



**SOPAC Member Countries  
National Capacity Assessments:  
Tsunami Warning and Mitigation Systems**

**Nauru**



Nauru



**SOPAC**

## 5. Assessment Results

### 5.1. Status of Key System Components

The Tsunami Capacity Assessment Workshop results are summarised below in Table 3 in which the status of key components of Nauru's tsunami warning and mitigation system are outlined (as at the date the Tsunami Capacity Assessment Workshop was held in February 2009, updates between then and the publication of this report are as marked).

**Table 3: Summary of current status of key components of Nauru's tsunami warning and mitigation system as at February 2009 (updates as marked)**

#### Rating

Yes - fully realised
Partially realised
No - not realised

Key Component	Rating	Comment
<b>Authority, Coordination and NGO Role</b>		
Legislation in place for tsunami warnings and response	<b>Partially</b>	Legislative framework for DRM in place as per DRM Act (D11). The NDRM Plan (D12) is in place and provides an overarching framework for the development of specific disaster risk reduction and disaster management plans. A tsunami sub plan is required to outline roles and responsibilities with regard to tsunami.
Tsunami coordination committee or effort at a National and local level	<b>No</b>	The National Disaster Risk Management Council (NDRMC) exists. This council reports directly to Cabinet.  The Mitigation and Preparedness Advisory Committee (including community representatives) reports to the NDRMC.  Neither of these groups was active at the time of the Tsunami Capacity Assessment visit. Tsunami could be considered regularly on their agendas.
Agency responsibilities clearly defined	<b>Partially</b>	The NDRM Plan (D12) includes lead and support agencies for emergency response.  Tsunami warning and mitigation responsibilities need to be further clarified in a sub plan to the NDRM Plan.

Key Component	Rating	Comment
<b>Authority, Coordination and NGO Role (Continued)</b>		
NGOs and Red Cross Society have a defined role in tsunami warning dissemination, preparedness and awareness and emergency response	<b>No</b>	International NGO's are not active in Nauru. Although there is a Nauru Association of NGO's and two representatives attended the workshop.
<b>International and Regional Cooperation</b>		
Country represented at an international and regional level to aid cooperation in tsunami warning and mitigation efforts	<b>Yes</b>	<p>Nauru is engaged in the Southwest Pacific Tsunami Working group of the ICG PTWS (A representative of the Nauru Police Force attended the last meeting in Samoa in February 2009).</p> <p>Nauru is also a member of several regional bodies and has working relationships with regional organisations and donors.</p>
<b>Priorities</b>		
Priorities established for implementation of tsunami warning and mitigation system at a National level	<b>Partially</b> (through the tsunami assessment process)	<p>Priorities established through Nauru's Tsunami Capacity Assessment Workshop include:</p> <ul style="list-style-type: none"> <li>• Development and testing of DRM plans at an organisation, community and national level including planning coordination between agencies (Implementing Agency – Nauru Police Force).</li> <li>• Communication systems (Implementing Agency – Nauru Police Force)</li> <li>• Education programs (Implementing Agencies - Nauru Police Force and the Department of Education).</li> </ul> <p>Refer to Table 4 for a comprehensive list of recommendations.</p>
<b>Multi-hazard Approach</b>		
Tsunami warning capabilities are being established within a multi-hazard framework	<b>Yes</b>	Nauru takes an all hazards approach to DRM as evident through the multi-hazard approach of both the DRM Act (D11) and NDRM Plan (D12).

Key Component	Rating	Comment
<b>Research Expertise</b>		
Active research is being undertaken within the country for seismology and tsunami to strengthen the tsunami warning and mitigation system	<b>No</b>	No active research identified. Nauru has had past inundation events and could benefit from research on these events as well as efforts to document traditional knowledge.
<b>Tsunami monitoring infrastructure</b>		
Existence of seismograph stations and integration of real time data from these stations into the tsunami warning process	<b>No</b>	No seismograph stations exist in Nauru.
Existence of sea level stations and integration of real time data from these stations into the tsunami warning process	<b>Partially</b>	One third party (National Tidal Centre Station, Australian Bureau of Meteorology) sea level gauge is located at Aiwo Harbour. Data from sea level monitoring station is not monitored locally. No one is trained in how to interpret this data. This data is not used in in-country tsunami warning processes. The Atmospheric Radiation Measurement program (ARM) assists with maintenance of sea level monitoring equipment by providing first-in-maintenance.
Sharing of seismic and sea level data internationally to facilitate improvement of PTWC tsunami messages for the region	<b>Yes</b>	6 minute data reported hourly from the Aiwo Harbour sea-level gauge is made available to the international community via the Global Telecommunications System (GTS). Due to the frequency of sampling and reporting, this data is currently not suitable for tsunami warning purposes.
<b>Warnings</b>		
Nation receives PTWC messages	<b>Partially</b>	NFS (Department of Civil Aviation) unofficially receives PTWC and JMA tsunami advisory information 24x7 via AFTN from Brisbane Flight Service (Air Services Australia). Participants in the Tsunami Capacity Assessment Process were unclear who the official PTWC in-country contact is.
24/7 operational staff at warning receipt and dissemination location	<b>Partially</b>	NFS are 24x7. However, NFS role in tsunami message handling is not formal, documented, nor recognised by the Nauru Police Force.

Key Component	Rating	Comment
<b>Warnings (Continued)</b>		
Disseminate national tsunami warnings as guided by a Standard Operating Procedure	<b>Partially</b>	No tsunami SOPs currently exist. No local interpretation of PTWC warnings is undertaken, however, public warnings and evacuations are issued based on inclusion of Nauru in the PTWC warning.
System redundancies in place for receipt of PTWC messages and dissemination of National warnings	<b>No</b>	There is no 24x7 agency backing up NFS. The Australian Consulate passes information onto the Nauru Police Force when received but they are not 24x7.
Redundant 24/7 methods available for dissemination of warnings to community (e.g. public radio, sirens etc.)	<b>Partially</b>	Warnings are passed onto the community by the Nauru Police Force using vehicles driving around the island issuing verbal warnings (two vehicles driving in opposite directions can warn coastal communities in less than an hour). Government radio and TV stations and community radio could be used to pass warnings onto the community (but are not 24x7 and the Nauru Media Office is vulnerable to damage in any wave inundation event and could be unable to transmit). Power supply reliability is an issue.
Effective warning dissemination to remote communities	<b>Partially</b>	Word of mouth is also a powerful tool for message dissemination in Nauru. A possibility in future includes the planned introduction of a new cellular telephone network (Digicel) which may include Short Message Service (SMS) warning capability.
Communications coverage of whole country that is effectively utilised for the dissemination of tsunami warning messages	<b>Partially</b>	Current radio communication technologies are the key communications coverage in Nauru. Radio and television coverage exists for the entire country. Satellite phones exist (with no central database of numbers). Lack of technical expertise, equipment and funding.
Issue of marine tsunami warnings and guidance for vessels, harbours and ports	<b>No</b>	Marine tsunami warnings are not currently issued in Nauru.

Key Component	Rating	Comment
<b>Emergency Response and Evacuation</b>		
Disaster preparedness and emergency response system has been reviewed and opportunities for improvement and training identified	<b>Partially</b>	The DRM Act (D11) and the NDRM Plan (D12) exist. However, sub plans require completion and training needs must be identified,
Tsunami emergency response, evacuation and recovery plan exists	<b>No</b>	Emergency response, evacuation and recovery plans do not currently exist on a hazard basis.
The designated agency for evacuation is identified and have authority by law	<b>Yes</b>	Evacuation can be enforced under the DRM Act (D11) and the public are required to evacuate. The Act provides the Nauru Police Force with powers during a disaster, including using reasonable force for evacuations.
Plans have been made for safe evacuation of population centres including aspects such as maps, routes and signage	<b>No</b>	Specific tsunami evacuation planning has not been completed. Topside is the only identified evacuation area, which suffers from limited and difficult access (via one road that can get blocked by cars).
Procedures are tested and exercised to improve the response through better planning and preparedness	<b>No</b>	No testing or exercising was identified through the Tsunami Capacity Assessment process.
Land use policies and building codes are in place to mitigate against the tsunami hazard	<b>Partially</b>	Housing and building regulations exist but are not implemented (D13). Effective land use planning is not practiced. Housing and building arrangements are based on ownership of land plots. This leads to congested living and multiple, incompatible land used on the one plot of land (D13).
<b>Tsunami hazard, vulnerability and risk</b>		
Completion of studies to assess the tsunami hazard in the country or Region	<b>Partially</b>	Two studies have been completed: A "Preliminary Study into the Tsunami Hazard faced by Southwest Pacific Nations" (Thomas, Burbidge and Cummins, 2007) and a "Probabilistic Tsunami Hazard Assessment of the Southwest Pacific Nations" (Thomas and Burbidge, 2009).

Key Component	Rating	Comment
Local risk assessments have been completed for at risk communities	No	No local tsunami risk assessments have been carried out. The lead agency for disaster response, Nauru Police Force is responsible for the identification of tsunami risk in country. However, the general population seems to be of the opinion that Nauru is under no immediate threat of tsunami.
Adequate data exists and local inundation modelling has been completed for population centres	Partially	<p>The Nauru MapServer (maintained by the Department of Lands and Ministry of Information and Communication Technology) hosts Nauru data including bathymetry.</p> <p>100% coverage of high-resolution Multi-Beam Echo-Sounder (MBES) bathymetry data exists for the seafloor from approximately 50m depth in the near shore area to an average offshore distance of 3km, reaching water depths of some 1800 metres. External sources of data were used in conjunction with this data to produce a bathymetry chart of Nauru at 1:25 000.</p> <p>There is topographic data of Nauru (although no metadata exists for it). SOPAC has a backup of this data as well as high resolution imagery (1metre).</p> <p>There has yet to be any inundation modelling done for Nauru.</p>
<b>Public and Stakeholder Awareness, Education and Training</b>		
Measures have been taken to ensure the public understand and take action in the event of a tsunami warning being issued	No	Presently no community awareness or training in relation to natural hazards.
Community level education and preparedness programs exist for tsunami	No	Presently no community awareness or training in relation to natural hazards. Awareness of tsunami exists due primarily to international media coverage.
Training programs for the National media exist for natural hazard and tsunami	No	No training programs for media for tsunami or other hazards have been undertaken.
Training programs exist for officials involved in tsunami warning and response	No	DRM training across Nauru agencies, as well as training in relation to tsunami is limited.