

## **FIRST HAND ACCOUNT OF THE IMPACT OF TC PAM ON PORT VILA, VANUATU ON 13 MARCH 2015 AND ITS AFTERMATH.**

ERSA Director Tony Batten and his family operate a preschool, *Pikinini Playtime* in Port Vila, the capital of Vanuatu and went through the experience of preparing for, the impact of, and the recovery from the impact of severe Tropical Cyclone *Pam*. Tony had been part of the ERSA team that had undertaken many disaster risk assessment studies in Australia since 2001 and had a clear understanding of the hazard and its likely consequences. As an experienced yachtsman he also has a keen appreciation of the weather conditions that can be experienced in the tropical waters of Vanuatu.

In the lead up to and after the impact Tony kept his colleagues in Australia informed of his first-hand experience of living through the most intense tropical cyclone to impact the South Pacific in more than 100 years. The following account is taken from his emails between 11 March and 29 March.

### **Warnings of the Approaching Storm**

**11/03/15 at 06:05 am**

We currently have cyclone Pam approaching. There has been widespread panic in the expat community due to some YouTube and Passage Weather info over the weekend. Lots of New Zealanders have packed the flights with families evacuating.

Meteo [the Vanuatu meteorological office] has been facing lots of criticism so they issued a Press Release Monday explaining their methodology, warnings and assuring everyone they have it in hand; but check their website today.... The TC Advisory reads as follows:

*Strong winds of 50KM/HR will affect MALAMPA and SHEFA and continuing tonight. Gales force winds of 80KM/HR is expected to affect TORBA, SANMA and PENAMA within the next 24 to 36 hrs.*

*Heavy rainfall is expected throughout Northern Vanuatu with flooding and flash-flooding expected over low lying areas. A strong wind warning is current for all open waters of Vanuatu. A severe Weather Warning is also current for Northern islands.*

Note the 80km/hr winds? But the highest wind on the Northern Waters forecast is 30 knots tomorrow.

Note the heavy rainfall? But the seven day forecast for selected centres does not have anything more than showers in any centre for the next 7 days. Not even in Sola, the closest to the cyclone at this stage.

So what are people to believe from an early warning perspective? Add to that the errors, for instance over the weekend the update forecast appeared with a date of 9 January 2015. So was that the 9 January forecast mistakenly posted or the correct forecast with the wrong date? If they take that little care with the date then how much care do they take with the forecast content? Add to that the fact that most people don't have the internet and are only getting what some radio announcer or friend is repeating over radio or phone and confusion reigns.

If you follow this scenario on Meteo over the next few days I am sure you will get further insight into the problems that early warning systems and communications and coordination between departments have in this country and they are NOT easily fixed.

**11/03/15 at 10:51 am**

In an extension this morning I asked around the market as to what the locals thought. Unequivocal they thought it would go past uneventfully. I asked one of our senior staff who is married to a Director General. Same answer. So in the interest of gaining an understanding of this 'local knowledge' I asked where the information came from – 'kastom', experience or what. My staff member looked at me and said "just from listening to Meteo and people like you".

Well, there you go. What is local and what is knowledge just gets all mixed up.

**11/03/15 1:09 pm**

... now the NDMO [Vanuatu National Disaster Management Office] buys in with an email stating a Blue Alert. Note that no such alert appears on the Meteo website. I don't know who the NDMO emails. This one came to us via Oxfam.

Also note this: "mo putum ol hevi samting long ol pis kapa we i save flae".

This means "Put something heavy on your roofing iron where it is loose and can fly away. I know that "improving local building standards" was an objective in the Mainstreaming Disaster Risk project but I would suggest that placing heavy items (like concrete blocks) on roofing iron is only going to create more missiles in a really heavy wind. It would take a lot of weight to hold iron down effectively and the concrete blocks you see on roofs around town won't do the job.

So here we have the NDMO issuing an alert that doesn't appear on the Meteo website that most people access for TC warnings and giving out quite faulty advice in terms of securing a building.

**12/03/15 06:20 am**

Yesterday afternoon the Meteo website was updated across all forecasts and they were actually in sync. The Marine forecasts were updated to "phenomenal seas" (5 to 10 metres). Quite a jump from the previous 2.5m and a rather disconcerting change if one was at sea. The 7 day forecasts for selected centres also changed to include 'heavy rain'. So maybe one small step for mankind?

Yesterday afternoon the texts started coming with each TC Warning. I got warning 2 at 16:13 and 3 at 19:53 on the TVL network, then nothing. Carol got warning 3, 4, 5 with 5 at about 22:20 on the Digicell network. Sarah, also on Digicell, has received none. We are now up to warning 8 this morning but no more texts. Maybe they didn't want to disturb our sleep and the texts will start again shortly.

Well, it is interesting being on the other end and experiencing the system rather than reviewing it.

**15/03/15 8:06 am email to ERSA members from Ken Granger after making telephone contact with Tony**

I have managed to get through to Tony and Carol this morning. They are all OK and amazed at the experience that they have just come through. Their house has suffered minor damage from a tree branch onto the veranda roof but the office at the school is a wreck. It will probably take two weeks for the school to be back in operation. They will be going out later today to check on their staff.

Their catamaran is beached and probably has one of the hulls holed but it is a lot better shape than any of the other boats in the harbour.

There has been some looting around the town. The major problem is the power supply – it will likely take weeks to restore service – the entire network is trashed. Communications are patchy – Digicel is still not working. Water supply is also out (no power for the pumps) so they are collecting water in buckets and using swimming pools for bathing.

The main thing is that they are safe and their losses have been relatively light in comparison with most of the community.

**19/03/15 5:20 pm**

Well we have water back (Sunday night), power in our area (Tuesday night) and internet intermittently. We are stunned by the efficiency of UNELCO (GDF Suez). They have been outstanding. The rapid response in our area though was due to the fact that once they replaced the feed line everything else is underground. So apart from meters blown apart and live wires hanging from houses without roofs, there was limited damage. I personally think that the President living down the road, the Minister for Climate Change being a neighbour on one side and the DG of Finance on the other with the PM using a house nearby could have had a little influence on priorities. But I am NOT complaining.

We have seen no relief workers in Vila apart from uniforms outside the Grand Hotel. Talked to the police on Tuesday and they were going it alone at that stage. The NGOs are incapacitated because many of the white bosses were evacuated in the lead up. CARE International has been demolished, World Vision is running from the manager's garage. The local response has been nothing short of amazing and we are proud to be a part of it. The Chinese were opening stores on Sunday and there was no price gouging. The hardware stores are delivering within 24 hours. The only negative has been the looting. They were ripping gear out of yachts and the grog out of bars before sun-up while the wind was still gale force. There is a curfew now and the PM has said they are shaming Vanuatu and he is going to make an example of them. It will be good to see some of them prosecuted.

The roads are all clear. They drove around town in large earthmovers pushing masses of trees and debris off roads. There are still power lines down all over town but all the electrical firms have been contracted and there are UNELCO trucks everywhere.

Our yacht is on the beach and holed on the starboard side. She will have to wait for a barge crane to get off. Eye witnesses tell of a multi-million dollar superyacht that went careening through the anchorage at the height of the blow. She cut a few off and sank at least one before they got her under control and back on her mooring. But the conditions must have been horrendous. There are some barges coming from Brisbane with a crane aboard to help clear the wreckage.

We had a storm shutter on the school where we were sheltering blow away and a 6.5mm laminated glass door blow in then we bolted to a back room between three concrete walls. We heard the office disintegrate and thought there would only be concrete walls in the morning but everything held. The only damage to the house we just finished renovating was a tree branch across the verandah. The expat houses along the escarpment with the view though have been devastated.

I have a new found respect for 'local' housing. When all you have is a few bush timber posts and corrugated iron sheeting it doesn't take much to put it back as good as it was before. Just a day or two. A local woman said "This is life. We get hurricanes all the time and we just put our houses back together and get on with life." But they do it with singing and laughing! I said I didn't think foreign consultants really understood that concept and that opened up the conversation and I have a friend for life.

We are so proud of our staff. Three have lost their whole houses. Blown away. But they are at the school laughing, singing, working. Like an army of ants they have cleaned, sorted, cut and carried. We are ready for school on Monday. We have had a steady stream of kids and parents asking "When is school starting?". Parents tell us the kids drive them mad wanting to come back to school. We are just privileged and stunned. Many schools won't be opening for months.

The landscape has to be seen to be believed. Hardly a leaf on a tree. The damage caused by falling trees is phenomenal. The amount of iron is also beyond belief. They will need a shipload or two before they get every roof back on.

I have an experience now that I never wanted but can talk about forever. The wind was indescribable. Every time you believed it had peaked it went up another notch. It sounded like a 747 coming and then an explosion when it hit. Our ears were being sucked out and every crack in the building was screaming as wind pushed in or out. Water was actually squirting up into the air from door tracks. I got to the point where I wasn't sure the building would hold and wasn't sure what the result would be if it didn't. A three storey concrete house was actually shuddering in the gusts! A couple in the house above us sheltered in a cupboard as their house disintegrated around them. Brand new expat houses have blown apart while tin shanties in a sheltered location have survived. Many of the multi storey office blocks lost their roofs. I will be stunned if the death toll doesn't go up when they get to the outer islands. The stories of near misses from flying iron and flash flooding are chilling.

The forecasts of a week before, that caused so much expat panic, seem to have proved accurate. But the forecast track as it approached never eventuated. They kept forecasting a swing to the east but it kept coming SW. Every forecast said the same thing but every track update revealed the opposite. What I couldn't understand was how they could be forecasting almost a direct hit from a CAT 5 while at the same time forecasting 20 to 25 knots in the harbour! Something had to be out of sync. The text updates right up until an hour before the peak were quite an achievement although they really only told us what we knew. We were getting pummelled and there was no avoiding it!

Anyway, thank you both for thinking of us. Have a look at this and see what you think. It went live a couple of days prior to PAM. <https://givealittle.co.nz/cause/giveakidachance>

**19/03/15 5:30 pm**

How do I estimate winds at that speed? Particularly when we were hunkered down in the basement. If they were 250 km/hr then I never ever want to endure 350 km/hr. The wind force was beyond anything I could have imagined. One yachtie today who stayed on his boat until it was blown ashore

and sunk told me he was marking his barometer and it dropped below the scale. The needle was bumping on 900 hPa but couldn't go any lower.

The motels are so full of 'aid' workers from embassies and NGO's sheltering that there is no room for people who have lost their roofs and houses. My sister in insurance is incensed by their behaviour. I am just accepting that I expected nothing else and accepting our new found affinity with our neighbours and friends who endured the brunt.

**20/03/15 9:14 pm**

Been out and about today helping people in the church who are the worst impacted. Whole houses disintegrated. Some friends who flew in from NZ on Tuesday said "Not as bad as expected" but for me it just gets worse. It seems that the initial picture was so overwhelming that the detail was lost. But now, every day adds more detail and more evidence of destruction as we are able to pause and take more in. We are so fortunate there has been no rain. Responding in wet weather would be another level of difficulty beyond what we are experiencing.

Today I saw a massive Banyan tree inverted. Roots facing up and branches down, perfectly balanced. A picture of our world, upside down. Whole houses blown away and people, almost in a trance sitting in the ruins when we arrived. As we cleared, chain sawed and gathered possessions they came to life and joined us. Slowly gaining energy from the progress we made and eventually talking about rebuilding and starting again. Of course they are planning to use the iron (kappa) that they have recovered from the wreckage plus what has fortuitously been delivered to their location from who knows where.

We saw a brand new school, obviously built by aid as no one else builds schools here, with the roof blown off. Not even aid programs apply building standards it seems as there are houses that have escaped unscathed and a cursory examination reveals roofs screwed down as required and rafters strapped. So many that have been destroyed have obvious deficiencies.

The NGOs are locked in interminable meetings. When I talk to my NZ friends tomorrow I will find out more. Suffice to say there is not much evidence whatsoever of any assistance on the street. The private sector has been outstanding with UNELCO leading the way. Water fully restored and power progressively coming back. However, it is somewhat of an illusion as there are power lines down everywhere and meters smashed. Today three pikininis held a large power line tight across the road so we could drive underneath. It was obviously not live, their hair wasn't standing up straight. Apparently UNELCO are isolating the faults and restoring an area recognising that within that area there will be numerous properties not connected. I estimate it will take many months to full restoration. A local business has provided extra trucks for UNELCO and has a man on standby to repair all their punctures from nails and screws for free so they can keep working to reconnect supply. The local supermarket chain ABM and Ricegrowers Australia has donated five containers of rice to Red Cross to distribute and Westpac has donated \$100,000 to the Red Cross. More food has been donated to the NDMO to feed the army of 'volunteers' that has apparently arrived. The total donated by local firm ABM so far is 23 million vatu (\$250,000) and rising.

On the front page of the newspaper the government is promising transparency, accountability and fair dispersal of aid. Is that an admission that those criteria are outside of normal practise? On Ambae and Pentecost they are searching for 19 missing international volunteers in two groups that have dropped out of communications. The total death toll to date though is only eleven. Absolutely remarkable and a testimony to the capabilities of local people to respond appropriately and implement local 'emergency plans' effectively!

There are some interesting issues emerging. The Chinese construction crane on the Chinese government funded Convention Centre project was still up at sunset on Friday, only hours before maximum impact. I thought "Why the hell haven't they taken that down?" Apparently the Aussie High Com next door had tried everything to achieve that result but had no joy. In the morning after impact the crane was gone. Well, it came down alright and has damaged the Aussie High Com on impact.

On the other hand the tourist industry is incensed because the High Com has issued a "No Travel" warning for Vanuatu. Bookings as far out as June are being cancelled. But Luganville, the second largest city, has been largely unaffected. So at a time when the country needs every dollar it can get the High Com is enhancing the impact of the disaster. There are also tales of Australian TV staging footage of people 'cooking on the street' to enhance their reports when truth be told the city is functioning relatively smoothly and no one is short of food yet. In fact the 6pm curfew means we can drive around at night without traffic and that is a pleasant novelty. Reports in the paper today though of the Minister for Agriculture saying how we will run out of food in less than a week may change that. If panic buying sets in the stores will emptied in days. Meanwhile we went to a restaurant tonight and celebrated with a lovely steak and a couple of Merlots. Hey, it is exactly a week ago we were sheltering in the basement listening to the wind building and our world flying apart. Exactly a week? It seems like a few hours ago!

But I suppose this is all 'normal' stuff in a disaster of this nature. We are going to face the trauma of retrieving stuff from the yacht tomorrow. That will be an emotional hurdle. But I keep reminding myself how I have a dry bed to sleep in and I am in my own house. There are many that aren't and won't be for a very long time. The local paper had photos today of the Navy's only Patrol Boat high and dry on an island in Havannah Harbour just when they actually need it and numerous countries are prepared to pay for the fuel it needs to actually run. They had sixteen crew on board. Obviously the conditions were more than bad to put a large patrol boat on the beach above the high water mark! It must have been the cyclone, surely no one's navigation is that bad, so I am feeling less guilt at McDiver ending up in her current predicament.

Monday the school will open and we will see what the impact will be on us directly. There may only be a few kids and we will have to lay off staff. Or we may be overwhelmed by those who won't have their school up and running for months and be struggling to provide room. We just don't know.

**24/3/15 11:15 am**

Well, we opened school yesterday and had about 70% of enrolments turn up. We have spent a lot of time emphasising to parents the importance of school and regular attendance. We also have a motto of "Where Learning is Fun" and work hard to make school an enjoyable experience. How much of the response to school opening is due to those factors and how much is simply a return to normalcy that will be repeated at all schools is difficult to determine. We are one of very few schools open so far. An example of 'unintended consequences' appeared in the paper today. One school used as a shelter during the blow is now faced with trying to recover resources carried away by those who sheltered in the buildings. Books, equipment, even power points. It seems that every disaster is someone's opportunity.

I have spent a little time inspecting housing wreckage in our area where most housing is expatriate. There is no evidence of building standards in any of the wreckage I have seen to date and those people I have spoken to that took great care to ensure they built to cyclone standards (typically Queensland standards) have been unscathed. A common problem is roofing iron screwed to battens and battens strapped to rafters but the rafters were not fastened to the structure so the whole roof

has lifted off in one large slab. Internal damage has been greatly enhanced by the use of plaster or Gyprock which has just dissolved. Some French people working with the Embassy and UNICEF decided yesterday to return to France. They survived largely unscathed until a week after the cyclone the ceiling in their unit inexplicably collapsed on their heads! I expect it is water damaged Gyprock and will confirm with the owner when I get a chance. They said "We thought Vanuatu was a safe country but it isn't so we are going home!"

Having said that our office was steel frame screwed together with 100x100 steel posts in strategic locations. The screws in the steel frame have been ripped out, one steel post has moved 150 mm at the top and various components have distorted. The forces must have been phenomenal. However the cyclone rated glass has survived intact and the window curtain is still there only much cleaner than before! I am sure the insurance assessors will have some enlightening information when they finish their inspections around town.

A large part of the problem seems to be that we expats buy properties and refurb internally to suit taste. Very few consider that the roof is now thirty years old, has borer damage, was built to old standards or no standards at all..... Inside looks great but PAM wasn't interested in the decor.

Town is returning to 'normal' with a major cleanup underway. The number of large business houses impacted due to poor SOPs and risk management though is concerning. The top floor of numerous multi storey offices have lost their roofs. Then water damage has damaged computer systems. The ANZ bank is struggling to operate manually and has managed to get five tellers opened today. QBE, the main insurer, had moved into new offices in a brand new shopping centre but the water came through the sliding glass doors and drowned all the computer equipment left on the floor. The main insurance broker, lost a server and have had to fly in a technician to try and restore service and now there is doubt that the backups (managed remotely from offshore) were done and there are concerns a rebuild from June last year could be needed. These sorts of stories are repeated over and over and it makes you wonder how such large organisations with such highly paid staff can be so lax. Fortunately we do a manual backup to 'the cloud' each week and our computers were all packed away in what we thought was the safest place. Simple is good and a lashing of good luck is even better!

The use of text SMS is quite innovative. One of our phones received a message from the Minister for Agriculture telling everyone to plant corn as it matures in thirty days. Another encouraged everyone to care for their animals following the cyclone. Our cat, already pampered, was greatly encouraged however the very large pig that lives next door to us wasn't. He met his end this morning to provide food for the family of our neighbour, the DG of a government department. (The by law prohibiting pig raising in built up areas obviously doesn't apply to everyone, only those who think it is important.) There are obvious problems with SMS though. Only one of our phones received the text messages. Others with the same provider did not. Our one phone on the alternate network did not. Furthermore, many phones have been wet or damaged and with the electricity network being so damaged many phones are flat and won't be charged for a long time. Also blanket texting puts major strain on networks that are already struggling from damage and people trying to contact relatives.

So it is an interesting innovation but I think the effectiveness is uncertain.

The Australian Navy (RAN Tobruk) arrived Monday with their usual display of military efficiency. The two Blackhawks flew in Sunday afternoon probably launched at the extremity of their range with an advance coordination party. Then on arrival the ship had not even anchored before she started disgorging landing craft and smaller amphibious vehicles that plied to and fro all day. Then late in the day she was manoeuvred onto the wharf with amphibious craft still circling and at 5am today she

departed for Tanna in the south. All very impressive! The military certainly don't seem to need the endless discussions and coordination meetings required to organise NGOs. They don't seem to proliferate like NGOs either. The number of white Toyota Hilux twin cab utes on the road sporting NGO logos is increasing markedly.

But apart from that the town has settled down. There are still acres of rubbish to be collected and the environmentally sensitive are telling people not to burn. Of course they are not providing an alternative and local people don't lightly forgo an opportunity for a bonfire so smoke is everywhere. The complaints have started in the Letters to the Editor and tempers are fraying. As people run out of cash because they have lost their jobs and local food gets scarce it will be interesting to see how social cohesion holds up. So far though we are doing pretty well I think.

**27/3/15 11:34 am**

Life is returning to 'normal' here now. I think a small team visiting every local community asking them where they sheltered and assessing the outcome would be very productive. Then small amounts could be granted to improve the existing shelter, build a secure water reservoir, establish a secure food bunker, whatever is needed to make the existing facility better. These people have withstood the brunt amazingly well. They just need assistance to improve what they have rather than a massive overarching strategic plan with coordinated bells and whistles that will always fail.

The NGOs are now all vying for prominence so every day they compete for the "What we are doing" headline complete with photos with Ministers and dignitaries. The rifts between government and the private sector are opening up with a leader of the private sector being thrown out of an NDMO meeting to which he had actually been invited by an NDMO staffer.

It seems that there was an adrenaline surge with the food allocation and everything has been distributed. Now there are areas being identified that were overlooked, like the Maskelynes on southern Malekula which are very low lying and so while not in the direct path copped a flogging. Our NZ friends have managed to get them a priority 3 allocation for emergency food but are being told "There is no food, it has all been distributed". The paper has several articles today from various community leaders demanding greater transparency in food delivery. I expect if we knew exactly where the food has been delivered there would be some interesting revelations!

Then there are the international tensions. The government has published the bank account to which all international donations need to be deposited. Of course the donor governments prefer emergency assistance, not dollar donations for obvious reasons. At a meeting yesterday a DG stood up and told the foreign govt reps and the NGOs that they need to deposit the cash amounts they have promised! They have promised millions so where are they? Tensions are growing!

So too are the opportunities for profit making. ABM made a major donation of food as reported previously but rice has now gone up 150 vt [Vatu – the Vanuatu currency] per 5 kilos. So the claw back has started. I bought the last onion this morning in the supermarket. Got to the counter and found it was 80vt – about \$1.00 AUD for one sad little onion. There are humorous stories too. I bought a Chinese made chainsaw at the start of all this for 13,000 vt (about \$150 dollars). Have had it back three times for repairs but it still works. I needed the chain sharpened and took it to the store where I bought it. No worries, but they needed a file. Yep, I had to find the file that came with the saw and take it to the store as they had no files. I am a patient type so I did as instructed and today went to collect the chain. Still not sharp. The file supplied with the saw lasted for two teeth and then was smooth so the rest of the chain remains un-sharp and there are no other files! I think it is funny but maybe I am losing it.

We have the roof on the house fixed and the office is well underway. The house on the block we purchased for the new school demonstrates the power of good building codes. It is screwed around the edges at every corrugation and at every fourth on the other battens. It hasn't suffered any damage. Not even a loose corner. There was some water blown up under the ridge capping but that is all. It certainly wasn't sheltered as there are massive trees and roof damage all around but it sits alone untouched. Thankfully!

The kids are back in school as if nothing ever happened. They are full of smiles as they come up the drive each morning and laugh and play all day. I think they must need crisis counselling. They should be in shock and suffering depression shouldn't they? I would love to do a Masters on resilience using these kids as a study in comparison with Australia. Well I say I would but probably just like talking about it.

Meanwhile we have stories of people washing clothes in the creek because they have no well water. I am shocked. I have seen literally hundreds of people over the last 7 years since our first visit washing clothes in the creek. We have done it ourselves when transporting medical teams to remote areas. It works really well and so does spreading the clothes to dry on the black volcanic rocks that litter most creeks. I never realised they were doing it because they have no well water! How silly of me. I obviously need to read more newspapers. In another humorous story that describes Melanesia so well our NZ friends were enquiring about the desal plant in south Malekula built by NZ Aid. It has only ever worked intermittently but they were wanting an assessment in relation to the Maskelynes current problems. "Is the desal plant working?" they asked. "Yes" came the emphatic reply. Puzzled they tried to work out why then there was a water shortage. Eventually they asked "Is there water coming out?" and "No" came the answer. Yes, the solar is making power and the pumps are running so of course in Melanesia it is 'working'. But making water? Nuh, but you didn't ask that did you.

The details of UNELCOs effort are emerging with some statistics in the paper today. They estimate 200 million VT, that's \$2.25 million AUD! They have restored 60% of the general customer supply and 91% of major customers. They include critical infrastructure. 240 poles were blown down on Efate alone! 12,000 customers on Efate were affected. Considering there are only 40,000 people on Efate and many of them are not customers that is a fair percentage of their customer base. They have been outstanding.

In another example of resilience the town is turning green. The leaves are growing before our very eyes. Palm fronds and banana leaves are already a metre or two long. The capacity to regenerate is simply stunning.

Well back to work. The energy levels are dropping but there is much to do.