

# VANUATU

## *The impact of Cyclone Pam*

Cyclone Pam – considered the worst natural disaster in the history of Vanuatu and the deadliest in the South Pacific since 2012 – made landfall on the 13<sup>th</sup> of March of 2015.

The islands of Erromango, Tanna and Shepherd Islands which were directly on the path of the cyclone were among the most affected.



**World Food Programme**



## Cyclone Pam impact maps & analysis

## Acknowledgement

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## Purpose of the assessment

The current report describes the impact of Cyclone Pam throughout Vanuatu. Specifically, it reports on the cyclone's *impact* and *pathways to recovery* in the areas of:

- 1) Agriculture and livelihoods
- 2) Food needs
- 3) Housing
- 4) Markets
- 5) Health

The report is designed to serve as a tool to enable stakeholder/expert discussion and derive a common understanding on the current situation.



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# Cyclone Pam impact

Cyclone Pam is the most powerful cyclone to ever hit the Southern Pacific. It formed near the Solomon Islands on the 6 March 2015 and traversed through several other island nations, including Solomon Islands, Kiribati and Tuvalu.

On 13 March 2015, it strengthened to a Category 5 storm over the y-shaped chain of islands which make up Vanuatu. Vanuatu took multiple direct hits over the islands of Efate (where the capital Port Vila is situated), Erromango and Tanna Island.

270km/h winds were sustained near Efate and the Shepherd Islands. The storm also brought with it heavy rains and a couple of reported storm surges. Shefa, Malampa and Tafea were the most heavily affected provinces with widespread reports of damage to housing and agriculture.



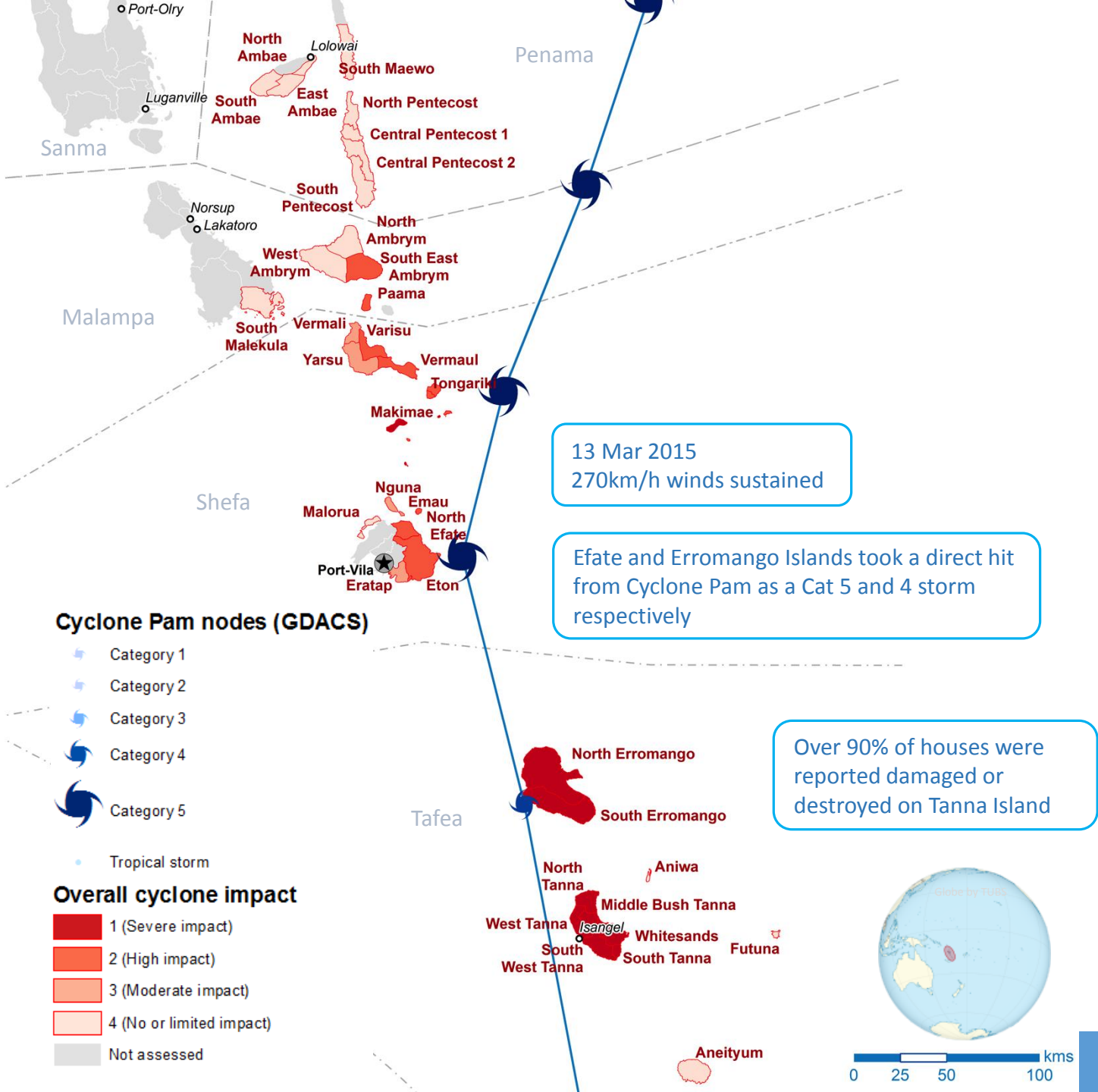
166,000 people affected



11 fatalities



1000mt of food aid dispatched



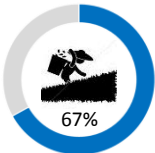
Agriculture is a key livelihood

Agriculture is the dominant livelihood with approximately three quarters of the population engaged in farming – predominantly coconut, roots and tubers, cocoa, and fruits and vegetables. Hunting and fishing complements subsistence farming.



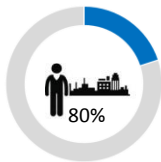
Own production is key in rural areas

Most households in rural areas depend on their own production to meet food needs: **two thirds of all food consumed is from own production**. Crops such as kava and copra generate the necessary cash income.



Markets are key in urban areas

In Port Vila, households depend on informal business and farming. Markets are critical for rice, bananas, roots and tubers, and baked goods: **eighty percent of all food is purchased**.



Impact of Cyclone Pam in Port Vila is discussed on pages 15-16.

Remittances are another key source of income

Remittances are an important source of income for many households. In 2012, approximately \$19million in remittances were sent to Vanuatu from other countries including Australia, France and New Zealand. In New Zealand and Australia, Ni-Vanuatu typically find low-skill seasonal work for periods of less than 6 months.

In 2010, 15% of urban households received remittances. The average monthly amount received was 35,850VT. 38% of rural households received remittances. The average monthly amount received was 12,000 VT.

Livelihoods in affected areas

Box 1: Livelihoods on Tanna



Across the area councils in Tanna (one of the most affected islands), the prevalence of subsistence farmers is high, ranging from 54% (West Tanna) to 83% (South West Tanna).



The percent of households with cattle ranges from 26% (Whitesands) to 64% (Middle Bush Tanna). On average, households own between 1-3 cattle.



Most households own pigs. Percentage of households owning pigs ranges from 64% (North Tanna) to 87% (Middle Bush Tanna). On average, these households own between 2-7 pigs.



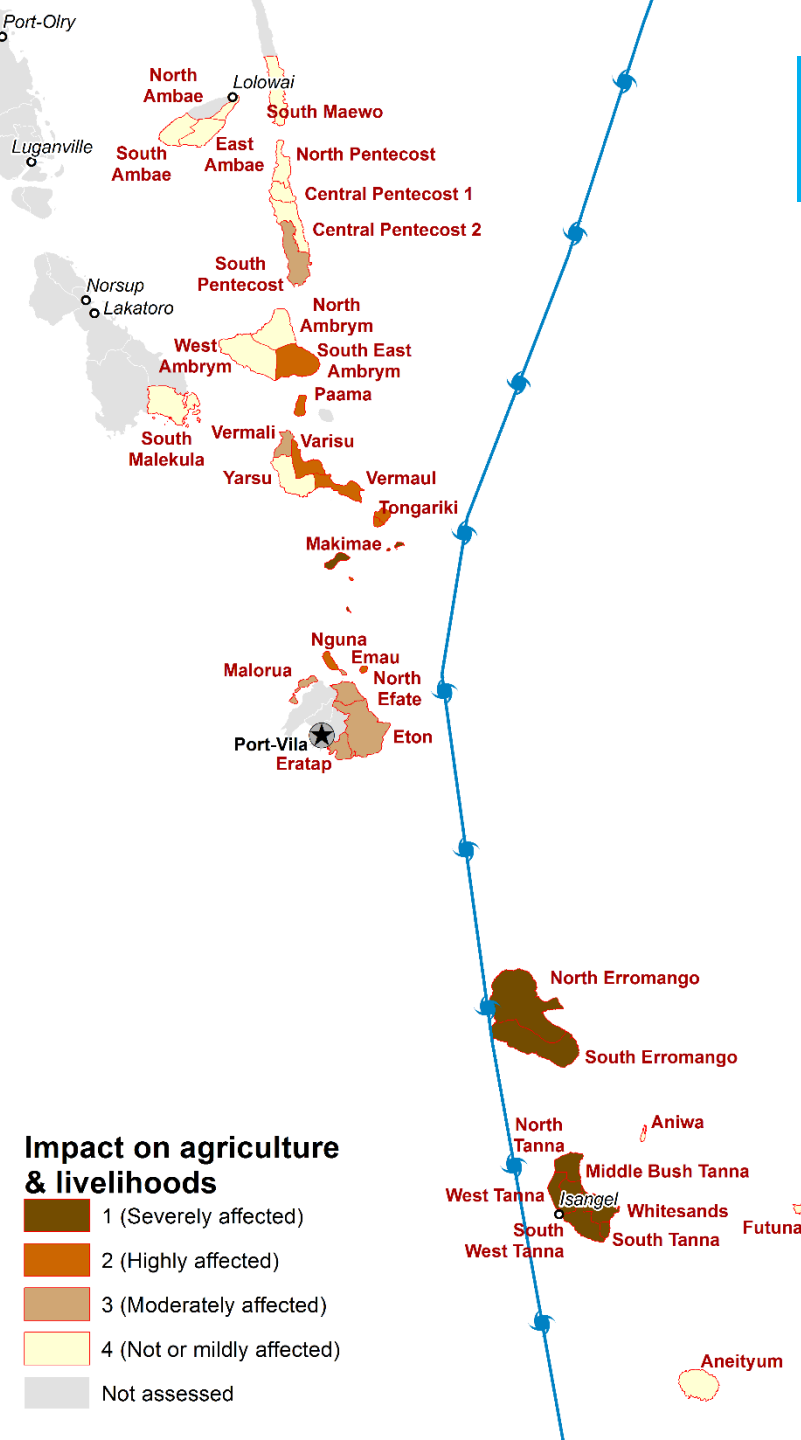
Almost all have poultry. The percentage of households that have poultry ranges from 85% (South Tanna) to 92% (Middle Bush Tanna). On average, these households have between 7-12 chickens.



The percentage of households that grow coconuts ranges from 32% (West Tanna) to 83% (North Tanna).



Fishing is an important activity for most households. The percentage of households involved in any kind of fishing activity (subsistence or for sale) ranges from 19% (West Tanna) to 71% (South West Tanna).



## Impact on agriculture and livelihoods



### Agriculture

In affected areas, more than half of the rural population depend on own farming for their livelihood and sustenance. Staple crops include yam, taro and manioc (see box on page 5).

**Severe impact:** Includes Tanna, Erromango and the Shepherd islands. Here widespread destruction of fruits, vegetables, root crops and livestock occurred. The majority of fruit trees have been either destroyed, or completely stripped of all fruit.

Despite having underground protection, garden root crops (yam, manioc and taro) have mostly been lost or badly damaged – having been uprooted or flooded during the cyclone.

Livestock have been gravely impacted in these areas with reportedly more than half of the cattle population (pigs, cows, chickens) perished.

Seeds and farming equipment have been destroyed. Fishing boats and gear were also lost but to a much lesser extent.

**High impact:** Crops in the eastern parts of Ambrym, Paama and Epi were highly impacted. Fruit trees suffered serious damage with many coconut trees having either fallen down or strongly tilted.

Garden root crops have been damaged but some quantities were saved.

The livestock which perished was mostly limited to chickens, but the remaining livestock are reportedly

suffering a shortage of feeds – grasses and shrubs – blown away by the cyclone.

Agriculture in East Efate was also severely impacted but livelihoods are more diversified and as such it was categorized as moderately.

[More detailed information about the impact on agriculture and livestock will be provided by the national disaster crop and livestock assessment currently being undertaken.](#)

**Pathway to recovery:** Replanting of all new fast-growing crops. In most areas, this will have taken place immediately – before housing reconstruction and other needs. Growth will take time but the soil on these islands is highly fertile, and characteristic of short harvest periods for many crops. Farmers are at risk of being without locally produced food by the end of March until at least June-July. This is when the first harvest from the post-cyclone replanted fast-growing food crops (for instance, cabbage and yam) will be available.

Those communities which practice traditional techniques of storing taro and yam will be better placed to fill their food gap for the period until first harvest. Other communities will need to have acted fast following the cyclone to begin preserving and storing any available foods.

The provision of seeds, farming equipment and agricultural expertise to severely and highly communities would help in efforts to rehabilitate agriculture.



## Box 2: Sticking to their roots

### Taro



Taro is a staple crop consumed in Vanuatu. In rural areas, it is considered an essential part of most meals. It is an excellent source of energy and fiber, and a good source of calcium and iron. Vanuatu's three main varieties are:

#### Taro Island (most common):

- Harvests 8-12 months after planting.
- Grows best in wet humid environment in light (sandy) or heavy (clay) soils.
- Perishes relatively quickly after harvesting.
- If kept underground in purpose-built pits lined with coconut husks or banana leaves, and then covered with soil, it remains fresh for 2-3 months.

#### Taro Fiji (widespread):

- Harvests 6-12 months after planting.
- Once harvested, stores in a cool, dry place for several months.

#### Taro Navia (selected locations):

- Takes several years to mature, but is commonly left for 15 years or more before harvest.
- Possible to 'field store' in ground for very long periods of time (> 30 years) and so has traditionally been a key emergency crop in times of natural disaster and food scarcity.
- Grows in fresh water and coastal swamps, and in purpose built swamp pits in low-lying coral atolls.

For subsistence farmers in Vanuatu, root crops are a central component to their agricultural activities and food consumption. This box describes these main crops and explains their importance for farming households.

### Yams



Yams are a staple crop in Vanuatu. They are good sources of energy, vitamin B1, vitamin C, and dietary iron and niacin. In Vanuatu, there are two main varieties: garden yam (widespread) and wild yam (selected locations).

- Harvests in less than 6 months after planting.
- Easily grown and mature quickly in right soil conditions.
- Exhibit good keeping qualities, and may be harvested well in advance of eating.
- Provide significant quantities of vitamin B1, vitamin C, and dietary iron and niacin.

### Manioc



Manioc (also known as cassava) is a starch rich root crop. It is easy to grow and prepare and is a popular food and livestock fodder crop. It serves as a key source of carbohydrates for Vanuatu's rural population.

- Reaches maturity at around 6-12 months in Vanuatu, and can remain in the soil for up to 3 months after maturity.

# Livelihood resilience

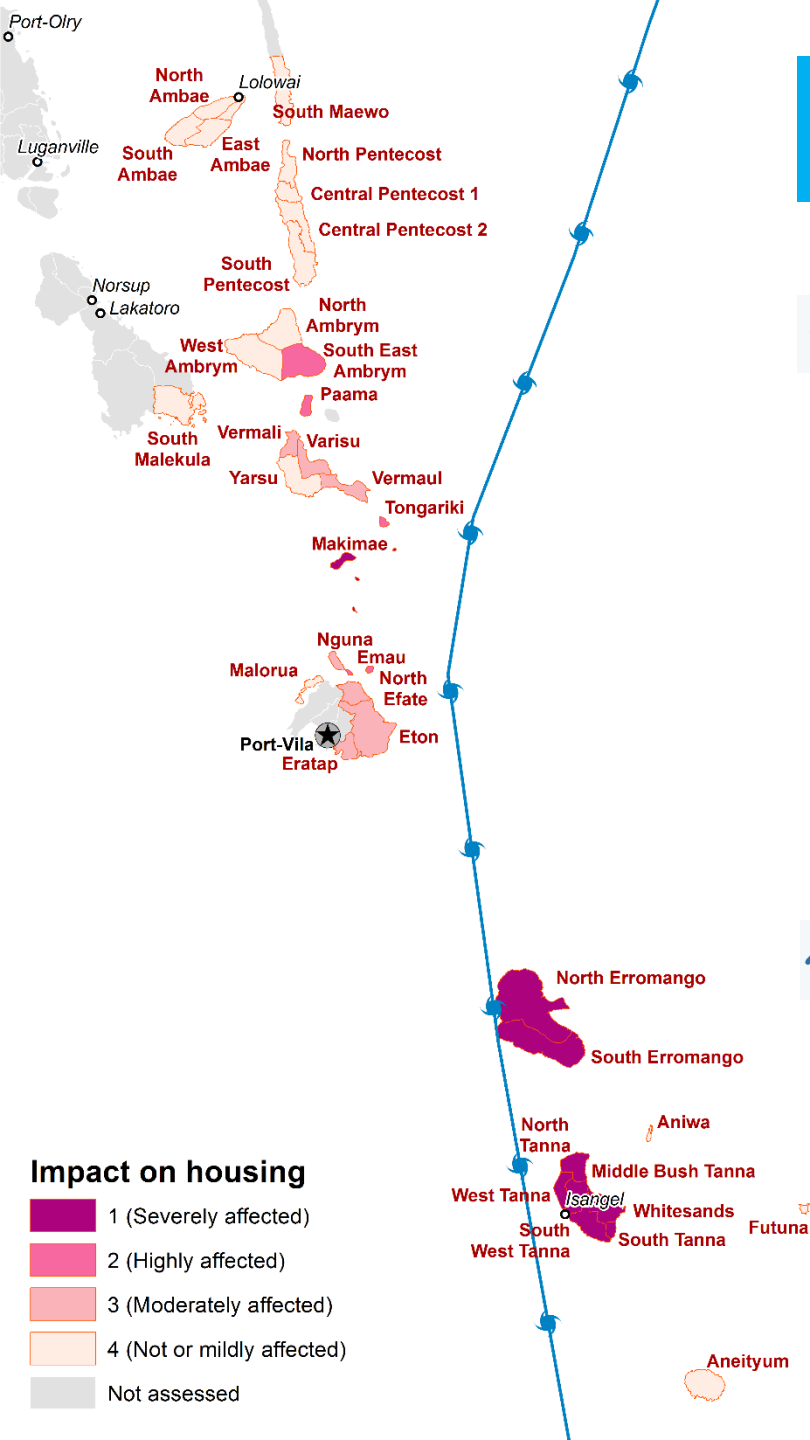
The rural population of Vanuatu relies on cash crops – particularly copra and kava – to generate cash income. Their ability to bounce back partly depends on the diversity of livelihoods and income sources, the extent crops were destroyed and the time required to regrow.



Most provinces depend on one or two activities for the majority of their income. In Malampa, copra contributes 60% to household income. Copra production in southeast Ambrym and Paama will be severely impacted.

In Penama and Tafea, kava production is the main contributor to household income. Particularly in Tafea the loss of kava will translate into long-term income loss for many households on Tanna and Erromango.

In Shefa, income sources are more diversified with manioc contributing to 22% of household income. Manioc takes about 6 months before harvest is possible.



## Impact on housing



### Housing

Apart from the longer-term impact on agriculture and livelihoods, the brunt of the impact was on housing. In the most affected provinces by the cyclone, most households live in traditional houses (75% in Tafea), constructed of bamboo matted walls and *Natangura* (sago palm) thatched roofs. Most of these houses were damaged.

**Severe impact:** More than 70% of houses destroyed or seriously damaged on the islands of Tanna, Erromango and Emae.

**High impact:** East Ambrym, Paama and the Shepherd Islands. Between 40% and 70% of houses were destroyed or seriously damaged.



### Schools

Schools are all closed until 30 March. Extensive damage has been observed to school buildings. School fees for are hefty (5.4% of total household expenditure goes to education), particularly for larger households. Concern was expressed by teachers on the impact cyclone Pam may have on school enrolment, as parents may be unable to afford school fees.

**Pathway to recovery:** The rudimentary built traditional houses are the first to blow away but they are also the easiest and first to be rebuilt. Houses are made of locally available materials, wood, bamboo and thatch.

In many communities, rebuilding has already commenced. Repairing a thatched roof takes about a full day's work. Rebuilding a whole house may take up to a week. The key constraint is the lack of thatch. Even in moderately affected areas, the sago palms, which leaves are used for the thatch, have been battered and in severely affected areas they have been stripped bare or been uprooted. Thatch therefore is in scarce supply. However, people are reclaiming and reusing their old thatch to the extent possible as a temporary measure. It takes about 1 year for the sago palms to regrow.

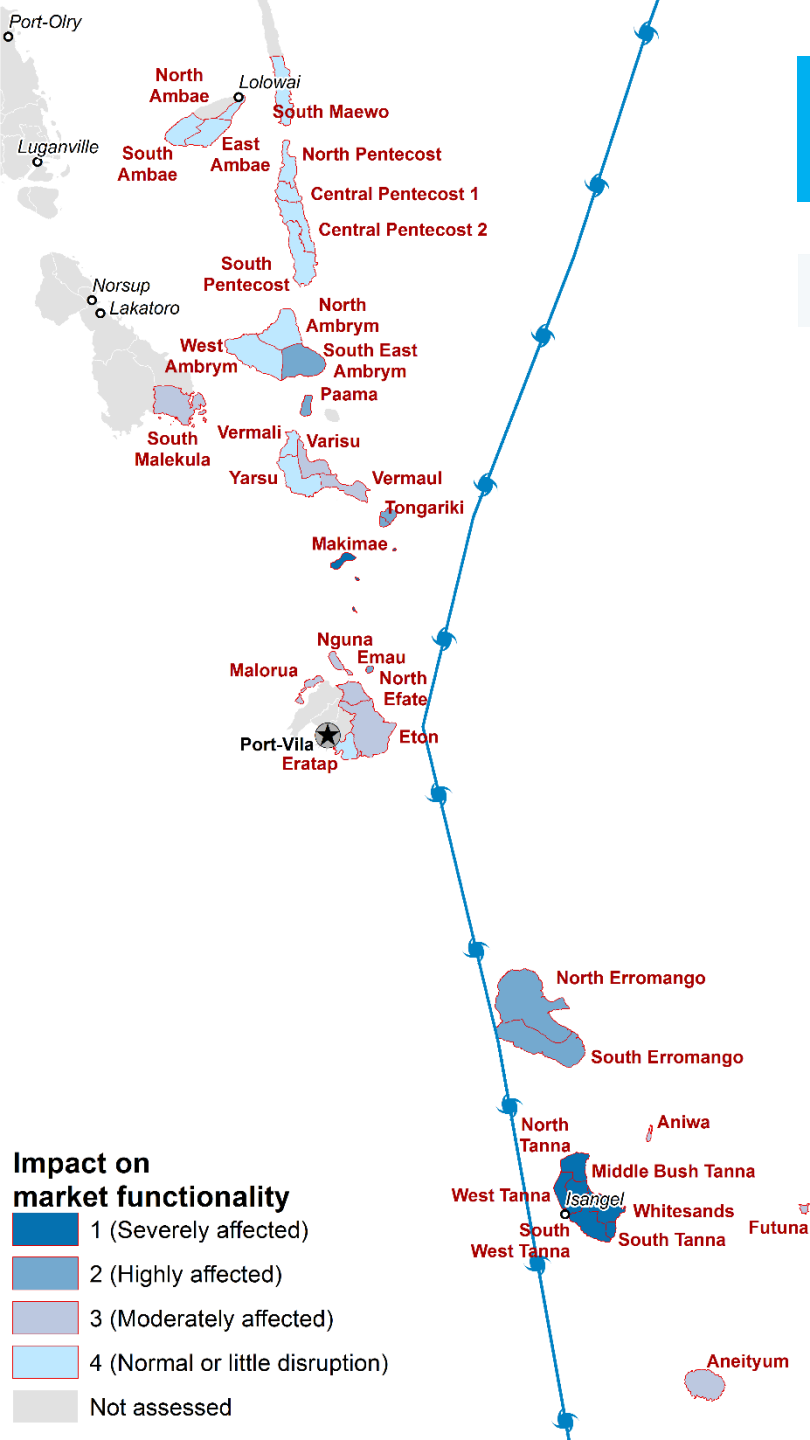


Families without housing temporarily shelter in community centres and churches. In some communities men and women (and children) are in separate buildings.

Schools and health centres require corrugated roof iron for rebuilding.

Financial support is required to ensure school fees can be afforded. Waiving school fees for the remainder of the year could be considered.





## Impact on markets



### Food markets

No market activity is currently taking place in any of the affected areas.

- Reasons:
1. Lack of surplus food crops to sell
  2. Market infrastructure damaged
  3. Lack of purchasing power

In less affected areas and larger communities, the number of sellers have reduced drastically with currently only a handful of traders present. Prices have increased.

In Port Vila, supermarkets are open and well stocked. Prices of imported goods are stable.

Kava and copra continue to be collected in areas that are accessible.

**Severely affected:** Food markets are not functioning in Tanna, Emae and other Shepherd Islands. Local shops have no or very limited stocks of imported food items.

**Highly affected:** Erromango, Tongoa, Paama and South East Ambrym. Here rural markets are not operational. Local food shop have limited stock of imported food items.

In other affected areas, connections to Port Vila may be constrained leading to temporary shortages in imported food items.

**Pathway to recovery:** The islands most affected by Cyclone Pam primarily focus on Port Vila as the supply centre for imported goods such as rice and tinned foods, along with non-food supplies.

Maritime transport is the main means of inter-island freight transport. Many islands do not have wharfs or landing sites and goods are offloaded using barges. However many of the wharfs and barges were damaged during the cyclone and are not fully functioning. Road access is generally good in Vanuatu, with  $\frac{2}{3}$  of the population living less than 10 minutes from a main road. Most roads have been cleared after Cyclone Pam and are accessible by truck.

The maritime transport corridors with Port Vila are rapidly being re-established.



### Cash programming

In affected areas where food needs are less urgent and connections with Port Vila have been re-established, cash programming is possible. It would reinforce these established market channels and allow people to decide on own priorities, including cash needs for schooling, seeds purchases, housing repair.

Vanuatu national bank has 28 local branches throughout the country and experience in rural banking. Direct cash in-hand is an alternative but requires strong NGO support on the ground.

Areas most suitable for cash programming include East Efate and urban slum in Port Vila.

## Box 3: Food imports

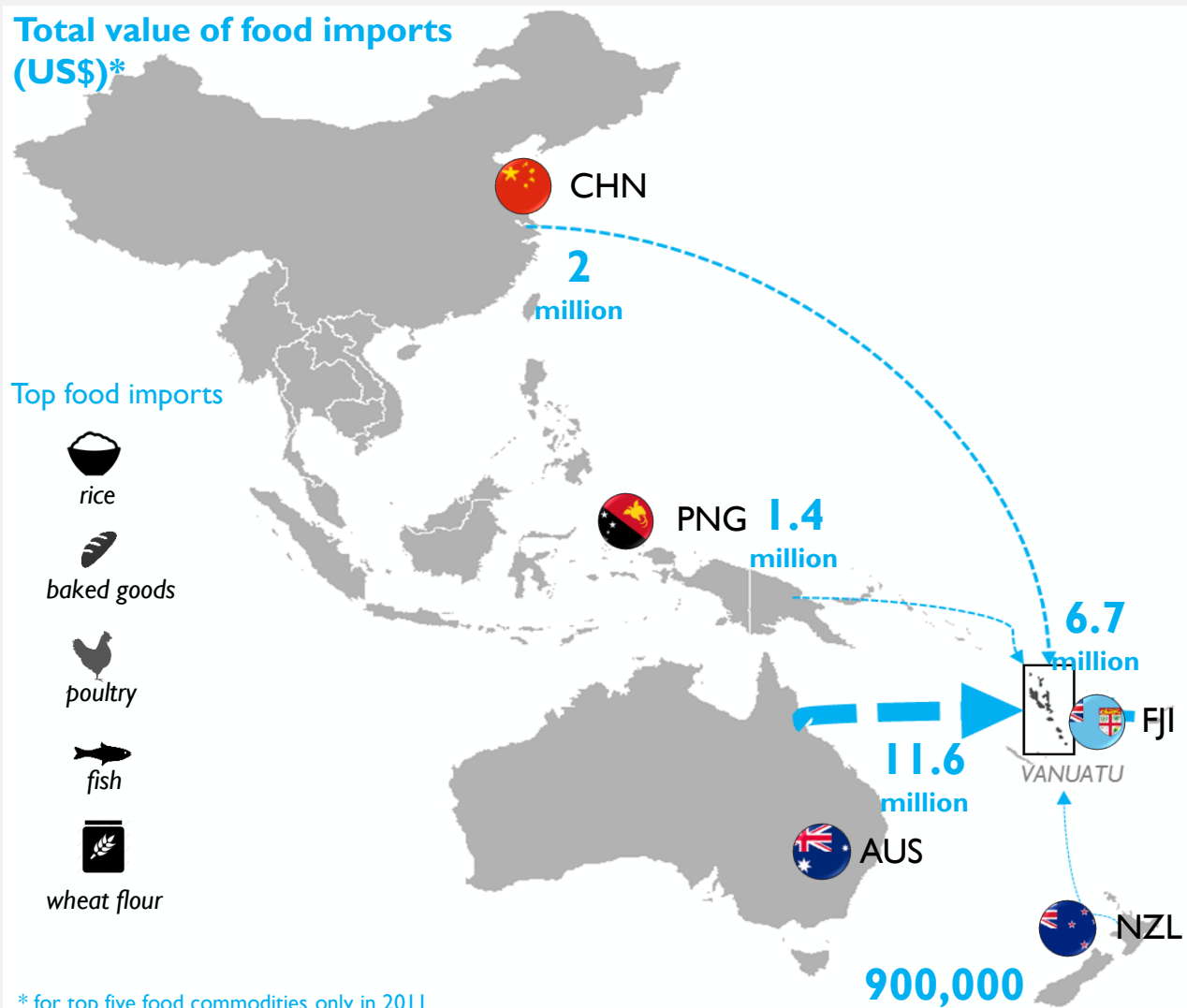


### Imports remain crucial

Vanuatu depends on imports, particularly to feed its urban population. Almost all goods are transported by sea through the key ports of Port Vila and Luganville.

Food imports account for one quarter of value of total imports and represents 9 percent of GDP. Exports are small and consist mainly of coconut oil, copra, kava, some vegetables, fish and meat.

### Total value of food imports (US\$)\*

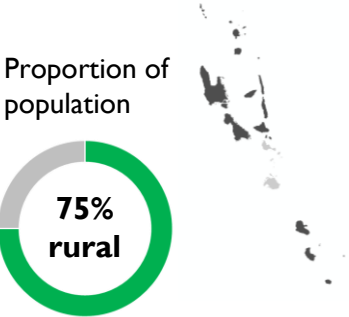


There are huge disparities in food consumption patterns between rural and urban households. Given high reliance on own production – and the impact of the cyclone on crops – food security impacts are higher on rural areas.

# Impact on household food consumption

## RURAL HOUSEHOLDS

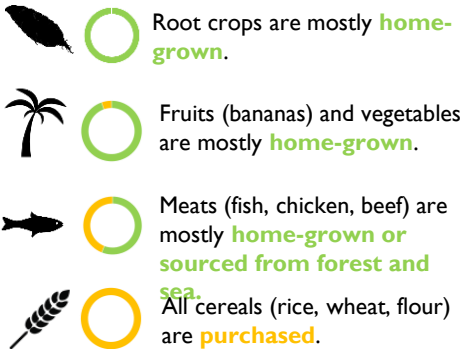
### food consumption



Rural populations mostly consume **root crops** (yam, manioc and taro), **starchy fruits** (plantain, breadfruit and banana), **fresh fish**, and **coconut products**. Food is rarely fried and vegetable oil is seldom used; instead it is boiled or grilled.

Rural households spend **62% of income on food**.

### food sources



### cyclone impacts

There has been severe damage on agricultural gardens and fruit trees. Forests have been decimated and ability to source foods from them have reduced. Fishing is possible but dependent on calm seas.

There are transport constraints (many islands have no wharfs or landing sites) and transporting commodities is time consuming. Airports are operational.

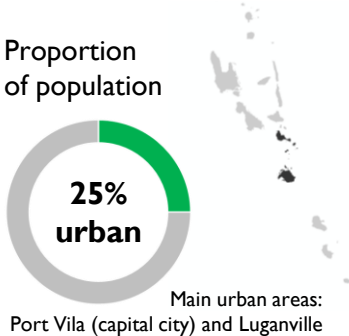
### coping

Skipping lunchtime meals and limiting food intake are commonly practiced.

With roots crops, fruits, vegetables affected, changes in diet are taking place.

## URBAN HOUSEHOLDS

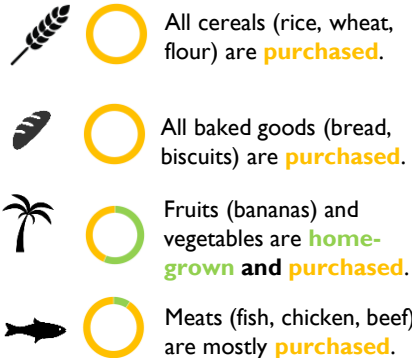
### food consumption



Urban populations in Port Vila have a less traditional diet, with **imported items** such as rice, instant noodles, crackers, oils/ fats and canned fish being commonly consumed.

Urban households spend **42% of income on food**.

### food sources



### cyclone impacts

Supermarkets are operational and prices of imported foods (rice, canned foods) are stable. Markets for local produce (roots, bananas, coconut) are closed.

Roots crops are being imported from non-affected areas via informal networks.

Freight transport operations have resumed.

### coping

Skipping lunchtime meals are practiced by the poorest.

Fruit and vegetables are left out of the diet.

## Box 3: A typical diet

The typical diet – most closely followed by the rural population – consists largely of yams, taro, manioc, and fruits like banana, coconut, mango, pomelo, and guava.

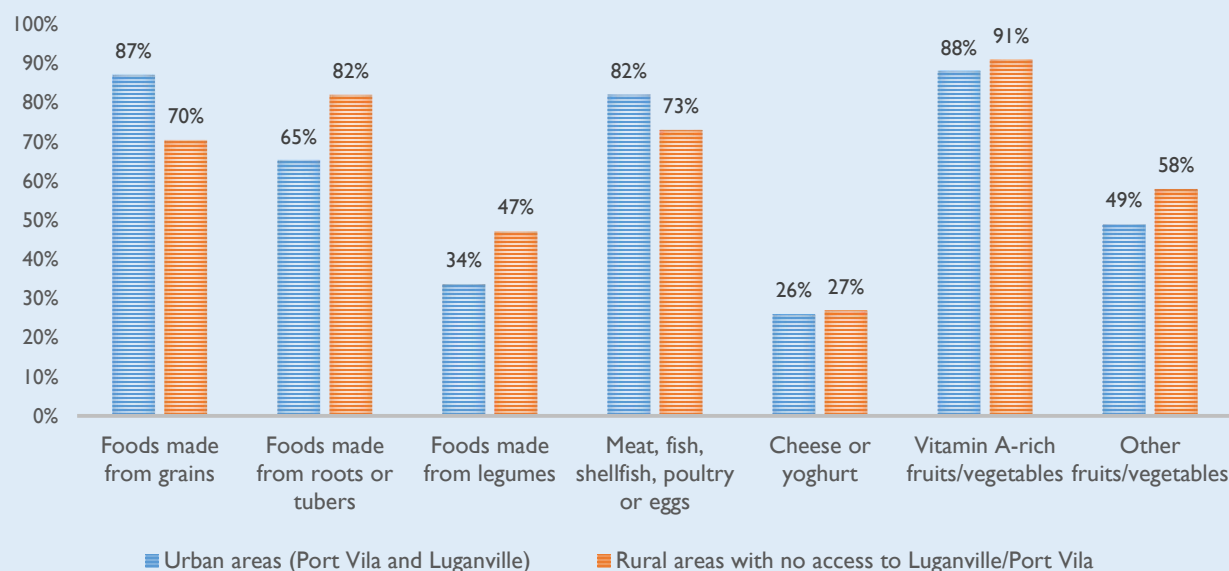
Consumption of poultry, beef, and fish does take place, but not in large quantities. Pork is usually only eaten during feasts. Coconuts and coconut milk is consumed everyday – like bananas, they are available the entire year.

Overall, in normal circumstances, the Vanuatu diet does not suffer due to a lack of food. However, there is a general lack of awareness regarding the importance of a balanced diet with sufficient quantities of vitamins, proteins and other nutrients.

Compared to their urban counterparts, Vanuatu's rural residents are more likely to consume root crops, fruit and vegetables (see chart).

Similarly, compared to wealthy households, Vanuatu's poorest households in Vanuatu are more likely to consume roots/tubers, legumes, and fruits/vegetables not rich in Vitamin A. They are less likely to consume meat/fish and food made from grains.

**FOOD CONSUMED BY YOUNG MOTHERS\* IN PAST DAY/NIGHT (DHS, 2013)**



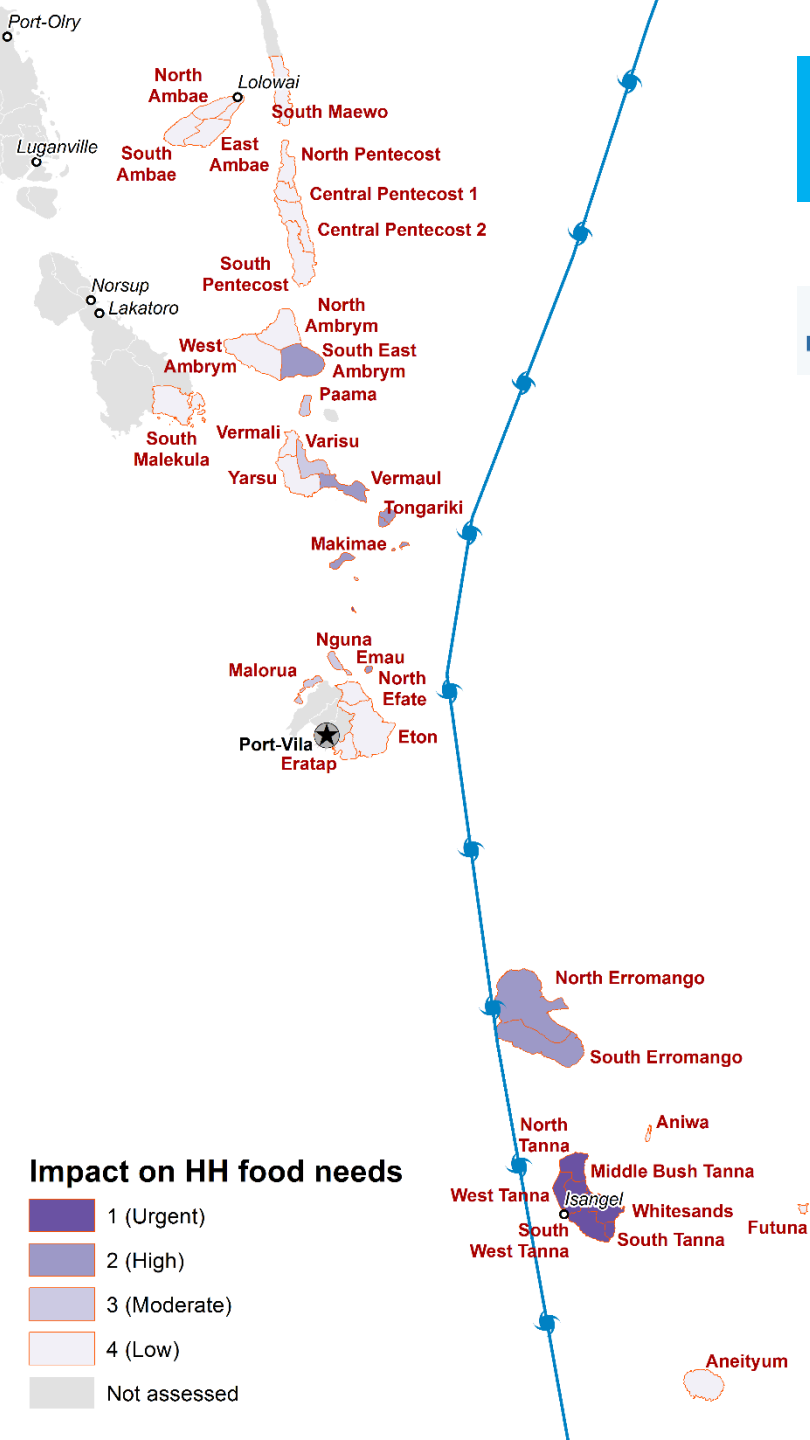
\*mothers with a child aged under 3 living with them

*Lap lap* is the country's national dish, made by reducing taro or yam root crops into a paste.

The paste is placed on a bed of taro or spinach leaves and soaked in grated coconut mixed with coconut milk.

Pieces of meat or fish are sometimes added. The mixture is then wrapped up in leaves from the lap lap plant, and cooked by placing heated stones around the package.





# Food needs



## Most urgent food needs

In the immediate days following the cyclone, food availability was not a problem. In addition to households stocks, across many areas, there were fallen fruits, washed up fish, and perished cattle which were available for consumption.

**Urgent food needs:** Two weeks after the cyclone, as first food aid is being distributed, food needs are becoming urgent. Needs are most urgent in Tanna. People have start limiting their food intake and skipping meals.

**High food needs:** Households in Erromango, southeast Ambrym and Epi as well as on the Shepherd islands report that they are rapidly running out of food. Some have started to limit the intake of their food. Generally they estimate they could run out of food within two weeks. Traditional food-storage practices are more likely to be employed in these areas and provide a short protective buffer.



Food gaps will remain until harvest (mid-June to July).

**Pathway to recovery:** Damage to home-gardens and forests has meant that significantly less self-produced food is available for rural households.

The food gap is exacerbated by a lack of food-storage techniques (aimed to combat food shortages in times of disasters) such as burying yam underground. Unfortunately, these traditional practices have been greatly reduced in many areas.

The extent of the food gap is directly linked to the damage on crops (see page 4), dependence on subsistence farming and household resilience (page 6). Combining these factors, provides guidance on food ration requirements; priority 1, 2 and 3, as presented in the map on the next page.

The currently assigned ration baskets are in the below table.

	Priority 1	Priority 2	Priority 3
 Rice	5 kg	5 kg	2.5 kg
 Tinned fish	425 g (1 can)		
 Tinned meat	200 g (1 can)	200 g (1 can)	
 Noodles	170 g (2 packs)	170 g (2 packs)	



# Food rations (suggested prioritization)

Priority areas for food assistance were determined by considering both the assessed agricultural damage and the level of subsistence dependency.

## Priority 1

Highest level of damage to agriculture and highest level of subsistence dependency.

It includes Tanna, Erromango and most of the Shepherd Islands.

Full food rations are recommended.

## Priority 2

Moderate to high levels of damage to agriculture and moderate level of subsistence dependency. It includes southeast Ambrym, Paama, eastern Epi, Tongoa and Tongariki.

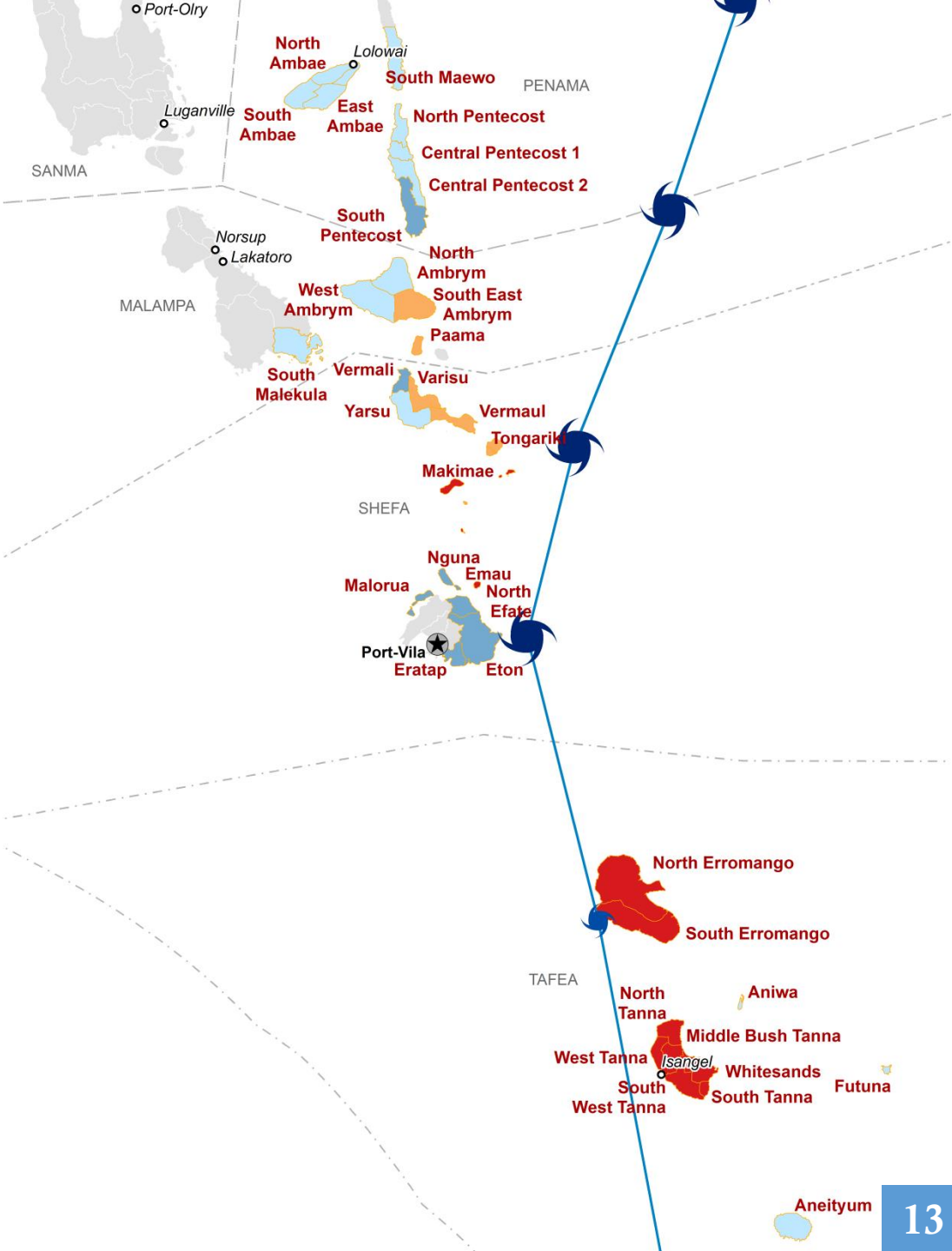
The food gaps are less but food rations supplementing left-over harvestable produce are required. Cash programming could also be considered provided that commodity transport to Port Vila is assured (see also page 8).

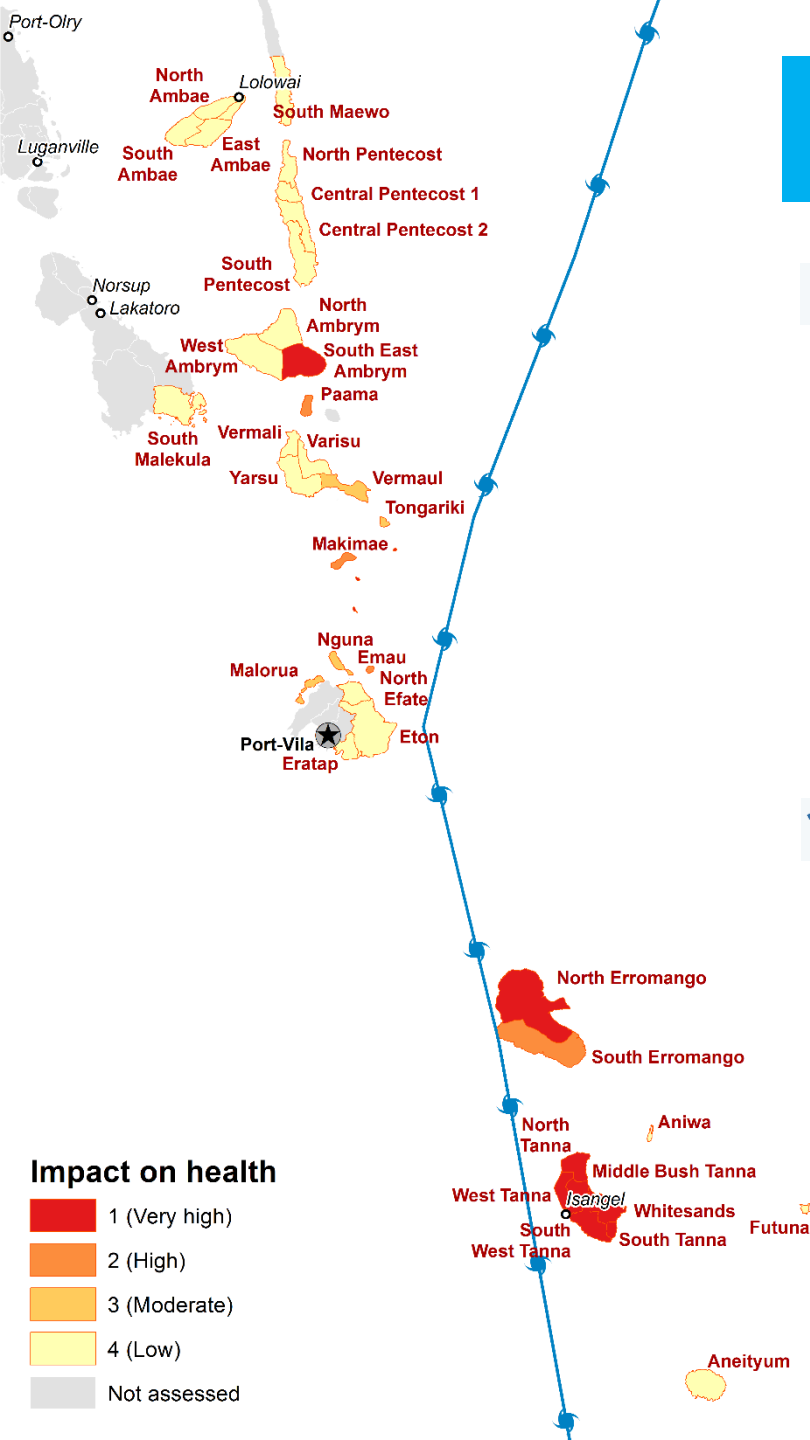
## Priority 3

Low levels of damage to agriculture and subsistence dependency. It includes less impacted areas where food gaps are less major. Smaller rations sizes or cash support could be considered.

## No priority

None to minor levels of damage. Food needs are minor. Cash support can be considered to support the build up of local economy.





# Impact on health



## Water sources

Access to safe drinking water was an issue before the cyclone. Many communities rely on rainwater harvesting which is collected in water tanks.

**Severely affected:** Water tanks in South East Ambrym, Erromango and Tanna are mostly destroyed. Clean and safe drinking water is in short supply.

**Highly affected:** Water tanks are polluted and water is undrinkable. Tanks need cleaning and water supply systems restored.



## Health clinics

Health clinics have been affected – mainly roof damage with some subsequent losses in medicine and equipment. No consistent picture is available on which health centres where are damaged, but most are functioning. Not every island however has a health clinic.

**Pathway to recovery:** Reportedly, diarrhoea and other waterborne diseases have not deteriorated significantly.

Health clinics would need to be repaired and water and sanitation systems re-established, prioritizing the severely and highly impacted areas.



Water tank

# Impact in Port Vila

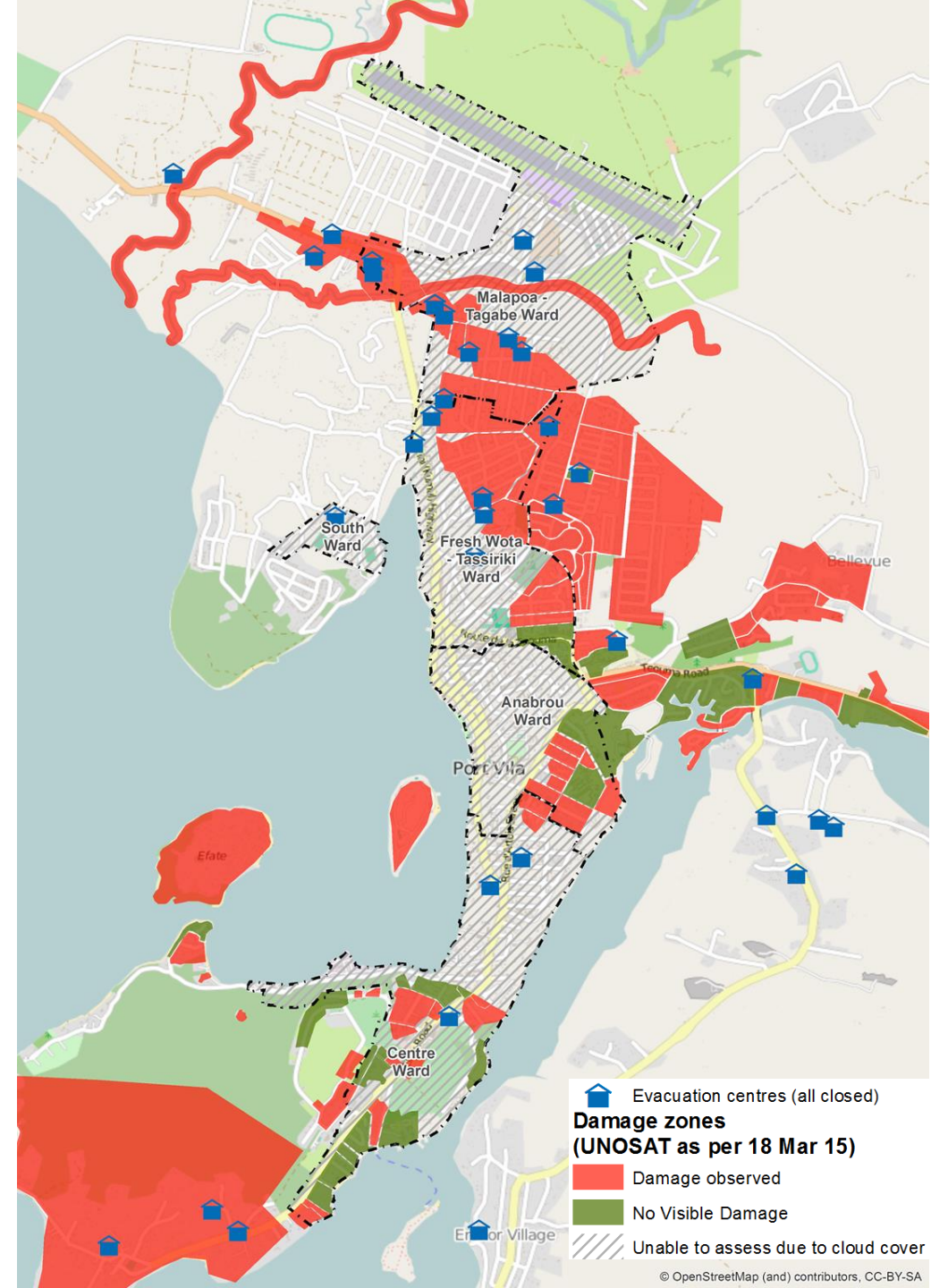
**Most affected neighborhoods:** Port Vila was heavily impacted by Cyclone Pam. Physical damage was predominant in the red shaded areas (UNOSAT analysis).

They include the neighborhoods of *Mele, Mele-maat, Prima/Abattoir, Salili, Blacksands, Bladiniere, End of Airport, Rangorango, Switi, Tagabe, Manples, Kokoreko, Ohlen, Anamburu, Freshwota, Erakor, Club-Hippique, Ernas, Teouma bush and Etas.*

**Housing:** An estimated 27% of Port Vila's population live in makeshift housing which is the highest proportion in the country.

Households situated beside the rivers were most damaged. Many makeshift houses in slums were swept away with surges. The quality and location of these riverside houses makes them particularly susceptible to storm damage.

Immediately following the cyclone, evacuation centres in and around Port Vila held 4,000 people. The centres were mostly schools and churches. Most centres are now closed. Most families whose houses were destroyed and badly damaged are staying with extended families as they rebuild their own houses.



# Needs in Port Vila

**Markets:** Port Vila's main local market for fruits, vegetables and handicrafts has been out of operation since the cyclone and will not re-open for 1-2 months. It is expected to return to full operation in 3-6 months.

Market sustained significant structural damage (e.g. windows and roofing) and sanitation problems. No availability of staple diet foods for ni-Vanuatu (manioc, taro, yams, banana, kumala, island cabbage, papaw, coconuts) due to damage by cyclone.

For the few available foods, prices have changed. Cabbage prices, for instance, has risen from 100vt to around 300-400vt.

There are sufficient supplies of imported foods and stable prices. But for the poorest lack of money to buy these imported food items is a major issue of concern.

**Livelihoods:** 82% of Port Vila's population report wages/salary as a main source of income. Men generally work as labourers, gardeners and small scale farmers.

The so-called '20-Vatu stores' – informal selling of food items in the evening market – have all stopped operating as there are no food to sell and no demand.

**Food needs:** Since Cyclone Pam, the poor population living in urban areas have experienced significant changes to their diet. For these residents, fruit and vegetable consumption has largely ceased. Most households are not consuming any green vegetables or root crops, and only eat rice and tinned foods.

Households lacking sufficient food are resorting to coping strategies such as skipping one meal a day, and reducing the size of their meal portions.

Households without food are joining their extended families/friends for meal sharing.

**Health:** Sanitation is a serious concern. Sewerage in slum areas have been scattered throughout, yet children are still seen swimming daily in the rivers.

Reportedly, the prevalence of diarrhoea and other waterborne diseases have not deteriorated significantly.

**Pathway to recovery:** The essential household needs include mosquito nets, building materials, seeds and tools for clearing debris.

In the immediate future, the option to transport foods from Vanuatu's unaffected provinces to Port Vila should be explored. This will require transport support (e.g. boats).

Minimum building codes are required to reduce the vulnerability of slum housing to destruction and sanitation problems.

Establish permanent strategically placed evacuation centres in and around Port Vila and provide proper education on evacuation procedures.

To ease financial burden on affected households, school fees should be waived for the coming months.

Fees for business (5,000vt) and municipality permits (8,000vt) could be waived to reinforce business.

Health clinics would need to be repaired and water and sanitation systems re-established, prioritizing the severely and highly impacted areas.

## *Summary*

The most widespread destruction occurred in Tanna, Erromango and the Shepherd Islands.

**Agriculture and Livelihoods:** Extensive damage to crops and livestock has left subsistence farming households in the worst affected areas with serious shortages for the coming 2-3 months (i.e. until the replanted fast-growing crops harvest).

**Housing:** Serious damage to housing occurred throughout the affected islands. Traditional houses were most vulnerable to destruction. Materials to rebuild these houses are locally available although natangura (thatched) is in short supply.

**Markets:** No local market activity is taking place in any of the affected rural areas. Local shops have no or very limited stock of imported food items.

**Food Needs:** Two weeks after the disaster, household food needs are most urgent in Tanna, Erromango and Shepherd Islands. People have started to limit their intake and are skipping meals. Food gaps will remain until harvest begins (mid-June to July).

**Health:** Access to safe drinking water was an issue prior to Cyclone Pam. The water tanks used for rainwater harvesting have been mostly destroyed in South East Ambrym, Erromango and Tanna.

## *Pathways to recovery*

### **Agriculture and Livelihoods:**

- Replanting of all new fast-growing crops.
- Provision of seeds, farming equipment and agricultural expertise to severely and highly affected communities.
- Transport and distribute shoots/seeds from unaffected areas.
- Facilitate seasonal work and remittance opportunities in neighbouring countries.

### **Housing:**

- Establish cyclone shelters throughout the island nation with secured access to safe drinking water / medical supplies and emergency foods.
- Make available thatch from unaffected areas.

### **Markets:**

- In affected areas where food needs are less urgent and connections with Port Vila have been re-established, cash programming should be considered to reinforce local markets.
- Business license fees in Port Vila could be waived for small traders.

### **Food needs:**

- Targeted food assistance is recommended for 3 months.

### **Health:**

- Health clinics would need to be repaired and water and sanitation systems re-established, prioritizing the severely and highly impacted areas.

### **Education:**

- Waiving school fees for the remainder of the year could be considered



## Methodology

This assessment brings together available evidence on the impact of Cyclone Pam. A series of thematic maps are used to depict the severity of impact throughout the country's most affected areas. This assessment has involved the following stages:

- 1) WFP conducted an initial '72 hour' rapid assessment to determine the initial priority areas. Priority area classification was based on a) the assumed geographic impact of the cyclone, and b) the estimated 'cyclone resilience' of the resident population.
- 2) To verify the identified priority areas, information from post-disaster field evaluations was required. Following these field evaluations – which were conducted by WFP and other key partners (i.e. UNDAC) – assessment teams completed an observation checklist (see Annex). The checklist is designed to classify the severity of impact in the visited area with respect to the following themes: agriculture/livelihoods, food needs, markets, housing and health. Based on checklist results, for each theme, all affected geographic areas were assigned a severity score.

## Limitations

- 1) For some areas the NDMO/UNDAC assessment teams did not complete the WFP observation checklist. This missing information has been substituted with available assessment information derived from informal assessment reports.
- 2) Different teams completed forms for different areas. This represents a risk of a lack of standardization in the evaluations. This is not considered a serious limitation for several reasons. First, WFP visited a range of the areas covered by different teams to compare/contrast responses provided by different teams. Second, the checklist is highly prescriptive and provides clear definitions by which teams must follow when classifying each area. Third, the results were verified through key stakeholder discussions and input.
- 3) The period of field-verification took place over a period from 17 - 27 March. Therefore, areas assessed at earlier dates may be at risk of being evaluated more severely than those assessed at later times. However, this is most likely to affect the evaluations of housing situations (traditional houses can be quickly reconstructed) and sanitation. In terms of food needs and agriculture/livelihoods – the main focus of this assessment – community predictions/estimations of the situation are probably accurate.



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## Observation Checklist

Province \_\_\_\_\_ Contact \_\_\_\_\_




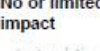
Island \_\_\_\_\_ Return to [siemon.hollema@wfp.org](mailto:siemon.hollema@wfp.org)

Area council/s (or description of location, e.g. west of island) \_\_\_\_\_

Based on observation and community interviews, please click the most appropriate tick-box (1, 2, 3 or 4) that best describes the situation as encountered in the assessed islands. Please fill in one form for each area council/island assessed.



### Overall Cyclone PAM Impact

1 – <input type="radio"/>	<b>Severe impact</b> 	<ul style="list-style-type: none"> <li>Most buildings have been severely damaged. Roofs are gone from most houses.</li> <li>Most coconut trees are felt down. Many large trees uprooted. Banana trees destroyed.</li> <li>All vegetable crops have been lost. Root crops heavily impacted.</li> <li>Electrical power distribution and communication services are completely disrupted.</li> </ul>
2 – <input type="radio"/>	<b>High impact</b> 	<ul style="list-style-type: none"> <li>Majority of traditional houses were unroofed or destroyed. There was considerable damage to structures of light to medium construction.</li> <li>Many coconut trees have been broken or uprooted. Most banana trees are down.</li> <li>Vegetable crops have suffered heavy losses. Root crops suffered some impact.</li> <li>There is widespread disruption of electrical power and communication services.</li> </ul>
3 – <input type="radio"/>	<b>Moderate impact</b> 	<ul style="list-style-type: none"> <li>Many houses made of light materials were unroofed and old galvanized iron roofing may be peeled off.</li> <li>Some coconut trees have been tilted and few big weak trees uprooted. Many banana plants are downed.</li> <li>Vegetable crops have been affected. Root crops are OK.</li> <li>Disruption of electrical power and communication services.</li> </ul>
4 – <input type="radio"/>	<b>No or limited impact</b> 	<ul style="list-style-type: none"> <li>Some houses of very light materials were partially unroofed.</li> <li>Twigs and branches of small trees are broken. Some banana plants have been tilted or uprooted.</li> <li>Crops only slightly or not impacted.</li> <li>Disruption of electrical power and communication services.</li> </ul>

Notes

## Annex 1. Observation Checklist



### Impact on Agriculture and Livelihoods

1 – <input type="radio"/>	<b>Severely affected</b>	<ul style="list-style-type: none"> <li>&gt;75% vegetable crops have been lost.</li> <li>&gt;25% of root crops heavily impacted.</li> <li>&gt;75% of fruit crops in area destroyed.</li> <li>&gt;50 % of livestock (chickens, cows, goats, pigs) lost; and their pens and shelters destroyed.</li> <li>All farmers are without planting materials/seed stock.</li> <li>&gt; 50 of farming tools lost.</li> <li>Fisheries infrastructure (boats/fishing gear) mostly destroyed.</li> </ul>
2 – <input type="radio"/>	<b>Highly affected</b>	<ul style="list-style-type: none"> <li>50-75% of vegetable crops lost.</li> <li>25% root crops suffered heavily impacted.</li> <li>50-75% of fruit crops stripped/ destroyed.</li> <li>25-50% of livestock lost; heavy damage to pens and animal shelter.</li> <li>Remaining livestock suffering critical shortage of feeds (i.e. coconuts, grasses and shrubs).</li> <li>Many farmers without planting materials, seed stock.</li> <li>Many farmers have lost or damaged farming tools.</li> <li>Fisheries infrastructure (boats/fishing gear) badly affected.</li> </ul>
3 – <input type="radio"/>	<b>Moderately affected</b>	<ul style="list-style-type: none"> <li>&lt;50% of vegetable crops have been lost.</li> <li>Most root crops unaffected.</li> <li>Less than half of the coconut and banana trees have been tilted or have fallen.</li> <li>Livestock mostly unaffected.</li> <li>Some farmers without planting materials, seed stocks.</li> <li>Fisheries infrastructure mostly unaffected.</li> </ul>
4 – <input type="radio"/>	<b>Not or mildly affected</b>	<ul style="list-style-type: none"> <li>Vegetable crops and root crops largely unaffected.</li> <li>Some banana plants have been tilted or uprooted. Some coconut trees tilted.</li> <li>Livestock unaffected.</li> <li>Most farmers retained planting materials and tools largely unaffected.</li> <li>Fisheries infrastructure unaffected</li> </ul>

Notes

Please turn over



## Household Food Needs

1 – <input type="radio"/>	<b>Urgent</b>	<ul style="list-style-type: none"> <li>Households report that they have no more food.</li> <li>People limit their food intake and adults are skipping meals.</li> <li>Very high anxiety expressed of where the food will come from in the next week.</li> </ul>
2 – <input type="radio"/>	<b>High</b>	<ul style="list-style-type: none"> <li>Households report that they are rapidly running out of food.</li> <li>Some households started to limit food intake.</li> <li>High anxiety of the population who are concerned of running out of food in the next 2 weeks.</li> </ul>
3 – <input type="radio"/>	<b>Moderately</b>	<ul style="list-style-type: none"> <li>Households report that they have access to food for at least the next 2-4 weeks.</li> <li>Households have not limited their food intake.</li> <li>Some households express concerns on running out of food.</li> </ul>
4 – <input type="radio"/>	<b>Low</b>	<ul style="list-style-type: none"> <li>Normal food consumption patterns are observed.</li> <li>No major concerns about satisfying food needs at the household level for the immediate period.</li> </ul>
Notes		



## Impact on Housing

1 – <input type="radio"/>	<b>Severely affected</b>	<ul style="list-style-type: none"> <li>&gt;50% of houses/buildings destroyed or seriously damaged.</li> <li>Most families living in evacuation centres or temporary shelters.</li> </ul>
2 – <input type="radio"/>	<b>Highly affected</b>	<ul style="list-style-type: none"> <li>25-50% of houses/buildings destroyed or seriously damaged.</li> <li>Many families living in evacuation centres or temporary shelters.</li> </ul>
3 – <input type="radio"/>	<b>Moderately affected</b>	<ul style="list-style-type: none"> <li>&lt;25% of houses/buildings destroyed or seriously damaged.</li> <li>Some families living in evacuation centres or temporary shelters.</li> </ul>
4 – <input type="radio"/>	<b>Not or mildly affected</b>	<ul style="list-style-type: none"> <li>Limited or no damage to houses. Some roofs may be damaged.</li> </ul>
Notes		



## Market Functionality

1 – <input type="radio"/>	<b>Severely affected</b>	<ul style="list-style-type: none"> <li>Access to usual food supply centres are severely disrupted.</li> <li>No or very limited supply of imported food items (rice/canned foods) available.</li> </ul>
2 – <input type="radio"/>	<b>Highly affected</b>	<ul style="list-style-type: none"> <li>Access to usual food supply centres are disrupted.</li> <li>Imported food items (rice/canned foods) available to a limited extent.</li> </ul>
3 – <input type="radio"/>	<b>Moderately affected</b>	<ul style="list-style-type: none"> <li>Access to usual food supply centres is more difficult.</li> <li>Some scarcity in imported food items.</li> </ul>
4 – <input type="radio"/>	<b>Normal or little disruption</b>	<ul style="list-style-type: none"> <li>Access to usual food supply centres seem unaffected.</li> <li>There may be some scarcity in imported cash foods (rice / tinned foods) but local foods are available.</li> </ul>
Notes		



## Impact on Health

1 – <input type="radio"/>	<b>Very High</b>	<ul style="list-style-type: none"> <li>No safe drinking water available.</li> <li>Zero access to health centres, health services and medical supplies.</li> <li>Reports of significant increased rates in diarrhoea / infectious diseases.</li> <li>Many untreated infections from trauma injuries from the cyclone observed.</li> </ul>
2 – <input type="radio"/>	<b>High</b>	<ul style="list-style-type: none"> <li>Safe drinking water supplies seriously affected.</li> <li>Access to health centres, health services and medical supplies constraint.</li> <li>Reports of increased rates in diarrhoea / infectious diseases.</li> <li>Some untreated infections from trauma injuries from cyclone observed.</li> </ul>
3 – <input type="radio"/>	<b>Moderate</b>	<ul style="list-style-type: none"> <li>Some loss or contamination of safe drinking water sources.</li> <li>Access to health centres, health services and medical supplies more difficult.</li> <li>Some cases of diarrhoea / infectious diseases.</li> </ul>
4 – <input type="radio"/>	<b>Low</b>	<ul style="list-style-type: none"> <li>Drinking water supplies mostly unaffected.</li> <li>Access to health centres, health services and medical supplies uninterrupted.</li> <li>Limited cases of diarrhoea / infectious diseases.</li> </ul>
Notes		

# Annex 2. Population

Vanuatu sustains a total population of 234,560 spread out across 65 of the 82 islands that make up the island nation. Port Vila and Luganville are the main urban areas. The rest of the population (76%) live in rural areas.

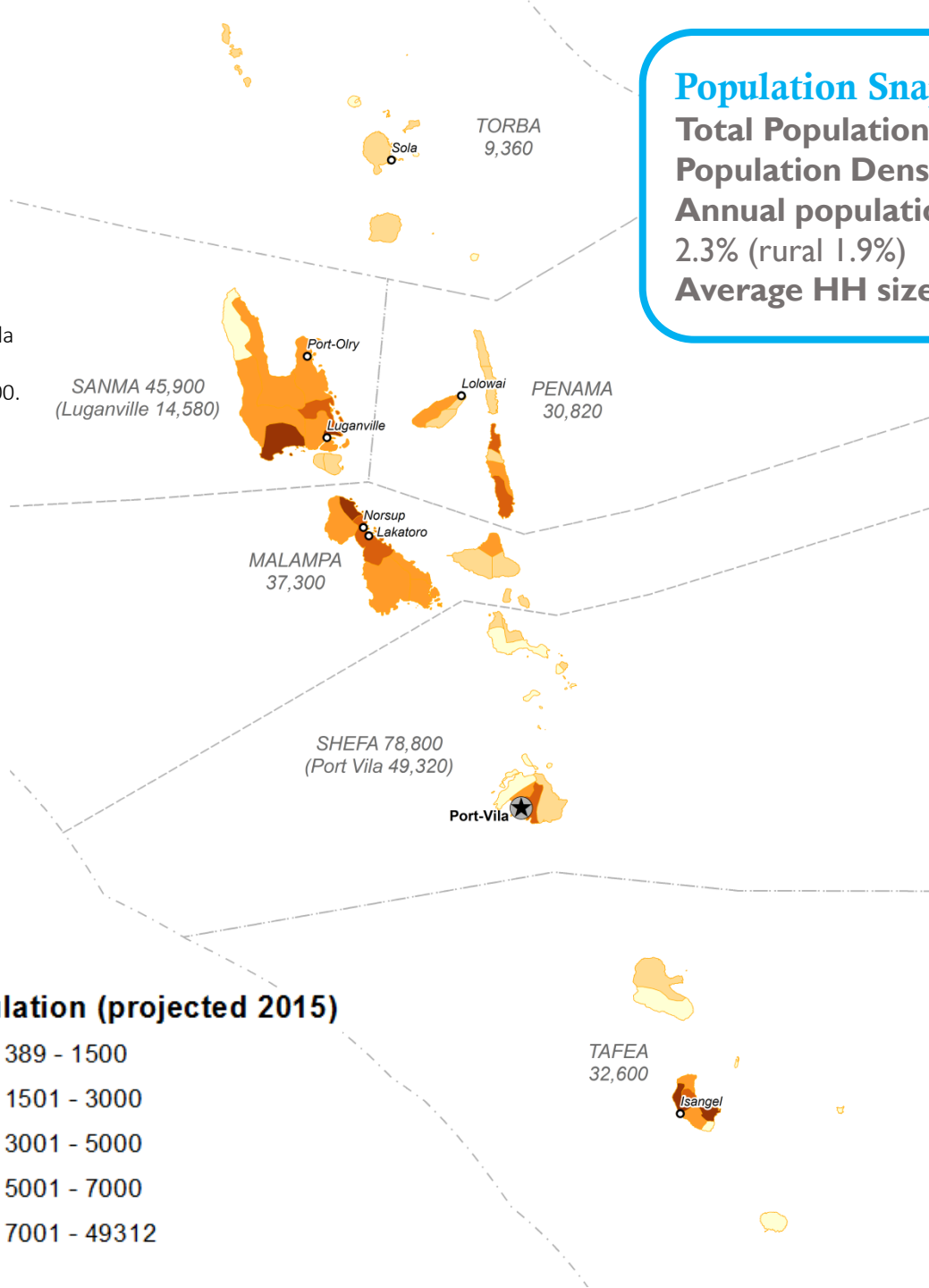
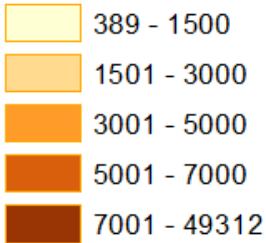
The most concentrated populations are on the larger islands of Santo, Malekula and Efate. Although the island of Tanna (one of the heaviest affected areas) sustains a comparably large population for its size with a population of ~ 29,000. This equates to a population density of ~50 people/sq. km on the island. The overall population density for Vanuatu is ~18 people/sq. km.

Most populated area councils/Urban areas:

Port Vila, Efate, SHEFA	49,312
Luganville, Santo, SANMA	14,580
West Tanna, Tanna, TAFEA	9,429
Nort East Malekula, MALAMPA	7,386
Whitesands, Tanna, TAFEA	7,336
Erakor, Efate, SHEFA	6,412



## Population (projected 2015)



## Population Snapshot

**Total Population** 234,560  
**Population Density** 18ppl/sqkm  
**Annual population growth** 2.3% (rural 1.9%)  
**Average HH size** 4.8