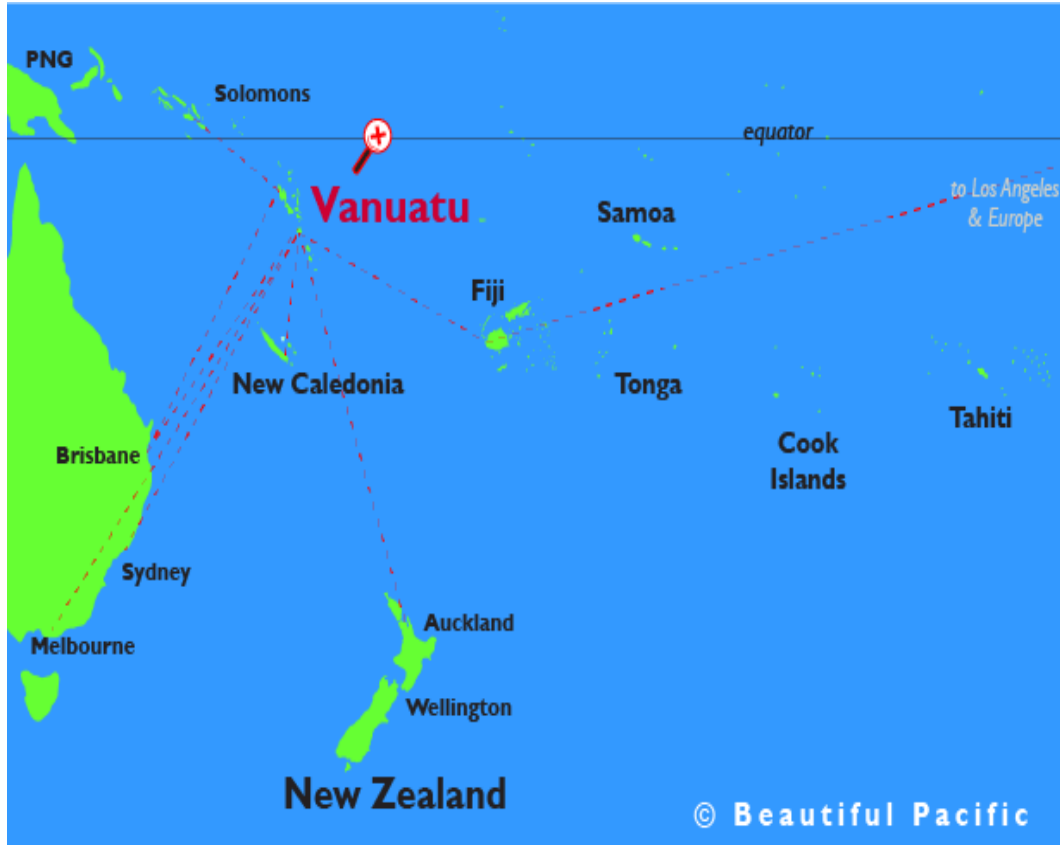

Presentation Outline

- 1. Country Profile – Republic of Vanuatu**
- 2. Disaster Risk Profile**
- 3. Tropical Cyclone Pam Background**
- 4. Pre Cyclone Preparations**
- 5. Status of the Telecom infrastructure**
- 6. Post Cyclone Actions**
- 7. Telecom Sector Challenges**
- 8. Lessons Learned – Plans for the Future**



Source: Beautiful Pacific

Country Profile

- Archipelago of 83 volcanic islands
- Total area of 12,200km square of which 1/3 is land area
- 260,000 people
- 75% of population lives in rural areas
- $\frac{3}{4}$ of households engaged in subsistence farming in rural areas;
- Voted twice as the Happiest place on earth;
- Tourism is our main income earner;
- ITU ICT for Sustainable Development Award in Sept 2015

Disaster Profile: No# 1 - Vanuatu

- **Considered the world's most vulnerable country to natural hazards**
 - Exposure to both geo-physical and hydro-meteorological hazards
 - Its limited financial and technical capacity to prepare for and respond to the associated risks
- **Geographic location within the Pacific Ring of Fire and the Centre of Pacific Cyclone belt**
 - Relatively high frequency of volcanic eruptions, Cyclones, earthquakes, tsunami, storm surges, coastal and river flooding, and landslides

WorldRiskIndex		
Rank	Country	Risk (%)
1.	Vanuatu	36.50
2.	Philippines	28.25
3.	Tonga	28.23
4.	Guatemala	20.68
5.	Bangladesh	19.37
6.	Solomon Islands	19.18
7.	Costa Rica	17.33
8.	El Salvador	17.12
9.	Cambodia	17.12
10.	Papua New Guinea	16.74
11.	Timor-Leste	16.41
12.	Brunei Darussalam	16.23
13.	Nicaragua	14.87
14.	Mauritius	14.78
15.	Guinea-Bissau	13.75

Source: World Risk Index 2014



Source: Sky News Australia

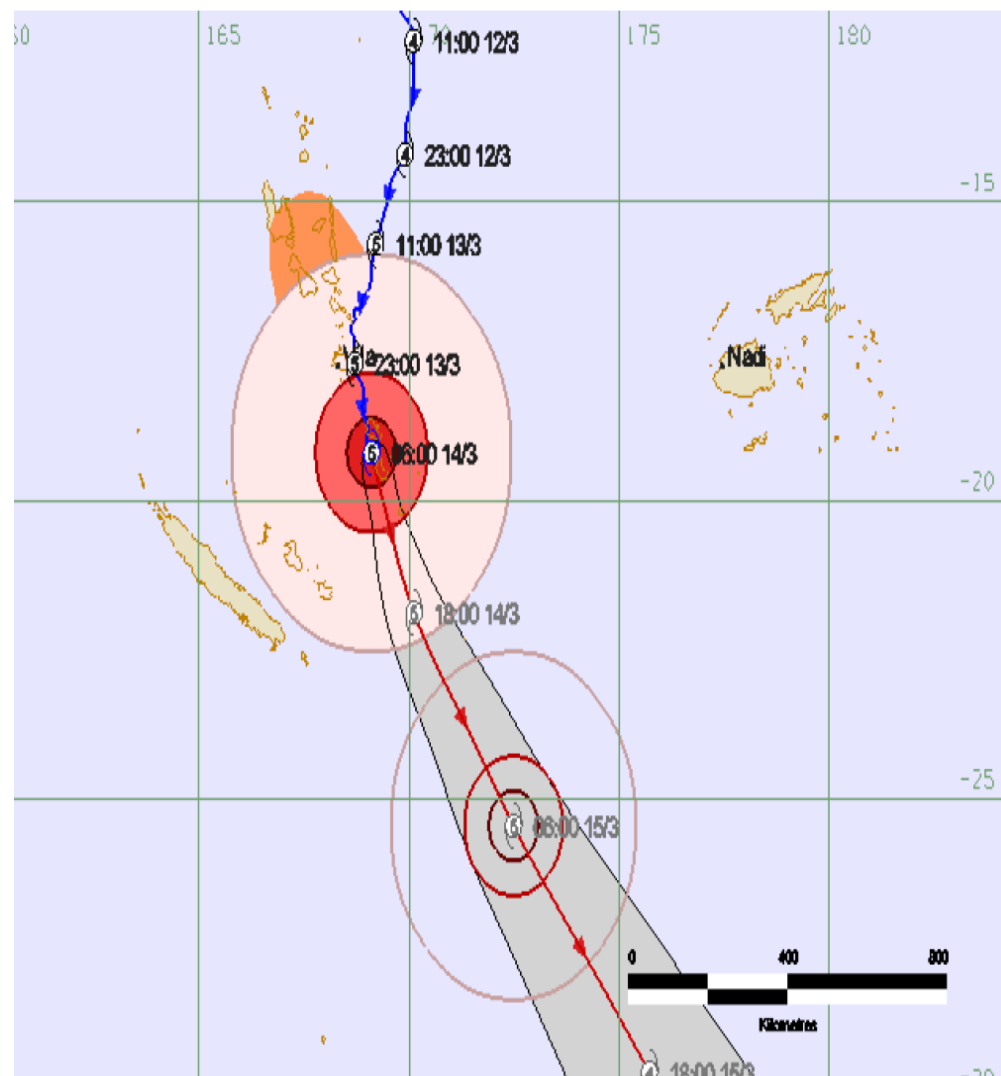
Category 5 – Tropical Cyclone PAM

■ Severe and wide-spread damage

- 11 deaths
- 65,000 displaced from their homes and immediately in need of shelter
- 17,000 building damaged (incl. homes, schools, clinics and other medical facilities)
- Crops destroyed on a large scale affecting livelihoods of at-least 80% of Vanuatu's rural population

■ Estimate cost of damage (economic value)

- US\$449.4 Million (VT48.5 Billion)
- Equiv..64.1% of GDP



Source: Vanuatu Humanitarian Team

Pre Cyclone Preparations

- Met and agreed on the following:
 - SMS warning alert to all citizens
 - Initial task for each Operator to contact their care-takers to analyze situation on the ground
 - Availability of helicopters
 - Power shut-down procedures by the main power company – Unelco Sves
 - Share list of key contacts
 - Government to provide clear curfew procedures incase of major curfew
- Biggest concern was limited resources available incase of severe cyclone such as Helicopter and planes for assessments and logistics
- Contact established with ITU and Telstra to provide Satellite Phones
- Operators contacted their regional and international partners for assistance

What we did

- Free SMS alert offered by 2 mobile network
- 93% of the population received free SMS warning alerts
- Operators advise TRR to remove all special promotions to free up Network
- A process was established between Vanuatu Meteo forecast section and the 2 Operators
 - Group emailing list set-up
 - Weather forecast section email the SMS text messages to Operators every hour
- The SMS alert was recognised locally and internationally as one of the 3 major factors contributing to low fatality rate, **ONLY 11 deaths**



Source: OGCIO, Vanuatu

Status of the Infrastructure



Before



After

Source: OGCIO, Vanuatu

▪ After Cyclone Pam

- On morning of 14th March, No communication services outside capital city, Port Vila
- For outer-islands, it took approximately 1 week to restore services
- Worst impacts on Shefa, Tafea and Malampa Provinces
- Transmission towers were partially or totally destroyed
- Equipment on three provinces were totally damaged
- Damaged resulted on loss of service across, mobile ,fixed and Data services including Radio and TV broadcast services
- International connectivity via newly installed Interchange Cable Network (ICN) Submarine cable remains online unaffected through out the cyclone and allowing Port Vila to remain connected to the outside World

Post Cyclone Actions

- **Private Public Partnerships works very well.** (site surveys, utilization of limited resources (ships, planes, helicopters, military aircraft))
- **Private Sector**
 - Mobilization of regional and international resources
 - 24/7 reconstruction/repair operations across islands mostly affected
- **Government**
 - Focal Point of Telecommunications rebuilding efforts
 - Restored temporary services to all Provincial officers with the support of ETC
 - Coordinate/Support ETC efforts & support to the Humanitarian Agencies, NGOs and Private Sector
 - Assisting Operators with Airports and customs clearance with aircraft and people goods arriving
 - Interim IP-Radio solution (more substantial rebuilt once funds become available)

Emergency Telecom Cluster (ETC) members and various other International Partners

▪ Emergency Telecoms Cluster (ETC) group;

- World Food Program (WFP)
- Telecom with Borders (TSF)
- British Telecom
- Ericson
- Google
- NetHope
- Cisco

▪ Other International Partners;

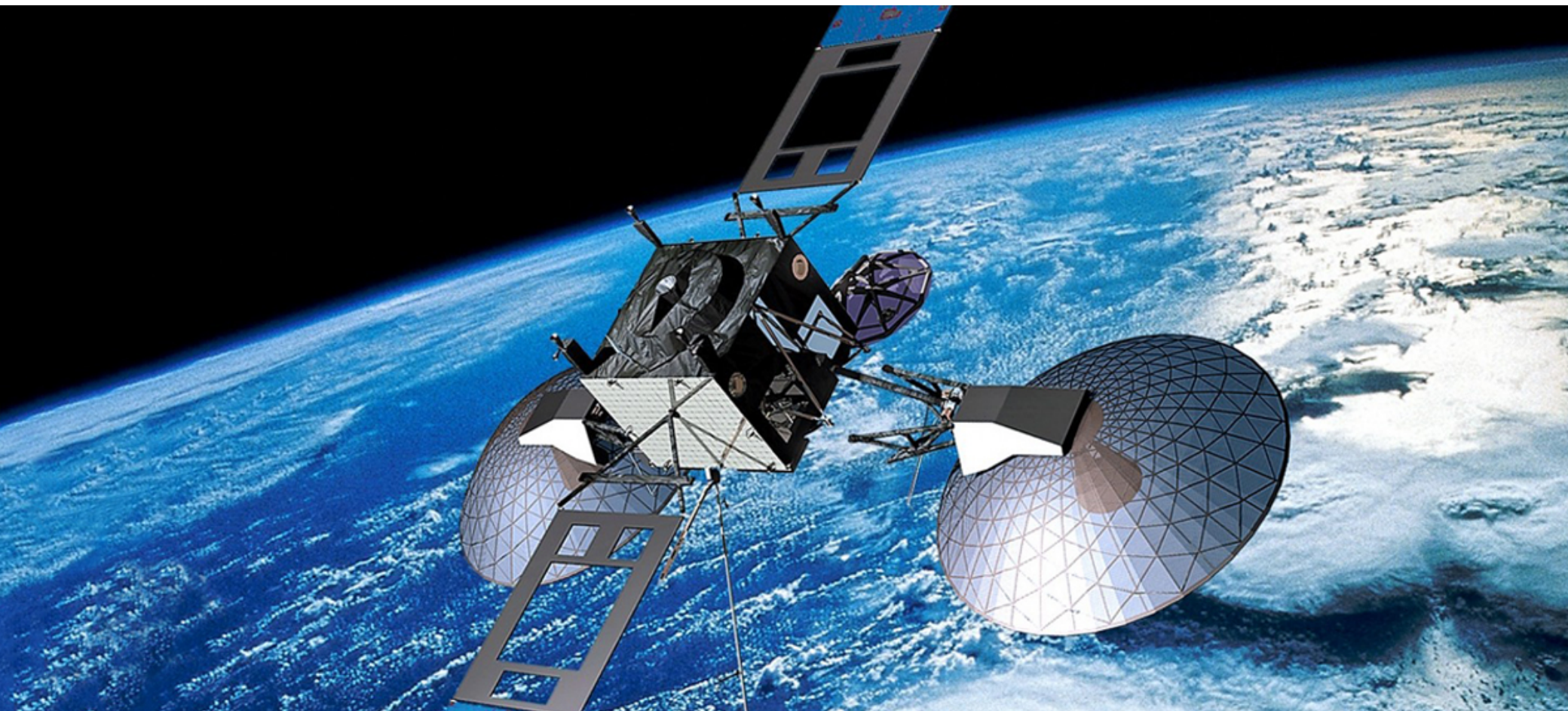
- ITU
- Telstra
- Vodafone foundation
- APNIC
- ISOC
- Trend Micro
- Microsoft
- Baracuda
- VMWare

Challenges for Telecommunication Sector

- **Regulatory powers to enforce sharing of resources and immediate collaboration**
- **Two (2) Greatest hindrance affecting the speed of immediate recovery**
 - The logistics, time and effort required to ship required materials to locations through out Vanuatu
 - Lack of electricity in most affected islands
- **As a result of damages sustained, transmission networks must be rebuilt in worst affected locations**
 - Significant investment in new towers and equipment's will be required by all Operators in 2015
 - Investments will likely affect profitability of private sector
 - However it is also assumed cost of damages in many cases will be recovered from insurance coverage held by Operators

Plans for the Future: Emergency Communications Strategy

1. Develop a National Emergency Communications Strategy;
2. A well coordinated relief distribution strategy with other sectors like energy, transport etc.;
3. A well coordinated network restoration plan with telecom operators for faster countrywide infrastructure restoration;
4. Install readily available emergency satellite communications throughout the country;
5. 98% coverage by 1 January 2018 has an emergency communications component in our UA Policy programs;



Source: www.allthingsnuclear.org