Response & Early Recovery Humanitarian Action Plan Tropical Cyclone Hola &

Ambae Volcano

ShortTerm (April – June 2018) Intermediate (July – December 2018) LongTerm (2019/2020)













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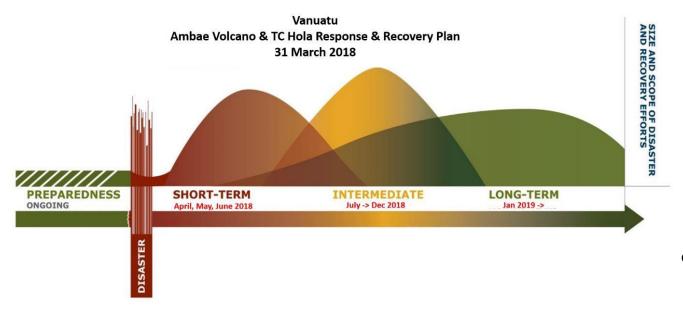
Executive Summary

Vanuaturemains one of the most vulnerable countries on the planet to the negative effects of climate change & natural disasters.

The simultaneous disasters of the Ambae Manaro Voui Volcano (September 2017 – present) and severe Tropical Cyclone Hola (March 2018) have placed extreme pressure on the Government of Vanuatu and the affected populations of PENAMA & MALAMPA Provinces. The situation continues to evolve, as evidenced by the destructive Wailembui Flashflood and Landslide on 31 March 2018.

While the National Disaster Management Office (NDMO), through its Cluster System, is coordinating the on-ground response to these disasters, and the Council of Ministers' have allocated over 130 million VT towards the response effort, there remain substantial technical and financial gaps totaling over 1 Billion Vatu.

	Short Term Needs (April-June 2018) VT	Intermediate Needs (July-December 2018) VT	Long Term Needs (2019/2020)	Response Need VT	GoV COM Allocation VT	Fiscal Gap VT	Comments
Ambae Volcano (+ Landslide)	224,772,656	193,139,743	84,482,490	502,394,889	40,000,000	-462,394,889	- Potential Support from -WorldBank/MALFFB41,049,343VT - DFAT/MoH 19,052,330VT - No Shelter Cluster Submission made to NDMO -includes MOET school fee exemptions
Tropical Cyclone Hola	251,475,981	99,064,098	281,016,995	631,557,074	92,000,000	-539,557,074	- potential cluster overlaps (WASH- Education, Shelter-Health) - Needs for Malekula only supplied by Shelter & Health - Shelter Cluster included costs for private home reconstruction -includes MOET school fee exemptions
TOTAL VT	476,248,637	292,203,841	365,499,485	1,133,951,963	132,000,000	-1,001,951,963	
TOTAL USD	4,432,303	2,719,453	3,401,594	10,553,351	1,228,484	-9,324,866	TOTAL USD



The following actions are recommended for immediate endorsement:

- Immediately establish a multi-agency taskforce to jointly coordinate the response and recovery efforts
- Solutions must be fully guided by the <u>National Policy on Climate Change and Disaster-Induced</u>
 <u>Displacement</u> as well as the <u>National Climate Change & Disaster Risk Reduction Policy</u> and the
 <u>National Sustainable Development Plan.</u>
- Increase staffing, technical capacity and procedural adherence within the NDMO through a medium-term surge approach
- Immediately launch an <u>emergency Flash Appeal</u> and a <u>CERF</u> under the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) as this disaster represents a major sudden onset disaster that requires a coordinated response beyond the capacity of the Government to respond to.
- Seek Financial and Technical assistance from Bilateral partners, local NGOs and regional technical agencies to improve and strengthen response capacity
- Review the affected areas cited in COM Decisions 46/2018 & 47/2018 to ensure that support reaches those most vulnerable, including in the geographical areas of:
 - o North West, North East and Central Malekula.
 - West Malo
 - South & Central Pentecost
 - North Ambrym
 - o Ambae
- Consider the use of innovative tools for humanitarian support including cash transfer and voucher systems for increased self-determination of the recovery process
- Enable recovery via VAT exemption on relief items and other emergency measures as it is not feasible for Government to directly rebuild private homes and infrastructure
- Approach disaster response and recovery in a universally accepted phased approach: Short Term (April – June 2018), Intermediate Term (July – December 2018) and Long Term (2019/2020).
- Hold Clusters to account to undertake comprehensive planning and budgeting alongside and in collaboration with other clusters to avoid duplications and build synergies
- Meaningfully engage local Civil Society and Private Sector stakeholders in all aspects of disaster response and recovery



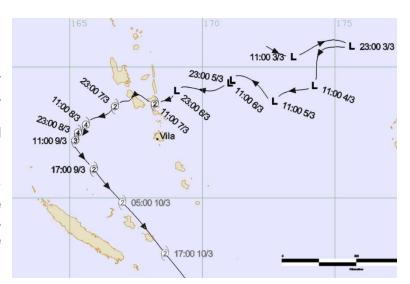


Hazard Background & History

Tropical Cyclone Hola

On March 3rd 2018 the Vanuatu Meteorology & Geohazards Department reported that Tropical Disturbance 09F had developed 230 km to the northeast of Nadi, Fiji. Over the coming days, the disturbance developed further as it moved towards Vanuatu, under the influence of a subtropical ridge of high pressure. It was subsequently classified on 6 March 2018 as Tropical Cyclone 12P. The system had developed into a Category 1 tropical cyclone Hola while it was located about 80 km to the east of Pentecost Island, Vanuatu. It was a category 2 tropical cyclone as it passed in between the islands of Pentecost and Ambrym. The system subsequently passed slowly directly over the island of Malekula and moved into the Coral Sea on March 7, where it rapidly consolidated and developed a 10 km eye. However, during the following days Hola's eye weakened and became cloud filled, as it stalled to the west of Vanuatu, peaking as a Category 4 Severe Tropical Cyclone with 10-minute sustained winds of 165 km/h.

The Ministry of Climate Change Adaptation (MCCA), Meteorology & Geo-Hazards, Energy, Environment and National Disaster Management Office rapidly organized its first emergency assessment meetings for TC Hola on 7 March 2018, and the first aerial assessments were conducted on 11 March 2018. Workinng with a range of civil society, government, development partner and local experts, NDMO coordinated the compilation of sectoral cluster needs assessments and response recommendations by 28 March.



Tropical cyclone Hola caused significant

damages to root crops, cash crops, shelter and public infrastructure for NorthWest & NorthEast Malekula, West Malo, Central Pentecost, SouthWest & SouthEast Ambae and Ambrym Islands. Situation reports and cluster meeting minutes are publically available on the MDMOTC Hola page.

Manaro Voui Volcano

The Island of Ambae contains a massive 2500 cu basaltic cone of Manaro Voui Volcano1 and the most voluminous active shield volcano of the Vanuatu arc. Its summit area shows two concentric calderas, the largest of which is 6 km in diameter and the smallest includes three Lakes (Manaro-Ngoru, Manaro-Lakwa and Manaro-Voui). Aoba is the name used by Smithsonian Institution's Global Volcanism Program in their global database, noting that the volcano is referred to locally as Manaro or Lombenben.

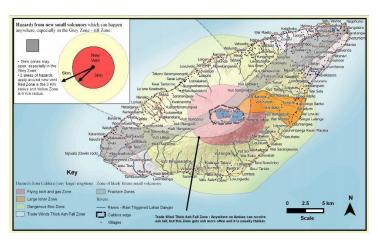
Past eruptions of Manaro Voui included the emission of big dark ash plume with substantial degassing of sulfur odor in 1995, and a major phreatic eruption in 2005. Most recently, from 6th September - 30th November 2017, Manaro Voui again erupted, with the formation of the scoria cone inside Lake Voui, Lava flows, an ash/gas column and minor ash emissions. On September 22, 2017, VMGD raised

 $^{^{2}}$ age ${f 5}$

¹ http://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano/our-active-volcanos/ambae/manaro-voui

the Alert Level was raised to 4 upon observing lava at the surface of the lake for the first time, as the underwater domegrew into a new volcanic island in the summit crater. On September 25, 2017, the Council of Ministers declared a State of Emergency on Ambae, and on September 28, 2017, COM ordered the complete evacuation of Ambae's 11,000 residents. Based on satellite data, webcam observations, and wind model data, during 21-27 March 2018 ash plumes from the vent at Ambae's Lake Voui rose to altitudes of 3-4.6 km. and drifted mainly S and SW, but towards the end of the week to the N and W.

As a result of the recent activity, ashfall had significantly impacted the S and W parts of the island, damaging crops, contaminating water, and collapsing homes, leading to the evacuation of multiple villages and households. On 25-26 March, residents of Santo reportedly witnessed incandescent material being ejected as high as 1 km, and Ambae volcanic explosions were heard on Pentecost and Maewo Islands. Situation reports and cluster meeting minutes are publically available on the NDMO Ambae Volcano page. VMGD has two volcano-seismic monitoring stations on Ambae providing live feed data to VMGD.



Web-cam photos and volcano seismic processed data can be viewed at http://www.vmgd.gov.vu/vmgd/index.php/geohazards/volcano.

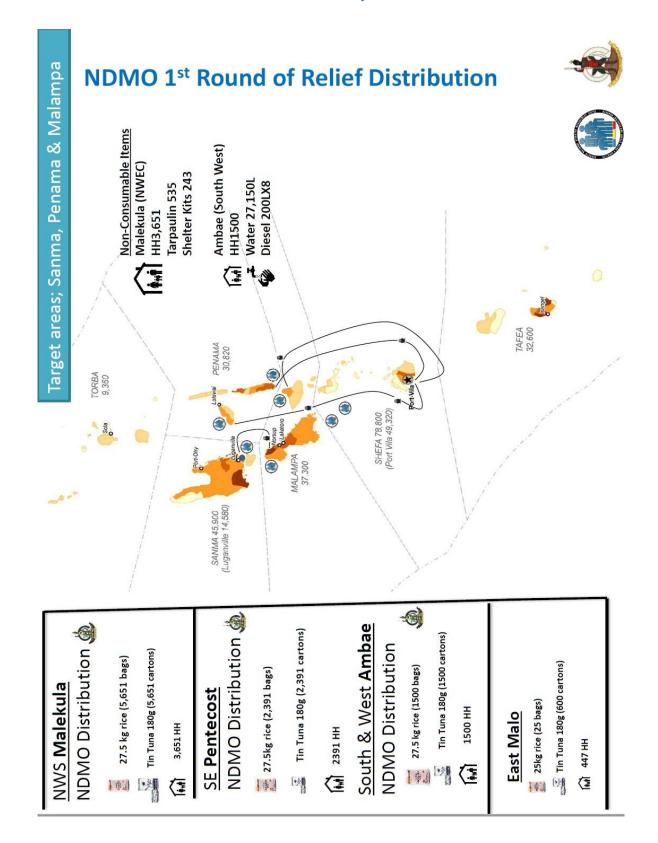
Emergency Relief and Financial Assistance – Disaster Zone Declaration

The destruction, loss and damages caused by TC Hola and Manaro Volcano has been widespread and finances and relief materials have been made available by the Government of Vanuatu and local partners to provide emergency relief and humanitarian assistance to the affected residents in two provinces: MALAMPA & PENAMA.

The Council of Ministers has made the following Decisions related to these two Hazards:

- Decision 223/2017- 200 Million Vatu towards Ambae Volcano response (10 million of which has not yet been allocated)
- Decision 035/2018 10 Million Vatu towards TC Hola assessments (6 million of which has not yet been allocated)
- Decision 46/2018- 40 Million Vatu towards West & South Ambae Island multi-hazard response (TC Hola + Volcano)
- Decision 47/2018- 92 Million Vatu towards TC Hola response on NorthWest & NorthEast Malekula, West Malo, Central Pentecost, SouthWest & SouthEast Ambae and Ambrym Islands

It is clear that despite the substantial government financial commitments, there is still an extraordinary need for external humanitarian assistance. For the Ambae response the Ministry of Agriculture is discussions with the World Bank for a relief package valued at 41,049,343VT, the Ministry of Health with DFAT for support valued at 19,052,330VT, the Ministry of Lands with UNICEF for 54,000,000VT and also with DFAT for 10,000,000VT.



Overall Disaster Zones Fiscal Analysis

	Short Term Needs (April-June 2018) VT	Intermediate Needs (July-December 2018) VT	Long Term Needs (2019/2020)	Response Need VT	GoV COM Allocation VT	Fiscal Gap VT	Comments
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Tropical Cyclone Hola	251,475,981	99,064,098	281,016,995	631,557,074	92,000,000	-539,557,074	- potential cluster overlaps (WASH- Education, Shelter-Health) - Needs for Malekula only supplied by Shelter & Health - Shelter Cluster included costs for private home reconstruction -includes MOET school fee exemptions
TOTAL VT	476,248,637	292,203,841	365,499,485	1,133,951,963	132,000,000	-1,001,951,963	
TOTAL USD	4,432,303	2,719,453	3,401,594	10,553,351	1,228,484	-9,324,866	TOTAL USD

Ambae Volcano Fiscal Analysis

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COM Decision 46/2018		Ambae Volcano On-	Ground Needs Assessm	ent			
Cluster / Sector	GoV COM Allocation VT	Short Term Needs (April-June 2018) VT	Intermediate Needs (July- December 2018) VT	Long TermNeeds (2019/2020) VT		Fiscal Gap VT	Comments
Food Security & Agriculture	10,000,000	50,222,400	12,800,000	12,200,000	75,222,400		MALFFB seeking World Bank support of 41,049,343 VT
wash	10,000,000	5,384,410	8,003,114	0	13,387,524	-3,387,524	potetial additional response activities with UNICEF support of 54,000,000VT; DFAT support of 10,000,000VT. MoL internal Budget of 10,000,000VT
Logistics	10,000,000	71,080,000	71,080,000	NA	142,160,000	L132 160 000	Some clusters have also included logistics in their budgets
Shelter	10,000,000	NA	NA	NA	0		Cluster Did Not submit response plan/budget request to NDMO
Health	0	12,146,932	18,220,398	0	30,367,330		MoH potential commitment of 19,052,330VT from DFAT
Gender	0	4,533,270	5,347,905	NA	9,881,175		Primarily to Mainstream Gender & Protection into other cluster works
Education	0	37,500,000	29,500,000	NA	67,000,000	-67,000,000	Includes School Fee Exemption for all students Term 1 + Term 2 (Boarding, Exam, Tuition Fees)
Wailembui Landslide - All Clusters		43,905,644	48,188,326	72,282,490	164,376,460	-164,376,460	Extra Cluster Activities to address devastation in Walumbue
Ambae Volcano	40,000,000	224,772,656	193,139,743	84,482,490	502,394,889	-462,394,889	

TC Hola Fiscal Analysis

COM Decision 47/2018		TC Hola On-Ground	Needs Assessment				
Cluster / Sector	GoV COM Allocation VT	Short Term Needs (April-June 2018) VT	Intermediate Needs (July- December 2018) VT	Long TermNeeds (2019/2020)	Response Need VT	Fiscal Gap VT	Comments
Food Security & Agriculture	51,000,000	123,814,300	10,800,000	7,200,000	141,814,300	-90,814,300	Includes Fresh and Non-Perishable Food Aid
WASH	11,000,000	15,893,073	8,011,317	0	23,904,390	-12,904,390	
Logistics	20,000,000	17,000,000	25,500,000	0	42,500,000	-22,500,000	Some clusters have also included logistics in their budgets
Shelter	10,000,000	11,100,000	0	57,000,000	68,100,000	-58,100,000	estimates only. NDMO roughly estimated additional costs for other affected areas in Short Term. Shelter
Health	0	3,681,208	1,152,781	2,416,995	7,250,984	-7,250,984	Health cluster made Malekula estimates only
Gender	0	830,000		0	830,000	-830,000	Budget should consider Intermediate + Long Term additional activities
Education	0	79,157,400	53,600,000	214,400,000	347,157,400		School Fee subsidy accounts for 25000 studets 1 term @ 63,750,000VT
Cyclone Hola	92,000,000	251,475,981	99,064,098	281,016,995	631,557,074	-539,557,074	

Due to the substantial fiscal gaps highlighted above, it is recommended that the Government of Vanuatu launch an <u>emergency Flash Appeal</u> and a <u>CERF</u> under the United Nations Office for the Coordination of Humanitarian Affairs as this disaster represents a major sudden onset disaster that requires a coordinated response beyond the capacity of the government plus any single UN agency to respond to.

In addition, to rapidly mobilizing emergency relief items, supporting clusters to mobilize on-ground assessments, and coordinating national and local stakeholders, the National Disaster Management Office with this document fully meets the target delivery to Council of Ministers a short, medium and long-term Recovery Plan by 1 April 2018.

A major impediment to the current relief operations and assessments has been the remoteness of the area, rugged terrain, accessibility, scattered populations and continued extreme weather, which have added to the logistical difficulties faced by sectoral Clusters and disaster officers at all levels of government and civil society.

Details of the up to date emergency response carried out by all sectors and agencies are being coordinated and shared by Vanuatu's National Disaster Management Office and its Cluster partners through the Ministry of Climate Change to the Council of Ministers, the National Disaster Committee, the Development Committee of Officials and via the general public on the NDMO website https://ndmo.gov.vu. A description of the NDMO emergency response cluster system and governance mechanisms is available online, including the NDMO Standard Operating Procedures.

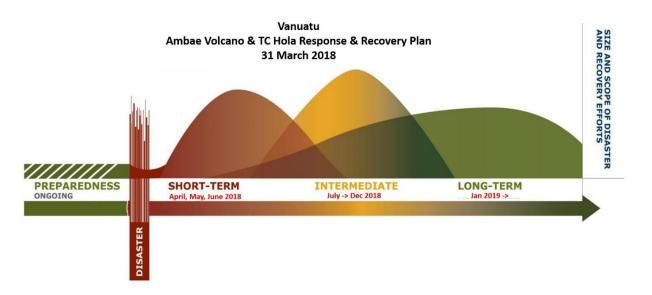
However, feedback coming from the affected areas suggest that the supply of non-food items, particularly tarpaulins, water and other emergency requirements are proving inadequate, and that onground needs will surpass the resources recently allocated by the Council of Ministers. Gaps, as well as immediate short term priority actions are summarized in this Plan, with details found in the two separate NDMO documents:



Response & Recovery Priorities & Gaps

Due to challenges in assessing remote locations, the continued exposure to extreme weather events, the ongoing and evolving nature of the Ambae volcanic eruptions, previous COM decisions and disaster response recommendations require updates as captured in this Response Plan.

Each Hazard, cyclone and volcano, are treated separately, and given sectoral (cluster) summaries of the timeframe, activities, and budget allocated/gaps. Detailed plans can be found in the Detailed Hazard Assessment Documents for TC Hola and the Ambae Volcano prepared by NDMO and annexed to this document. For the purposes of planning, response activities have been allocated to Short Term, Intermediate and Long-Term





Summary Damage Assessment & Response Plans TC Hola

Geographical Areas Affected:

- North West, North East and Central Malekula.
- West Malo
- South & CentralPentecost
- Ambrym
- South & West Ambae



An overwhelming majority of the estimated losses and damages have been to private property such as residential buildings, water catchments, commercial buildings, gardens/plantations, forests and livestock. Public property, such as roads, schools, utilities (including community water systems), and clinics, also suffered damage in severely affected areas. In all areas affected, subsistence-based rural households suffered the most.



Cluster	TC Hola Damage / Impact	Short Term Response	Intermediate Response	Long Term Response
Education	159 schools affected: 9,571 students (4,575 males / 4,966 are female) Assessments revealed damage to permanent roofs (5-10 schools) auxiliary buildings (20-30 schools- ECCE classrooms, Dining Halls, staff houses, Kitchens, toilets bathrooms) water systems (2-5 schools- water gutters, tanks and pipes) school resources (students books, reading books, computers, teacher teaching resources, stationary).	School fee exemptions (boarding, exam and tuition) 1 term temporary repairs to enable educational continuity tarpaulins for roofs/ tents WASH kits, taps, gutters, spouts kitchen sets emergency food rations toilet repair	roofing materials for repairs water tanks thatching material structural assessments supplementary teaching materials/resources toilet rebuilding	permanent building reconstruction replacement of teaching materials/resources
Food Security & Agriculture	Food gardens destroyed including subsistence crops: yam, kumala, manioc, taro as well as vegetables, bananas and fruit trees (70-90% damage in affected areas) Current food supply expected to last for up to only 3-6 weeks, then stealing and economic burdens of food purchase will increase Cash crops damaged including coconut, cocoa and kava Feral animal damage done to gardens in immediate aftermath of storm	emergency food rations (1-2 months) supply planting materials cuttings supply vegetable seeds undertake awareness & extension	supply cocoa seedlings procure nursery materials undertake extension & training	nursery materials extension & training
Health	Damage to health facilities like hospitals and clinics (e.g. structural damage, medicines, mattresses and paperwork soaked, computers and IT equipment destroyed). Diarrheal outbreak in disaster zones (11-14 cases confirmed) Increased numbers of mosquitos and plasmodium vivax	bed mosquito nets roofing repairs for clinics/dispensary	asset assessments computer IT replacement cyclone shutters etc	full reconstruction for clinics/dispensaries
Logistics	In many isolated & affected areas there are difficulties with road condition access with powerful 4WD vehicles only (Malekula, Ambrym, Pentecost, Ambae) Affected areas in the northern part of the island accessible only by sea transport. Air strip in West cannot be easily accessed by Northern residents (Ambrym) Remote parts of central to eastern Pentecost can only be accesses through bush trekking. Most part of the south and central can be easily accessed through sea transport (Pentecost). Air access is not possible to Malo Island	emergency transport (plane, ship, banana boat, truck)	recovery transport (plane, ship, banana boat, truck)	NA (not provided by cluster)
Shelter	Schools & Clinics/Dispensaries structurally damaged as highlighted above (roofing, walls, toilets, water systems) Private homes damaged/destroyed (Central Malekula: 192, North East Malekula: 739, North West Malekula: 526) Community Buildings damaged/destroyed (Central Malekula: 19, North East Malekula: 4, North West Malekula: 63)	provide tarpaulins to all damaged/destroyed households	NA (not provided by cluster)	rebuilding essential community buildings

Gender				
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		7		

- Women, people living with disability, children, elderly, lactating mothers, pregnant women, and widows are at elevated risk.
- · Livelihood sources of income for parents paying schools affected leaving parents in difficult situations which might results in separation of families to other places looking for a better income to sustain their livelihood and payment of school fees.
- · Students not attending school because parents cannot afford uniforms and/or fees
- No access to menstruation-related sanitary protection kits for young women and mothers
- Vulnerable groups walking long distances to seek food and water

- conduct gender and protection evaluations
- send gender and protection officers on island missions
- NA (not provided by cluster)
- NA (not provided by cluster)



- · Damage to water systems
- o water pipes were exposed on the ground surface affected by falling rocks and trees
- o pipes crossing the creeks were also damaged due to flooding and hits by heavy logs and stones washed away by flood.
- Several communities and schools now out of water such as Ranon Junior Secondary School and its surrounding communities.
- · Rainwater tanks and ground wells contaminated with debris. Some tanks now lacks catchment as roof were blown away.
- Communities and school children are fetching water from coastal springs several kilometers distant.
- Many thatched toilets damaged
- Lack of enough or clean water causing people to not wash their hands after using unsafe toilets.
- Diarrhea outbreak in Pentecost and Malekula.

- waterpumping to clean water sources/wells
- materials to box/protect source
- well covers
- water containers · buckets with filters
- treat contaminated water
- minor system repairs build VIP toilets
- hygiene promotion awareness
- replacement of pipes
- technical surveys & assessment
- extension and training
- build tanks and catchments
- upgrade water systems
- build rain harvesting systems
- rebuilding tanks/wells

NA (not provided by cluster)







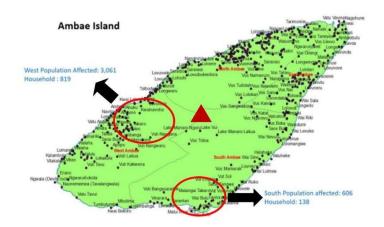




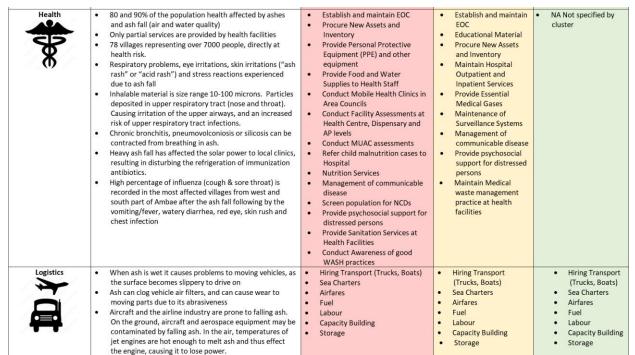
Summary Damage Assessment & Response Plans Ambae Volcano

The Government of the Republic of Vanuatu through the Vanuatu National Disaster Management Office (NDMO) activated the National Emergency Operations Centre (National EOC) and has been coordinating the response. The Joint Police Operations Centre (JPOC) was also activated and the Vanuatu Police Force and Vanuatu Mobile Force have been supporting the operations with logistics and transportation, as well as security in the evacuation centres. Provincial Governments activated their Provincial Emergency Operation Centre (PEOC) and respective Provincial Disaster Committees to lead the operation on the ground. In Sanma province the WASH, Shelter, Gender, Logistic, FSAC and Protection Cluster with the assistance from its National and international cluster leads (i.e.: UNICEF with WASH Cluster, CARE international and Save the Children for Gender and Protection, and IOM.). Clusters have provided the following summarized assessments:

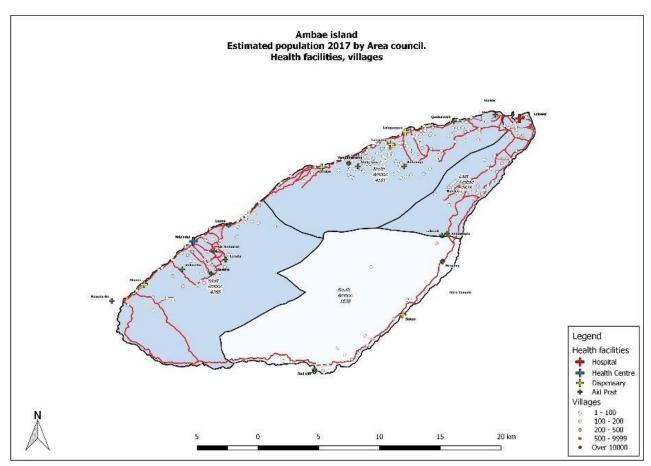




Cluster	Ambae Volcano Damage / Impact	Short Term Response	Intermediate Response	Long Term Response
Education	Food and water unavailability for students Parents unable to pay school fees Learning disrupted	School Fee Exemptions (Boarding, Exam and Tuition) 2 Terms School Relocation/Evacuation Learning Support	School Relocation Evacuation Learning Support	School Relocation Evacuation Learning Support
Food Security & Agriculture	Ash fall has demoralized farmers; 80% of farmers in the southern and western areas of Ambae are not intending to plant or grow cash crops and forestry anymore Up to 95% of subsistence crops extremely damaged by the impact of ash-fall. Up to 89% of cash crops extremely damaged by the impact of ash-fall Ash falling on grass or drinking water affects the health of grazing animals People are selling their livestock (cattle, pigs, poultry and Goats) at lower than market price due to lack of pasture availability. Food will be scarce where ash fall has been heavy, and animals may require supplementary feed. Volcanic ash poses a pneumoconiosis risk for animals, as it does for humans. Animals may ingest ash that is coated with fluorine and consequence contract fluorosis poisoning including symptoms of lesions in the nose and mouth, and hair falling out around the mouth As vegetation is destroyed by ashfall, fish in streams are killed as a result of the increased water temperature in the river. Fish may also be killed by suspended sediments, higher acidity and higher concentrations of fluorine in water bodies after an ash fall. Clear crystal ocean waters of west and south Ambae now muddy killing coral reefs and other marine creatures in the food chain. With widespread ash falls, birds may die from a lack of food. Gases may also kill birds near the vent area. Insects are particularly susceptible to ash, as the epicuticular wax layer is abraded by ash particles which causes rapid desiccation and death	Provide food aid to the most affected areas 2880 HH (non perishable) Provide food aid to the most affected areas 2880 HH (fresh island food) Identify appropriate storage facilities for incoming fresh food Provide clear plastic sheet to families in affect areas to establish sheltered food nurseries to grow vulnerable crops (vegetables) Procurement and distribution of seeds and planting materials Establish new nurseries in areas where there is minimal impact in the West and South from ash or acid rain Repair and protect existing tilapia ponds from ash, acid rain and animals Facilitate the sale of cattle from affected areas	Ongoing monitoring of the Food and Agriculture situation in Ambae Collate all existing information on farming in volcanic areas. Explore options to harvest and neutralize rain water with ash contamination Provide with polybags to start cash crop seedlings Deploy 6 FADs, one in the west, north and one in the east Training to mioimise, impact of livestock on garden areas	Support alternative forms of income generation while cash crops recover Provide training on food preservation techniques Assist in soils rehabilitation, where required Establish tunnel houses in schools Increase poultry production Improve pasture management



Shelter	Ash accumulates and causes structures (for example buildings and tree branches) to collapse Ash particles carry a film of corrosive acid causing corrosion on metallic surfaces (roofing, vehicles) Fine grained ash becomes cohesive when wet, resulting in crusting of ash layers which causes increased rain run-off	No Cluster Plan submitted to NDMO	No Cluster Plan submitted to NDMO	No Cluster Plan submitted to NDMO
Gender	An increase in Gender Based Violence (GBV) and Sexual Exploitation and Abuse (SEA) An increased need for child protection Lack of services for People Living with Disabilities (PLWD) General safety, protection and dignity of displaced and host communities Overloaded or lack of health services, particularly Sexual and Reproductive Health (SRH) and Maternal and Child Health (MCH)	Surveys & Data Collection Development & Distribution of Key Messages Psyco-Social Support & Training Psyco-Social Communications Gender Cluster Coordination & Logistics Gender & Protection Support	Gender Cluster Coordination & Logistics Psyco-Social Communications Psyco-Social Support Lessons Learned & Meetings	NA Not specified by cluster
WASH	Small bodies of water, such as roof water tanks and drinking troughs, contaminated by ash leachates, rendering them undrinkable. Most water tanks and wells have ash falls and leafs inside, water color has completely turn black in color and very acidic. 30 to 40% of the population (North Ambae) face water contamination turbidity of the water (like "milk")	Water bottles distributed to each Household 1,077 hygiene kits distributed to families/households 52 portable toilets installed with cleaning products and O&M training Construct 52 temporary pit latrines 4 each in 13 designated safe sites Hygiene promotion and hand washing awareness Water trucking to 13 evacuation centers (ongoing) 348 student hygiene kits (1 kit for 5 students) to secondary schools	8 tanks of 6,000lt installed at camps Install first flush system in communal facilities used as evacuation centers Water trucking to 13 evacuation centers (ongoing)	NA Not specified by cluster



Financial Requirements for Response & Recovery

(As per Cluster Detailed Assessments and Recommendations)

The Ambae Volcano & TC Hola Response & Recovery Plan involves implementation of a large number of diverse activities in a relatively short period of time, which requires enormous preparation in institutional, financial and logistical terms to support implementation.

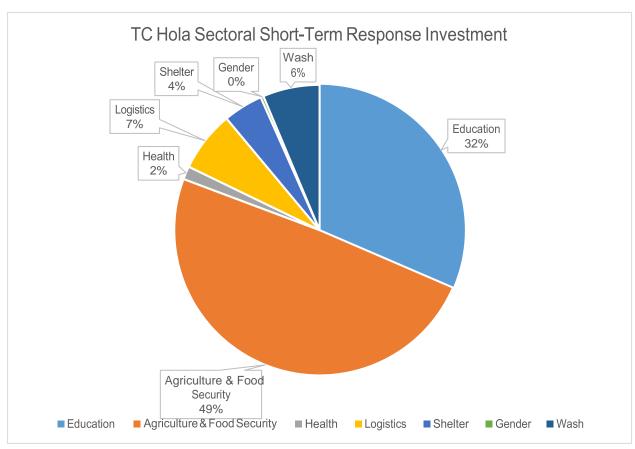
The objective is to promote the principle of Building Back Better and Safer in recovery and reconstruction. Given the recurrence of disasters and vulnerability in these areas and Vanuatu generally, it is only appropriate that recovery and reconstruction are implemented in a way that it contributes to the resilience of the communities, reflected in its economy, social cohesion and governance.

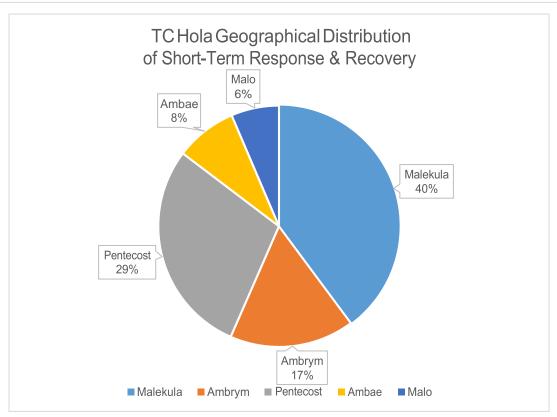
A summary of the sector wise needs assessment of the Recovery Plan are given in the following tables. The calculation of the recovery needs includes the cost of reconstruction and additional cost of making existing livelihood systems disaster resilient. It also takes into account improvement in agriculture and agricultural practices, introduction of new technologies, improved varieties of vegetable seeds, improved varieties of high value crops and fruits, imparting skills that will enhance incomes through onfarm and non-farm activities, protection of environment and awareness raising in risk reduction and management at all levels.

Tropical Cyclone Hola Short Term Response Costs (April – June 2018)

Sector Cluster	Short Term Emergency Interventions	Cost VT
	- school fee exemptions 1 term	
	- temporary repairs to enable educational continuity	
	- tarpaulins for roofs/tents	
	- WASH kits, taps, gutters, spouts	
	- kitchen sets	
	- emergency food rations	
	- toilet repair	
Education		79,157,400
	- emergency food rations (1-2 months)	
	- planting materials cuttings	
Agriculture & Food		
Security	- awareness & extension	123,814,300
	- bed mosquito nets	
Health	- roofing repairs for clinics/dispensary	3,681,208
Logistics	- emergency transport (plane, ship, banana boat, truck)	17,000,000
Shelter	- Provide tarpaulins to all damaged/destroyed households	11,100,000
	- conduct gender and protection evaluations	
Gender	- send gender and protection officers on island missions	830,000
	- water pumping to clean water sources/wells	,
	- materials to box/protectsource	
	- well covers	
	- water containers	
	- buckets with filters	
	- treat contaminated water	
	- minor system repairs	
	- build VIP toilets	
Wash	- hygiene promotion awareness	15,893,073

Island	Short Term Costs VT
Malekula	100,184,828
Ambrym	42,047,101
Pentecost	72,341,364
Ambae	20,754,900
Malo	16,147,789
TOTAL	251,475,981

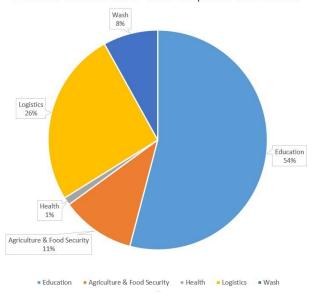




Intermediate Term Response Costs (July – December 2018)

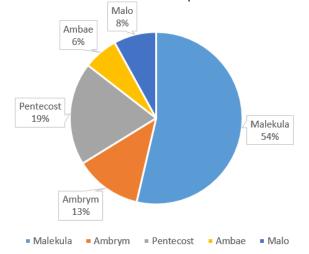
Sector / Cluster	Intermediate Emergency Interventions	Cost VT
	-roofing materials for repairs	
	-water tanks	
	- thatching materials	
	-structural assessments	
	- supplementary teaching materials/resources	
Education	- toilet rebuilding	53,600,000
	- seed coconuts	
	- cocoa seedlings	
	- nursery materials	
Agriculture & Food Security	- extension & training	10,800,000
	- asset assessments	
	- computer IT replacement	
Health	- cyclone shutters etc	1,152,781
Logistics	- recovery transport (plane, ship, banana boat, truck)	25,500,000
	- replacement of pipes	
	- technical surveys & assessment	
	- extension and training	
	- build tanks and catchments	
	- upgrade water systems	
	- build rain harvesting systems	
Wash	- rebuilding tanks/wells	8,011,317
	TOTAL	99,064,098

Sectoral Intermediate Term Response Investment



Island	Intermediate Costs VT
Malekula	53,148,292
Ambrym	12,445,235
Pentecost	19,111,982
Ambae	6,450,000
Malo	7,908,590
TOTAL	99,064,098

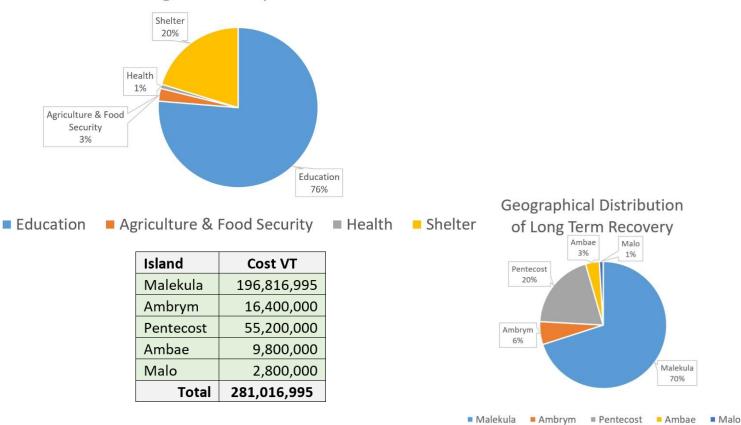
Geographical Distribution of Intermediate Term Response & Recovery



Long Term Recovery Costs (2019/2020)

Sector Cluster	Long Term Emergency Interventions	Cost VT
	- permanent building reconstruction	
Education	- replacement of teaching materials/resources	214,400,000
	- nursery materials	
Agriculture & Food Security	- extension & training	7,200,000
Health	- full reconstruction for clinics/dispensaries	2,416,995
Shelter	- rebuilding essential community buildings	57,000,000
	TOTAL	281,016,995

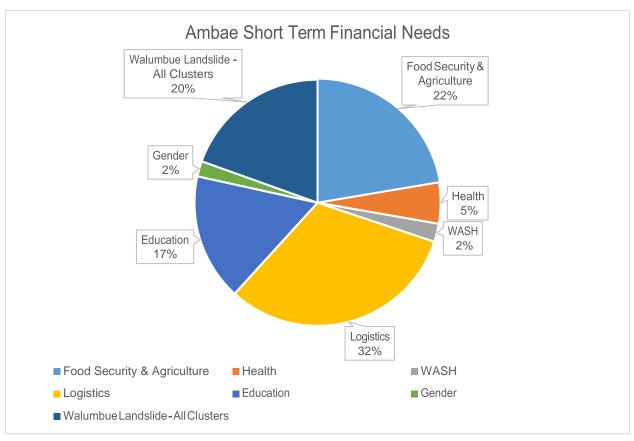
Sectoral Long Term Response Investment

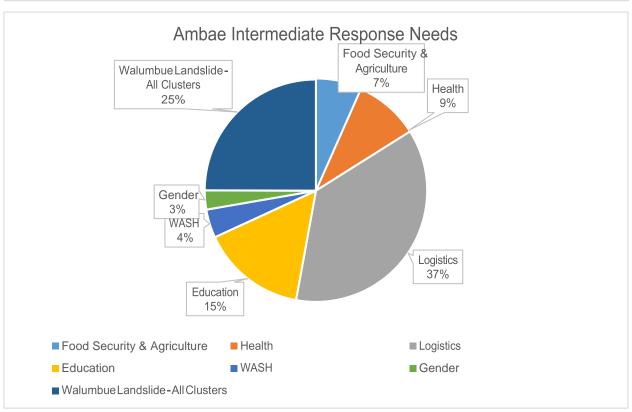


Costs of Response and Recovery can be addressed to some extent by the Government and local partners working in the affected areas from their existing resources, but international humanitarian assistance is urgently required to meet essential resourcing gaps.

Ambae Volcano Financial and Technical Needs Short Term Response Costs (April – June 2018)

Time Frame	Activity Summary	Cluster	Cost
Short Term	Food aid to 2880 HH (nonperishable & fresh) Storage facilities for incoming fresh food Provide clear plastic sheet for sheltered food nurseries Seeds and planting materials Nurseries in areas away from ash or acid rain Repair tilapia ponds Facilitate the sale of cattle	Food Security & Agriculture	50,222,400
Short Term	Conduct Mobile Health Clinics Conduct Facility Assessments at Health Centre, Dispensary and AP levels Child malnutrition management Management of communicable disease Screen population for NCDs Provide psychosocial support Provide Sanitation Services Conduct Awareness of good WASH practices	Health	12,146,932
Short Term	Water bottles to Household 1,077 hygiene kits 52 portable toilets Construct 52 temporary pit latrines in 13 designated safe sites Hygiene promotion and hand washing awareness Water trucking to 13 evacuation centers 348 student hygiene kits secondary schools	WASH	5,384,410
Short Term	Hiring Transport (Trucks, Boats) Sea Charters Airfares Fuel Labour Capacity Building Storage	Logistics	71,080,000
Short Term	School Fee Exemptions 1000 students FREE exam fee, tuition, boarding fee 2 terms School Relocation/Evacuation	Education	37,500,000
Short Term	 Surveys & Data Collection Development & Distribution of Key Messages Psyco-Social Support & Training Psyco-Social Communications Gender Cluster Coordination & Logistics Gender & Protection Support 	Gender	4,533,270
Short Term	Walumbue Flash Flooding and Landslide Food & Water Relief Health Management Logistics Emergency Shelter Education Continuity Science & Monitoring	Walumbue Landslide - All Clusters	43,905,644





Intermediate Term Response Costs (July – December 2018)

Time	Activity Summany	Cluster	Cost
Frame	- Ongoing monitoring of the Food and Agriculture		
	situation in Ambae Collate all existing information on farming in volcanic areas. Explore options to harvest and neutralize rain water with ash contamination Provide with polybags to start cash crop seedlings Deploy 6 FADs, one in the west, north and one in	Food Security & Agriculture	12,800,000
Intermedi ate	Educational Material Procure New Assets and Inventory Maintain Hospital Outpatient and Inpatient Services Provide Essential Medical Gases Maintenance of Surveillance Systems Management of communicable disease Provide psychosocial support for distressed persons	Health	18,220,398
Short Term	 Hiring Transport (Trucks, Boats) Sea Charters Airfares Fuel Labour Capacity Building Storage 	Logistics	71,080,000
Intermedi ate	 School Fee Exemptions 1000 students FREE exam fee, tuition, boarding fee 2 terms School Relocation/Evacuation 	Education	29,500,000
	8 tanks of 6,000lt installed at camps Install first flush system in communal facilities used as evacuation centers Watertrucking to 13 evacuation centers (ongoing)	WASH	8,003,114
Intermedi ate	 Gender Cluster Coordination & Logistics Psyco-Social Communications Psyco-Social Support Lessons Learned & Meetings 	Gender	5,347,905
	 Walumbue Flash Flooding and Landslide Food & Water Relief Health Management Logistics Emergency Shelter Education Continuity Science & Monitoring 	Walumbue Landslide - All Clusters	48,188,326
		TOTAL	193,139,743

Long Term Recovery Costs (2019/2020)

Time Frame	Activity Summary	Cluster	Cost VT
Long Term	Support alternative forms of income generation while cash crops recover Provide training on food preservation techniques Assist in soils rehabilitation, where required Establish tunnel houses in schools Increase poultry production Improve pasture management	Food Security & Agriculture Cluster	12,200,000
Long Term	Walumbue Flash Flooding and Landslide Food & Water Relief Health Management Logistics Emergency Shelter Education Continuity Science & Monitoring	Landslide	72,282,490
		TOTAL	84,482,490

Economic and Social effects within Disaster Zones

Income Shock

The population of the affected districts is heavily dependent on agriculture for their livelihood, which has been badly affected by TC Hola & the Ambae Volcano. Furthermore, these areas have a general reliance on income from livestock, fisheries and forestry which has been equally affected. Additionally, the deterioration of water and sanitation services, disruption of schools and health services, and the possible increase infood insecurity is likely to result substantially increased risk of livelihood crisis.

Gender

The disadvantaged social groups in the districts have suffered the largest damage and loss. A large percentage of agricultural and informal sector participants are female. The widespread loss of food stocks, confirmed loss in crop productivity and loss of livestock as well as small scale enterprises is likely to cause a severe income shock for women and their families. A narrow asset base, burden of domestic work, limited access to economic resources combined with the lack of alternative livelihoods also mean that recovery for women may take longer than for men who have more livelihood options.

The destruction of water supply and sanitation facilities have a direct negative impact on women and girls as they now fetch water from insecure/unsafe sources. The work burden on women, and the disproportionate cost borne by them in the household economy, not only limits the time they can spend in economic activities but restricts them spatially and culturally to activities that are compatible with their domestic obligations.

Reportedly, families are deploying different coping mechanisms to deal with the disaster, including distress sales of assets and receipt of remittances. However, for vulnerable families, the loss of assets combined with the loss of family protection, and desperation for alternate livelihoods could have negative consequences on women, girls and children who may face heightened risk of sexual and gender-based violence and other risks.

Recovery Principles (Short-Intermediate Term)

Some principles and factors to be integrated in all response & recovery interventions are:

- Build back better and strengthen resilience. Despite the tragedy that each disaster brings, TC
 Hola and the Ambae Volcano also offer a unique window of opportunity to address root causes
 of Vanuatu's vulnerability—such as improper land use zoning, poor enforcement of building
 codes, and gender inequality—and in the process strengthen resilience. The "building back
 better" process must factor in current and future risks; apply engineering standards for
 strengthening the resilience of physical assets; and strengthen capacities for managing residual
 disaster risk through local preparedness.
- Involve local communities in the overall recovery effort. The recovery process must give ample
 time and space for the voice and aspirations of the affected communities to be heard. Engaging
 local communities, traditional authorities and provincial stakeholders throughout the response
 and recovery process will ensure ownership and contribute to its success.
- Strengthen local capacity of all implementing partners and the communities.

Response & Recovery Links to National & International Frameworks

Vanuatu's Commitment to the **Sendai Framework for Disaster Risk Reduction 2015–2030** places disaster risk reduction and building resilience to disasters with a renewed sense of urgency within the context of sustainable development and poverty eradication. Taking into account the experience gained through the implementation of the Hyogo Framework for Action, the Sendai Framework stresses the need for focused action within and across sectors by States at local, national, regional and global levels.

As a Party to the **United Nations Framework Convention on Climate Change (UNFCCC),** Vanuatu has committed to providing information and informing the global community about the Loss & Damages it is currently experiencing from climate-related extreme events like Tropical Cyclone Hola. Without taking immediate ambitious action on climate mitigation and adaptation at all levels, Vanuatu will continue to face intensifying risks.

At the regional level, the <u>Framework for Resilient Development in the Pacific</u>: An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) 2017-2030 is a regional framework that provides high level strategic guidance to different stakeholder groups on how to enhance resilience to climate change and disasters, in ways that contribute to and are embedded in sustainable development. The FRDP identifies three goals: Goal 1: Strengthened Integrated Adaptation and Risk Reduction to Enhance Resilience to Climate Change and Disasters, Goal 2: Low Carbon Development, Goal 3: Strengthened Disaster Preparedness, Response and Recovery.

Vanuatu's <u>National Sustainable Development Plan</u>, 2016-2030 envisions "A stable, sustainable and prosperous Vanuatu". In the NSDP context, sustainable explicitly refers to ensuring resilience. One of the five development aspirations of the NSDP is "enhanced resilience and adaptive capacity to climate change and natural disasters".

Most of the climate change and disaster risk directives of the NSDP fall under the "Environment Pillar", which seeks to ensure a pristine natural environment on land and at sea that continues to serve our food, cultural, economic and ecological needs, and enhance resilience and adaptive capacity to climate change and natural disasters. Under the Environment Pillar, ENV Goal 3 focuses on Climate & Disaster

Resilience, which aims for a strong and resilient nation in the face of climate change and disaster risks posed by natural and man-made hazards. The NSDP's policy objectives are:

- ENV 3.1 Institutionalise climate change and disaster risk governance, and build institutional capacity and awareness
- ENV 3.2 Improve monitoring and early warning systems
- ENV 3.3 Strengthen post-disaster systems in planning, preparedness, response and recovery ENV 3.4 Promote and ensure strengthened resilience and adaptive capacity to climate related, natural and man-made hazards
- ENV 3.5 Access available financing for climate change adaptation and disaster risk management

Vanuatu's <u>Climate Change & Disaster Risk Reduction Policy</u> 2016-2030, lays out a set of seven (7) priority policy themes and under each a series of 190 priority actions:

- Governance; 5 key areas 31 priority actions
- Finance; 3 key areas 15 priority actions
- Knowledge and Information; 7 key areas 37 priority actions
- Climate Change Adaptation & Disaster Risk Reduction; 5 key areas 42 priority actions
- Low Carbon Development; 2 key areas 22 priority actions
- Response and Recovery; 6 key areas 43 priority actions

The vision of the CCDRR Policy: 'Vanuatu is a resilient community, environment and economy'. The CCDRR Policy outlines Vanuatu's climate/disaster risk reduction institutional contexts, including the roles and functions of the <u>National Advisory Board on Climate Change & Disaster Risk Reduction (NAB)</u>. The Policy highlights the successes in Vanuatu that agencies commonly have climate and/or disaster human resources now in their structure as well as dedicated sectoral units; for example, the Ministry of Agriculture's newly launched Risk and Resilience Unit.

Vanuatu has had great success with mainstreaming climate change and disaster risk reduction into <u>sector policies</u> including the Overarching Productive Sector Policy, National Forest Policy, Agriculture Sector Policy, National Curriculum Statement, National Environment Policy, National Fisheries Policy, Tourism Strategic Action Plan, National Land Use Planning Policy, National Livestock Policy and others.

Response & Recovery Constraints

CT network operations remain patching with frequent drop out of connectivity at Lolowai and	5 79 10 10 10 10 10 10 N
Saratamata Provincial Headquarters	Arrange for alternate private ICT network
Financial Support Bureau is partially functional with no connectivity for raising electronic ourchases orders	As above, potential links with GBN
imited transport assets on Ambae with low vehicle accessibility (G-plate)	Procurement vs hire and transport to Ambae
imited access to public transport due to low private vehicle ownership on Ambae Island and high demand for private transport use.	As above
imited to no Personal Protective Equipment (PPE) for response teams operating in ash affected areas	Require procurement
Majority of stream or creek fed water sources contaminated with ash fall	Water Security key and coordination with WASH cluster
No current psychosocial support teams in place other than two staff who have been through mental health support training	External support required from national / NGO
imited mobility assets for people with physical disabilities	Procurement against identified mobility issues
imited IEC materials available in Ambae for distribution by mobile teams for awareness, extension and training.	National level support required for printing and distribution to Ambae
Any deployed personnel outside their normal place or posting are eligible for Daily Subsistence Allowance (DSA) in accordance with approved rates	AS per PSC, to be included on logistics planning
imited technical staff available to support Ambae operations through temporary positing	Consider temporary placement, posting and addition staffing

Response & Recovery Management Mechanisms

According to Council of Ministers Decision 46/2018, it agreed to:

Appoint PMO as the lead agency working with other sectors (MoCC, MOL, MOL) to plan and execute permanent displacement options for the affected populations.

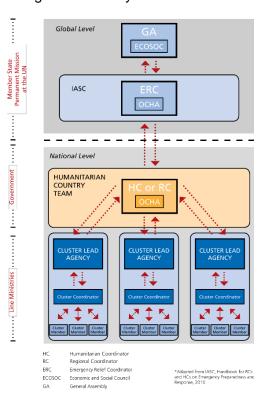
It will be critical for PMO to work closely with the existing NDMO-coordinated Cluster System.

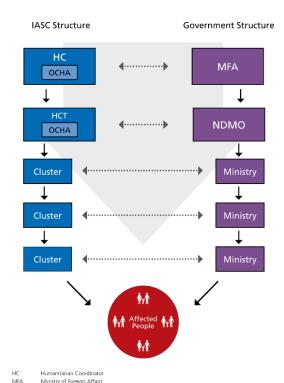
The Government-led Clusters are responsible for strengthening system-wide preparedness and coordinating technical capacity to respond to humanitarian emergencies in their respective sectors. At the country level, clusters ensure that humanitarian organizations' activities are coordinated. Government agencies hold the lead role, and a humanitarian partner holds a cluster colead role. Members can include government, humanitarian agency, community groups, and private sector. The relationships and preparedness activities developed through the National cluster system has proven effective in enhancing communication and response during disasters. The Inter-Custer is the coordinating mechanism for the 8 technical clusters.

The Vanuatu Humanitarian Team (VHT) – which is Vanuatu's domestic cluster system. The VHT was established late 2011 as a collaboration between Vanuatu based NGOs, UN and government

- Inter-Cluster
- Education Cluster
- Emergency Telecommunications Cluster (ETC)
- Food Security & Agriculture Cluster (FSAC)
- Gender & Protection Cluster (G&P)
- Health & Nutrition Cluster
- Logistics Cluster (VLC)
- Shelter Cluster
- Water Sanitation & Hygiene Cluster (WASH)

agencies. Coordinated with OCHA Regional Office Pacific support, it is focused on improving the coordination of humanitarian preparedness and response in support of government agencies in disasters. Government line ministries act in cluster lead roles in emergencies and VHT members act as co-leads. The VHT is recognized as a key coordination mechanism in Vanuatu.





Humanitarian Country Team National Disaster Management Organization

Potential Relocation or Permanent Displacement

The intensifying need to evacuate people facing flood, cyclones and other hazards, has led the Government to identify a clear policy to protect people when displacement occurs, and address the long-term recovery and development needs of communities affected by displacement, including host communities.

The National Policy on Climate Change and Disaster-Induced Displacement aims to help guide emergency and development planners to work together with the Government of Vanuatu to address the needs of all communities affected by displacement, including people at-risk of displacement, displaced people, internal migrants, people living in informal settlements, and host communities.

As the TC Hola and Ambae Volcano recovery phase progresses, all Ministries must to work together to provide protections for people at each stage of the displacement cycle, with a view to achieving the ultimate aim of durable solutions for all people affected by displacement.

Planned relocation remains an option of last resort. However, the extreme nature of the Ambae volcanic disaster may require this option. Where communities do need to move away from hazards, either temporarily or permanently, this movement must take place with dignity and with appropriate safeguards and human rights protections in place.

Addressing displacement requires a well-coordinated, well-resourced, multi-disciplinary and multi-stakeholder approach to ensure that all people receive the support and assistance required.

The Government of Vanuatu aims to ensure that all people affected by displacement, including host communities, are included in national development planning and have equal opportunities to share in the country's growing security, wealth and prosperity.

Contact Information

NDMO Private Mail Bag 9107 Port Vila, Vanuatu

Email: ndmo@vanuatu.gov.vu Phone: +678 22699/+678 23035 TO YUM STUDY

REPUBLIC OF VANUATU

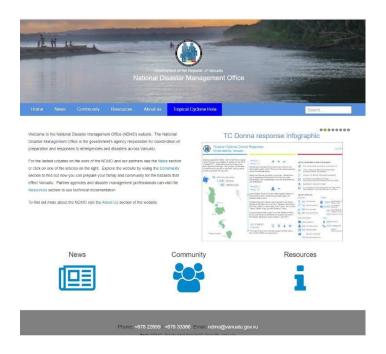
NATIONAL ADVISORY BOARD ON CLIMATE CHANGE AND DISASTER RISK REDUCTION

C/O Corporate Services Unit Ministry of Climate Change and Natural Disasters

Private Mail Bag 9054, Port Vila Telephone: (678) 24686; Fax: (678) 22310 Email: nab@meteo.gov.vu; Web: www.nab.vu



Or visit https://ndmo.gov.vu



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