic passenger and cargo movement within the country. The merchant marine fleet of 77 vessels includes 38 bulk carriers, eight cargo vessels, and 24 refrigerated cargo vessels.

The public road network comprises 2,958.6 km across 24 islands with the length of road and types of pavement surfaces for each province recorded in the table below. The sealed network, around 7% of the total, is restricted to Efate, Santo and Malekula. The remaining 93%—the primary network on all other islands, is concrete pavement, unpaved gravel, and earth roads, typically island ring roads that follow the settlement patterns near the coastlines except for the northern Pentecost Road which followed the ridge that separates east from west Pentecost.

Table 60: Road Length vs Pavement Type per Province

Item No.	Province	Road Length (km)	Pavement Type (km)				
			Asphalt	Chip Sealed	Concrete	Gravel	Earth
1.	Torba	56.30	0.00	0.00	5.10	15.70	35.50
2.	Sanma	845.50	0.00	85.60	4.60	654.40	100.90
3.	Penama	450.00	0.00	0.00	10.20	222.90	217.00
4.	Malampa	509.90	0.00	0.00	4.10	268.30	237.50
5.	Shefa	594.30	7.50	187.40	8.90	222.10	168.50
6.	Tafea	502.60	0.00	43.00	9.40	103.90	346.40
7.	**TOTAL:**	**2,958.60**	**7.50**	**316.00**	**42.30**	**1,487.30**	**1,105.80**

Source: Public Works Department Management Information System – Pro-MIS, 2023

The main mode of transport in Vanuatu is by sea, via small craft in coastal areas and combined passenger and freight vessels for interisland movements. Outside of Port Vila and Luganville, shipping services call at about 36 small jetties or wharves and many more informal anchorages or beach landing sites. For most communities, services are relatively frequent and reliable. With donor assistance the international wharf in Port Vila has been upgraded and improvements are planned for the domestic shipping services.

Regarding land transportation, major improvements on the Efate ring road, and the Tanna and Malekula Road Project (Phase 1) have been completed. Several road projects are currently in progress as listed below:

- Phase 2 of the upgrade of Tanna and Malekula Road Project
- Phase 3 of the Tanna Road Project
- Phase 1 of the Pentecost Road Project
- Package 1 of the South Santo Road Project

However, whilst the sealed and concrete paved network have increased, the road maintenance budget is still not sufficient to maintain these road improvement works.

Disaster Effects

Damage and Loss Estimates

The immediate effect of the twin cyclones on the transport sector was to:

- cut all modes of transportation,
- hinder access to market, and
- stop access to schools and health facilities in the rural areas.

Road transport is the cheapest mode of transportation in comparison to maritime and /or aviation. Therefore, accessibility was a priority to open access and allow delivery of the humanitarian response emergency needs such as medical attention, clean water, food, and other essential services.

Damage to the transport sector is confined to parts of the northern provinces of Penama and Malampa, and the whole of the southern provinces of Shefa and Tafea. Heavy downpour that accompanied the twin cyclones also caused flooding of several areas, washed away pavement including some damage to concrete structures and protection works in Shefa and Tafea Province, and a bridge at Imanaka Creek, Tanna Island, Tafea Province. A description of the damages and calculations of costs to the land transport sub-sector is detailed in the sector's annex.

Damage to the Bauerfield international airport was confined to the terminal building, and aviation navigational marker or beacon damaged at Klem's Hills. There was no damage to the runway which allowed the local flights to continue as normal.

The Port Vila Lapetasi International Multi-Purpose Wharf sustained no damaged except for the Port Vila Main Wharf that experienced some minor to major damage as outlined below.

- 150 tons bollards damaged and foundation undermined. Requires engineering assessment. The stability of main wharf structure requires assessment.
- 12 of the 26 fenders are damaged beyond repair. This requires immediate attention as large boats cannot safely dock.
- Potable water supply for vessels – main pipe is ruptured under the wharf that needs repair.

In terms of the navigational markers, one of the two damaged navigational markers at Prime Minister's Office is severely damaged and requires rebuilding and mounting while the other sustained moderate damage that requires restoration.

Several transportation infrastructure specifically concrete drainage structures, bridge and pavements have been completely damaged; however, temporary by-passes have been constructed to ensure access is provided to essential services for delivery of the humanitarian supplies as well as transportation of 'local kakai' to the main markets. Other than that, losses in terms of economic flows were experienced in the transportation sector with the delay of schedule for boats or ships and blocked roads resulting in limited supplies of food, fuel, and others from Port Vila to the affected islands of Vanuatu. Power (electricity) outage due to damaged poles in Port Vila and Lenakel has also seen disruption to delivery of government and banking services, however, other alternative solutions have been utilized for provision of minimum services to the public at large.

Total damage in the transport sector is VUV 6,387,300,000.

Table 61: Damage and Loss for the Transport Sector (VUV)

Sub-Sector	Damage	Loss	Total Effects	Private (%)	Public (%)
Infrastructure	6,387,300,00	57,020,000	6,444,320,000	0	100

The Human Impact

The social impact of the disaster on the transportation sector is significant. People in the affected provinces would have experienced difficulty in undertaking travel to fulfill their livelihoods and food security in the wake of the disaster. In addition, damage to the transport infrastructure and routes disconnected people from economic opportunities, family, and friends as well as key social services in terms of private or personal travel and affected incomes of commercial transport operators. For example, just after the cyclone, the transportation and infrastructure cluster noted that 90% of the total road network and 30% of the outer island airports of the affected provinces had not been accessed due to fallen trees, damaged structures, and others for more than a week, and there are currently several one lane temporary roads across the two provinces of Shefa and Tafea especially the rural roads. This has affected the operation of the immediate humanitarian response and emergency services since they relied heavily on land, air, and sea transport. In regard to the education sector, in addition to damage to school buildings and infrastructure, limited road transport caused difficulties for students to attend places of learning.

Planned and budgeted road and associated infrastructure improvement and extension activities for 2023 have been postponed, with the 2023 budget reprogrammed for road and associated infrastructure repairs. This has affected the communities where this work was planned to take place, in terms of having to continue to use existing roads, tracks etc., as well as opportunities for income generation from casual labour in the works gangs and other support services including food, accommodation, local quarries etc.

Barriers alongside major roads are an effective way of ensuring pedestrian safety, as are maintained walking paths, and clearly marked highly visible road crossing points, for all pedestrians including persons living with disability. Likewise, all people (young, old, persons with mobility difficulties or other forms of disability) as passengers or crew of marine craft, small and large, need safe access to the vessel and during their journey, with certainty that their personal property is not damaged or otherwise compromised.

The road network in Vanuatu is relatively small at 2,958.6 km, 50% is gravel and 37% is earth roads. Dust is an almost inevitable consequence of roadwork and gravel roads, generated from the unbound surface layers of gravel roads. The resulting dust can disturb both the population and the local environment, especially during the dry seasons and is typically treated by watering, alternative material choices or using dust binders near houses. During the wet seasons earth roads and river crossings can be impassable to most private and commercial transport vehicles.

Recovery Needs

The recovery strategy concentrates on reconstruction of roads and bridges, port facilities, and airport infrastructure to

restore connectivity to essential transport subsectors that are essential to the response and recovery operations of other sectors such as Health, Education, Shelter, Food security and Protection. In addition, the function of markets and commercial centres also relies on transport infrastructure. The total recovery needs are estimated to be VUV 40,000,000,000 for the transport sector. The table below summarizes the recovery costs by sub-sector.

Table 62: Recovery Needs in the Transport Sector

Subsector	Recovery costs		
	Short	Medium	Long
Aviation	10,070,000	250,500,000	6,725,000,000
Maritime	5,500,000	180,000,000	13,200,000,000
Roads	374,000,000	3,801,850,000	20,994,995,000
Assessment and Logistics	59,750,000		59,750,000
Grand Total	**449,320,000**	**4,232,350,000**	**40,919,995,000**

The reinstatement of damaged transport assets to the pre-cyclone condition will be a priority during the six-month to one-year time frame. The medium to long-term recovery efforts must adopt the Build Back Better principles governed by sound engineering and construction designed for on-going climate resilience. The scale of the work required may exceed the capabilities of limited resources, therefore MIPU will likely need additional external assistance for the technical side of recovery operations using public-private partnerships. Communities play a substantial role in routine road maintenance and community consultations will be a key factor to ensure longer-term sustainability of investments. Consultation with communities must also take place during the pre-construction stage, consisting of engagement with community groups to identify needs, risks, and adaptation measures for all members of the community, including the most vulnerable. Local communities are also likely to be able to provide labour to support the construction phase projects. Roads must be built to be sustainable and climate resilient.

Table 63: Detailed Recovery Needs in the Transport Sector

	Sub-Sector	Description of Activity
Immediate / Short Term	Roads	Full width road clearance:
		Clearing, grubbing including cutting of fallen trees and disposal of debris and waste materials
		Damage to retaining structures (coastal/inland):
		Backfill of damaged retaining structures with approved materials to protect pavement, drainage structures, bridge, or coastline
		Clearing of drainage structures:
		Clearing of line drains, culverts, crossings, and drifts including disposal of debris and waste materials
		Clearing of bridge structures:
		Clearing of bridge including excavation and disposal of waste materials and debris
	Airports	Full runway clearance:
		Clearing, grubbing including cutting of fallen trees and disposal of debris and waste materials
		Clearing of drainage structures:
		Clearing of line drains and culverts including disposal of debris and waste materials
		Repair to damaged windsocks:
		Supply and installation of new windsocks
		Airport certification by CAAV:
		Physical inspection of airports for commencement of commercial flights
	Ports, Wharfs & Jetties	Clearing of ports (wharfs & jetties):
		Clearing of debris including disposal of materials washed ashore by the cyclone
		Salvage of vessels:
		Salvage of vessels within the harbor
		Repair to Port Navaids:
		Repair of aids to navigation aid
		Anchorage Clearance:
		Hydrographical survey within harbor limits

Sub-Sector		Description of Activity
	Assessment	Detail Scope of Work & Estimation
		Undertake detail scope of works and project estimation cost for medium to long term works
	Logistics	Charters (Ship & Flights):
		Arrangement of charters via ship and airplane to the affected areas to transport personnel, machineries, fuels, oils and other necessary
Medium Term	Roads	Gravelling of Roads:
		Stockpile, supply, spread and compact road base materials
		Pothole patching (gravel):
		Pothole patching of gravel pavement
		Repair of DBST pavement:
		Pothole patching of DBST pavement with asphalt premix
		Repair to retaining structures (coastal/inland):
		Installation of gabion baskets and backfill with approved materials including planting of vetiver grass or others necessary for slope stability
		Repair of drainage structures:
		Construction of formwork, supply and installation of reinforcement bars, and supply spread and vibration of concrete including curing
		Repair of concrete pavement:
		Construction of formwork, supply and installation of reinforcement bars, and supply spread and vibration of concrete including curing
	Airports	Repair of gravel/grass runway, taxiway & apron:
		Backfilling including supply, spread and compact road base materials on all soft spots and washed-out areas
		Repair to drainage structures:
		Repair to damage drainage either corrugated or concrete culvert
		Repair to fencing materials:
		Supply of wooden post, barbe wire and stables including repair of perimeter fence (airports with perimeter fence)
	Ports (Wharfs & Jetties)	Repair of Ports (Wharfs & Jetties):
		Repair to damage wharf or jetty structure
		Repair of bollards & fenders:
		Repair including restoration of damaged bollards and fenders
Long Term	Roads	Construction of sealed roads:
		Asphalt Pavement
		Construction of sealed roads:
		DBST Pavement
		Construction of sealed roads:
		Concrete Pavement
		Repair to retaining structures (coastal/inland):

Sub-Sector	Description of Activity
	Construction of concrete retaining structures including backfill with approved materials including planting of vetiver grass or others necessary for slope stability
	Construction of drainage structures:
	Supply and installation of corrugate and concrete pipes (precast or in situ) including line drains, crossings, and drifts
	Construction of bridges:
Airports	Sealing of CAT C Aerodromes:
	Supply, spread and compact coronous material (road base material) including formation of runway, taxiway and apron pavement, and application of Double Bituminous Surface Treatment (DBST)
	Construction of new terminal buildings:
	Supply of materials and construction of terminal building including electrical and plumbing works
	Construction of new perimeter fence:
	Supply and installation of perimeter fence with wooden post and barbe wire
Ports (Wharfs and Jetties)	Construction of new ports (wharfs & jetties):
	Supply of materials and construction new wharfs and jetties including installation of bollards and fenders, and lighting
	Installation of marine aids to navigation:
	Purchase and installation of marine aids to navigation

Water, Sanitation and Hygiene

Introduction

In this Water, Sanitation and Hygiene sector (WASH) report, the damage, loss and recovery needs are assessed for water supply, sanitation (wastewater) and hygiene services in the P1 and P2 affected areas. The assessment covers water supply infrastructure owned or supported by the Department of Water Resources (DoWR) in rural, peri-urban areas, and provincial urban centres. Damage and loss assessments for WASH in Schools and Health Care Facilities are reported in their respective sector assessments, while damage and loss related to solid waste management are addressed in the Environment sector assessment. Damage and loss figures from UNELCO were not available for the assessment (see stakeholder discussion below).

Pre-disaster Baseline Context

All areas of Vanuatu suffer from water insecurity, with the effects being the worst in rural and peri-urban areas where poorer households are always the most affected by any disaster. Half of the population in the areas affected by Cyclones Judy and Kevin only have access to unimproved pit toilets. This single statistic highlights the underlying health vulnerability which is only made worse by the effects of the disasters.

The following are the key findings of the baseline data analysis on access to WASH services:

- Water for drinking and washing is sourced from piped supplies by approximately 40% and 50% of affected households respectively. An additional 40% of households rely on rainwater as their primary source of drinking water.
- Private pit latrines are the most common type of toilet (40% of HH) followed by 16% of affected households with a private VIP latrine.

- 60% of affected area households burn rubbish on compound as their primary disposal method. Although this aspect of WASH is not addressed in this report, it is important to know that inappropriate waste disposal habits can affect water quality and security, particularly for groundwater and surface water sources.

The three provinces (Malampa Shefa and Tafea) covered under this PDNA each have a mixture of water supply systems, including direct gravity fed systems, indirect piped systems bore holes, shallow dug wells, rainwater harvesting and surface water (rivers and springs which are often unprotected sources). Households in the P1 and P2 affected areas obtain drinking water mainly from a shared tapstand / piped service (21%) followed by (18%) from privately piped water systems (household taps). Access to rainwater was from shared rainwater tanks (22%) and 18% from private rainwater tanks.

The 2020 national population census shows that 52 % of households in the Priority 1 and 2 areas rely on piped water for hygiene purposes. Disruption to the piped water supply would therefore directly impact the hygiene practices of half of the households in these areas. The remaining 49% of households were reliant on less secure sources under normal circumstances and were therefore more vulnerable to WASH-related illness prior to the disasters. Notably, 16% of the households in the P1&2 areas utilize river, lake or spring water for hygiene purposes. After rainwater tanks, these are the sources which are the most likely to be negatively impacted by disasters, further increasing the vulnerability of households.

Hand hygiene is the main focus of WASH hygiene education and refers to hand washing with water and soap. The 2020 census data shows that 90.8% of households have hand washing stations, with only 66.8% observed having both water and soap available. In rural areas 75% of households had a facility with water and soap. These households will be more vulnerable to wash related illness when their water supply is compromised. The level of vulnerability of the remaining 25% will also increase as more pressure is exerted on surface water sources for drinking and washing following disasters.

In relation to sanitation, the 2020 census data shows that unimproved privately owned pit latrines are used by 40% of households in P1 and P2 priority areas, and that Ventilated Improved Pit (VIP) are used by 16% of households and shared pit latrines by 10% of households. These toilet technologies, often constructed of local materials at ground level, are highly likely to be blown away by strong winds, washed away by flooding, or filled with debris. Flush (15% of HH) and water seal/ pour flush (12% of HH) toilets are often constructed of permanent materials and are more resilient to cyclones.

Further baseline data and analysis can be found in the sector annex including tables with WASH related census data.

Disaster Effects

Damage and Loss Estimates

Strong winds and intense rain from TC Judy and Kevin damaged water and sanitation infrastructure, which in turn has impacts on rural livelihoods, health, protection, education and the economy. Damage to rural and peri-urban water supply networks includes significant destruction of rainwater catchment systems, with roofing, guttering, and pipework the most affected. Piped rural water supply systems have also been damaged by flooding, scouring and landslips. Rainwater-dependent islands have been most vulnerable in the aftermath of the cyclone; communities have limited water source alternatives and are now reliant on unprotected surface water sources or water deliveries in many cases. No damage was reported for Port Vila's urban water infrastructure managed by the private company UNELCO, and the company did not report any losses to the sector team.

Sanitation superstructures (structures above ground) made from bush materials suffered considerable damage. As a result, women, children, and vulnerable people now lack privacy and, in some cases, safe access to sanitation facilities. Due to the timing of the PDNA, there were no detailed damage assessment reports available. The extent of Damage and Loss was estimated from existing data for private and public (community) ownership of water and household sanitation (toilets) infrastructure.

Water Sub-sector Damage and Loss

About 2507 water supply installations were assessed, and 19,542 households were potentially affected. The damage and loss in the water sub-sector is estimated to be VUV 1,285,907,607.

Table 64: Water Infrastructure Damage and Loss Assessment in P1 and P2 Areas (VUV)

Province	Island	Area Council	Damage		Loss	Total Damage & Loss
			Public Community-based Water Systems2	Private Household Water System1	Public Loss Community-based systems	
		All areas			93,776,272	93,776,272
Shefa	By Island	Province Sub-totals	367,805,160	444,814,661		812,619,821
Malampa	By Island	Province Sub-totals	18,242,319	174,050,550		192,292,869
Tafea	By Island	Province Sub-totals	146,964,610	40,254,035		187,218,645
National	**All**	**Aggregate**	**533,012,089**	**659,119,246**	**93,776,272**	**1,285,907,607**

Reports to the DoWR management from field assessment teams indicated that all types of rural water system sustained high levels of damage due to strong winds, flooding and erosion, and landslips. The most significant rate of damage was to the large number of rainwater capture and storage systems, which are mainly on private houses comprising 50% of the affected communities.

The estimation of losses in the water sub-sector was limited to changes in economic flows experienced and forecast by the DoWR (Public losses). As was the case for previous PDNAs, UNELCO did not supply any loss information. The GoV sector analysts advised the PDNA sector team that UNELCO bills water users on a standard rates basis, not by consumption rate, so no loss of revenue would be experienced. Loss to DoWR were calculated by DoWR staff and the PDNA WASH sector lead based on: a) Decline in revenue from the Urban water systems in Malampa (Lakatoro) and Tafea (Isangel) during the projected recovery period, and b) Increased operational costs while effecting immediate repairs, providing temporary water supplies to communities and assessing the damage in detail.

Sanitation and Hygiene Sub-sector Damage and Loss

The assessment of damage was constrained to household toilets. Although handwashing facilities are a vital component of sanitation and hygiene management, it was not practical in the PDNA exercise to include estimates damage to these facilities. Rather it was deemed that the value of toilet reconstruction costs should be sufficient to allow handwashing facilities to be included.

The most common sanitation technologies used in the affected areas suffered considerable damage, with nearly 100% of Pit toilets and 80% of Ventilated Pit latrines potentially destroyed by strong winds and flooding. No reports of damage to the septic systems commonly used in Port Vila were received. The only urban piped wastewater system in Port Vila —at the national hospital in Port Vila—was not reported as damaged.

About 22,530 rural and 11,118 urban household sanitation infrastructure facilities were potentially damaged. The estimated total damage in the sanitation sub-sector is VUV 2,073,981,861.

Table 65: Sanitation Infrastructure Damage and Loss Assessment in P1 and P2 affected areas (VUV)

Province	Island	Area Council	Damage		Loss	Total Damage & Loss
			Public Community-based Water Systems2	Private Household Water System1	Public Loss Community-based systems	
Urban	Urban	Port Vila		733,927,612		733,927,612
Shefa	By Island	Province Sub-totals		781,699,920		781,699,920
Malampa	By Island	Province Sub-totals		157,426,476		157,426,476
Tafea	By Island	Province Sub-totals		400,927,853		400,927,853
National	**All**	**Aggregate**		**2,073,981,861**		**2,073,981,861**

Due to a lack of data and time, no estimation of loss due to household sanitation and hygiene access problems was made for the five-year recovery period. It is understood anecdotally that in Port Vila, the commercial carting of septage to the Bouffa Septage Treatment Facility (STF) was only temporarily interrupted which the cyclone passed through and in the immediate aftermath, but services resumed thereafter. However, lack of access to appropriate secure sanitation infrastructure following the cyclones has a potential to increase the rate of open defecation. This in turn creates the potential for increased rates of gastrointestinal and other WASH-related disease within households and the general community.

The Human Impact

The human impacts from damage and losses to water, sanitation and hygiene infrastructure are largely linked to increased risks of water borne diseases outbreaks, increased vulnerability to natural disasters and disruption of livelihoods. These include:

- Communities with limited sources of water have increased vulnerability to natural hazards that can destroy or contaminate their primary water source. Limited access to water for washing will place hand washing as low priority due to water rationing and exposing individuals to diseases;
- Once these primary improved drinking water sources are damaged or destroyed, there is considerable time lost by members of households who are forced to collect, transport, and store water from secondary water sources. These are generally of lesser quality, quantity, and reliability than their primary water source, and are used for activities such as washing. They are also unprotected and hence likely to become contaminated.
- Rates of water-borne infections increase as a result of consuming water from unsafe secondary sources. When this happens, losses arise in terms of medical treatment costs, lost productive time for disabled individuals, and lost productive time for those who nurse them, predominantly women.
- Damage to sanitation infrastructures places women, children, and vulnerable people at increased risk of sexual violence due to lack of privacy and security when using temporary sanitation facilities.
- Damaged sanitation structures lead to open defecation, increasing the risk of disease outbreaks within the community, resulting on further livelihood impacts.

Recovery

Recovery Needs

The total recovery needs for the WASH sector as a whole is estimated to be VUV **294,906,500**. The specific short-, medium- and long-term recovery needs for the WASH sector are presented in the table below. Refer to the sector annex for more details on these recovery needs and costs.

The recovery needs encompass the costs of damage and loss for the water sub-sector and the Sanitation and Hygiene sub-sectors plus the additional costs for recovery. These damage and loss costs have been considered in parallel but documented separately for clarity of linkage to the effects and impacts of the cyclones. The water and sanitation recovery needs discussed in the sections below have already been categorized and costed in the total recovery costs above under Quality Improvement, Technology Improvement, DRR, or BBB needs.

Table 66: Recovery Needs for the WASH Sector (VUV)

Sub-sector	Short Term	Med Term	Long Term	Total
Water sub-sector				
Recovery Program Management staff and resources			48,774,000	48,774,000
Review / redesign of water supply infrastructure	240,000			240,000
Implement standard specifications for water infrastructure with BBB		240,000		240,000
WASH Committee resources & training materials	100,000			100,000

Sub-sector	Short Term	Med Term	Long Term	Total
Develop local Training and Assessment Specialists.		150,000		150,000
Protection of tubewell headworks -no pipe network		4,070,000		4,070,000
Protection of tubewell headworks - piped groundwater	2,405,000			2,405,000
Water Technician Training		425,000		425,000
Establish and train WASH committees		3,628,500		3,628,500
Training local people	140,000			140,000
Construction of secure warehouse	48,000,000			48,000,000
Subtotal water	50,885,000	8,513,500	48,774,000	108,172,500
Sanitation sub-sector				
Recovery Program Management staff and resources			48,774,000	48,774,000
Study on options for small scale centralized waste water treatment plant		1,200,000		1,200,000
Implement standard specifications for waste water treatment systems with BBB		600,000		600,000
Conduct sanitation and hygiene awareness	6,500,000			6,500,000
Confirm availability of materials for sanitation campaign		1,000,000		1,000,000
Recruit sanitarians at area council levels for hygiene/sanitation extension			30,360,000	30,360,000
small-scale entrepreneurs trainings and skills dev			300,000	300,000
small scale waste disposal treatment plant		12,000,000		12,000,000
Reconstruct pit latrines as VIP	86,000,000			86,000,000
Subtotal sanitation	92,500,000	14,800,000	79,434,000	186,734,000
Total WASH	**143,385,000**	**23,313,500**	**128,208,000**	**294,906,500**

When establishing WASH recovery priorities the authors considered the following:

- Public Health Concerns that are an important consideration during recovery. The recovery plan should prioritize the reinstatement and support of essential services to reduce the risk of disaster impacts further extending into public health deterioration. By addressing public health concerns, the community will be better able to recover.
- Critical Infrastructure and Key Resources that are necessary for the health and welfare of the population. Restoration of essential services and repair, as well as rebuilding of key assets are high priorities for any community's recovery (e.g., reconstructing a village sanitation system).
- Economic Impacts on communities stemming from the disasters (losses). For example, restoring water supply services is essential for the economic recovery of businesses and the community in general.
- Community Needs consider the number of households who could be impacted and potentially displaced by a disaster. The number of individuals who may need access to alternative water, sanitation and hygiene facilities including additional health care will change depending on the nature and context of the disaster impacts.

The proposed recovery activities are intended to:

- Increase water supply and resilience through improved design and construction.
- Improve the security and livelihood opportunities of women and girls through safer and more appropriate WASH access at all times. This includes funding the assessment of suitable options for small-scale rural wastewater treatment systems with more durable construction.
- Enhance the self-reliance and livelihood opportunities of communities through capacity building.
- Develop and document standards for construction of WASH infrastructure to improve resilience.
- Explore opportunities for improved technical training for workers in the sector in Vanuatu through strategic partnering with training organizations.
- Enable the movement of communities up the sanitation ladder through technological changes such as replacing pit latrines with robustly constructed VIP latrines.

- Improve the efficiency of WASH materials deployment through creation of rural warehousing facilities. These would be routinely used for infrastructure and operational items and also for pre-deployment of NFIs as required.

The specific recovery needs proposed for the Sanitation sub-sector focus initially on improving resilience through training and quality (design and construction) improvements. A strategic shift is recommended in the approach to services in the sanitation sector by devising methods for moving users from Unimproved service up to at least Basic service standards for sanitation. This involves:

- Undertaking a review of technologies and potential solutions already available and potentially used elsewhere in combinations to provide small-scale community-based wastewater treatment, while incorporating improved resilience to the effects of climate change.
- Assessing what options could work in different scenarios and communities in consultation with selected target communities.
- Performing pilot trial(s) in the mid- to long-term to evaluate possible solutions.
- Ensuring that sufficient funding is in place for project management, capacity building and behaviour change programmes for the full recovery period.

Recovery Strategy

WASH Stakeholders

There are many actors to be considered in the recovery planning for the Vanuatu WASH sector, including Government Departments, NGO's and the private sector:

- The Department of Water Resources under the Ministry of Lands and Natural Resources (MLNR) is responsible for the management of rural and peri-urban water resources and the water systems in Provincial Centres (outside Port Vila).
- The regulation of water services in Vanuatu is controlled by the Utilities Regulatory Authority (URA) under the Ministry of Finance.
- The Department of Public Health, under the Ministry of Health, is responsible for health promotion and sanitation compliance and messaging.
- The Ministry of Education and Training is responsible for ensuring access to water and sanitation facilities and integrating hygiene promotion into curriculum in schools.
- UNELCO is the private enterprise concession holder for the production, transport, and supply of water (in addition to electricity) in Port Vila. UNELCO did not provide damage or loss data for the PDNA.
- Local stakeholders include community groups, Hexagon, Vanuatu Agricultural Supplies and others.

Approach to Recovery

Due to the volume of work needed to rectify damage and re-establish access to safe drinking water and sanitation systems in the short- and long-term, especially in Shefa and Tafea Provinces, the WASH sector, led by DoWR, will work to increase the capacity for project delivery at the national and provincial levels. To meet this need, dedicated project management staff, construction management staff and resources have been included in the recovery needs budget. This is to ensure that dedicated resources are provided and funded to plan and manage the reconstruction process and facilitate the necessary capacity building and quality improvements. It is proposed that these new dedicated positions operate within DoWR as a special but separate project unit, enabling them to work closely with the existing operations and project teams for planning and coordination. This will require additional physical resources as well as resources for mobilization, which have also been budgeted for.

Strong linkages to this project management team will be required in the Ministry of Health regarding sanitation and hygiene activities and in the Ministry of Education and Training to provide support to WASH in schools. Recovery activities will reinforce effective collaboration between government and partners to deliver a coordinated set of WASH activities. The proposed recovery activities are informed by and responsive to community needs for health, education, protection, and other sector priorities and trends, with a strong focus on BBB and disaster risk reduction principles. The DoWR, as the lead agency for water supply and water resources management in the country and as WASH Cluster lead agency, will coordinate WASH recovery activities with all partners; this approach will ensure cohesion, quality, and prioritized action as well as systematic and continued monitoring. Financial support provided to the DoWR for recovery coordination will reinforce the DoWR's non-emergency sector coordination role.

In the medium term, recovery will focus on ensuring that communities are able to access and manage and sustain WASH services for enhanced resilience to future disasters. In order to complement planned sector development programmes,

recovery activities will help communities reduce their vulnerability to WASH-related health risks and ensure that people return to protective environments with WASH services (in communities, schools, and health care facilities). Rather than replacing damaged infrastructure to the same design standard, rehabilitation activities will use a BBB approach to community water supply systems. This effort will have to be accompanied with the preparation of infrastructure standards and guidelines, combined with monitoring and audits of designs and construction by the DoWR.

Community planning and management tools like drinking water safety and security plans will reinforce normal operations and maintenance training at the village level. The extensive damage in the P1 and P2 areas means that the main WASH sector must strengthen its collective capacity for high-quality program delivery to restore services. All actors (i.e., government, NGOs, and the private sector) should focus on establishing strong sub-national management, technical, planning, and implementation capacity, which will reinforce the implementation of the Vanuatu National Water Policy 2017 –2030. To guide the recovery process, the WASH sector should strengthen its use of evidence-based bottom-up planning and budgeting processes, with attention to vulnerable groups and communities.

In collaboration with the Ministry of Education and Training and the Ministry of Health, recovery activities will aim to restore and improve access to (and information about) water, sanitation, and hygiene facilities at schools and health care facilities. Some of these facilities were damaged by the cyclones, although it is recognized that many did not meet established standards before the cyclone. Rebuilt facilities will be improved to a higher level of construction. An equity focus in planning will also warrant special attention on peri-urban areas and informal settlements.

The recovery needs encompass the reconstruction and repair of damaged infrastructure and assets plus the additional recovery needs to be addressed. In the short-term transition from relief to recovery, the WASH sector will focus on preventing the outbreak of WASH-related diseases by continuing provision of immediate access to basic water, sanitation, and hygiene services and restoring protective environments. Water, sanitation and hygiene recovery activities will be used to reinforce the long-term sector objectives of providing sustainable and equitable access to WASH facilities. Activities will be led by the DoWR and will focus on improving technology including climate change adaptation, the quality of implementation, planning, coordination, and monitoring within the sector.

To better manage water security and safety around Vanuatu, the DoWR developed a National Implementation Plan for Safe and Secure Drinking Water (NIP). The NIP helps communities to identify their own water supply, sanitation and hygiene risks through participatory Drinking Water Safety and Security Planning. These plans form part of the baseline context for each community and must be consulted when planning specific interventions during the recovery phase. The interventions proposed in the sector focus on recovery through:

- Maintaining the response / recovery momentum in provision of short-term WASH services.
- Providing funding for dedicated program management to drive long term recovery efforts.
- Funding for improved construction standards and types of sanitation facilities.
- Designing changes to infrastructure for enhanced resilience.
- Inclusion of resources for targeted local capacity building in construction, repair and management of water and sanitation facilities
- Funding facilities to warehouse resources in strategic rural locations to aid routine operations, emergency repairs and recovery.

Climbing The Sanitation Ladder

A significant, impactful and recurrent effect of cyclones in Vanuatu is the widespread destruction of Pit Latrines and Ventilated Improved Pit Latrines and the associated increase in issues related to faecal-oral disease risk management. These damaged latrines are subsequently reconstructed by households only to be destroyed again in the next cyclone or storm. In addition to and in parallel with the measures for recovery outlined, special emphases is required to address and improve the disaster resilience of sanitation services in rural and peri-urban areas.

Vanuatu 2030 The People's Plan identified the objective of 100% access to improved sanitation by 2030. To achieve this a coordinated, foundational, holistic and well-resourced program of work must be delivered. This is necessary to break the recurrent damage-repair-damage cycle and to lift communities up the sanitation ladder. The effectiveness of sanitation service delivery models tends to vary as households and countries move up the Sanitation Ladder. An appropriate mix of strategies must be selected and applied over time. Sanitation recovery principles for the affected areas should prioritize the approaches that are most effective in enabling the affected population to move up the sanitation ladder. This approach has been adopted in the proposed recovery strategy. The costed sanitation and hygiene recovery activities are listed below.

Cross-Cutting Issues

Employment and Livelihoods

Pre-disaster Baseline Context

Limited domestic employment opportunities and high levels of informality, gender disparities, subsistence work and unpaid work are the typical characteristics of the labour market in Vanuatu. Decent employment opportunities and working conditions have been extremely impacted by several disasters, the COVID-19 pandemic and the lack of skilled labour as a result of the labour mobility schemes.

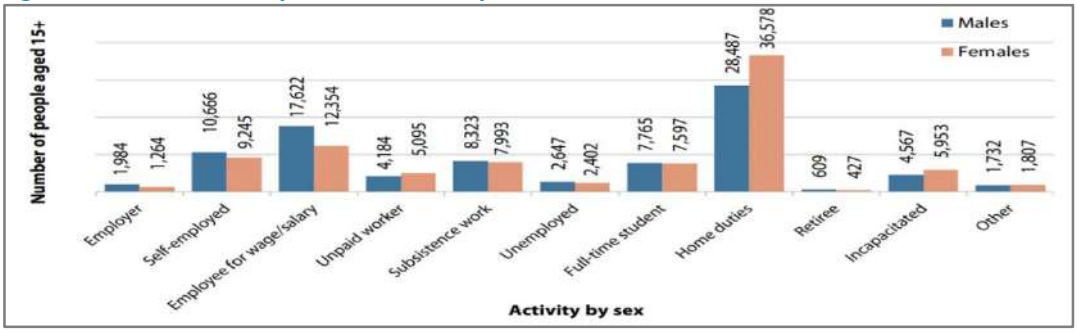
Vanuatu has had four major disasters in the last six years that has significantly impacted the employment and livelihoods of Ni-Vanuatu. The 2015 TC Pam Post Disaster Needs Assessment (PDNA) highlighted that a total of 504,050 work days and VUV 1.6 billion of personal income was lost. Of the work days lost, 245,110 was from the informal economy[77]. The 2017 Manaro volcanic eruption on Ambae resulted in almost 11,000 residents being evacuated with some families still displaced many years after the disaster[78]. The 2021 TC Harold and COVID-19 PDNA estimated 617 million USD in damages and losses, or 61% of GDP, as a consequence of the disasters[79].

Labour Market

The Labour Force Participation Rate (LFPR) in the country is 46.7 percent and the Employment-to-Population Ratio (EPR) is 43.9 percent. The national LFPR and EPR is lower for women, a pattern that can be observed in all provinces of Vanuatu. The lowest LFPR and EPR rates for women are in the province of Tafea[80]. A total of 78,729 people are in employment with 72 percent located in the rural areas. The largest share of those employed reside in the province of Shefa (39 percent). In terms of waged employment, 29 percent are working for private enterprises (22,879) of which 14.2 percent are classified as employers. Only 13.1 percent of those in waged employment are working in the public sector (10,345). About 25.3 percent or 19,911 people were classified as self-employed, the majority of whom are engaged in the informal economy. In terms of geographical distribution, the highest proportion of employees in the private sector are in the province of Shefa (42.5 percent) and the highest percentage of self-employed people are in Sanma (31.5 percent). 16,317 people or 21 percent are classified as subsistence workers. The general pattern shown in the figure below, indicates that there are more males than females in the labour force categories, while the opposite is true for home duties.

In terms of employment by sector, the largest share, 33,338 people or 42.3 percent of employed persons worked in the agriculture, forestry, and fishing sector. The second and third largest groups include those employed in wholesale and retail trade, repair of motor vehicles and household (HH) activities, making up 11.9 percent of those employed. When making rural and urban sector comparisons, more than half of all employed people in the agriculture, forestry and fishing sector (32,617) are in rural areas and only 3.3 percent of all employed people are in urban areas (720). On the other hand, while the manufacturing sector in Vanuatu is small, more than half (54.5 percent) of workers in this sector are in urban areas.

Figure 14: Labour force by economic activity and sex: 2020



[77] TC Pam PDNA, Government of Vanuatu (2015)
[78] Life after Ambae Volcanic Eruption, UNDP (2020)
[79] TC Harold and COVID-19 PDNA, Government of Vanuatu (2021)
[80] Population and Housing Census, Government of Vanuatu (2020)

A recent Vanuatu Skills Needs Industry Survey Report commissioned by the Vanuatu Chamber of Commerce & Industry (VCCI) highlighted that only 9% of the 478 enterprises surveyed indicated that they employed a person with disability.

Prior to the cyclone, the number of active members registered with the Vanuatu National Provident Fund (VNPF) were 85,662, of which 2.9 percent were from the informal sector. Of the total active members, 39 percent were females from the formal sector and 3.6% were females from the informal sector. 1,346 Employers had made contributions to VNPF in February 2023, prior to the cyclone.

Income

The total number of paid employed people consisted of 29,976 persons, 58.8 percent male and 41.2 percent females. In 2020, wages and salaries made up 32.8 percent of the main source of household income and 32.3 percent from sales of cash crops. 16.8 percent of HH income came from self-owned business activities (1.9% from handicraft), 5.3 percent was money sent from overseas, and 12.8 percent was from other sources (0.9 percent from rent). While income from wages or salary was higher for urban HH, by contrast, the majority (20.9 percent) of all rural HHs stated that their main source of income was from the sale of cash crops. At the household level the most common crops were island cabbage (76.6 percent), banana (76.3 percent), taro (70.2 percent) and yam (60.3 percent). However, unpaid workers accounted for 12 percent of total employed or 9,718 people with the province of Malampa having the highest percentage of unpaid workers (25.2 percent).

Prior to the two cyclones, the minimum wage in Vanuatu was VUV 220 per hour. However, on 10th May 2023, the Government announced a new minimum wage rate of VUV 300 per hour, due to high inflation and brain drain. The setting of a new rate amounts to a 36 percent increase from the previous rate and a 53 percent increase in the last six years. Intentions to set up sectoral minimum wage rates in the future is being considered by the Government[81].

Unemployment

The national unemployment rate is 6.0 percent with unemployment rates higher for females (6.3 percent) than males (5.8 percent), and considerably higher for women in urban than in rural areas. The highest unemployment rates were in Tafea and Shefa. The youth unemployment rate is estimated to be 11-12 percent[82]. Those who are Not in Employment, Education or Training (NEET) make up 35 percent of the working population[83].

Informal economy

Nearly 70 percent of individuals are informally employed. The informal employment rate is 68.7 percent for women and 65.5 percent for men. Evidence shows that the lower the level of education, the higher the chance of being informally employed[84]. More than 2,000 informal sector workers are registered with the Vanuatu National Provident Fund (VNPF). In terms of economic sector, informal employment incidence is the highest in the agriculture, forestry and fishery sector (95.1 percent), followed by industry (62 percent) and the service sector (45.2 percent)[85].

Labour mobility, remittance and skills gaps

According to the Pacific Development Policy, over the Recognized Seasonal Workers Scheme's (RSE) first 15 years (2007-22), 44 percent or 16,250 individuals have been from Vanuatu, of which only 13.6 percent were females[86]. In October 2022, the Government announced that the expanded RSE would increase the total number of Ni-Vanuatu workers in New Zealand to 19,000, an increase of 19 percent from the previous year[87]. This will mean that approximately 24% of total employed persons will be engaged in the RSE scheme alone.

The inward flow of remittances, mostly through seasonal workers, amount to 20 percent of GDP or U$191.26 million,[88] and continues to support the socio-economic needs of many Ni-Vanuatu households.

The Vanuatu Skills Needs Industry Survey Report commissioned by the Vanuatu Chamber of Commerce & Industry (VCCI) highlighted that 50 percent of the 478 enterprises surveyed indicated they had lost at least one staff to the labour

[81] https://www.dailypost.vu/news/36-minimum-wage-increase/article_664b55cd-bda4-549b-a985-d3a3e98892f6.html
[82] Population and Housing Census, Government of Vanuatu (2020)
[83] Presenattion at National Employment Policy Workshop, ILO (2023)
[84] Rapid Assesement on the impact of TC Harold and COVID-19 on Employment and Workers in Vanuatu, ILO (2021)
[85] Rapid Assesement on the impact of TC Harold and COVID-19 on Employment and Workers in Vanuatu, ILO (2021)
[86] Pacific seasonal workers' participation in the RSE scheme: the numbers and their implications, Pacific Development Policy (2023)
[87] https://www.rnz.co.nz/international/pacific-news/475900/vanuatu-concerned-about-labour-drain-from-expanded-rse-scheme
[88] ABC News, 2023

mobility schemes. The tourism and hospitality sectors (65 percent) were the most affected, followed by manufacturing and trade sectors. The majority (58 percent) of respondents were from the micro and small business category[89]. In March 2023, the Vanuatu Government announced plans to allow 1,500 foreign workers to enter the country under Special Category Visas, free of charge, for a period of 12 months. This is critical to support the 4.1 percent forecasted GDP growth for 2023[90].

Disaster Effects

Summary of Damage and Loss

Tropical Cyclones Judy and Kevin affected directly and indirectly the livelihoods of about 40,220 households and 185,012 people across the three disaster-affected provinces. Using the ratio of destroyed and damaged dwellings as a proxy, it is estimated that the cyclones affected approximately 38,764 of workers or 49.2% of total employment.

Of the total affected workers, 9,691 are self-employed of which 45 percent or 4,351 are women micro entrepreneurs (the "*mamas*"). Using the ratio of destroyed and damaged dwellings as a proxy, it was estimated that the cyclones affected approximately 67 percent or 25,933 of workers in the informal economy, across the three disaster-affected provinces. This includes the majority share of 68 percent or 2,996 *mamas* in the informal sector. Assuming that it would take all the entrepreneurs on average six weeks to re-construct and four weeks to repair their private workplaces/dwellings, they have lost 484,550 workdays.

Mamas and bus drivers dependent on cruise ships were affected considerably as 8 ships did not come to Port Vila in the months of March and April 2023. As a result, 300 mamas lost 2,400 workdays and VUV 36 million in personal income. Similarly, 60 bus drivers servicing cruise ships lost 480 workdays and VUV 9.6 million in personal income. About 150 bus drivers dependent on servicing local demand on Efate were not able to operate normally for a month. This resulted in the loss of 4,650 workdays and VUV 6.975 million.

Among the employed and affected, 8,140 were subsistence workers, of which 49 percent or 3,989 were women. Across the three disaster affected provinces, approximately 10 percent of income from agriculture, forestry and fishing was affected.

With the support of the Vanuatu Trade Union Combine (VUVUC), an assessment was undertaken of its membership. Of the 1,895 members affected, 50 percent or 956 members/workers from the formal sector were affected. Of these affected formal sector workers, a total of VUV 7,321,728 in personal income and 5,925 workdays were lost[91].

VNPF records show that 1,334 employers made contributions to the VNPF in March 2023, one month after the cyclones, while 12 employers did not make contributions, compared to pre-cyclones numbers.

The Human Impact

Most of the impact of the cyclones, in terms of lost workdays and personal income, was felt by informal economy workers, particularity self-employed and subsistence workers living in rural areas, including women headed HH (20%), youths and persons with disabilities. In the short-term, and based on the information available, the most impacted workers will be:

1) 17,831 self-employed and subsistence workers, particularly in rural areas, who are unlikely to resume their full economic activities within the next three to six months. This is primarily due to the following:
- The damage sustained to their private dwellings, which are also used for economic production and storage.
- The damage to their production equipment/materials.[92]
- The damage to cash crops and seedlings considering that rural HH main income derives from cash crops.

[89] Vanuatu Skills Needs Industry Survey Report, VCCI (2023)
[90] Daily Post, March 2023
[91] Vanuatu Trades Union Combine (VUVUC) TC Kevin and Judy Assesmeent
[92] The Housing Sector Assessment is indicating that the loss of personal effects was assumed to be 15 percent of the replacement cost for both the destroyed and damaged dwellings.

- The potential lack of workers for the agriculture, forestry and fishing sector. The 2020 Census noted a 15.2% decrease in this category of workers compared to the last Census. The high interest for overseas seasonal work could widen the labour demand gap for this sector.

Assuming that each of the above 17,831 workers are all from different households, the loss of income for the next three to six months could have an immediate impact on the quality of life of about 82,022 people including 31,989 children. This includes 16,404 people from women headed HH.

2) The 4,351 affected women micro entrepreneurs or *mamas*, including the 2,996 *mamas* in the informal sector. Particularly affected are the *mamas* that depend on tourism (300 in Port Vila), produce cash crops and sell cash crops at the local markets.

The loss of income and lack of workers in the agriculture, forestry and fisheries sector could result in HHs using children to perform work related to this sector. This could mean that 31,989 children from the most affected HHs could be at risk of engaging in Child Labour activities.

Recovery Needs

Total recovery needs for the Employment and Livelihoods sector are estimated to be VUV 12.5 billion.[93] The detailed breakdown of these recovery needs is presented in the table below.

Table 67: Recovery Needs for the Employment and Livelihoods Sector

Recovery Programme	Short Term	Medium Term	Long term	Total	Responsible Agencies
Community Based Emergency Employment (CBEE) targeting the agriculture, forestry and fisheries sector	5,000,000,000			5,000,000,000 [94]	MALFFB, Cooperatives Department, ILO
National awareness on health and safety of workers in the formal and informal economies during recovery.	1,500,000			1,500,000	DoL
Registration of affected workers (Employment Vanuatu) to access employment services and redeployment to growth sectors.	5,000,000			5,000,000	DoL, ILO
Local skills development summit and action plan.	1,400,000			1,400,000	VCCI, TLAC, ILO
Employment Intensive Infrastructure Programme (EIIP) for the private construction sector.		5,000,000,000		5,000,000,000 [95]	Ministry of Infrastructure, ILO
Child labour assessment		2,000,000		2,000,000	DoL, UNICEF, ILO
Institutionalization of Business Continuity Plans (BCP) in all enterprises.		1,500,000,000		1,500,000,000	VBRC, UNDP, ILO

[93] This amount for recovery needs in E&L was adjusted from VUV 22.5 billion (as indicated in the recovery needs table) to VUV 12.5 billion since some budget line items are already costed in the agriculture and housing sectors.
[94] This amount is already reflected in the agriculture sector and is therefore not included in the total recovery needs for the E&L sector.
[95] This amount is already reflected in the housing sector and is therefore not included in the total recovery needs for the E&L sector.

Programme to make local jobs and working conditions more attractive for NiVans			3,000,000,000	3,000,000,000	VCCI, VUVUC, ILO
Extending social security coverage to informal sector workers and entrepreneurs.			2,000,000,000	2,000,000,000	VNPF, UNCDF, ILO
Capacity Building Programme for Tripartite Labour Advisory Council (TLAC) on Disaster Preparedness & Recovery.			1,000,000,000	1,000,000,000	TLAC, ILO
Capacity building of Vanuatu Trade Union Combine (VUVUC) to establish membership database & mapping			3,500,000	3,500,000	VUVUC, APHEDA, ILO
Supporting skills development, including disaster resilience, in the agriculture and construction sectors.			5,000,000,000	5,000,000,000	MALFFB, MIPU, IFAD, FAO, UNDP, UNCDF,ILO
Development and Implementation of a National Employment Policy.			5,000,000	5,000,000[96]	TLAC, ILO
Review of Labour Laws to support decent work and safe recovery.			5,000,000	5,000,000[97]	TLAC, ILO
TOTAL	5,007,900,000	6,502,000,000	11,013,500,000	22,523,400,000[98]	

Recovery Strategy

In the short term, the recovery strategy should focus on supporting the re-generation of production and income through early recovery programmes and in the medium term, transition to building locally demanded skills and promoting sustainable enterprises. In the long term, up-stream employment policies and labour laws should be developed and implemented to strengthen the resilience of workers to future shocks, particularly targeting women, youths, persons with disabilities and those engaged in the informal economy. Decent work, social dialogue and engagement of the Tripartite Labour Advisory Council (TLAC) should be central to the planning, implementation and monitoring of the recovery strategy.

Social Protection

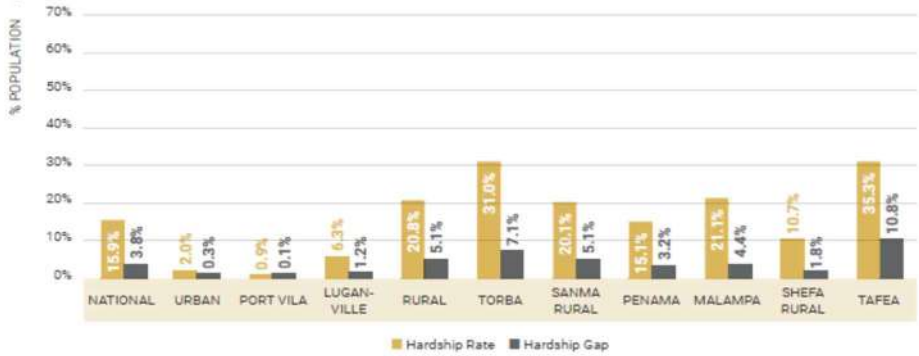
Pre-disaster hardship context

According to the report "Hardship in Vanuatu. 2019-2020 NSDP Baseline Survey",[99] the rate of hardship for Vanuatu, defined as those individuals living below the national poverty line is estimated to be 15.9 percent representing 47,000 individuals living in hardship nationwide, with 96.7 percent of people in hardship located in rural areas. The rate of hardship in urban areas is 2.0 percent, compared to 20.8 percent in rural areas (Figure 15). There are also substantial

[96] This amount will be covered by government budget.
[97] This amount will be covered by government budget.
[98] The revised total recovery needs for this sector is VUV 12,533,400,000 (see previous footnotes).
[99] Vanuatu National Statistics Office (2021).

geographic differences, with the highest rates of hardship in the rural provinces of Tafea and Torba (35.3 percent and 31.0 percent, respectively).

Figure 15 Hardship in Vanuatu



Source: VNSO (2021) "Hardship in Vanuatu. NSDP Baseline Survey"

In absolute terms, people in hardship concentrates in Tafea (14,066), Malampa (9,069), rural Sanma (8,706) and Penama (5,204). Together, these four rural areas account for 78.4 percent of all the people in hardship in Vanuatu. Households in hardship in these areas have less educated adults and derive less income from employment. Eighty-three percent of people working and living in hardship are working in agriculture, most of them self-employed. People in hardship, and more generally all rural households, are less connected to some services such as public water connection and electricity grid connection.

Post-disaster Social Protection context

Social Protection (SP) system (social insurance, social assistance, and labor market programs) in Vanuatu remains in a nascent stage of maturity with limited government spending. The country lacks a Social Protection policy with no safety nets interventions established aiming to assist people in hardship at regular time and in case of changes in circumstances. Furthermore, the existing database and civil registry might miss to identify categories of people living in hardship (i.e., low income, disability, unemployed, etc.) due to the lack of information collected or the limited interoperability (exchange of information) among databases which capture critical characteristics of households and individuals.

In terms of the contributory social protection system, Vanuatu has put in place a robust social security system for formal workers, headed by the Vanuatu National Provident Fund (VNPF), which was created in 1986. Currently, 43 percent of population 15 years and older is a member of the VNPF (62 percent of them are men), this is approximately 27 percent of the total population of the country. There are not public safety net programs in Vanuatu, and little that can be regarded as in-kind social assistance. Some allowances are in place such as the Family Assistance Support for destitute families and scholarships, while labor market programs have the least share.[100]

Notwithstanding the nascent stage of Vanuatu's current formal Social Protection system (social insurance, social assistance, and labor market programs) to assist affected population after a shock, relevant recent experiences from government and humanitarian partners have been put in place. Specifically, social protection interventions were implemented to address the compounded effects of COVID-19 and TC Harold, such as the "Recovery strategy and package" implemented by the Government (GoV); the "Assistance strategy to members" implemented by the VNPF;[101] and the "Cash transfer program for vulnerable families" implemented by a network of humanitarian partners lead by Oxfam.

Recovery Strategy

The country has been relying on informal (community-based) safety nets. However, the effectiveness of informal social protection has been proven to be limited in presence of covariate shocks like natural disasters which have affected the entire community. In presence of large shocks households and communities have challenges in redistributing resources

[100] https://www.adb.org/sites/default/files/project-documents//44152-012-reg-tacr-34.pdf

[101] "Recovery strategy and package" aimed to protect formal employment and livelihoods of informal workers through soft loans, mainly in urban settings; while VNPF's assistance strategy targeted its membership (mostly men in urban areas) by providing soft loans and simplifying procedures to release funds from their respective accounts.

because the shocks affect all at the same time. Hence, the need of formal social protection to ensure that assistance is delivered at time of needs ensuring that the most vulnerable households and communities are timely reached.

Disaster Risk Management

Disaster Risk Management (DRM) in Vanuatu has evolved significantly over the past few years towards a holistic and inclusive approach to preparedness, response and resilient recovery within and across all sectors.

Significant policy frameworks include the national Climate Change and Disaster Risk Reduction Policy (CCDRM Policy 2016-2030) which calls for a more integrated and targeted approach to mitigation and climate change prevention measures, contextualising global frameworks around DRM and climate change and the National Disaster Recovery Framework (NDRF) which is a roadmap that aims to address the risk and vulnerabilities of Vanuatu building on the consensus of utilising Risk-Informed development.

Disaster Risk Management Arrangements

The national disaster risk management arrangements are stipulated under two separate legislations:

- The Disaster Risk Management Act No.23 of 2019 (DRM Act 2019) sets out the umbrella national arrangements for the management of disasters arising from natural and other hazards. The DRM Act, however, is silent on recovery and reconstruction.
- The Meteorology, Geological Hazards and Climate Change Act (2016)- Act No.25 of 2016) sets out the national arrangement for monitoring and warning for severe weather, including tropical cyclones and other meteorological hazards, in Vanuatu.

The former sets out the mandates for disaster risk management in the country including the key role of the NDMO to coordinate disaster response actions, the responsibilities for meteorological and geological hazards and climate change services (as provided by the Vanuatu Meteorology and Geohazards Department). However, neither legislation articulates responsibilities related to recovery. It is in this vein that under the leadership of the Office of the Prime Minister, the National Recovery Bill was drafted to be tabled to Parliament in 2023. The Bill includes institutional arrangements and mandates for recovery coordination. It provides for the National Disaster Recovery Framework to guide recovery and development nexus. The Bill outlines how recovery should be carried out, not only at the national level, but also at the local government level, through Local Authorities. The legislation makes provisions for public and private participation including civil society. Disaster risk financing is also considered with the establishment of a Recovery Fund, as well as others to provide much needed resourcing for recovery and resilience.

These legislations work in unison and complement others relating to physical planning, urban planning, and sectoral development.

Once the Recovery and Resilience Bill becomes an Act of Parliament, there will be a need to harmonise the systems from response to recovery and ensure that the development consent process is risk informed[102]. This review should enable Vanuatu to more meaningfully strengthen the overall practice of disaster risk management within the context of the *Vanuatu 2030 | The People's Plan*.

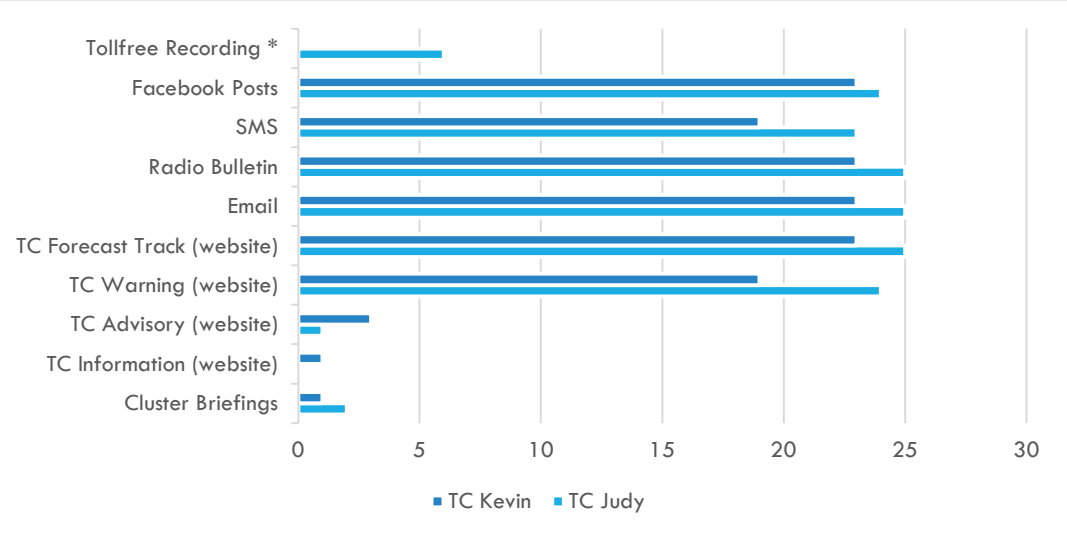
Early warning

An important element of Vanuatu's preparedness capability is represented by the effectiveness of its early warning system (EWS). At a national level, early warning is the overall responsibility of the Vanuatu Meteorological and Geohazards Department (VMGD). The VMGD is responsible for providing warnings for severe weather, tropical cyclones, high seas, tsunamis, and other meteorological and geohazards within the area of 12°S to 23°S and 160°E to 175°E (roughly Vanuatu's territorial waters).

[102] MIA, DUAP, DLNR, DLA (2022) Tanna Island: Resilient Investment and Development Opportunities, Vanuatu

As part of its responsibilities, the VMGD conducted early briefings with cluster leads in order to prepare them for the developing systems and to advise of the high likelihood that the systems would intensify into Category 4 cyclones. Updates to the public were also issued across multiple media platforms. The Cyclone Warning Centre at VMGD issued 290 products across various platforms.

Figure 16: Products Issued by VMGD



** Tollfree recording was only available during TC Kevin.*

Aside from the hurricane force winds to be expected, VMGD had also advised the public to expect widespread flooding due to the intense rainfall. Fortunately, though high waves were recorded at the Tanna buoy, these coincided with low tide and did not result in any reported impacts. Hazard impact assessments were not undertaken at the time of reporting. This information would have been beneficial in advising development and recovery in areas that were affected. Also not captured in the assessment was the impact on the environment.

Very early on in the operations, officers were seconded from other departments to support the forecasting unit in the Cyclone Warning Centre. These officers continued to support the warning centre until the warning centre was deactivated. During that time, VMGD technical staff were deployed to assess all instrumentation including housing, power supply, security and future risk. Though the damage and loss estimations for the VMGD were not quantified, estimates were made to replace equipment damaged or destroyed by the cyclones as well as to improvements to existing sites to ensure that warning services can be continued.

Table 68: Recovery Needs in DRM (VUV)

Early Warning Stations	Short term	Medium term	Long term	Grand Total
Repair and retrofit building for operational safety	1,600,000			1,600,000
Replacement of damaged EW equipment	1,710,000	100,000		1,810,000
Replacement of EW equipment nearing end of life	2,330,000	1,182,000	500,000	4,012,000
Grand Total	**5,640,000**	**1,282,000**	**500,000**	**7,422,000**

Response[103]

Using the provisions in the DRM Act 2019, a State of Emergency (SOE) was declared on the 2nd of March 2023 (Order No 29 of 2023) and its subsequent amendment on 5th March 2023 (Order 30 of 2023). The response was coordinated from the NEOC and implemented in the following two phases:

- Phase I aimed to provide immediate relief to affected communities and also determined the scale of operations in the provinces. Rapid assessment provided crucial information to guide the work of the clusters and enabled the NEOC to determine resourcing needed from within Vanuatu and internationally.
- Phase II of the response was programmed for the latter half of the SOE period, 3-6 months.

[103] NDMO (2023) TC JUDY & TC KEVIN NATIONAL RESPONSE PLAN

The National Response Plan was launched on the 30th of March 2023 identifying immediate humanitarian priorities for emergency food rations, clean water, agricultural tools / seeds / cuttings, lighting, tarpaulins / roofing / shelter kits, medical assistance and the restoration of transportation infrastructure and health and educational facilities. The estimated cost for the response was VUV 6,170,291,985 (approximately USD 52 million).

During the latter part of Phase I, sectors had begun to move towards planning sector recovery with detailed sector assessments being planned. The decision by the Government of Vanuatu to start the recovery planning process with the activation of the Recovery Operations Centre (ROC) on 06th March ensures that there is a cohesive transition from response to recovery. The ROC is located in the Department of Strategic Planning, Policy and Aid Coordination (DSPPAC) and takes its guidance from the National Disaster Recovery Framework Roadmap (NDRF).

Figure 17: Operational Timeline of the Recovery Operations Centre

Recovery

The overall responsibility for recovery currently rests with the Prime Minister's Office under the Department of Strategy Policy, Planning and Aid Coordination (DSPPAC) whereas, the humanitarian response is under the purview of the NDMO, Ministry of Climate Change. Where the National Disaster Committee oversees the response effort, the National Recovery Committee (NRC) was established in 2018 to lead and coordinate recovery implementation. The NRC has continued to function by regulation order Number 154 of 2018 of the Government Act.

The NRC is supported by its Secretariat, the Department of Strategic Policy, Planning and Aid Coordination with the ROC providing technical and operation advice. Once activated, the immediate priorities of the ROC were to coordinate the Post Disaster Needs Assessment (PDNA) and drafting of the Recovery Plan. Its work is guided by the National Disaster Recovery Framework Roadmap (NDRF) which has in turn informed the drafting of the Disaster Recovery and Resilience Bill. The enactment of the Bill is crucial to bridge humanitarian response to recovery and recovery to resilient and sustainable development and facilitate access to the resourcing needed.

It is important that DSPPAC continues the interactions with the sectors involved in the PDNA and creates opportunities to expand on the network of sector leads now well versed in the methodology. The socialisation of the Bill (and Act of Parliament), NDRF, PDNA and the Recovery Plan is needed with agencies and individuals not involved, in particular decision makers. The engagement with State Owned Enterprises, civil society organisations and private sector is key to understanding how disasters have impacted private and informal actors as well as ensuring recovery activities are improving lives and livelihoods. The governance for recovery will be detailed in the TC Judy & TC Kevin Recovery Plan.

The provisions under the State of Emergency have provided some allowances these include: VAT free for local purchase goods particularly building materials and school fees subsidies for students from cyclone affected islands.

Disaster Risk Financing

Where humanitarian response is funded through a contingency budget, no dedicated funding is yet provided for recovery. Dedicated funding of recovery activities have been targeted at sector activities through projects. Following TC Pam, the Government of Vanuatu opted out of the PCRAFI catastrophe risk insurance but was able to access Catastrophe-Deferred Drawdown Option (CAT-DDO) in 2020. In May 2023, Vanuatu hosted a Disaster Risk Financing workshop to discuss potential products and solutions that could provide access to ex post and ex ante financing for government, sectors, communities and individuals.

Recovery Priorities for DSPPAC

The process undertaken for the PDNA has leaned heavily on the expertise and knowledge of the sector experts from Government Ministries and sector analysts from DSPPAC. The establishment of the Recovery Unit has been key to coordinating the PDNA and drafting of the recovery plan. This PDNA has definitely been Government led. It is important that DSPPAC continue to engage with the sector leads involved and develop a programme that will allow for more frequent exchanges. Socialisation of the functions of the Recovery Unit and the ROC, the NDRF and related legislation is needed particularly with the private sector and civil society. The recovery arrangements will benefit from these networks that exist throughout Vanuatu in communities and provinces. The total recovery needs for DRM is VUV 101,179,363.

Table 69: DRM Recovery Priorities (VUV)

Recovery Activities	Lead	Short term	Medium term	Long term	Grand Total
Enhance Committee members knowledge of their roles and responsibilities and general understanding of Recovery	DSPPAC	2,360,000	2,360,000	2,360,000	**7,080,000**
Develop an information management system to support the functions of DSPPAC and the ROC	DSPPAC	2,360,000	11,800,000		**14,160,000**
Facilitate sector preparedness activities including the development of assessment forms and reports	DSPPAC	1,180,000	2,360,000	1,180,000	**4,720,000**
DRM Capacity development of key personnel	DSPPAC	7,868,354	6,740,467	5,988,542	**20,597,363**
Development of a disaster financing strategy	Ministry of Finance		11,800,000	35,400,000	**47,200,000**
Repair and retrofit building for operational safety	VMGD	1,600,000			**1,600,000**
Replacement of damaged EW equipment	VMGD	1,710,000	100,000		**1,810,000**
Replacement of EW equipment nearing end of life	VMGD	2,330,000	1,182,000	500,000	**4,012,000**
Total		**19,408,354**	**36,342,467**	**45,428,542**	**101,179,363**

Gender

Disasters are not gender neutral. They have different impacts on women, girls, boys and men[104]. Women and girls are often affected disproportionately to men and boys due to gender inequalities caused by socioeconomic conditions, cultural beliefs, and traditional practices[105]. Women and girls also face different risks and have different capacities and resources on which to draw to respond and cope[106]. Gender relations in Vanuatu tend to be culturally specific and characterized by unequal distribution and/or access to power and resources, differences in mobility and in the ability to make life decisions and to voice priorities and needs, as well as to explore and use individual potential and

[104] https://documents1.worldbank.org/curated/en/270841493643065229/pdf/114671-WP-PUBLIC-pdna-guidelines-vol-b-gender.pdf
[105] https://www.gfdrr.org/en/genderequality
[106] https://documents1.worldbank.org/curated/en/270841493643065229/pdf/114671-WP-PUBLIC-pdna-guidelines-vol-b-gender.pdf

capacities[107]. The effects of TC Judy and Kevin on gender equality in Vanuatu are presented here to inform the country's recovery efforts.

Disaster Effects

Psychosocial

Anxiety, stress and signs of trauma as a result of the cyclones devastating impacts on people's lives and livelihoods [108] was reported by most rapid assessment teams. The experience may also trigger trauma for people who already lived through past severe tropical cyclones including TC Harold (2020) and TC Pam (2015) and who are facing other on-going natural disasters[109]. This may have longer term mental health impacts and can exacerbate household and relationship level stress, a risk factor for violence. Community leaders who can support Gender/Protection work (e.g. those that can assist with protection of children, people with disabilities and at-risk men and women) were reported to be available in 43.5% of assessed communities including CAVAW and chiefs. With limited mental health services in Vanuatu, it is vital that psychosocial support and psychological first aid is integrated into recovery and first responders receive additional or refresher training.

Gender Based Violence

Vanuatu has one of the highest prevalence rates of violence against women and girls globally. Gender based violence occurs in all provinces and islands, among all age groups, education levels, socio-economic groups and religions. It is higher in rural (63%) than in urban (50%) areas. Social values held by both women and men reinforce the acceptability of violence towards women and girls - 60% of women agree with at least one "reason" for men to be violent with their wives[110].

Table 70: Key Indicators of Gender Based Violence in Vanuatu

GBV indicator[111]	National	SHEFA	TAFEA
Prevalence of sexual and or physical violence against women by their husband or intimate partner	60 %	31%	67%
Prevalence of sexual violence against women by their husband or intimate partner	44%	20%	54%
Prevalence of physical violence against women by their husband or intimate partner	51%	25%	57%
Prevalence of emotional violence against women by their husband or intimate partner	68%	46%	65%
Prevalence of financial violence against women by their husband or intimate partner (Women refused jobs because of their husbands/partners)	24%	-	-
Prevalence of financial violence against women by their husband or intimate partner (Husband/partner took their earnings without their consent)	33%	-	-
Prevalence of financial violence against women by their husband or intimate partner (Husband/partner refused to give money for household expenses)	41%	-	-
Prevalence of coercive control against women by anyone in the community, including their husband or intimate partner (Women prevented from attending a meeting or participating in an organisation)	14%	-	-

Source: 2011 Vanuatu Women's Lives and Family Relationships, VNSO and VWC

Following TCs Judy and Kevin, Vanuatu's toll free helpline managed by Vanuatu Women's Centre (VWC) was down and not fully operational again for approximately two weeks. The VWC, the provider of GBV counselling services in Vanuatu, had some interruption to services after the cyclones, but was operational again within a week. It is difficult to quantify the impact of the cyclones on gender based violence in the immediate aftermath of the twin cyclones, however previous

[107] https://documents1.worldbank.org/curated/en/270841493643065229/pdf/114671-WP-PUBLIC-pdna-guidelines-vol-b-gender.pdf
[108] References to trauma are based on observations of signs of trauma during rapid assessments rather than based on clinical diagnosis.
[109] including drought and volcanic ash fall.
[110] World Vision, 2020, Evaluation report: PTL Reducing Gender-based Violence Project Vanuatu Counseling Approach https://reliefweb.int/report/vanuatu/evaluation-report-ptl-reducing-gender-based-violence-project-vanuatu-counselling
[111] Study on Women's Lives and Family Relationships - VNSO and VWC

disasters in Vanuatu have shown that initial reporting of gender based violence is low as the attention of family members is on first response and rebuilding. The VWC has anecdotal evidence however, that the cases of gender based violences will be higher than pre-cyclone rates, due to the compounding pressures of shelter, food and increased workloads. GBV response services in Vanuatu are limited but the VWC and the Committee Against Violence Against Women (CAVAW) network play a vital role in community level first response, violence prevention and support for survivors.

The rapid assessment teams deployed in the days following the cyclones reported one case of sexual abuse of a young woman with a disability (referred to police) and cases of physical and emotional abuse of women and children due to high levels of tension and stress (food insecurity, increase in household workloads, children out of school, loss of sources of income for marketing). Increased risks included lack of privacy and security due to damaged houses, bathing and sanitation facilities (no lighting, shared facilities, no locks, damaged walls). GBV support and risk mitigation measures are needed across all sectors[112]. Women and girls living with disability are at greater risk due to their physical isolation, exclusion and dependency which increases the extent of abuse they are subjected to and limits the actions they can take[113].

Female Headed Households

Although seasonal work is a valuable income source for families in Vanuatu, when men go overseas on seasonal work, their families are left behind, at-risk and less resourced to respond and recover. The impact of these absent workers is cited frequently in the Gender & Protection Assessment data, in both Tanna, Erromango and Efate, with reports of female-headed households as a consequence of male adults in a household participating in seasonal work overseas, including pregnant women, two reports of child-headed households and children being looked after by other family members. Women who may normally have the support of their husbands or partners to manage a household, care for children, replant gardens, or conduct repairs are now facing doing this alone, adding to their work burden These circumstances also increase protection risks for women and children. It also points to the need for support for the workers who are overseas, whose homes and families may be affected.

Participation and Leadership

In many formal and customary spaces in Vanuatu, women's leadership and decision making is disproportionately low compared to men (including young women and women with disabilities). Low levels of participation can compromise quality of response and recovery programming as decisions may not be mindful of different needs and priorities of different groups in society especially women, girls, and people with a disability.

There are opportunities to engage and support women and girls in leadership positions but risks must be mitigated. There are already strong women leaders in disaster response mechanisms, especially at the community level through Community Disaster and Climate Change Committees (CDCCCs), which NDMO guidelines outline must be gender balanced. Some rapid assessment teams highlighted that women CDCCC members played a leading role in the first response. There are opportunities during recovery to support and encourage women (including young women and girls and those with a disability) in leadership roles (for example, in WASH, Shelter and Food security programming) and to strengthen provisions in the Decentralisation Act for inclusive local governance, including representation of women, youth and people with a disability. However, the high prevalence of GBV, including controlling behaviours in relationships, requires a considered approach to engaging men and boys to support women's meaningful participation and active leadership.

Capacity and Coping Mechanisms

People in Vanuatu are resilient and there are strong social and cultural networks which must be acknowledged and supported during response and recovery. These include women's networks (church groups, savings groups, emergency preparedness groups), youth groups and first responders such as CDCCCs, Vanuatu Women's Centre CAVAW network, pastors and chiefs. Wherever possible, recovery should support local capacities and locally led response and recovery, and work with and support existing social networks and mechanisms.

[112] TC Judy TC Kevin Rapid Gender and Protection Analysis
https://reliefweb.int/report/vanuatu/tropical-cyclones-judy-kevin-gender-protection-analysis-22-march-2023-version-3
[113] UNFPA, A Deeper Silence The Unheard Experiences of Women with Disabilities – Sexual and Reproductive Health and Violence against Women in Kiribati, Solomon Islands and Tonga (March, 2013), p. 12

Recovery

Recovery Needs

The recovery needs are VUV 597 million to address the effects of the twin cyclones on gender equality. For a detailed breakdown of recovery needs refer to the Gender sector annex.

Table 71: Recovery Needs for Gender Equality (VUV)

Recovery needs	Short Term	Medium Term	Long Term	TOTAL
Gender responsive disaster resilience	49,000,000	55,000,000	33,000,000	137,000,000
Gender Based Violence	40,000,000	38,000,000	25,000,000	103,000,000
Child protection	59,200,000	45,000,000	28,000,000	132,200,000
Disability Inclusion	57,000,000	108,000,000	60,000,000	225,000,000
Total	**205,200,000**	**246,000,000**	**146,000,000**	**597,200,000**

Recovery Strategy

Disaster recovery needs to respond to the needs of women and girls as presented here. In addition, recovery also has the potential to transform unequal power relations that contribute to gender-differentiated vulnerabilities as it provides a "window of opportunity" to promote gender equality[114]. Recovery can present opportunities for new and more progressive gender roles and relationships to emerge. It is therefore critical that gender is mainstreamed in every step of recovery to ensure that recovery interventions are relevant, effective and sustainable for women and men of the affected population. Mainstreaming Gender Equality, Disability and Social Inclusion (GEDSI) considerations ensures that recovery efforts will reduce, rather than reinforce, inequalities by avoiding assumptions, generalisations and stereotypes, and by promoting positive change. Recovery programmes that effectively consider GEDSI can also increase and broaden ownership and sustainability of recovery initiatives by ensuring greater ownership through equal involvement of the population as a whole[115]. Understanding different gender roles, responsibilities, needs, and capacities is therefore critical in ensuring all people in Vanuatu benefit from recovery programming.

Cross-cutting Gender Equality, Disability and Social Inclusion (GEDSI)

Gender mainstreaming, including gender-responsive planning and budgeting, is a policy priority of the Government of Vanuatu's National Sustainable Development Plan, National Gender Equality Policy, National Policy for Climate Change and Disaster Induced Displacement and other sectoral policies and guidelines. It is also a priority in international agreements and treaties to which Vanuatu is a signatory.

Every sector has the responsibility to ensure GEDSI is mainstreamed across Vanuatu's recovery from TCs Judy and Kevin. Each recovery sector ought to carry out the following throughout their planning, budgeting, programming, monitoring and evaluation:

- Assess and respond to the gendered impact on the social, productive, infrastructure and cross-cutting sectors as a result of TCs Judy and Kevin.
- Collect age, sex and disability disaggregated data to allow specific needs and vulnerabilities to be addressed and ensure the most at risk are prioritised in all recovery, resilience and build back better initiatives.
- Facilitate the meaningful participation of women, people with disabilities and other at-risk groups in all recovery and resilience decisions and activities at each stage of the process.

[114] https://www.gfdrr.org/sites/default/files/publication/gender-equality-disaster-recovery.PDF
[115] https://documents1.worldbank.org/curated/en/270841493643065229/pdf/114671-WP-PUBLIC-pdna-guidelines-vol-b-gender.pdf

- Prevent and respond to gender and social inclusion concerns ensuring safety, dignity, access and accountability for affected populations, including the specific needs of women, men, girls and boys.
- Develop multi-sectoral initiatives that strengthen security in communities and prevent and respond to violence against women and girls.
- Implement sector-specific and multi-sectoral recovery actions that abide by 'do no harm' principles.

Prevention of Sexual Exploitation, Abuse and Harassment (PSEAH)

The gender and protection rapid assessment teams noted that women and children were at risk of sexual exploitation, abuse and harassment and that PSEAH measures were important. There was one report of children/women/people with disabilities exchanging sex to access Non Food Items and/or food in Tafea Province. To date there are no other reports of SEAH, however, people are extremely vulnerable (food insecurity and lack of safe access to shelter and WASH facilities) and are therefore at risk. Assessment teams, security forces (police, Vanuatu Mobile Force (VMF) and international military personnel) have all been deployed to affected communities flagging an urgent need for risk mitigation measures. There is a need for multi-sector attention to Prevention of Sexual Abuse and Exploitation (PSEA), with an obligatory reporting mechanism to be established for all sectors. It is important that throughout the recovery period, recovery workers are trained in PSEA and sign the code of conduct for humanitarian workers in Vanuatu.

4. Recovery

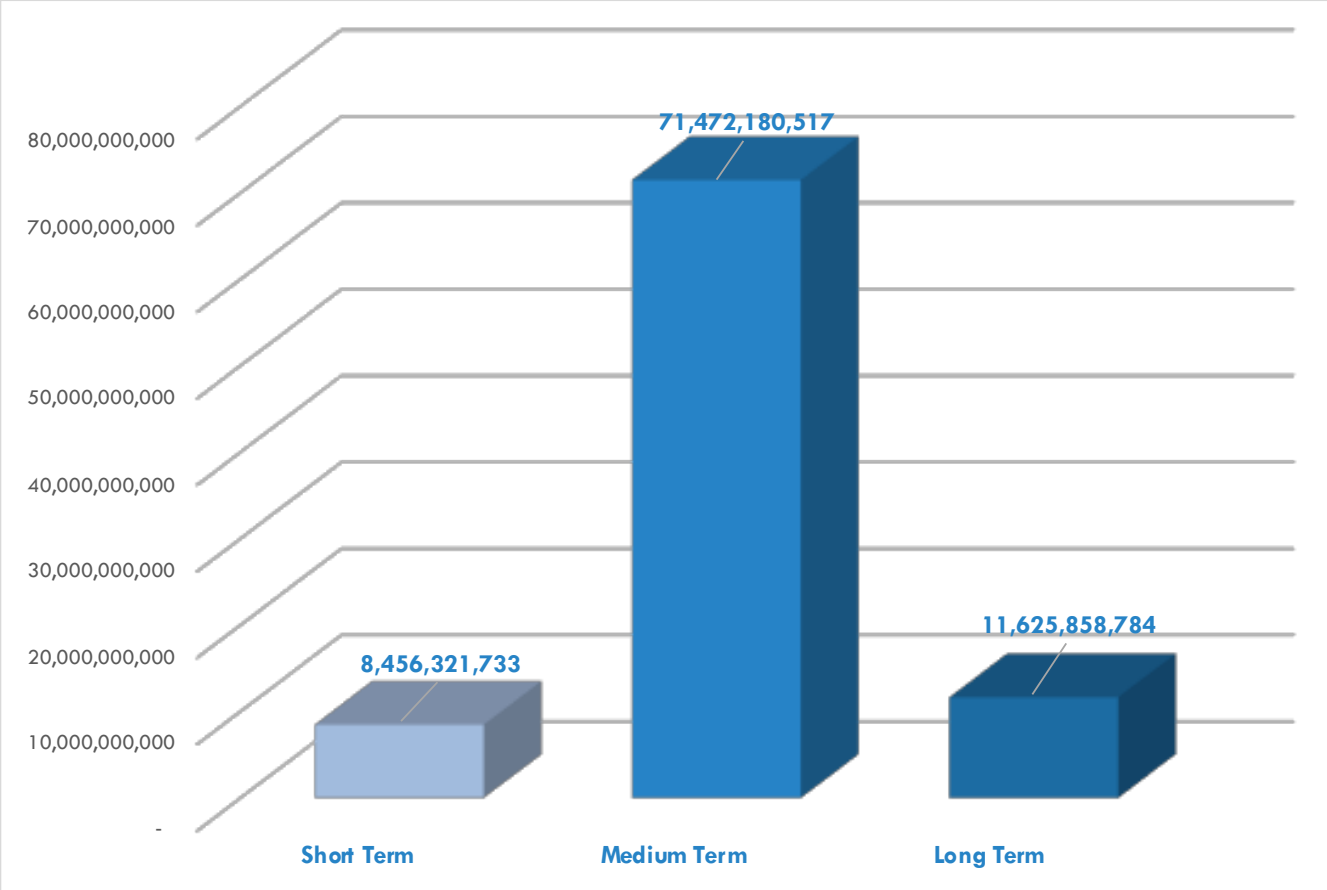
Recovery Needs

The table below presents the breakdown of all recovery needs by sub-sector, as well as in relation to the short, medium and long-term needs. Medium term recovery needs are the highest with VUV 71.5 billion, followed by long-term requirements at VUV 11.6 billion, and lastly short-term recovery needs with VUV 8.5 billion.

Table 72: Detailed Recovery Needs by Sub-sector

SECTOR	RECOVERY NEEDS				
	Short Term	Medium Term	Long Term	Total VUV	Total USD
Agriculture	277,238,419	800,743,990	1,514,111,426	**2,592,093,835**	**$21,898,233**
Commerce & Industry	69,359,021	206,827,063	101,250,000	**377,436,084**	**$3,188,613**
Tourism	50,000,000	205,000,000	0	**255,000,000**	**$2,154,262**
Energy	16,388,159	0	0	**16,388,159**	**$138,449**
Telecommunications	5,500,000	106,300,000	175,000,000	**286,800,000**	**$2,422,911**
Transport	0	40,000,000,000	0	**40,000,000,000**	**$337,923,460**
Water, Sanitation	143,385,000	23,313,500	128,208,000	**294,906,500**	**$2,491,396**
Culture	12,152,705	25,000,000	52,000,000	**89,152,705**	**$753,170**
Education	1,381,695,950	0	4,442,300,000	**5,823,995,950**	**$49,201,622**
Governance	199,225,660	0	0	**199,225,660**	**$1,683,076**
Health	934,830,681	1,420,103,497	843,760,816	**3,198,694,994**	**$27,022,852**
Housing	775,250,000	24,224,750,000	0	**25,000,000,000**	**$211,202,163**
Youth & Sports	188,887,784	0	0	**188,887,784**	**$1,595,740**
Employment & Livelihoods	4,177,800,000	4,177,800,000	4,177,800,000	**12,533,400,000**	**$105,883,247**
Disaster Risk Management	19,408,354	36,342,467	45,428,542	**101,179,363**	**$854,772**
Gender	205,200,000	246,000,000	146,000,000	**597,200,000**	**$5,045,197**
TOTAL	**8,456,321,733**	**71,472,180,517**	**11,625,858,784**	**91,554,361,034**	**$773,459,162**

Figure 18: Short-, Medium- and Long-Term Distribution of Recovery Needs (VUV)



5. Annexes

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Annex 2: Technical Note

To the **Summary Table of Damage and Loss** as the data in the table may differ from estimates which appear in the following Sector Reports.

1. Agriculture –
    a. Summary table of Damage and Loss consists of data for Priority areas one and two.
    b. Value estimates of damage and loss are based on 30% of production, that enters the market, as agreed to by Agricultural and Macroeconomic team.
2. Infrastructure
    a. Transport - Values attributed to Loss in the Sector Report were upon investigation attributed to Damage in the Summary Table of Damage and Loss.
3. Industry
    a. Loss and Damage Figures were adjusted too late for inclusion in the D&L Table

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