

Pacific lessons to learn from Deepwater Horizon event

5,000 barrels estimated at over 800,000 litres (*at the time of this article*) of oil are being discharged daily into the Gulf of Mexico, washing ashore along the Gulf Coast in the United States lapping at the Louisiana shoreline. This follows the tragic turn of events when an oil drilling rig caught fire, exploded, burned for two days and then sank in 1,500 metres (5,000 feet) of water killing 11 workers. This recent Deepwater Horizon event has leaking oil reaching the US coastline with the local fishing industry facing an estimated loss of USD 1.5 million per month as they are unable to fish. This estimate does not include those that come under fire due to the ripple effect such as the net suppliers and tourism fishing industry who are all under threat.

The Deepwater Horizon mobile drilling rig belongs to Transocean, the world's biggest offshore drilling contractor under contract to BP Oil. Despite the efforts of the oil company to stop the leaks, which stemmed from three locations within the rig well riser pipe, oil is still pouring out from two of the leaks.

While this did not happen in our backyard, the stark reality is that oil related disasters, albeit of lesser magnitude and scale, though potentially as devastating, are an ever-present threat to our islands and our ocean. The smallness of most Pacific island nations makes us even more vulnerable to such disasters as, in many cases, we may not have the national capacity to respond effectively to address them but Horizon again shows, even industry and advanced countries can be similarly challenged. The Deepwater Horizon incident should serve as a wake up call for the world to think seriously of the damage marine oil spills can cause, and to treat them as very real risks. The Pacific region, in particular, needs to be amongst those who need to be aware, given our lack of resources and capacity to cope with such a disaster.

If a global superpower is being faced with such immense negative repercussions, where would it leave us should we be struck by a massive oil spill disaster given our limited response measures and our almost total reliance on ocean and coastal resources?

One likely high-impact disaster could involve an oil tanker carrying Industrial Fuel Oil (IFO) as cargo. Fiji and New Caledonia are two of the few island countries that store and distribute IFO. Another, very real scenario could involve a vessel grounding or colliding and spilling the IFO that it uses for fuel, commonly known as "bunker fuel". At least one grounding incident is reported each year in the Pacific region. In 2009, the Forum Samoa II ran aground in the Apia Harbour and, while the volume spilt was insignificant, it could have been worse - the Forum Samoa II had the potential to spill 350 tonnes of IFO and 100 tonnes of diesel bunker fuel.

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Forum Samoa II aground in Apia Harbour
Photo: Dayne Maxwell
Marine Pollution Response Service
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Different types of marine spills

In the Pacific, marine spill response is broken into three tiers following international practice:

- Tier I covers minor spills from a facility such as an oil storage facility, a shipping yard or port area.
- Tier II covers medium spills that can be addressed through the national plan arrangements that are beyond the capacity of a facility.
- Tier III is a major incident that requires response beyond the capacity of the national government.

The Deepwater Horizon Incident is a Tier III level marine spill incident.



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Another possible scenario could take place from the InterOil Napa Napa Refinery in Papua New Guinea, which has the highest volume of crude and other persistent oils being transported via ships throughout the Pacific region. Potential oil drill sites as well as potential vessel slip docks such as those in Fiji, Palau, Papua New Guinea, Solomon Islands and Vanuatu could also result in oil leaks and marine pollution.

Although these are all just “possible scenarios”, oil spill disasters do happen in our region and cleanup is an expensive process. In April 2009, the Pacific Adventurer spilt 270 tonnes of IFO bunker fuel in Queensland, Australia. The total response and compensation cost for this incident was an estimated AUD 32 million.

Most of the oil spill threats in the Pacific islands region are ship-based, although the presence of an oil refinery, potential exploratory drill sites and vessel slip docks also present threats. Addressing marine pollution from ships, including marine spills, needs to be prioritised by island countries. Currently, several Pacific island countries still only have draft National Marine Spill Contingency Plans for Tier II Spills that are yet to be approved. (See box pg 1 *Different types of marine spills*) These, along with the responsible authority and the lead agencies, must be in place so we are not caught short should the Pacific region experience any large-scale marine oil spill.

Assistance from the International Maritime Organization, Australia, France, New Zealand and the United States of America has allowed the Secretariat of the Pacific Regional Environment Programme (SPREP) to work with governments of Pacific island countries and territories to strengthen the web of foundations which we can use to respond to the different types of marine spills. (See box “*Plans to address marine spills*”)

SPREP has provided training in oil spill response to hundreds of Pacific islanders as well as procured oil spill equipment for three island countries – Cook Islands, Samoa and Tonga. There is a lot of industry oil spill equipment in the larger island countries such as in Fiji and Papua New Guinea, however many of the smaller islands do not have oil spill equipment.

Many countries have also adopted the foundation templates provided by SPREP, particularly the model legislation developed by SPREP and the Secretariat of the Pacific Community (SPC). (More on *legislation and financing on page 4*) The model legislation recommends a sustainable financing mechanism in the pollution levy. It has been promulgated in the Cook Islands, Samoa and Tonga, while Fiji, Nauru, Papua New Guinea and Solomon Islands have used the template to develop similar legislation.

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Plans to address marine spills

If there is a Tier I and Tier II Spill, they can be addressed through the National Marine Spill Contingency Plan (NATPLAN) of each Pacific island country and territory.

For a Tier III Spill, the Pacific Marine Spill Contingency Response Plan (PACPLAN), under the Framework of the Pacific Oceans Pollution Prevention Programme (PACPOL), is the mechanism for response.

PACPLAN guides the response roles and responsibilities of key players such as SPREP, island and non-island countries and industry partners. This plan also outlines which non-island country is responsible for primary and secondary response to an island country. It also explains the principals for mutual assistance.

The different response plans for the levels of marine spills must work together in order to be effective as each plan provides the strong foundation the next level. This calls for the need to conduct a natural resource damage assessment as an integral part of industry, national and regional pollution response preparedness.

Montara Oil Fields

The PTTEP Australasia-operated rig in the Montara oil fields in the Timor Sea had a Well Head Blow Out on 21 August 2009 that leaked oil and gas at an estimated rate of 2,000-4,000 barrels per day for 76 days. The leak was stopped by pumping mud into the well. During the attempt to stop the leak, the rig caught fire that burned the oil thus preventing further leakage into the sea. The spilt oil was successfully dispersed, boomed and skimmed at sea preventing any oil from reaching the coastline or nearby reefs. The Australian government commissioned a national inquiry to investigate the incident.

Potentially this event and the Deepwater Horizon incident can usher in a new national, and maybe international, debate on offshore drilling and will likely result in new laws and regulations.

Yet, even if all Pacific islands countries and territories have necessary marine spill measures in place, there are still gaps which leave us vulnerable. For example, there are numerous anecdotal reports of incidents and near misses not being officially reported. These could potentially be used as learning tools to help avoid a major marine oil spill accident in our region. The lack of reporting and resources for monitoring of ship marine pollution incidents is one of the biggest issues.

A second issue is that of uncertainty and the need to identify and prepare for future and worst-case scenarios. In the case of the Deepwater Horizon disaster, there has been no previous incident where oil has consistently leaked over a matter of days into our ocean, so there is no way of knowing the future implications – environmentally, socially and economically. It has also meant that we are faced with the challenge of identifying solutions once the crisis is already upon us. With the Deepwater Horizon incident, one month after the event, and despite the rapid response of the oil company, successful solutions are still being sought to plug the oil leaks and to carry out effective clean up.

Better understanding of possible scenarios could help us pre-empt disasters and either prevent them altogether or to develop technologies and systems that will enable rapid response that avoids long term damage to our precious ocean and our island coastal ecosystems. Pacific and other small island developing states need to learn from the Deepwater Horizon incident and put in place steps to protect themselves. This means commitment by governments to international conventions, development of effective legislation and development of firm partnerships and networks for response.

The images the world is now seeing of the repercussions of the Deepwater Horizon Oil accident in the Gulf of Mexico should be the catalyst for action by the Pacific region to step up its preparedness.

Think about it.



Pacific Islands Country participants at an Oil Spill Training Course in an oil spill containment boom deployment exercise
Photo: Australian Marine Oil Spill Centre (AMOSC)

Response techniques

Many techniques are being used to curtail more oil from reaching coastlines such as “booming”, “skimming”, “dispersants” and “in-situ burning”.

Booms are floating lines of plastic designed to catch oil floating at or just beneath the surface. They are placed in areas that will trap oil and keep it in the one area.

Skimmers are contraptions dragged from boats that pull the oil off the surface and are the best technology available for oil spill cleanup. Their success is heavily reliant on how they are used as oil on water will go wherever the currents or winds push it.

The booms and skimmers are more effective in calm waters with a success rate of about 15% in amount of oil collected which quickly shrinks to single digits as the water gets rougher.

Dispersants are cleaning agents that help break up the oil and slow the movement of oil. By breaking up the oil, dispersants help spread the oil thus allowing for more weathering of the oil as well as more evaporation and biodegradation.

How do dispersants slow oil movement? The dispersant attaches water molecules to oil molecules making the oil heavier so that it is suspended below the surface (within 1-2 metres of the water column). This prevents the oil from being moved quickly with the wind and currents.

In-situ burning is burning of curtailed oil to prevent it from reaching nearby coastlines and coral reefs.

The United States Environment Protection Agency is advising the responders at the Deepwater Horizon incident on the use of dispersants as well as burning of curtailed oil on site. So far, in this operation, over 1.3 million feet (400,000metres) of spill containment booms have been used - that is equivalent to a long line of booms wrapped twice around the entire Samoan Islands

Legislation

Although 10 of the SPREP island countries are IMO members, many others need to ratify the IMO and regional instruments for strength of lobbying - no one country can regulate marine pollution.

There are a number of different international conventions designed to protect the marine environment from oil spills in the Pacific. The conventions are categorised as Prevention, Preparedness and Response. It is important that countries ratify and implement these at the national level.

Some conventions by category are listed:

Prevention: MARPOL 73/78, London Convention and Protocol, Ballast Water Management Convention and Anti-fouling Systems Convention;

Preparedness & Response: Intervention Convention and its Protocol, OPRC 1990 and its HNS Protocol 2000, SAR, SALVAGE Convention.

A clear lesson to learn from the Deepwater Horizon incident is the importance for countries to ratify and implement **liability and compensation** conventions such as International Convention on Civil Liability for Oil Pollution Damage CLC 92; the International Convention on the establishment of an International Fund for Compensation for Oil Pollution Damage, the HNS Convention and the Bunkers Convention. These conventions are insurance against a civil liability that is beyond the ship owner's liability limit. For example, in the case of the Deepwater Horizon, BP's liability limit under US legislation is USD 75million. The US Government is now working on legislation that could increase BP's liability and compensation cap from USD 75 Million to USD 10 Billion.

Sustainable financing mechanism in the pollution levy

The Model Marine Pollution Prevention Legislation that was developed by SPREP and SPC proposes to establish the procedure for the setting of levies under the National Marine Pollution Fund (POLFUND). The contributors to POLFUND are basically any vessels in excess of a certain gross tonnage e.g. 100 gross tonnes, whose principal driving force is mechanical as well as storage fuel site depot installations.

Currently in the Pacific, levies are enforced in Fiji and Papua New Guinea where there is a high volume of vessel traffic. In Fiji the POLFUND is charged at 4 cents per gross tonne, deposited into a Trust Account and administered by a board of trustees. The POLFUND allows for the payment of the initial response to oil spills by the lead agencies and responsible authorities and, where the vessel owner is known, the funds are reimbursed according to the "polluter pays" principle. The fund also allows for response to mystery spills, procurement and maintenance of oil spill equipment as well as the operational running of the national planning, preparedness and response activities.



GULF OF MEXICO - Aerial view of oil being burned from the Deepwater Horizon/BP incident, May 19, 2010. Deepwater Horizon. U.S Coast Guard photo by Chief Petty Officer John Kepsimelis.

Official Deepwater Horizon Websites

<http://www.epa.gov/bpspill/>
UN Environmental Protection Agency Response to BP Spill in the Gulf of Mexico
<http://www.deepwaterhorizonresponse.com>
Deepwater Horizon Response



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