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# PAPUA NEW GUINEA

Disaster Management Reference Handbook

2016

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# Disclaimer

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# Welcome - Note from the Director

Dear Reader,

The CFE-DM has a mandate to provide and facilitate education, training, and research in civil-military operations, particularly for international disaster management and humanitarian assistance that require coordination between the Department of Defense (DOD) and other agencies. In line with this mandate, CFE-DM has conducted research to create reference books on disaster management roles, processes, capabilities and vulnerabilities. This Disaster Management Reference Handbook Series is designed to provide decision makers, planners and responders a basic understanding of regional disaster management plans and structures, including information on key domestic disaster response entities, basic regional background, and local and international humanitarian organizations present in the region. CFE-DM produces country and regional reference books to provide a commonly available baseline of information regarding disaster management environments. Many places in the Pacific Basin are subject to a variety of disasters including floods, droughts, and landslides, and these handbooks provide a context for regional-specific factors that influence disaster management.



Sincerely,

Col Joseph D. Martin  
Director

# Information about the Center for Excellence in Disaster Management and Humanitarian Assistance



## Overview

The CFE-DM is a U.S. DOD organization that was established by U.S. Congress in 1994. The Center is a direct reporting unit to U.S. Pacific Command and is located on Ford Island, Joint Base Pearl Harbor-Hickam, Hawaii.

CFE-DM was founded due to a worldwide need based on lessons learned in complex humanitarian emergencies and disaster response operations in the early 1990s. The need was for integrated education, training, applied research, and civil-military coordination across the disaster management spectrum. While maintaining a global mandate, the Asia-Pacific region is our priority of effort and collaboration is the cornerstone of our operational practice.

## Our Mission

The Center's mission is to advise U.S. Pacific Command leaders; enable focused engagements, education and training; and increase knowledge of best practices and information to enhance U.S. and international civil-military preparedness for disaster management and humanitarian assistance.

## Vision

CFE-DM exists to save lives and alleviate human suffering by connecting people, improving coordination and building capacity.

## Contact Information

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# Disaster Management Reference Handbook Series Overview

The Disaster Management Reference Handbook Series is intended to provide decision makers, planners, responders and disaster management practitioners with an overview of the disaster management structure, policies, laws, and plans for each country covered in the series. Natural and man-made threats most likely to affect the country are discussed. The handbooks also provide basic country background information, including cultural, demographic, geographic, infrastructure and other relevant data.

Conditions such as poverty, water and sanitation, vulnerable groups and other humanitarian issues are included. A basic overview of the health situation in the country and disease surveillance is also covered. The handbooks include information on key national entities involved in disaster management, disaster response and preparation, and the military's role in disaster relief. Information on United Nation agencies, international NGOs, major local NGOs, and key U.S. agencies and programs in the country, are also provided.

The overall aim is to offer a guide that brings together important information about disaster management and response for each country in an effort to provide a basic understanding for the reader. Information in the handbooks are compiled and based primarily on trusted, reliable, publicly available sources. Much of the information used is from U.S. or other government sources, United Nation sources, NGO websites, scholarly references, foreign government websites, and various media sources. When available, a link to the original internet source is provided.

Each handbook is a working document and will be updated periodically as new, significant information becomes available. We hope that you find these handbooks informative, relevant, reliable, and useful in understanding disaster management and response for this country. We welcome and appreciate your feedback to improve this document and help fill any gaps to enhance its future utility. Feedback, comments, or questions can be emailed to [cfe-dmha.fct@pacom.mil](mailto:cfe-dmha.fct@pacom.mil). You may also contact the Center for Excellence at: (808) 472-0518. Please visit our website (<http://www.cfe-dmha.org>) to view the latest electronic versions available or to request a hard copy of a disaster management reference handbook.

## Executive Summary

Papua New Guinea (PNG) lies on the eastern half of the island of New Guinea located between the Coral Sea and the South Pacific Ocean among the islands of Oceania and is 160 kilometers (100 miles) north of Australia.<sup>1</sup> Due to the country's position in the Pacific "ring of fire", the country is vulnerable to seismic-related activity.<sup>2</sup> The country is prone to natural disasters including earthquakes, volcanic eruptions, tsunamis, cyclones, river flooding, coastal erosion, landslides, droughts and frost. PNG is under enormous threat from the impact of global warming and the effects of changing climatic patterns.<sup>3</sup>

The economy remains dominated by the agricultural, forestry and fishing sector. This employs most of the labor force. The mineral and energy extraction sector accounts for the majority of export earnings and Gross Domestic Product.<sup>4</sup> Over the last decade, PNG has experienced economic growth, with expanding employment and an increase in government spending. However, despite this favorable environment, PNG still faces considerable development challenges.

PNG's Disaster Management Act was enacted in 1987 and provides legislative and regulatory provisions for disaster management in the country.<sup>5</sup> It is supported by the 2012 National Disaster Risk Management Plan (NDRMP).<sup>6</sup> However, the Act does not reflect the PNG government's recent pivot to dealing with disasters by integrating prevention and preparedness in their disaster management planning. Historically, there has not been much awareness with regard to disaster management regulatory and legislative framework, primarily in the sub-provincial and local levels. The 2012 NDRMP lays out the Disaster Risk Management (DRM) architecture of the country and provides guidance for DRM intervention at all levels. However, implementation has been slow and resource challenges exist throughout the government.<sup>7</sup>

PNG has developed long-term strategies for attaining sustainable development through DRR, DRM and addressing the issue of climate change. PNG Vision 2050 encompasses both short and long-term development strategies while the National Disaster Mitigation Policy (2010) provides a mechanism for shaping disaster mitigation and vulnerability reduction efforts as well as emergency response and reconstruction. The National Climate Compatible Development Management Policy (2014) is PNG's blueprint to achieve their vision in building a climate-resilient and carbon-neutral pathway through sustainable economic development. These strategies intend to represent a foundation for continued economic development and risk mitigation.

The PNG government's policy and institutional framework for DRM still faces numerous obstacles. The main challenges in moving towards a more proactive and systematic approach to manage risks and build resilience include 1.) the limited coordination between DRM and Climate Change Adaptation agencies; 2.) the slow migration from emphasis on response to risk reduction and management; 3.) the limited institutional capacity for planning and design of risk informed investments; and 4.) the lack of available historic natural hazard data, which hinders the assessment of risks.<sup>8</sup>



# PAPUA NEW GUINEA

## Country Overview

Disaster Management Reference Handbook | 2016

# Country Overview

PNG is the largest of the Pacific Islands Nations. PNG has several large volcanic islands and 600 small and scattered islands to the east and north in the Bismarck and Solomon Sea (Figure 1).<sup>9</sup> Total land area is over 462,840 km<sup>2</sup> (178,704mi<sup>2</sup>). The topography of PNG is among the most rugged in the world, with altitudes of over 4,000 meters (13,123 feet). Large geographical diversity exists with offshore islands, lowland forests and extensive marshes, dry savannah and temperate highlands. Only 13 percent of the country is inhabited.<sup>10</sup> PNG is one of the most diverse countries in the world (geographically, biologically, linguistically, and culturally). Its abundant natural resources have not led yet to economic prosperity for the majority of its people. PNG's relative level of poverty in relation to neighboring countries is increasing.<sup>11</sup>

PNG has a population of approximately 7.3 million and has over 800 known languages

reflecting the diverse origins of the people. English, Tok Pisin (Pidgin), and Hiri Motu (the lingua franca of the Papuan region) are the official languages.<sup>12</sup> The majority of the people are Melanesian, but some are Micronesian or Polynesian.

The spectrum of PNG society now ranges from traditional village-based life, dependent on subsistence and small cash-crop agriculture, to modern urban life in the main cities of Port Moresby (capital) Lae, Madang, Wewak, Goroka, Mt. Hagen, and Rabaul. Some 85 percent of the population directly derives their livelihood from farming and 15 percent of the population lives in urban areas. It is estimated that the population is growing at a rate of approximately 3.1 percent annually.<sup>13</sup>

PNG was first encountered by Europeans two hundred years ago, and German traders and planters were active there from the 1860s; quite early when one considers that the PNG highlands had no contact with outsiders until the 1930s. Germany annexed Bougainville at the end of the 19th century, at a time when it also colonized New Guinea (the northern half of

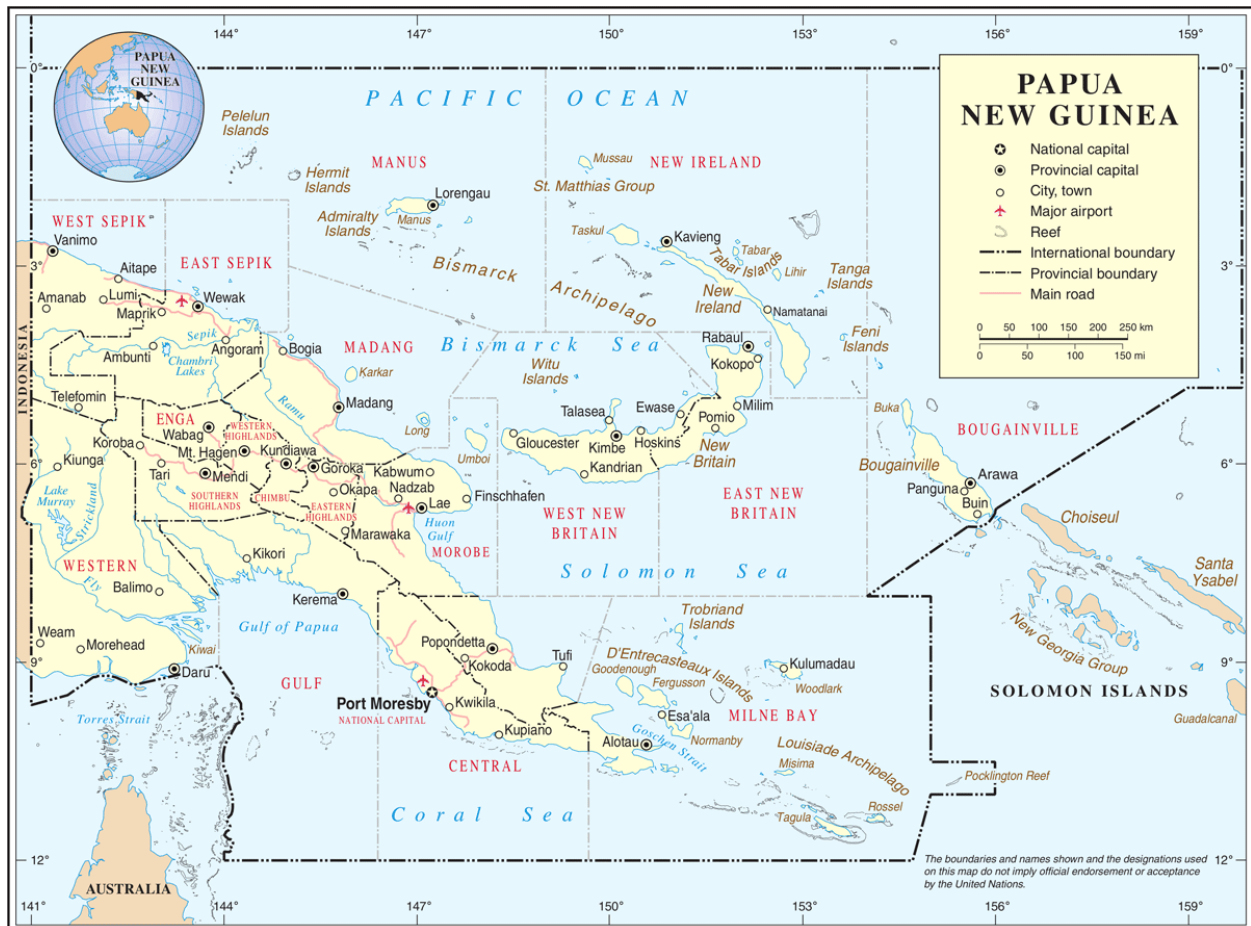


Figure 1: Map of PNG

what's now PNG) and the Solomon Islands. Then, in 1898, it ceded the Solomon Islands to Great Britain, as part of a deal between Germany, Britain, and the U.S. over territory in Samoa, but it kept Bougainville. Through the first half of the twentieth century, Bougainville changed hands, along with the rest of New Guinea several times. After World War I, it became part of the League of Nations mandated territory of New Guinea, administered by Australia, which already had colonial jurisdiction over the southern area of Papua. Then for three years of World War II, it was controlled by Japan, and was the scene of intense fighting and bombardment by American forces.<sup>14</sup>

After the war, PNG went back to Australian control under the auspices of the UN; and in 1975 it became part of the newly independent nation of Papua New Guinea. The eastern half of the island of New Guinea, the second largest island in the world, was divided between Germany (north) and the UK (south) in 1885. The latter area was transferred to Australia in 1902, which occupied the northern portion during World War I and continued to administer the combined areas until independence in 1975.

Minor protests progressed to insurgency, leading to a breakdown of law and order in 1988. The civil war in Bougainville (1989-1998) is one of the most serious conflicts PNG has experienced since it gained independence in 1975. The conflict has been described as the largest in Oceania after World War II. Estimates indicate that 70,000 people out of a population of about 180,000 were displaced into care centers or camps.<sup>15</sup> Many people died as a result of the conflict; reports range between 10,000-20,000. The total number of deaths indirectly caused by the Bougainville conflict is difficult to quantify mainly due to the air and sea blockade that prevented access to goods and services, particularly medical services.<sup>16</sup>

In 2001, Papua New Guinea and a Bougainville provisional government agreed to put an end to the armed conflict. The deal



Photo 1: Tribal Dance, Lae, PNG

included autonomy for Bougainville, regular elections starting from 2005, and a referendum on independence between June 2015 and June 2020. The timing of the referendum is subject to meeting two prerequisites which is achieving good governance and the implementation of a weapons disposal plan. It remains to be seen if the time periods and the conditions of the provisional government agreement will be compatible and which one will take precedence.<sup>17</sup>

## Culture

### Cultural Groups

It is estimated that more than a thousand different cultural groups exist in PNG. Because of this diversity, many different styles of cultural expression have emerged. Each group has created its own expressive forms of art, dance, weaponry, costumes, singing, music, architecture and much more (Photo 1).<sup>18</sup> Most of these cultural groups have their own language. People typically live in villages that rely on subsistence farming. In some areas people hunt and collect wild plants (such as yam roots) to supplement their diets. Those who become skilled at hunting, farming and fishing earn a great deal of respect.<sup>19</sup>

### Customs

Pre-colonial practices of cannibalism and head hunting that created tensions among tribal

groups were not uncommon. Communities of the Purari in the New Guinea Coast, Avatip of the Sepik and parts of the Solomon Islands were noted for such practices, which had strong ritual connection and were considered part of warfare. It is suggested they provided warriors with not just bravery, but strength and rejuvenation or spiritual rebirth. These Melanesian practices were in many ways intended to be used as a form of punishment although in some cases human flesh was eaten as a culinary treat and markets supplied such needs. Some communities in the Upper Fly River practiced cannibalism as well as head-hunting while communities in the southern coast were head hunters. Communities in the interior are reported to have hunted each other without discrimination until pressure from missionaries, Dutch and Australian colonial administrations worked to stamp out the practice in the 1950s. Recent information from PNG suggests that open cannibalism has almost entirely ceased in many parts of PNG.

Kinship rules in PNG determine who a person can marry. Marriage can be made legal in three ways: payment of bride price which is recognized by custom, religious ceremony, or a civil contract signed at the Registrar's Office. Marriage payment known as the 'bride price' or dowry normally involving the exchange of valuables and food is practiced in many societies. The payment signifies a woman's transfer of productive capacity to another kinship group and is a form of compensation to her family.

Polygamy, where a man can have more than one wife is practiced in all four regions of the country. Polygamy in most cases is associated with status and prestige as having many wives and children implies providing more food and pigs for ceremonies. The cost of bride price in modern times has increased as families demand a lot of money and expensive goods.<sup>20</sup>

### Cultural History

The first people to settle in the Islands of Papua New Guinea were Papuan, Melanesian and Negrito tribes. The tribes migrated from Southeast Asia via Indonesia between 50,000 and 70,000 years ago during the ice age when the sea was probably lower and sea distances were shorter. The next wave of migrants was Austronesian who settled in coastal areas approximately 5,000 years ago. The name Papua originates from Spanish and Portuguese sailors who arrived in the South Pacific region between the 1500's and early 1600s. Jorge de Meneses is

reported to have named the main island in 1526-1527 as 'Papuawah' or Ilhas dos Papuas, a Malayan term meaning islands of people with 'fuzzy' or 'woolly' hair. 'New Guinea' was a name given to the island in 1545 by Spanish sailor Ynigo Ortiz de Retez due to the supposed similarity between local people and those he found living in the Guinea coast of West Africa. Dutch, British, and French sailors also made frequent short commercial visits to the area in later periods and by 1870, longer visits were made by scientists, gold miners, traders and missionaries.

### *Bougainville*

Bougainville is culturally very distinct from the rest of Papua New Guinea. Bougainville has strong cultural links to the Solomon Islands and the Bougainville islands in fact form the North Solomons Province of PNG (Figure 2).<sup>21</sup> The southernmost point of Bougainville is only seven kilometers (4 miles) from the northernmost point of the Solomons, whereas Bougainville as a whole is 500 km (310 miles) from the PNG mainland, and almost 1,000 km (621 miles) from Port Moresby. Bougainville had a long history of colonial contact under different masters. They had not reaped any particular rewards from that contact, to the point where in World War II many Bougainvilleans welcomed the Japanese as representing possibly a better deal for them than the Germans and Australians. The war thus created extra divisions between Bougainvilleans (pro-Japanese versus pro-Allied Bougainvilleans) over the top of the different clan and language group divisions that already existed. Those divisions took a long time to heal; the last 'reconciliation feast' to resolve disputes of the 1940s was held in the mid-1980s. The war also brought the deaths of 25 percent of the Bougainville population.<sup>22</sup>

### Demographics

Understanding the demographic context of PNG provides insight into socio-cultural factors that will affect disaster management effectiveness and disaster vulnerabilities. It is important to reflect gender, ethnicity, culture, vulnerable groups, and economics in the planning and implementation of disaster preparedness, mitigation, and response activities to address gaps and risks.



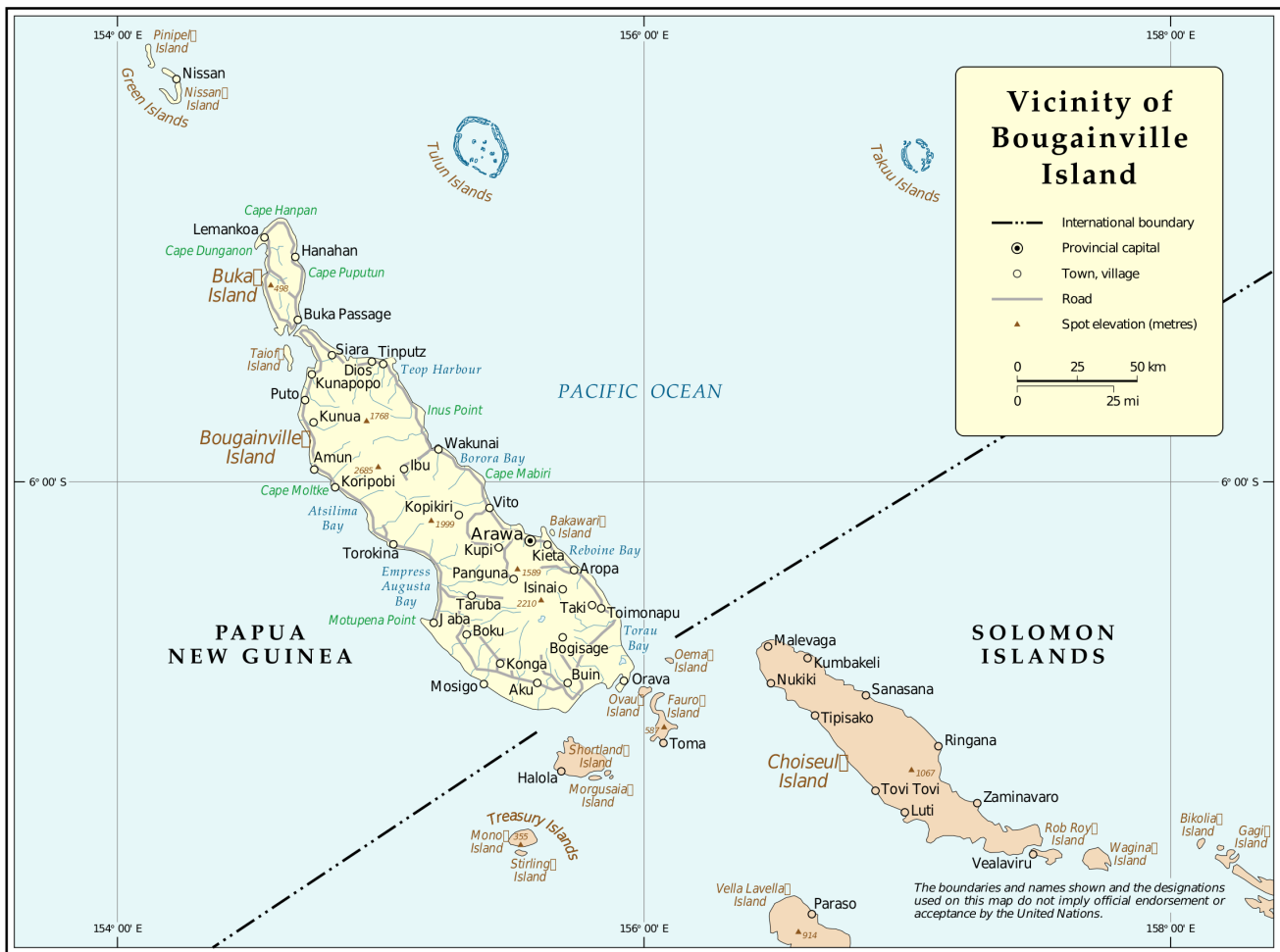


Figure 2: Vicinity of Bougainville Island

## Ethnic Makeup

There are five main ethnic groups in PNG. The largest ethnic group is of Melanesian origin followed by Papuan, Negrito, Micronesian, and Polynesian. Like other Melanesian societies, the wantok system of tribal and familial relationships dominates. This is highlighted by reciprocal social responsibility for payback. This informal revenge mechanism, which is used as a form of social control, creates fear of retaliation of one inflicting pain and suffering on another person. An accusation of sorcery obligates an individual to defend one's family, clan or tribe. This commitment has sometimes led to tribal fights and killings although its application varies from coastal areas to the highlands. While PNG could be described as an egalitarian society because few of its many tribal cultures have hereditary chiefs, the society is basically patriarchal with men having higher status than women.<sup>23</sup>

Papua New Guineans, most of whom are Melanesians, vary widely in their physical, ethnic and cultural characteristics. Papua New

Guinea is, in fact, the most heterogeneous country in the world. The centuries old heritage of Melanesian society maintains a strong influence over most of the population. Long before the concept of democracy was established in Europe, Papua New Guinea communities were reaching decisions by consensus and not by the dictates of the most powerful member of the village.<sup>24</sup>

## Key Population Centers

PNG has 22 Provinces of which 15 are Maritime Provinces.<sup>25</sup> PNG has a total population of 7.3 million (2013).<sup>26</sup> The majority of the population lives in the Highlands region (39 percent). Approximately 26 percent live in the Momase region, 20 percent in the Southern region, and 15 percent live in the Islands region.<sup>27</sup>

The population density in PNG is 10.6 people per square km. Urban population is estimated to be around 17 percent of the total population and increasing as more people move from rural areas into urban centers, in particular the capital Port

PROVINCE	CENSUS YEARS				ANNUAL GROWTH RATE			
	1980	1990	2000	2011	1980 – 1990	1980 – 2000	1980- 2011	2000 - 2011
PAPUA NEW GUINEA	3,010,727	3,761,954	5,190,786	7,275,324	2.2	2.7	2.9	3.1
<b>SOUTHERN REGION</b>	<b>588,700</b>	<b>771,193</b>	<b>1,041,820</b>	<b>1,456,250</b>	<b>2.7</b>	<b>2.9</b>	<b>2.9</b>	<b>3.0</b>
Western	78,575	110,420	153,304	201,351	3.4	3.4	3.0	2.5
Gulf	64,120	68,737	106,898	158,197	0.7	2.6	2.9	3.6
Central	116,964	141,195	183,983	269,756	1.9	2.3	2.7	3.5
National Capital District	123,624	195,570	254,158	364,125	4.6	3.6	3.5	3.3
Milne Bay	127,975	158,780	210,412	276,512	2.2	2.5	2.5	2.5
Northern	77,442	96,491	133,065	186,309	2.2	2.7	2.8	3.1
<b>HIGHLANDS REGION</b>	<b>1,121,258</b>	<b>1,373,673</b>	<b>1,973,996</b>	<b>2,854,874</b>	<b>2.0</b>	<b>2.8</b>	<b>3.0</b>	<b>3.3</b>
Southern Highlands	236,052	317,437	360,318	510,245	3.0	2.1	2.5	3.2
Hela	na	na	185,947	249,449	na	na	na	2.7
Enga	164,534	235,561	295,031	432,045	3.6	2.9	3.1	3.5
Western Highlands	265,656	336,178	254,227	362,850	2.4	-0.2	1.0	3.2
Jiwaka	na	na	185,798	343,987	na	na	na	5.6
Chimbu	178,290	183,849	259,703	376,473	0.3	1.9	2.4	3.4
Eastern Highlands	276,726	300,648	432,972	579,825	0.8	2.3	2.4	2.6
<b>MOMASE REGION</b>	<b>857,773</b>	<b>1,027,600</b>	<b>1,433,432</b>	<b>1,867,657</b>	<b>1.8</b>	<b>2.6</b>	<b>2.5</b>	<b>2.4</b>
Morobe	310,622	380,117	539,404	674,810	2.0	2.8	2.5	2.0
Madang	211,069	253,195	365,106	493,906	1.8	2.8	2.8	2.7
East Sepik	221,890	254,371	343,181	450,530	1.4	2.2	2.3	2.5
West Sepik	114,192	139,917	185,741	248,411	2.0	2.4	2.5	2.6
<b>ISLANDS REGION</b>	<b>442,996</b>	<b>589,488</b>	<b>741,538</b>	<b>1,096,543</b>	<b>2.9</b>	<b>2.6</b>	<b>2.9</b>	<b>3.5</b>
Manus	26,036	32,840	43,387	60,485	2.3	2.6	2.7	3.0
New Ireland	66,028	86,999	118,350	194,067	2.8	2.9	3.5	4.5
East New Britain	133,197	185,459	220,133	328,369	3.3	2.5	2.9	3.6
West New Britain	88,941	130,190	184,508	264,264	3.8	3.7	3.5	3.3
AR Bougainville	128,794	154,000	175,160	249,358	1.8	1.5	2.1	3.2

Table 1: Population Growth Rates by Provinces

Moresby.<sup>28</sup> Table 1 shows population as well as growth rates by provinces.<sup>29</sup>

## Language

PNG has more than 800 different native languages. There are three official languages spoken in PNG, Melanesian Tok Pisin (pidgin), Hiri Motu and English. Tok Pisin is an English-based creole language that evolved from interaction between local tribes with early English speaking traders and whalers. It is the most widely used language. Hiri Motu is a simplified version of Motu. English is the language of business, government and education.<sup>30</sup>

## Religion

The majority of the population (96 percent) are members of a Christian church, 1.4 percent are non-Christian, and 0.6 percent are identified as having no religion at all. The country's constitution and other laws protect religious freedom while the predominant religion is Christianity. Many Christians tend to integrate indigenous beliefs and practices where it is common for people to seek assistance from traditional healers when western medical treatment or prayer is perceived to have failed to cure an illness. Fear of witchcraft and evil spirits is still widespread. Traditional beliefs are still strong where people give respect to certain species of animals, birds or plants that are believed to have souls that possess supernatural or magical power. Clan rituals to appease their spirits vary according to tribe and provide people

with another perspective for interpreting social reality. Unlike Christianity that views death as the end of earthly existence, Melanesians consider that their ancestors have a living presence and are keeping a watchful eye over community affairs. Many groups have built 'spirit houses' where food can be left to sustain the ancestor and prevent harm to the community.<sup>31</sup>

## Vulnerable Groups

### Women

Gender-based violence remains a major issue in PNG as it is driven by social and cultural attitudes. Barriers to addressing it include adherence to bride price traditions in many areas of PNG, which legitimizes control of women by their husbands. Lack of female representation at the highest level of political office to promote women's rights affects how women's issues are dealt with. Other related concerns include male bias by customary courts at local levels and policing services that are often under resourced. The most common form of gender based violence is 'wife beating' perpetrated by the intimate partner. PNG is a patriarchal society where domestic violence traditionally tends to be considered a private matter and the practice is still viewed as acceptable by many people. Violence has left victims with injury, psychological trauma, sexually transmitted infections, loss of productivity and income. Preference to educate boys rather than girls has also contributed to an increase of dependency on husbands as breadwinners. There has been mounting political pressure to improve women's empowerment from women's groups in PNG (Office for the Development of Women) backed by the UN agencies and AusAID (now currently absorbed into DFAT) efforts. The historic Equality and Participation Bill introduced in 2011 that was aimed at guaranteeing 22 seats to women in parliament has yet to be passed into law. Australia together with national and other non-government development agencies have committed funds and expertise to reduce gender-based violence by encouraging an environment of gender equality.<sup>32</sup> (Note: At the time of writing this report AusAID had been absorbed into DFAT, however the sources still lists it as AusAID).

### Children

Despite recent improvement of economic

activity, poverty, crime and growing social disparity continue to affect children and most human development indicators have deteriorated. Of particular concern is the disproportionate vulnerability of girls and women, who face increased risk of having their right to education, health and protection violated throughout their childhood. In the home, around 75 percent of women and children experience family violence, one of the highest rates in the world. Girls drop out of school due to the high cost of school fees, harassment by boys and teachers, sexual abuse or lack of psychosocial support. The culturally defined domestic expectations placed on girls (such as remaining at home to work in the garden or attend to household duties) remain a significant contributor to their low enrollment rate.<sup>33</sup> Many children are orphans because a parent died of AIDS. They then may have to live in crowded homes with family members or end up on the street. Many children live in extreme poverty, homelessness, ill health, violence, abuse, neglect, fear and conflict. While there are no nationally representative studies on violence against children in PNG, small-scale studies consistently demonstrate that children are vulnerable to violence.

Exposure to violence in the home and immediate environment is a daily occurrence for a number of young men and young women.<sup>34</sup> In the UN-HABITAT Youth and Crime Survey, young people (age 12-25) reported the following:<sup>35</sup>

- 39 percent witness physical violence between family members at least once a week
- 29 percent are beaten at least once a week by a male relative
- 18 percent are beaten at least once a week by a female relative
- 51 percent experience physical punishment as a form of punishment
- 44 percent acknowledged that relatives have been arrested for violent crime including assault, murder and rape
- 16 percent have been forced to have sex, with one in five of them forced to engage in sex with a family member
- Almost one percent were forced to have sex to obtain good grades in school

Sexual violence outside the home is also widespread. A government report also noted that 30 percent of the girls and women in an urban

settlement had been victims of sexual violence. Most perpetrators of rape know their victims, who are mainly young women and girls.<sup>36</sup> The Government recognizes the high risk of rape, gang rape and other forms of violent sexual assault that young women are subject to, and the fact that this occurs severely limits their rights to freedom, assembly and equal participation in social, economic and political life.<sup>37</sup>

HIV and AIDS is a growing problem. By the end of 2006, up to 80,000 people were estimated to be infected with HIV. The prevalence rate is highest in the 15-39 age group. In the 15-29 age group, there are significantly more females than males affected and because 70 percent of pregnant women also fall in this age bracket; the risk of mother to child transmission remains high. The risk of acquiring HIV for women is compounded by the social conditions that affect their status and their access to, and control of, resources. Children who are affected by HIV are now recognized as a particularly vulnerable group, as they are more likely to be orphaned, drop out of school, live in child-headed households and experience stigmatization and discrimination.<sup>38</sup>

### *The Poor*

PNG's Human Development Index (HDI) value is 0.466, which is in the low human development category, positioning the country at 156 out of 187 countries and territories on the UNDP Human Development Index for (2012). The HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: 1.) a long and healthy life, 2.) access to knowledge and a decent standard of living, and 3.) a long and healthy life as measured by life expectancy. Access to knowledge is measured by mean years of schooling for the adult population, which is the average number of years of education by people aged 25 years and older; and expected years of schooling for children of school-entrance age, which is the total number of years of schooling a child of school-entrance age can expect to receive if prevailing patterns of age-specific enrolment rates stay the same throughout the child's life. Standard of living is measured by Gross National Income per capita.<sup>39</sup>

Despite the wealth that is being generated by mineral and oil sectors, poverty levels for PNG in the last 16 years have remained relatively high particularly in rural areas. The country is still far from meeting benchmarks set by the UN

Eight Millennium Development Goals. PNG household income and expenditure survey for 2009-2010 revealed rural people were still poorer (93 percent of rural people were poor) compared to those living in urban areas (16 percent). The United Nations Children's Fund (UNICEF) Annual report 2012 linked the problem of social and economic disparities to limited capacity of public sector institutions to deliver basic social services such as education and health, and addressing gender inequality.<sup>40</sup>

### *Refugees and Internally Displaced Persons*

As of June 2015, there are 9,510 Refugees and 400 Asylum Seekers residing in PNG.<sup>41</sup> PNG has 22,500 Internationally Displaced Persons due to natural disasters, tribal conflict, inter-communal violence, and development projects.<sup>42</sup>

### *Trafficking in Persons*

PNG is a source, destination, and transit country for men, women, and children subjected to sex trafficking and forced labor. Foreign and PNG women and children are subjected to sex trafficking and domestic servitude. Parents may sell girls into forced marriages to settle debts or as peace offerings, leaving them vulnerable to be forced into domestic service, or may prostitute their children for income or to pay school fees. Local and Chinese men are forced to labor in logging and mining camps through debt bondage schemes. Migrant women from Malaysia, Thailand, China, and the Philippines are subjected to sex trafficking and domestic servitude at logging and mining camps, fisheries, and entertainment sites.<sup>43</sup>

An estimated 19 percent of PNG's labor market is comprised of child workers-some of whom are subjected to forced labor or child prostitution. "Mosko Girls"-young girls employed in bars to provide companionship to male patrons and sell an alcoholic drink called mosko-are vulnerable to human trafficking, especially around major cities in PNG. NGO sources indicate that children in prostitution increased by 30 percent in 2013. Boys as young as 12 are exploited as "market taxis" in urban areas and required to carry extremely heavy loads for low pay; some may be victims of forced labor. Reports continue to allege that high-ranking public officials condone, are engaged in, or benefit from sex trafficking in PNG.<sup>44</sup>

PNG does not fully comply with the minimum standards for the elimination of trafficking and is not making significant efforts to do so.

No law enforcement or government officials were investigated in 2013, despite reports of complicity in human trafficking at the highest levels of government. Parliament in 2012 passed legislation prohibiting all forms of trafficking, but the bill did not enter into force during the reporting period. Trafficking-related crimes were prosecuted in village courts rather than criminal courts, resulting in restitution to the victim but no prison time for offenders. No formal victim identification or referral mechanism exists, and the government did not fund shelters run by NGOs or international organizations.<sup>45</sup>

## Economics

PNG has experienced over a decade of comparatively robust economic growth, with expanding formal employment opportunities and strong growth in government expenditure and revenues. This economic performance has been driven by high international prices for PNG's exports (including agricultural products), conservative fiscal policies and, more recently, construction activity related to the Liquefied Natural Gas (LNG) project. Notwithstanding this favorable environment, PNG continues to confront considerable development challenges.

PNG remains off track against all the Millennium Development Goals. Over 2 million Papua New Guineans (an estimated 40 percent of the population) are poor and/or face hardship, according to the 2013 Pacific Regional Millennium Development Goal (MDG) Tracking Report. With around 80 to 85 percent of Papua New Guineans residing in traditional rural communities, the majority secure their livelihoods from subsistence gardens and small-scale cash cropping.

While exports of LNG will boost PNG's Gross Domestic Product (GDP) considerably in the near future, the PNG Government will need to practice fiscal discipline in order to maintain macroeconomic stability and increase broad-based economic growth. Australia is working with the PNG Government to support the establishment of a sovereign wealth fund to assist with sharing the economic gains of PNG's resource sector with the people of PNG.<sup>46</sup>

The deficit is largely the result of disappointing revenues, particularly from mining and petroleum taxes, and consequently the government is facing short-term cash flow constraints. It has little recourse to domestic

financing as PNG-based purchasers of Treasury bills have already invested heavily in short-term government debt. New sources of finance such as asset sales or sovereign bond issuance, are being considered but will take time to materialize and could be expensive.<sup>47</sup>

Papua New Guinea is prone to natural disasters. Heavy rains often lead to damage to road infrastructure and livelihoods, as well as economic losses, as seen in June and September of 2012. Total damages and losses in 2012 amounted to approximately U.S.\$28 million. The government spent more than U.S.\$300,000 to organize humanitarian aid and provided U.S.\$1.5 million for alternate road access in order to restore access to the damaged roads.<sup>48</sup> Figure 3 shows PNG nationally reported losses between 1990-2014. Flooding represents 32.1 percent of the economic losses with Earthquakes representing 30.2 percent.<sup>49</sup>

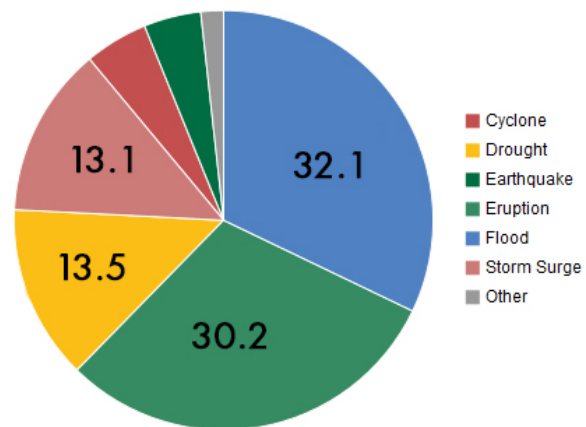


Figure 3: Combined Economic Losses

## Environment

Environmental considerations influence disaster management in many ways. This section outlines some of the key environmental factors that contribute to PNG's disaster hazards and affect potential response operations.

### Borders

PNG has a generally benign external security environment, though not without some challenges. The principal issues for PNG's external security have been in three main areas: the border with Indonesia to the west; the border with the Solomon Islands to the east; and

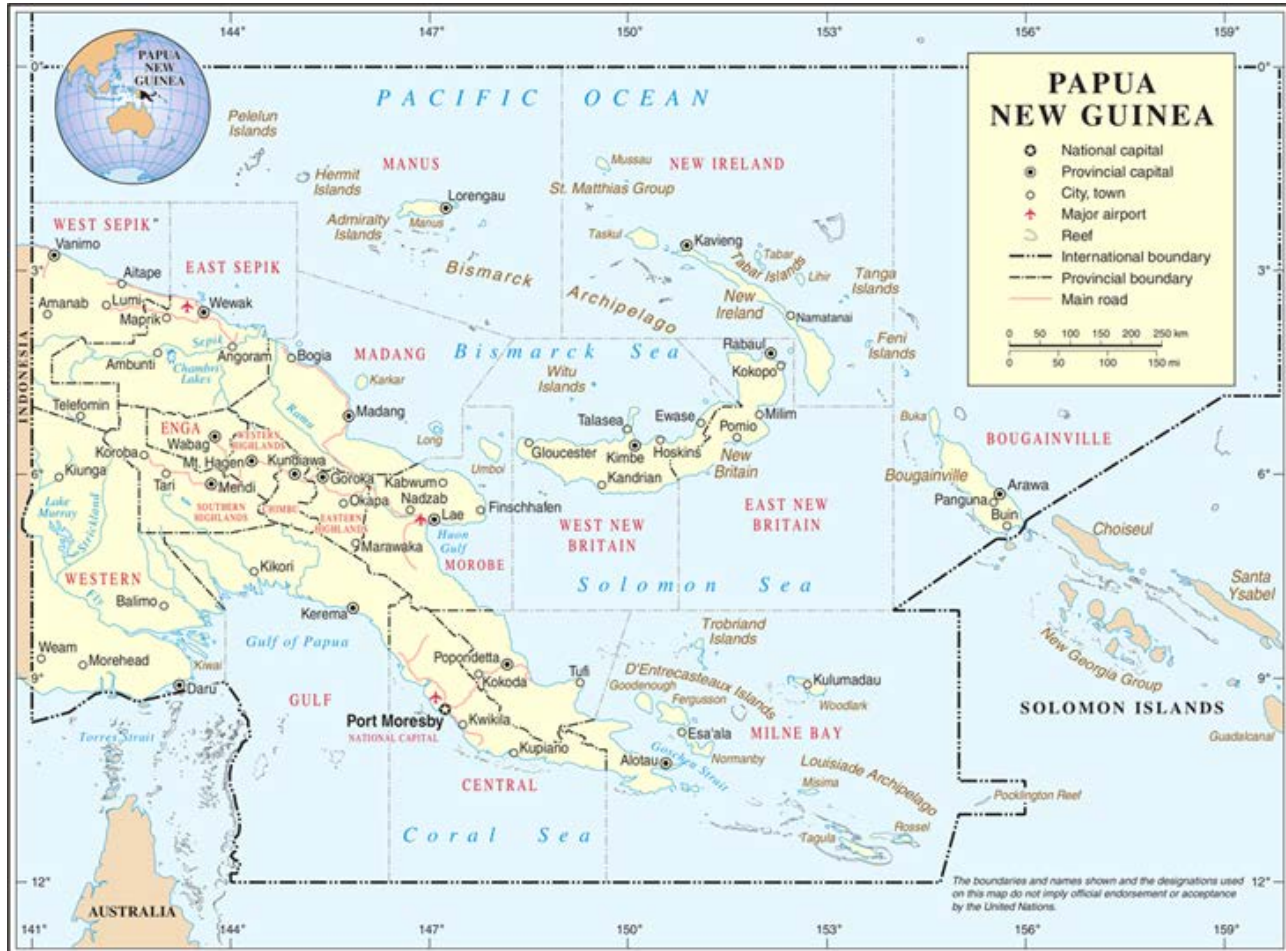


Figure 4: Map of PNG International Boundaries with Indonesia and the Solomon Islands

incursions by foreign fishing vessels in PNG’s territorial waters.<sup>50</sup> Figure 4 shows a map of PNG depicting a dotted line for the international boundary between Indonesia and PNG to the west and the international boundary between the Solomon Islands and PNG to the east.<sup>51</sup>

### *The Border with Indonesia*

PNG shares a border with the Indonesian provinces of West Papua and Papua (formerly the single province of Irian Jaya). Papuan nationalists, led by the Organisasi Papua Merdeka (OPM, Free Papua Movement) and more recently the Komite Nasional Papua Barat (KNPB, West Papua National Committee), have maintained a continuing campaign for West Papuan separatism and a review of the 1969 so-called “Act of Free Choice” (in fact, an act of “no choice,” conducted in the presence of a UN special representative), by which West Papua moved from a UN Temporary Executive Authority to incorporation within the Indonesian Republic.

In the early 1970s, there was significant sympathy among PNG’s emerging leaders for the separatist ambitions of their Melanesian brothers in the former Dutch territory. However, PNG recognized Indonesian sovereignty in West Papua after 1969 (as did Australia) and within its capacity sought to deny the OPM access to PNG. Despite this, OPM camps were set up in the dense jungle on PNG’s side of the border, which was a source of some tension in relations between Indonesia and PNG.

Regular crackdowns on West Papuan groups by Indonesia led to frequent border crossings by OPM supporters and ordinary villagers, and occasional incursions by Indonesian soldiers. In 1984, 10,000 border crossers sought refuge in PNG after the Indonesia military acted against Papuan nationalists who had sought to raise the West Papuan flag. The Indonesian military made unauthorized border incursions in pursuit of alleged OPM supporters who sought refuge in PNG. In an escalation of tensions, PNG took its grievances to the UN General Assembly.

By the late 1980s, relations between the two countries had improved and the two had signed a Treaty of Mutual Respect, Friendship and Cooperation. However, the border remains a continuing irritant in PNG-Indonesia relations. West Papuan separatism has not gone away. The erosion of concessions made by the Indonesian Government to West Papuans after the demise of President Suharto, continued immigration from other parts of Indonesia, and sustained military repression and human rights abuses in West Papua have fueled Papuan nationalist sentiments and separatist demands and create a vicious cycle of repression and confrontation. PNG has resisted Indonesian proposals for joint border patrols, and with the Papua New Guinea Defense Force (PNGDF)'s capacity to patrol the border limited by its resources, the potential for future border "incidents" is high.<sup>52</sup>

#### *The Border with the Solomon Islands*

In the east, a similarly arbitrary colonial boundary separates PNG from the Solomon Islands, although there has been continuing traditional movement across the island chain. During the Bougainville rebellion, members of the Bougainville Revolutionary Army regularly crossed into the Solomon Islands (for some time with the effective blessing of the Solomon Islands Government) to escape the PNGDF, and weapons and medicines were imported into Bougainville through the Solomon Islands. In a mirror image of what was happening on PNG's western border, on more than one occasion PNGDF soldiers crossed illegally into the Solomon Islands (in one instance attempting to annex a small island in the Solomon Islands territory), drawing complaints from successive Solomon Islands governments. Since the end of the Bougainville conflict, this issue has largely disappeared, although the reported continuing flow of weapons into PNG through the Solomon Islands still poses security concerns.<sup>53</sup>

#### *Illegal Fishing*

PNG has a valuable fisheries sector ranging from inland river fisheries, aqua culture, coastal, and reef fisheries to prawn trawling and large-scale deep-water tuna fisheries. PNG's 2,437,480 million square kilometer Exclusive Economic Zone is one of the largest marine jurisdictional zones in the Pacific and the richest in fisheries resources in the region. The operation of illegal foreign fishing vessels in PNG waters, particularly in the "Dogleg" area to the west of

the Papuan Gulf, has been a serious issue for PNG, especially given its limited capacity to monitor, let alone control, its extensive territorial waters.

Some attempts have been made to address the problems of illegal fishing on a regional basis through the Forum Fisheries Agency and the Western and Central Pacific Fisheries Commission. Australia has supported the efforts of PNG and other Pacific island states to improve their maritime security and protect their fisheries through the Pacific Patrol Boat Program and assistance in aerial surveillance.<sup>54</sup>

## **Geography**

Situated to the north of Australia, PNG has a total land area of 462,840 km<sup>2</sup> (178,704 mi<sup>2</sup>), including the large islands of New Britain, New Ireland and Bougainville and hundreds of smaller islands. Comparatively, the area occupied by PNG is slightly larger than Sweden, or the state of California, USA. The country extends 2,082 km (1,294 mi) north-northeast to south-southwest and 1,156 km (718 mi) east-southeast to west-northwest. Mainland PNG shares the island of New Guinea, the second-largest island in the world, with Irian Jaya, a province of Indonesia. To the north is the U.S. Trust Territory of the Pacific Islands; to the east, the Solomon Islands; to the west, Irian Jaya; and about 160 km (100 mi) to the south, the nearest neighbor, Australia. PNG has a total boundary length of 5,972 km (3,711 mi), of which 5,152 km (3,201 mi) is coastline.

PNG's capital city, Port Moresby, is located on the country's southern coast. PNG is situated between the stable continental mass of Australia and the deep ocean basin of the Pacific. The largest section is the eastern half of the island of New Guinea, which is dominated by a massive central cordillera, or system of mountain ranges, extending from Indonesia's Irian Jaya to East Cape in PNG at the termination of the Owen Stanley Range, and including the nation's highest peak, Mt. Wilhelm (4,509 meters/14,793 ft.). A second mountain chain fringes the north coast and runs parallel to the central cordillera.

In the lowlands are many swamps and floodplains. Important rivers are the Sepik, flowing about 1,130 km (700 mi) to the north coast, and the Fly, which is navigable for 800 km (500 mi) in the southwest. The Bougainville-New Ireland area comprises Bougainville and Buka islands, the Gazelle Peninsula of New Britain, New Ireland, New Hanover, the St. Matthias

group, and the Admiralty Islands.

The smaller islands of PNG are also areas of extreme topographic contrast and generally feature mountain ranges rising directly from the sea or from narrow coastal plains. Volcanic landforms dominate the northern part of New Britain and Bougainville, and some of the smaller islands are extremely volcanic. An eruption in September 1994 of two volcanoes caused the destruction of half of the town of Rabaul on New Britain Island.

The country also experiences periodic high-magnitude earthquakes. On 16 November 2000, the New Ireland region experienced a quake that hit 8.0 on the Richter scale. It was recorded as the largest earthquake of the year worldwide, but fatalities were limited to two people. On 11 March 2003, a 6.8 magnitude earthquake hit the same region, and on 9 September 2005, a 7.7 magnitude quake occurred; both quakes caused some damage but no reported deaths.<sup>55</sup>

### Climate

The climate is tropical with high temperatures, humidity and rainfall. PNG experiences a northwest monsoon from December to March and a southeast monsoon from May to October. There are only slight seasonal temperature variations although temperatures vary significantly according to altitude. Climatic conditions vary greatly from one area to another owing to the mountainous topography and the two major prevailing air streams (the southeasterly trade winds and the northwesterly monsoon).

Rainfall is the main weather feature that differentiates the seasons. There are distinct wet and dry seasons, the timing of which varies from one area to the other. For instance, the wet season in Lae largely corresponds with the dry season in Madang, even though both are on the northwest coast of the mainland.<sup>56</sup>

Sea level rises due to climate change will increase the frequency and scale of flooding events. Expected increases in precipitation will saturate soils, increasing the risk of landslides and river flooding. Changes in climatic conditions are expanding the areas suitable for mosquitoes and also increasing the number of mosquitos in a given area.<sup>57</sup> The effects of climate change are significant and will be discussed in detail in the *Hazards* section of this handbook.





# PAPUA NEW GUINEA

## Disaster Overview

Disaster Management Reference Handbook | 2016

# Disaster Overview

## Hazards

PNG is prone to natural disasters including earthquakes, volcanic eruptions, tsunamis, cyclones, river flooding, coastal erosion, landslides, droughts and frost.<sup>58</sup> It ranks in the top six countries for the highest percentage of population exposed to earthquake hazards and for population exposed to severe volcanic risk. Landslide hazards is also particularly high. Heavy rains often lead to damage to road infrastructure and livelihoods, as well as economic losses, as seen in June and September of 2012.<sup>59</sup>

### *Cyclones*

The tropical cyclone season for PNG begins in October and ends in May each year. PNG receives, on average one cyclone per year.<sup>60</sup>

### *Earthquakes*

PNG ranks in the top six countries for the highest percentage of population exposed to earthquake hazards.<sup>61</sup> Located on the margins of the Australian and Pacific tectonic plates, PNG regularly experience earthquakes between magnitudes 5 and 7. East and West Sepik, the

Southern Highlands, Oro and Milne bay are the provinces most susceptible to seismic activity.<sup>62</sup>

### *Landslides*

Landslides in PNG are generally associated with large, shallow earthquakes and rainfall. Many landslides occur during the wet season as the rainwater infiltrates the soil and weakens the restraining properties of the soil or rock. The provinces most susceptible to landslides are Eastern Highlands, Simbu, Western Highlands, Southern Highlands, Enga, Morobe, Western, East and West New Britain.<sup>63</sup>

### *Volcanoes*

PNG has the highest percentage of population exposed to severe volcanic risk.<sup>64</sup> The country has 16 active volcanoes and 22 dormant volcanos, which is the most in the South West Pacific. Ten of the 16 and all of the dormant volcanos are located within the Bismark Volcanic Arc. Five are located in West New Britain Province, potentially threatening 250,000 people.<sup>65</sup>

Additionally, of the 16 volcanoes, six of them are classified as high-risk volcanoes, meaning they have had explosive eruption in the past and the potential for more in the future. The six high-risk volcanos in PNG are Ranbaul in East New Britain, Ulawun and Pago in West New Britain, Karkar and Mana in Madang, and Mount Lamington in Oro province.<sup>66</sup> Photo 2 shows Tavurvur Volcano in Rabaul, PNG.<sup>67</sup>



Photo 2: Tavurvur Volcano, Rabaul, PNG

### Drought/Frost

El Nino reappears every 2-10 years and causes drought and frost, which contributes to food and water shortages. The more severe impacts exist along regions within the boundary of Savannah grassland in both high and low altitude areas.<sup>68</sup>

### Tsunamis

West and East Sepik, Madang, Morobe, Milne Bay, Manus, New Ireland, the autonomous region of Bougainville, East and New West Britain, are the locations most prone to tsunamis.<sup>69</sup>

### Floods

Each year in PNG floods cause significant damage to buildings and critical infrastructure, such as roads and bridges, as well as to agriculture and crops.<sup>70</sup> Photo 3 shows flooding in East Sepik Province, PNG.<sup>71</sup>



Photo 3: East Sepik Province Flooding in PNG

## Recent History of Natural Disasters

August 2015- The National Weather Service declared the country would be experiencing a severe El Nino event, which is forecasted to continue for 8 – 10 months with reduced rainfall in all parts of the country. The National Disaster Management Office (formerly the National Disaster Center [NDC]) estimated that 2 million people are affected. The Provincial Disaster Center of Chimbu Province reported 24 people confirmed dead as a result of prolonged drought in the Highlands region.

March 2015- Heavy rainfall caused river overflows in PNG's provinces of Western Highlands, Central Highlands, Southern Highlands, and Jiwaka. In total, about 100,000 people were affected by the rainfall and floods.

April 2014- Tropical Cyclone Ita caused extensive damage in the Northern provinces, displacing many villagers and disrupting livelihoods of 12,346 people. The number of houses destroyed was extensive, rising to 1,285 with 3,442 food gardens also being hit. Water and food supplies were contaminated or damaged by the storm and 67 classrooms had to be closed.

January 2013- Heavy rainfall resulted in floods and landslides affecting homes, food gardens, water sources and infrastructure. Thousands of people were affected in several provinces.<sup>72</sup>

January 2012- A landslide in Tumbi Village, Hela Province, killed dozens and severely disrupted trade and transport in the country.<sup>73</sup>

May 2010- An estimated 20,000 people in remote parts of East Sepik province were affected by floods- the worst in 40 years- along the Sepik River. Residents needed minimum levels of outside support thanks to traditional coping mechanisms. Worst affected were Angoram, Ambunit and Wosara-Gowi districts.

October 2006- Mount Tavurvur situated on the outskirts of Rabaul erupted. Approximately 2,000 residents were evacuated from areas experiencing heavy ash falls. The worst affected communities included Matupit, Bai, Nordup, Matalau, Rakunat, Koere, and Rabuana.<sup>74</sup>

1998- More than 2000 people were killed in Sanduan Province when a 6.8 earthquake triggered a tsunami off PNG's northwestern coast, wiping out the village of Sissaro.<sup>75</sup>

Figure 5 shows the mortality rate for disasters for the same time period.<sup>76</sup>

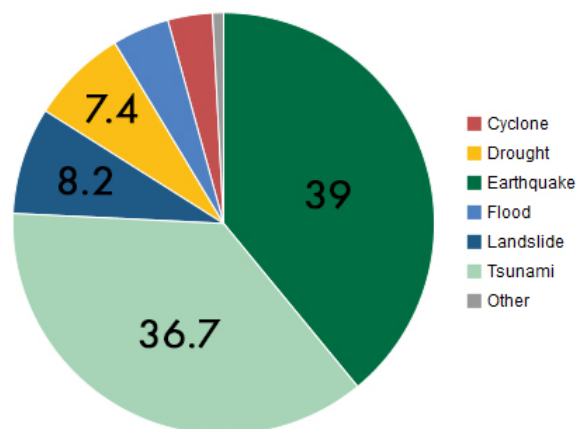


Figure 5: Mortality Rate for Disasters (1990-2014)

## RISK PROFILE

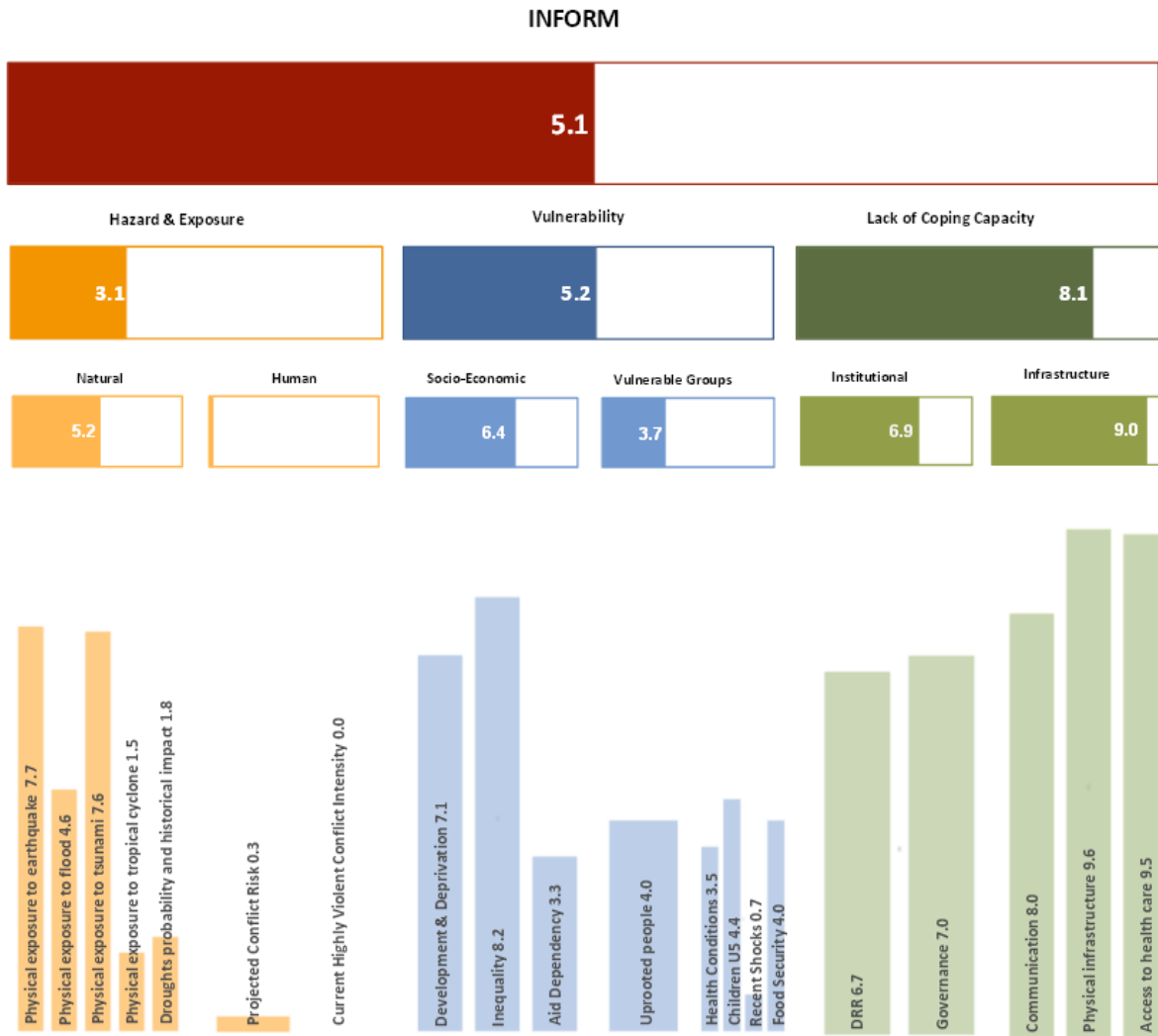


Figure 6: INFORM Country Risk Profile for PNG

Figure 6 shows the Index for Risk Management (INFORM)'s index for PNG in reference to Hazards score. INFORM is a global, objective and transparent tool for understanding the risk of humanitarian crises. The INFORM index is a way to understand and measure the risk of a humanitarian crisis. INFORM is a composite indicator, developed by the Joint Research Center, combining 53 indicators into three dimensions of risk: hazards (events that could occur) and exposure to them, vulnerability (the susceptibility of communities to those hazards) and the lack of coping capacity (lack of resources that can alleviate the impact). The index results are published once every year. They give each country an overall risk score of 1-10 (1 being the lowest and 10 the highest) for each of the dimensions,

categories, and components of risk. The purpose of INFORM is to provide an open, transparent, consensus-based methodology for analyzing crisis risk at global, regional or national level. PNG has a 2016 Hazard and Exposure risk of 5.1/10; a Vulnerability score of 5.2/10; and a Lack of Coping Capacity score of 8.1/10. Earthquake hazards meet the 7.7/10 risk index with tsunami being a close second at 7.6/10. Physical Infrastructure and Access to Healthcare inefficiencies rate the highest.<sup>77</sup>

### Climate Change

PNG is under enormous threat from the impact of global warming and the effects of changing climatic patterns. The fourth Intergovernmental Panel on Climate Change report (2007) showed scientific predictions of increased surface temperatures, thus accelerating

changes in global and regional climatic patterns. In PNG, climate change will likely exacerbate event-driven hazards such as coastal flooding, inland flooding and landslides, and may also introduce new hazards due to gradual shifts in climatic conditions— most prominently, further malaria penetration into the highlands, changed agricultural yields and damaged coral reefs.<sup>78</sup>

Coastal flooding and sea level rise will affect coastal regions in PNG. In the last 15 years, four catastrophic flood events, and coastal floods have affected some 8,000 people a year. On an annualized basis, the floods caused USD 10-20 million (M) of damage, displacing 500 people and killing five. Rising sea levels worsened the effect of coastal floods and necessitated the evacuation of people from the Carteret Atolls and Duke of York Islands. Salinization and flooding are damaging fragile communities and cultures, making these areas uninhabitable.

Malaria severely affects PNG daily life, with 1.7M people infected every year. About 60 percent of the population lives in high-risk malaria regions. In the last 20 years, climatic changes have worsened the malaria effects. With rising temperatures, the parasite has established itself in the highlands where it was not previously present. Additional rises in temperature over the next 20 years will introduce malaria to previously risk-free regions and could worsen the impact of malaria for those living in low-risk zones.

Inland flooding, driven by heavy irregular rainfalls, regularly affects valleys and wetlands in both lowlands and highlands. The effects of inland flooding are amplified by steep inclines and deforestation. Based on 19 years of data, 22,000-26,000 people are affected annually by inland floods, displacing 6,000-8,000 and typically resulting in a few deaths each year. Public records estimate annual damage at U.S.\$ 8-12M, a burden usually shouldered by the poorest people in the country. Changes in climatic conditions, both through increased average precipitation and increased extreme rainfall events, will strongly affect the impact of inland floods.

Sea temperature increase and acidification may over time destroy PNG's coral reefs, the fifth largest in the world. Between 50,000 and 70,000 coastal inhabitants rely on coral reefs for their food, livelihoods and shelter. Not only do the reefs contribute to economic growth through fisheries and tourism, they protect the coastlines from storms and loss of land.

Landslides, triggered by increased rainfall

intensity and land use changes, destroy vital assets in mountainous areas. In recent decades, landslides have caused considerable damage to road infrastructure and remote communities. The effect of landslides is not well understood given the unpredictability and remote impact. At the same time, landslides have caused significant damage along the Highlands Highway, the sole lifeline for the highland communities and export businesses. Changes in precipitation patterns and land use are likely to increase the number of landslides. Photo 4 shows evidence of Coastal Flooding and Sea Level Rise in PNG.<sup>79</sup>



Photo 4: Evidence of Coastal Flooding and Sea Level Rise in PNG.

## Infectious Disease

PNG's population is susceptible to several infectious disease threats such as Dengue, HIV, Hepatitis A, Malaria, Measles, Typhoid, Japanese B Encephalitis, Rabies, and Tuberculosis. More information on these communicable diseases can be found in the Health section as well as the Travel Health Information Section (Appendix) of this document.

## Endemic Conditions

### Deforestation

Deforestation is an increasingly serious issue owing to rising commercial demand for tropical timber and largely unenforced logging regulations in the corrupt timber industry. The government strenuously denies any wrong doing or that the industry is inappropriately regulated. The Forestry Minister has refused to acknowledge or act upon the recommendations of a 2004 World Bank report on illegal logging,

stating that the report was written by people biased "against the growth of the industry". The forestry industry, while technically regulated, has largely a free rein supported by endemic corruption and high-powered vested interests including within the Forestry Ministry itself.

Deforestation of steeply wooded hillsides provides the potential for landslips and mudslides, removing the topsoil and endangering the subsistence villagers below. Mudslides have been reported in East and West New Britain, Morobe and Gulf provinces where logging has been particularly heavy and rivers downstream of several large mills have been polluted with run off. Concern in the World Bank's report was also expressed for the loss of biodiversity caused by forestry practices as approximately five percent of the world's species are thought to exist within PNG's rich natural environment.

Approximately 85 percent of the population still remain and rely on the land and forests for food and indigenous medicines. The effect of rapid deforestation is already having a considerable effect on the health and welfare of poorer sections of the population.<sup>80</sup>

### *Mining*

Mining projects are also harmful to environmental sustainability in PNG. Panguna mine on the island of Bougainville, for example, was forced to close due to its environmental impact. Ok Tedi mine was the subject of an environmental class action resulting in AUD1 billion in reparation payments and Lihir mine remains the subject of continuing safety and environmental concerns. The principal rivers are the Fly, Purari, Kikori, Sepik and Ramu. The main river is the Fly, some 1,200 km (745 miles) long. The Fly is navigable for some 800 km (500 miles) from its mouth at the Gulf of Papua and has been heavily polluted through mining operations at Ok Tedi, which have been suspended since 2000.<sup>81</sup>

### *Government corruption*

The political system has become dysfunctional since independence in 1975, whereby corruption, weak governance and tribal loyalties have eroded governmental capacity and undermined the power of parliament and the stability of cabinets. As a result, tough economic decisions have been avoided and the nation's development has been left largely forgotten and struggling, in favor of short-term gains and maintenance of political careers. As PNG's prime aid donor, Australia's

Enhanced Cooperation Program aid package of \$300M focuses on reform, anti-corruption, a strategic plan on HIV/AIDS, and assistance with military training. With a defense force of 2,100, the PNG military is poorly trained, lacks funding and, most importantly, is not trusted by the local populace due to indiscriminate campaigns and human rights abuses.

### *Crime*

Levels of crime and violence in PNG are high, and have remained consistently so for over a decade. The homicide rate, considered the most reliable indicator of overall crime, was 10.4 per 100,000 inhabitants in 2010. The rate varies widely across regions, with an estimated rate of 66 per 100,000 in Lae and 33 in the National Capital District (NCD), amongst the highest in the world. Robbery and assault are the most commonly reported crimes. Family and sexual violence is also highly prevalent, and affects both females and males.

Violent crime, such as robberies and assaults, appears to be increasing as a proportion of overall crime, and that crime is on the rise in known "hotspots" such as Lae and the NCD. In Lae, crime appears to have increased for 11 of 12 categories of crime reported in 2010 (compared with 2005 and 2008 data). The use of firearms has also been increasing since 2008.

Crime and violence are driven in part by recent social and economic changes, which have created disputes that are less amenable to management by traditional means. In particular, violence in PNG can be understood, at least partly, as a result of the inability of both traditional and formal institutions to manage the stresses that have come with rapid economic growth, increasing migration, and other factors.<sup>82</sup>

Inter-group fights in Port Moresby manifest mainly in the form of tribal or ethnic group fights, raskol gang fights and inter-school fights. It was reported by civil society and government officials that tribal fighting perpetuates a culture of violence in Port Moresby, as it is seen that fighting is a traditional way to resolve conflict.<sup>83</sup>



# PAPUA NEW GUINEA

## Organizational Structure

Disaster Management Reference Handbook | 2016

# Organizational Structure for Disaster Management

PNG national institutional arrangements are illustrated in Figure 7 and Figure 8. It is intended the structure be replicated at each level of government to ensure that emergencies and disasters are managed consistently, and that escalation from Local Level through to District and above can be achieved seamlessly, thereby enhancing coordination.

Each level of government is responsible for developing and maintaining a DRM plan, appropriate to their hazard profile and resource capacity and are responsible for allocating budgets to ensure national DRM objectives can be achieved and the local disaster plan can be effectively mobilized.

## National Executive Council (NEC)

The NEC is the Executive arm of the National Government established under Section 149 of the Constitution. It consists of the Prime Minister (Chair) and all Ministers. The Committee meets twice a month.

The Office of the Secretary to the NEC is established under Section 150 of the Constitution. The functions and responsibilities are specified under Section 23(3) of the Prime Minister and National Executive Council Act and procedures determined by the National Executive Council.

## Ministerial Statutory Responsibilities for Disasters Risk Management

The Ministerial Statutory Responsibilities are covered by ministerial determination published in the National Gazette and the Minister responsible for Provincial Government and Local Level Government (LLG) matters is the Minister responsible for DRM in PNG.

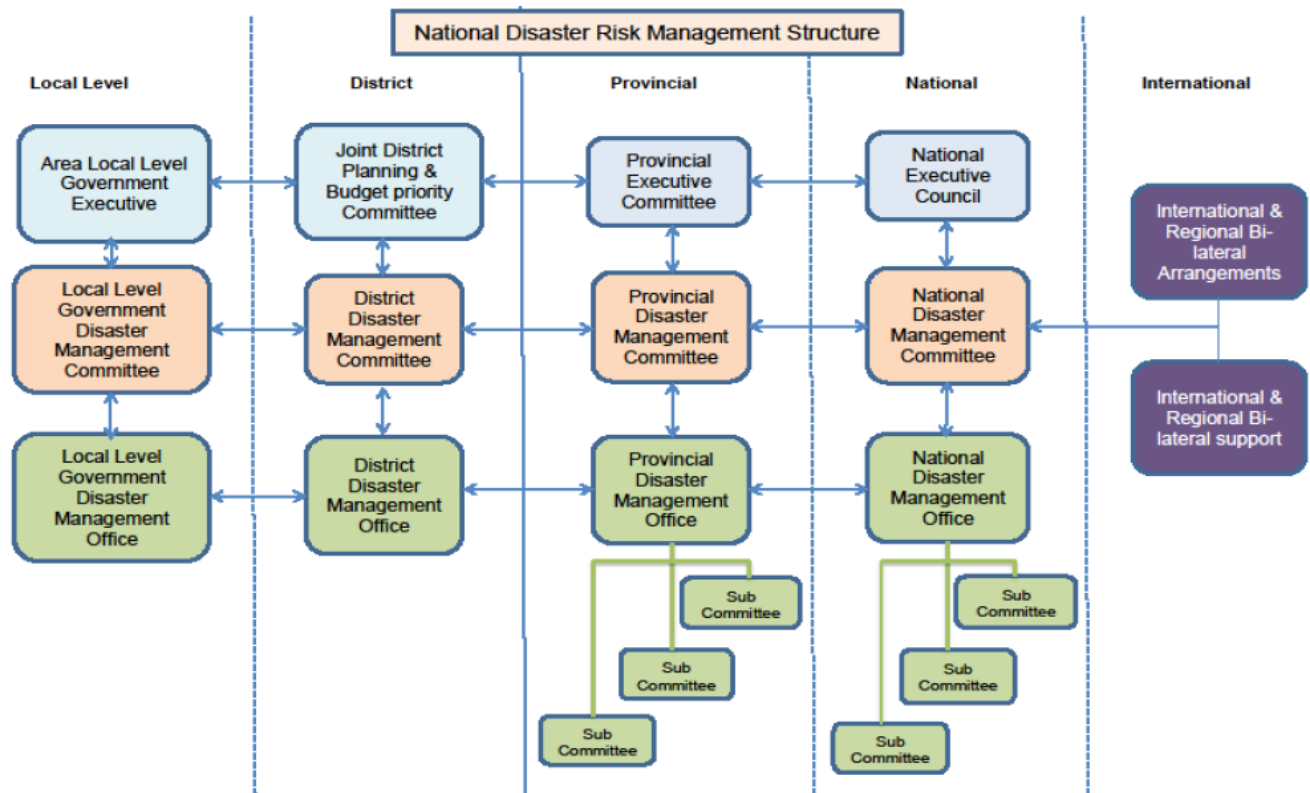


Figure 7: National Disaster Risk Management Structure



The Disaster Management Act and other related legislations endow the following powers to the Minister:

- Order investigation into the operations of DRM in certain specific cases of operations or overall management of DRM in PNG
- Table Draft Disaster Management Law, Special Reports and Annual DRM Reports in the Parliament
- Sponsor Policy Submissions on issues concerning DRM in Parliament

### National Disaster Management Committee (NDMC) (formerly National Disaster Committee)

The NDMC plays a central role in PNG DRM arrangements both in normal times and at times of crisis. It is the strategic decision making forum for DRM and is advised by the National Disaster Management Office (NDMO), which is the day-to-day focal point for DRM activities. The NDMC in turn advises the NEC on all DRM matters in PNG, but in particular, it reports on:

- DRM Planning and Budgeting arrangements for Disaster Risk Reduction (DRR) strategic programs and projects in line with the PNGDSP 2030 and Medium Term Development Plans (MTDPs)
- Major policy and legislation amendments concerning DRM
- The national state of preparedness for emergencies
- Any appeals for international assistance and
- In the case of a disaster, the circumstances and advisability of declaring a National Emergency under the Constitution or State of Disaster

The NDMC prepares on an annual basis for the Minister for presentation to the National Parliament, a report on the activities of the Committee for the previous year. This is done by NDMO and presented to the NDMC for formal sanction for onward passage to the Minister

Disaster Risk Management Structure

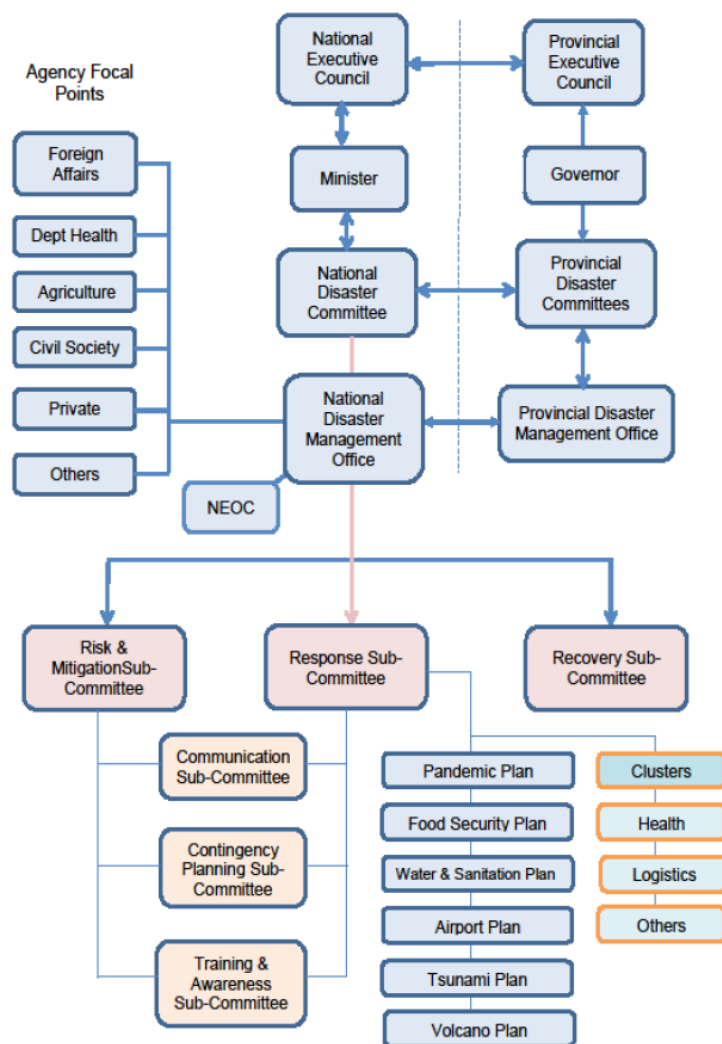


Figure 8: National Disaster Risk Management Structure (Including Sub-Committees)

responsible for disasters.

### National Disaster Management Office (NDMO)

The NDMO (formerly known as the NDC) is the day-to-day focal point at national level for all disaster management matters. The NDMO is situated within the Department of Provincial and LLG Affairs, and plays a pivotal role in ensuring the aims and objectives of national DRM strategy are achieved. The NDMO is responsible for coordinating DRM across government and non-government sectors at a national level and also in the event of international assistance being required.

NDMO responsibilities include:

- Coordinating national disaster response, humanitarian relief and recovery operations
- Evaluating preparedness at all levels of government for the purpose of responding to a disaster situation and give direction where necessary to enhance such preparedness
- Providing leadership, mentoring and support in developing a culture of risk management across all government sectors
- Providing technical support, coordination and guidance to Provinces to assist them in meeting their responsibilities under the Disaster Management Act and the NDRMP
- Developing a National Training and Awareness strategy, coordinating national training requirements and evaluating effectiveness of training on national DRM

The main NDMO is located in Port Moresby. However, there are five provincial disaster offices located in Central, Gulf, Milne Bay, Oro and Western Province. Figure 9 represents the organizational structure of the NDMO (formerly NDC).

## Provincial Disaster Management Structure

The Provinces in PNG have their own DRM structure. At provincial level the disaster management structure replicates the national structure at each tier of government, Provincial, District and Local Level. These arrangements establish clear lines of communication. In a disaster situation, this structure facilitates the escalation progressively through each level of government if necessary. Initially the LLG may act independently in managing an emergency or disaster, however, should circumstances lead to resources being overwhelmed at Local Level, assistance will be provided by the District and progressively through to the Provincial level if District level resources become exhausted. Simultaneously, coordination of the disaster would be escalated progressively as assistance is sought.

## Provincial Executive Council (PEC)

The Provinces in PNG are the primary administrative divisions of the country and are branches of the National Government and they play a key role in the national strategy of reducing disaster risk.

The Provincial Executive Councils provide oversight on strategic matters including governance arrangements in the

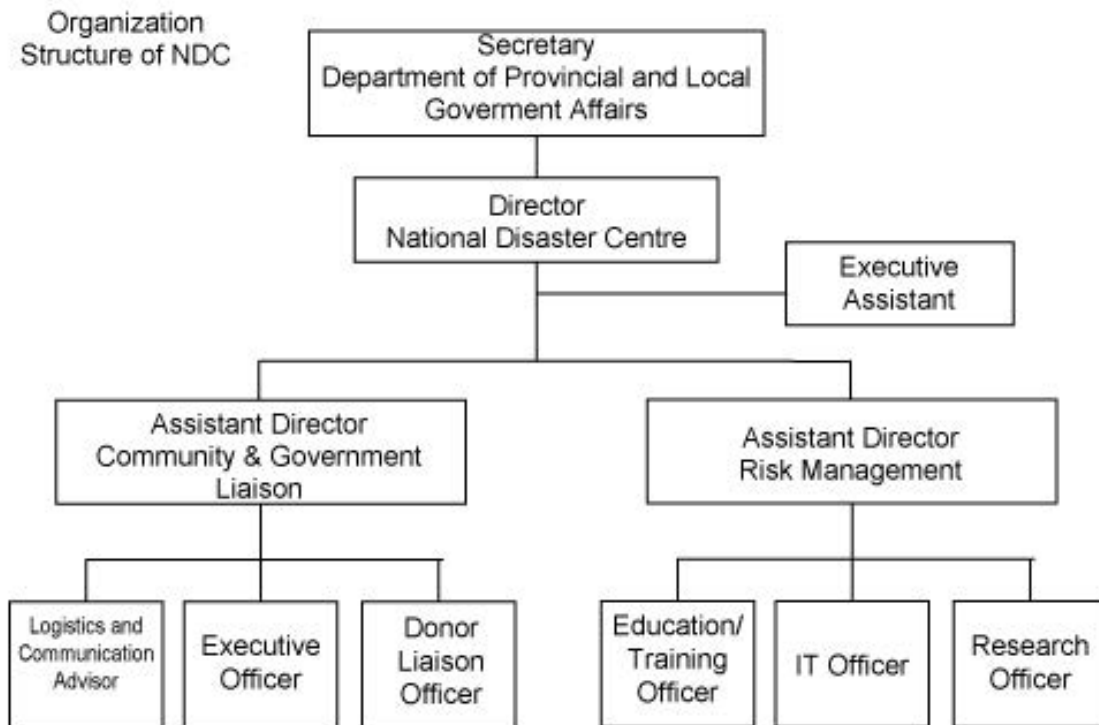


Figure 9: Organizational Structure of NDMO (NDC)

provinces as laid down by Organic Law. Each Provincial Government, through its respective Provincial Executive Councils, has ultimate responsibility for DRM throughout their province. Through the appointment of a Provincial Disaster Management Committee (PDMC) in each province, these councils develop and implement DRR and disaster management countermeasures, policies and laws.

### **Provincial Disaster Management Committee (PDMC)**

The PDMC's (formerly known as Provincial Disaster Committees) advise the Provincial Executive Council on all disaster management matters in the province.

The Committees play a central role in Provincial DRM arrangements both in normal times and at times of crisis. It is the strategic decision making forum and is advised by the Provincial Disaster Management Office, which is the day-to-day focal point for Provincial DRM activities.

The PDMC is responsible for the adequacy and suitability of Provincial DRM policy and plans. The PDMC will monitor the progress and effectiveness of DRR plans, projects and initiatives and will advise to PEC on annual DRM planning and budget requirements to enable the Province to comply with the NDRMP and the Disaster Management Act.

It is a requirement for the Provincial Disaster Management Committee to prepare all DRM reports for the province for each year for presentation by the Governor to the Provincial Assembly for information and endorsement. Reports of the same are to be presented to the Minister responsible for DRM for presentation to the NEC and Parliament as part of the report on the activities of the PDMC for the previous year.

### **Provincial Disaster Management Office (PDMO)**

At provincial level the Provincial Disaster Management Office (formerly known as Provincial Disaster Center) is the focal point for Provincial DRM beneath the Provincial Disaster Management Committee.

Each Provincial Disaster Management Committee is required to appoint a full time Provincial Disaster Management Coordinator (formerly known as Provincial Disaster Coordinator). The Provincial Disaster Management Coordinator is the head of the PDMO, which is to be established under the

Office of the Provincial Administrator. The PDMC will carry out the responsibilities of the provincial DRM focal point as well as support the functions of the Provincial Disaster Management Committee.

Each government department and/or agency is required to appoint a full or part time DRM liaison officer within its department/division or agency. Such a liaison officer works closely with the Provincial Disaster Management Office, as the focal point for DRM in the provinces. PDMO responsibilities include:

- Coordinating provincial disaster response, humanitarian relief and recovery operations
- Evaluating preparedness at provincial level for the purpose of responding to a disaster situation and give direction where necessary to enhance such preparedness
- Providing leadership, mentoring and support in developing a culture of risk management across all provincial government sectors
- Coordinating technical support, and guidance to Provinces to assist them in meeting their responsibilities under the Disaster Management Act and the NDRMP
- Supporting the National Training and Awareness strategy, by coordinating provincial training requirements and evaluating effectiveness of training

### **District and Local Level Disaster Management Committees**

Similar to the Provincial Disaster Management Committee structures, at both District and LLG the committee structure must be replicated, with similar roles and responsibilities allocated at each level.

### **National DRM Sub-Committees**

Six sub-committees have been established under the NDMC. This structure is deemed appropriate to meet the emerging needs associated with DRM. These committees will become a valuable resource to provinces as a focal point on specific areas and providing advisory services as required. They will also provide specialist advice to the NEC in times of disaster and any subsequent analysis and review. At intervals, the Chair of each sub-committee will be required to advise the NDMC on the work of the sub-committees. The NDMO is

responsible to ensure the annual programs of each sub-committee accords with the priorities of the annual DRM strategy and the outcomes of the sub-committees work will advise the annual NDMO report to the NDMC on national DRM preparedness.

## **Risk and Mitigation Sub-Committee (R&MSub/C)**

Prevention of disasters or the lessening of their severity is a key objective in DRM. DRM, is a specialized application of risk management, and is the major tool for working towards this objective, by identifying risk and then developing those activities by which to mitigate risk.

The adoption of DRM, and its underlying concept of risk, has helped communities and disaster managers move beyond the narrower concept of 'hazard' to 'risk'. Risk deals with the interaction of the exposure to hazard and the specific community vulnerability.

The R&MSub/C is tasked with the responsibility of identifying and analyzing disaster risk. This information may be used in planning and project management to ensure alignment of risk reduction activities and mainstream government business.

Effective mitigation builds on a risk assessment that is customized to the hazards, the vulnerabilities and the resilience of the relevant community or area. Because mitigation is specific to a particular context, the R&MSub/C will act as advisors to PDMO's, to assist in developing specific provincial mitigation programs.

## **Response Sub-Committee (ResSub/C)**

The ResSub/C is responsible for ensuring the adequacy of the NDRMP in setting the strategic framework for response to emergencies and disaster.

This includes all aspects of national arrangements for managing the response to disasters within, or with the potential to affect, PNG. It applies to all government sectors and agencies having roles or responsibilities in response to those emergencies and disasters, regardless of the scale of the event.

The ResSub/C is responsible for the adequacy and operational preparedness of the National Emergency Operations Center, linking with the Training and Awareness, Communications and Exercise Management Sub-Committees, to ensure all aspects of response management are being effectively managed.

## **Recovery Sub-Committee (RecSub/C)**

The role of the RecSub/C is to continually review, monitor and make recommendations regarding roles and responsibilities within the Government of PNG relating to recovery following a disaster. These roles sit within a broader DRR context as recovery commences in the disaster preparedness phase, to ensure closer integration with the national development planning process.

In the emerging DRM environment, the aim of the Sub-Committee is to ensure recovery plans seek to stabilize affected areas at the earliest opportunity, as the sooner the affected areas are stabilized, the shorter and more effective the recovery process is likely to be. It will also consider those actions that reduce threats to livelihoods and assets that will strongly impact a community's ability to recover after a disaster.

The RecSub/C is responsible for developing proficiencies at province level, enabling effective assessments to be conducted which will determine the need and capacity, so objectives and priorities may be set to facilitate early recovery. The Sub-Committee will actively encourage balanced representation within key DRM committees, which plan recovery operations, as it is essential to develop an inclusive approach to early recovery by encouraging full engagement of national and provincial authorities, civil society and the private sector in the planning, execution, and monitoring of recovery actions.<sup>84</sup>

## **Local Level Government (LLG) Disaster Management**

The PDMO may declare a *provincial or local disaster* based on select criteria:

- A specific risk affects more than one District or LLG or exceeds the capabilities of a single District or LLG to manage it effectively
- The risk results in the same type of event occurring repeatedly and at different times in more than one District or LLG with significant cumulative impacts on lives, property and the natural environment
- An event or process affects more than one District or LLG or exceeds the capabilities of a single District or LLG to manage it effectively
- Provincial or local emergency will include recurrent high- and medium-magnitude events that may require

regional support and/or intervention. These include droughts, floods, tsunamis, earthquakes, volcanic eruptions, cyclones destructive windstorms, rainstorms and communicable disease outbreaks affecting people or livestock.

An event classified and announced as a **regional or local disaster** may at any time be reclassified by the PDMC if the magnitude and severity or potential magnitude and severity of the disaster are greater or lesser than the initial assessment.

If an event is classified as a provincial or local disaster, the PDMC of the Province concerned may:

- Make arrangements for the release of any available resources of the Provincial, District or LLG authorities including stores, equipment, vehicles and facilities
- Make Provincial, District or LLG authorities available for the performance of emergency services
- Direct, regulate and oversee the evacuation to temporary shelters of all or part of the population from the emergency-stricken or threatened area if such action is necessary for the preservation of life
- Regulate and oversee traffic to, from and within the emergency-stricken or threatened area
- Regulate and oversee the movement of persons and goods to, from and within the emergency-stricken or threatened area
- Control the occupancy of premises in the disaster-stricken or threatened area

- Make provision for and control the use of temporary emergency housing
- Implement any measures necessary to maintain existing or to install temporary lines of communication to, from or within the affected area
- Issue and disseminate information required for dealing with the emergency
- Facilitate post-emergency reconstruction, rehabilitation and recovery

While an announcement of a provincial local disaster remains in force, PDMC shall also have authority to take all other steps that may be necessary to prevent escalation of the disaster, or to alleviate, contain and minimize the effects of the disaster.<sup>85</sup>

## Government

There are three levels of government: National, Provincial, and LLGs. Regional electorates correlate with the country's 22 provincial constituencies. Each province has its own assembly and administration. Table 2 reflects a summary of the PNG political landscape.<sup>86</sup>

### Constitution

The independent state of PNG is a constitutional monarchy with parliamentary democracy. The state gained independence from Australia in 1975 and adopted its own constitution on 16 September of that year, following several years of internal self-rule by a democratically elected chief minister and government. The constitution ensures freedom of speech and the press, and states that the power,

Presidential elections	Next contest: N/AP; Last contest: N/AP
Legislative elections	Next contest: 2017 July; Last contest: 23 June-17 July 2012.
Head of State	Elizabeth II (since 6 February 1952)
Governor-General	Sir Michael Ogio (since 25 December 2010)
Prime Minister	Peter O'Neill (since 6 August 2012)
Deputy Prime Minister	Leo Dion (since 6 August 2012)
Finance	James Marape (since 6 August 2012)
Finance	Patrick Pruaitch (since 19 March 2014)
Foreign Affairs	Rimbink Pato (since 6 August 2012)
Defense/Security	Fabian Pok (since 6 August 2012)

Table 2: PNG Political Landscape

authority, and jurisdiction of the people should be exercised by the national government divided into three independent branches - the executive, the legislature, and the judiciary.

The legal system is based on English common law and has adopted a number of Australian and English laws. PNG's independent judiciary comprises the Supreme Court, the National Court, and local and village courts. The Supreme Court is the final court of appeal and has an inherent power to review all judicial acts of the National Court, which in turn has the power to review any exercise of judicial authority.

PNG's politics are highly competitive with most members elected on a personal and ethnic basis within their constituencies rather than as a result of party affiliation. Members of parliament are now elected in a limited preferential voting system. There are several parties, but party allegiances are not strong. Winning candidates are usually courted in efforts to forge the majority needed to form a government, and allegiances are fluid. No single party has yet won enough seats to form a government in its own right.

PNG has a history of changes in government coalitions and leadership from within parliament during the 5-year intervals between national elections. New governments are protected by law from votes of no confidence for the first 18 months of their incumbency, and no votes of no confidence may be moved in the 12 months preceding a national election. In an effort to create greater stability by reducing incessant votes of no confidence, the Integrity of Political Parties Act was passed in 1999, forbidding members of each party in parliament from shifting loyalty to another party.

In 2003, the electoral system was changed to limited preferential voting, which has begun to encourage politicians to strike alliances and to be responsive to constituent concerns once elected. The new system was used in the 2007 national general elections. However, 53 election petitions disputing returns were registered with the courts. Allegations included bribery, intimidation, block voting, and undue influence.

On Bougainville Island, a 10-year rebellion was halted by a truce in 1997 and a permanent cease-fire was signed in April 1998. A peace agreement between the Government and ex-combatants was signed in August 2001. Under the eyes of a regional peace-monitoring force and a UN observer mission, the government and provincial leaders established an interim administration and made significant progress

toward complete surrender/destruction of weapons. A constitution was drafted in 2004 and provincial government elections were held in May 2005. The elections were deemed to be free and fair by international observers. Joseph Kabui was elected to serve as the first president of the Autonomous Bougainville Government.<sup>87</sup>

## Disaster Management Organizations in PNG

The following lists Disaster Management Organizations in PNG:

### **Rabaul Volcanological Observatory (RVO)**

The RVO established after the 1937 eruption at Rabaul, is responsible for monitoring the activity of active and dormant volcanoes spread along three volcanic arcs throughout PNG. More than 150 eruptions have been recorded in the last 200 years.<sup>88</sup>

### **Port Moresby Geophysical Observatory (PMGO)**

The PMGO was established in 1957 and has 16 seismograph stations in towns and districts including Port Moresby, Finschhafen, Kavieng, Kimbe, Kuta, Madang, Nadzab, Namatanai, Ok Tedi, Paiam, Rabaul, Wau and Wewak. PMGO has close links with other similar institutions, including the National Earthquake Information Service (NEIS) of the U.S. Geological Survey, Geoscience Australia, the Harvard University Seismological Center, the Comprehensive Nuclear Test-Ban Treaty Organization and the Pacific Tsunami Warning Center.<sup>89</sup>

### **PNG Department of Environment and Conservation (DEC)**

The DEC was established in 1985 and vested with the powers to protect the environmental values of air, water, soil and biodiversity and the sustainable use of natural resources as mandated by the Fourth Goal of the National Constitution: "PNG's natural resources and environment to be conserved and used for the collective benefit of all and are replenished for the benefit of future generations."<sup>90</sup>

### **PNG Meteorological Service**

The PNG National Weather Service was developed in 1975 and consists of three internal departments. These departments include Facilities, Observation and Support Services; Climate and Special Services; and Forecasting

and Warning. The PNG Meteorological Service provides regional and national meteorological and climatological research, climatological information and climate prediction and forecasting tools.<sup>91</sup>

## Community Based Disaster Risk Management in PNG

Disaster Management Offices are the focal point of DRM activities at District and LLG and provide the front line of disaster response in the event of an incident. Disaster management Committees are established at the district and local level and consist of the following:

### *District DRM Committees*

Joint District Planning & Budget Priority Committee

District Disaster Committee

District Disaster Management Office

### **LLG DRM Committees**

Area LLG Executive

LLG Disaster Committee<sup>92</sup>

## International Agencies in PNG

### **UNDP**

UN House, Deloitte Tower, Level 14  
Douglas Street  
Port Moresby, N.C.D.  
PNG  
T: +675 321 2877  
F: +675 321 1224  
E: registry.pg@undp.org  
W: <http://www.pg.undp.org/>

UNDP works to improve the state's ability to deliver public services to its people, and in doing so, plays a vital role in helping to achieve the MDGs, raise the standard of living and protect human rights for all.

### **United Nations Children's Fund (UNICEF)**

Level 14 Deloitte Tower  
Douglas Street  
Port Moresby, NCD

121 PNG  
T: +675 321 3000  
F: +675 321 1372  
E: [portmoresby@unicef.org](mailto:portmoresby@unicef.org)  
W: <http://www.unicef.org/png/>

The UNICEF PNG country office works in close partnership with the Government of PNG, NGOs, the private sector, faith-based groups, youth groups, local communities and vulnerable children to ensure the realization of the rights of every child. UNICEF works to ensure that children enjoy the rights guaranteed to them in the Convention on the Rights of the Child, ratified by the Government in 1993.

### **International Federation of Red Cross and Red Crescent Societies (IFRC)**

P.O. Box 6545 Boroko NCD  
Port Moresby  
Boroko  
T: 675-325-7016  
F: 675-325-9714  
W: <http://www.ifrc.org><sup>93</sup>

The IFRC is the world's largest humanitarian and development network, with millions of volunteers in 189 member National Societies.

IFRC is guided by Strategy 2020 – their collective plan of action to tackle the major humanitarian and development challenges of the present decade. They focus their work in three areas: 1) disaster response and recovery, 2) development and 3) promoting social inclusion and peace.

### **International Organization for Migration (IOM)**

Level 3, Pacific MMI Bldg.  
Champion Parade, Port Moresby  
NCD PNG  
PO Box 1876 Port Moresby, NCD, PNG  
T: 675- 321-3655  
F: 675-321-3628  
E: [IOMPapuaNewGuinea@iom.int](mailto:IOMPapuaNewGuinea@iom.int)  
W: <http://png.iom.int/>

IOM is assisting PNG in enhancing its preparedness and response capacity to migration crises, as well as facilitating climate change adaptation and linking disaster management to development. In line with its mandate, IOM's Emergencies and Disaster Management program in PNG aims to reduce the effects of natural and man-made disasters on local communities

through three pillars of community resilience, coordination and capacity building.

## World Health Organization (WHO)

4th Floor, AOPI Center  
Waigani Drive  
Port Moresby, PNG  
T: 675-325-7827  
F: 675-325-0568  
E: who.png@wpro.who.int  
W: <http://www.wpro.who.int/countries/png/en/>

WHO's primary role is to direct and coordinate international health within the UN. Their main areas of work are health systems, promoting health through the life-course, non-communicable diseases, communicable diseases, corporate services and preparedness, surveillance and response.

## U.S. Government Agencies in PNG

### U.S. Embassy

Embassy of the U.S. of America  
Located on Douglas Street in downtown Port Moresby  
P.O. Box 1492, PNG  
T: +675 321-0832 or +675 321-0289  
F: (675) 321-3423  
E: [ConsularPortMoresby@state.gov](mailto:ConsularPortMoresby@state.gov)  
W: <http://portmoresby.usembassy.gov><sup>94</sup>

### U.S. Agency for International Development (USAID) Pacific Islands Regional Office

U.S. Embassy, Douglas Street  
P. O Box 1492, Port Moresby  
NCD PNG  
T: 675-321-1455, ext. 2113  
F: 675-321-3423  
E: [infopacificislands@usaid.gov](mailto:infopacificislands@usaid.gov)  
W: <https://www.usaid.gov/pacific-islands><sup>95</sup>

## Participation in International Organizations

PNG and the U.S. belong to a number of the same international organizations, including the World Bank, the Pacific Community, the Secretariat of the Pacific Regional Environment Program, ADB, Alliance of Small Island States, Asia-Pacific Economic Cooperation (APEC) forum, Association of Southeast Asian Nations Regional Forum (observer), CP, Extractive

Industries Transparencies Initiative (candidate country), Food and Agriculture Organization, G-77, International Atomic Energy Agency, International Bank for Reconstruction and Development, International Civil Aviation Organization (ICAO), International Committee for Radionuclide Technology International Development Association, International Fund for Agricultural Development, International Finance Corporation, IFRC, International Hydrographic Organization, International Labor Organization, International Monetary Fund, International Maritime Organization, Interpol, Inter Oil Corporation, IOM, Inter-parliamentary Union, International Organization for Standardization (correspondent), International Telecommunications Satellite Organization, International Telecommunications Union, Multilateral Investment Guarantee Agency, Non-Aligned Movement, Organization for the Prohibition of Chemical Weapons, Sparteca, United Nations Conference on Trade and Development, United Nations Education, Scientific, and Cultural Organization, United Nations Industrial Development Organization, Universal Postal Union, World Customs Organization, World Federal Trade Unions NGOs, WHO, World Intellectual Property Organization, World Meteorological Organization and the World Trade Organization.<sup>96</sup> PNG also belongs to the Pacific Islands Forum, of which the U.S. is a Dialogue Partner.<sup>97</sup>

## Foreign Disaster Relief and Emergency Response

### Disaster Relief Program Description

Pursuant to 10 U.S.C. 404, the DOD can assist foreign countries to respond to man-made or natural disaster situations when necessary to prevent loss of lives. After the local U.S. Embassy has officially declared a disaster, the Office of Foreign Disaster Assistance (OFDA) assesses the needs and priorities of the country and may request DOD assistance. The assistance may be in the form of transportation, excess property items, Humanitarian Daily Rations (HDR), or some other commodity. The Overseas Humanitarian, Disaster, and Civic Aid (OHDACA) appropriation or USAID may fund transportation of disaster relief.



## Foreign Disaster Relief and Emergency Response Program Process

When a foreign country suffers a disaster, it may request assistance through the U.S. Embassy; DoS and OFDA validate the request. If deemed necessary, the DoS requests disaster relief assistance from the DOD. Assistant Secretary of Defense (Special Operations and Low Intensity Conflict) approves the request and forwards it to Defense Security Cooperation Agency (DSCA) for action. DSCA (Programs Directorate) identifies the required supplies (HDRs, Excess Property, etc.) and works directly with the Joint Staff Logistics Directorate (J4) to provide transportation in support of disaster relief efforts.

## Congressional Notification for Foreign Disaster Assistance

Not later than 48 hours after the commencement of disaster assistance activities, the President is required by law (10 U.S.C. 404) to transmit a report to Congress containing notification of the assistance (proposed or provided) and a description of the following as is available: the manmade or natural disaster for which disaster assistance is necessary; the threat to human lives presented by the disaster; the U.S. military personnel and material resources involved; the disaster assistance provided by other nations or public or private relief organizations; and the anticipated duration of the disaster assistance activities.<sup>98</sup>

## Laws, Policies, and Plans on Disaster Management

The current Disaster Management Act (plan) was promulgated in 1987 and provided legislative and regulatory provisions for disaster management in the country.<sup>99</sup> It is supported by the 2012 NDRMP.<sup>100</sup> However, the Act does not reflect the PNG government's recent shift to dealing with disasters by moving away from "emergency response only" to integrating prevention and preparedness in their disaster management planning. Historically, there was not much awareness with regard to DM regulatory and legislative framework at different levels especially at the sub-provincial and local level. The 2012 NDRMP articulates DRM architecture of the country and provides guidance for DRM intervention at all levels. However, implementation has been slow.<sup>101</sup>

The 2012 PNG NDRMP provides an

overarching framework to all sectors on adopting a DRM approach based on a whole of government strategy aligning with the principles of the Pacific DRR and Disaster Management Framework for Action 2005-2015.<sup>102</sup>

**PNG Vision 2050** encompasses both short and long-term development strategies and aims, among other things, at attaining sustainable development through DRR, DRM and addressing the issue of Climate change. PNG completed its review of the DRR Legislation in 2014 and is presently awaiting parliament endorsement.

**The National Disaster Mitigation Policy (2010)** provides a mechanism for shaping disaster mitigation and vulnerability reduction efforts as well as emergency response and reconstruction. It also provides a basis upon which programs can be coordinated and integrated.<sup>104</sup>

**The National Climate Compatible Development Management Policy (2014)** is PNG's blueprint to achieve their vision in building a climate resilient and carbon-neutral pathway through sustainable economic development.<sup>105</sup>

**The PNG Development Strategic Plan (PGNDSP) 2010-2030** sets forth new directions and parameters for development planning in the country. The PNGDSP embodies the principles of the Constitution of PNG and reinforces the fundamental directives required to advance PNG into a middle-income country by 2030. The document highlights risk management strategies in response to the threat of natural disasters. This includes:<sup>106</sup>

- Implement and enforce building standards for the construction of infrastructure in disaster prone areas
- Promoting awareness of the risk of disasters and how best to respond when disasters threaten, so that communities are well prepared
- Establishing an effective emergency line operating 24 hours a day, 7 days a week throughout PNG for the timely reporting of emergencies
- Improving the capacity of monitoring and evaluation mechanisms to predict geophysical threats in order to raise the scope for early warning
- Creating a policy and legal framework for the rapid deployment of defense forces in emergencies

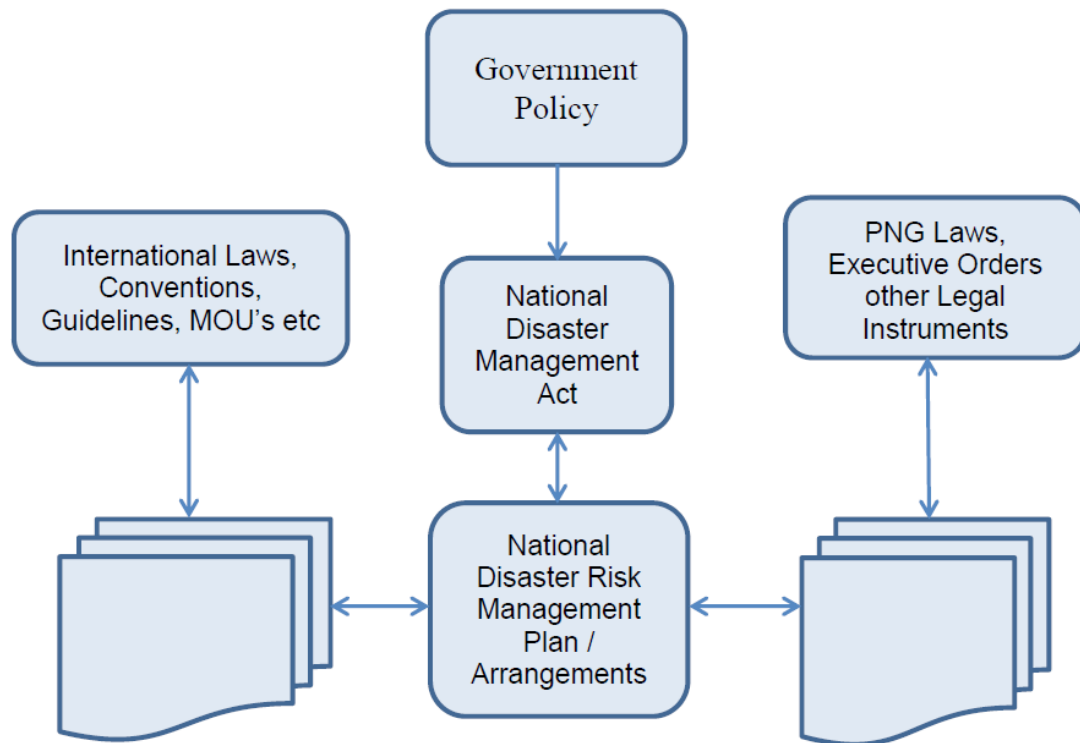


Figure 10: Framework for National Risk Management Plans

- Ensuring that disaster management and operation agencies are well coordinated and adequately resourced to ensure a timely and appropriate response in the event of natural disasters
- Increasing civil-military cooperation to instill the confidence and coordination required for working together in disaster situations. This will include joint exercises and training in disaster management and disaster response
- Provide adequate training to disaster management agencies
- Train and work with the UN, the U.S., Australia and other nation's disaster relief teams in order to gain experience

The PNG Medium Term Development Plan (MTDP) is a 5 year rolling development plan (i.e. 2006-2010, 2011-2015, etc.) providing a clear, accountable plan for investment. The MTDP is aimed at developing the PNG Development Strategic Plan 2010-2030 into tangible results. The rolling plans also take into account the lessons learned and experience from the previous medium term development strategies. Additionally, the MTDP outlines the specific key players who will be responsible for achieving key

deliverables. It strengthens the national governments ability to monitor and evaluate investments over the coming years during the life of PNGDSP 2010-2030.<sup>107</sup>

The Legal & Regulatory Framework advises the development of the Plans/Arrangements, which incorporate both national and international references. The manner in which they are consolidated is illustrated in Figure 10.

The Framework includes all organizations and institutions with a recognized role to play in DRM. It also includes the mechanism for coordination, with a focus on leadership and effectiveness. In this manner, requirements for human resources, funding, equipment and supplies, will be included within the review process.<sup>108</sup>

## Education and Training

In November 2012, PNG's NDC signed a Memorandum of Understanding (MoU) on 'Capacity Building Partnership 2012-2015' with the University of PNG to support the University with K50,000 (U.S. \$16,120) annually. The fund will be used to help the University develop training materials on foundation courses integrated with DRM courses and also to develop

a syllabus for a Diploma and Degree Program in 2015 and beyond.

The Comprehensive Hazard Assessment and Risk Management program was accepted and adapted by the University of PNG to be taught as a subject to final year Environmental Science and Geography students in 2012. Many students from the faculty have been taught the fundamentals of DRM as preparatory to this program. This tool can be used for mainstreaming DRR into ongoing national development planning processes. It aims at addressing all hazards including natural and human-induced, and also to help identify measures that can be implemented in all phases of disaster management (prevention, preparedness, response, and recovery). The emphasis is on bringing a wide range of stakeholders together for risk reduction to enhance effectiveness of the combined efforts.<sup>109</sup>

As an example of professional training, the National Capital District Commission (NCDC) Disaster Coordinator attended a 5 week Disaster Awareness Training Program in Japan Jan-Feb 2015.<sup>110</sup>

## Disaster Management Communications

Communication remains one of the major challenges in PNG. About 90 percent of the population lives in rural areas that lack adequate communication facilities. Communication is minimal, and limited to media broadcast and telephone. Many areas are still lacking good telecommunications and broadcast services.<sup>111</sup>

### Early Warning Systems

The government has a disaster early warning system in place and provides alerts to provinces. However, the provinces do not have active communication plans and facilities to disseminate alerts among the most vulnerable communities. Local level preparedness to act in sufficient time and effective manner to reduce losses is minimal. Although the media is involved in disaster early warning dissemination, the reach of media especially transistor radio and television is limited.

The NDMO of PNG is attempting to improve its disaster management arrangements by strengthening multi-hazard early warning systems that provides accurate, timely warnings to the community. This will be achieved through strengthening the linkage of the NDMO with other key technical agencies including National

Weather Service, Port Moresby Geophysical Observatory, and Rabaul Volcanic Observatory. Together these key agencies will determine threat levels that guide the development of early warning messages for dissemination to the communities through the NDMO and Provincial disaster management arrangements.

The NDMO has started implementing a plan to upgrade the Very High Frequency and High Frequency radio network. The Government is also assessing the feasibility of using Short Message Service as a means to reach the remote communities. The provinces have been advised to develop communication plans. The NDMO has also taken up steps to increase public awareness in order to ready the community to respond promptly and appropriately to Early Warning messages.<sup>112</sup>

### Responsible Agencies for Flood and Storm Warning

At present, there are no public disaster information systems in place. However, the Government has established a toll free line for disaster inquiries. The Government use TV, Radio and newspaper to broadcast disaster information and manages a website on disasters.<sup>113</sup>

The NDMO role is to coordinate the management of disasters and emergencies in the country. The specific respective Provincial Authorities in whose province the hazard or emergency takes place perform the actual duties of responses to emergencies or disasters. Both the NDMO and the Provincial Disaster Management Committees have the primary responsibility for implementing and coordinating the disaster counter measure activities before, during and after disaster and emergency situations.<sup>114</sup>

The NDMO has established partnerships with the Joint Typhoon Warning Center and the Pacific Tsunami Warning Center, both located in Hawaii, USA.<sup>115</sup>

## Military Role in Disaster Relief

The PNGDF has various responsibilities. Their primary functions under Section 202 of their Constitution are as follows:

- Defend PNG and its territory
- Assist in the fulfillment of PNG's international obligations

	Total Strength	Army	Airforce	Navy
Active Personnel	2,900	2,400	200	300
Reserves	0	0	0	0

Table 3: PNG Defense Force Manpower

	2014	2013	2012	2011
Constant 2014 U.S.\$ million	113.1	106.4	103.4	85.9
%GDP	0.7	0.7	0.7	0.6

Table 4: PNG Defense Appropriations 2011-2014

- Provide assistance to the civil authorities in meeting civil disasters, the restoration of public order and security and meeting national emergencies
- Contribute to national development tasks

Their core services include:

- Border Security
- Maritime Surveillance, Patrol and Response
- Public Order and Security
- Nation-Building
- Disaster Relief
- Fulfillment of International Obligations

The PNGDF is able to provide an arrangement of support options to the government in the event of a national disaster. Their ability to provide this support is restricted to existing military skill sets and in-service equipment. Disaster relief activities require appropriate national and provincial government legal and resource coordination mechanisms. An example is the 2005 Manam disaster in which the PNGDF supported the restoration of water and sanitation services and provided limited Navy Patrol boat transport services to displaced residents.<sup>116</sup>

The role of the PNGDF is undergoing significant change as the force tries to become more relevant, effective and professional. The role of the PNGDF will be widened to allow for greater participation in international operations. PNG's hosting of international events (PNG will host the APEC summit in 2018) has necessitated greater focus on recruitment and training of personnel. The PNGDF consists of a joint force of Land, Air and Maritime Operations Elements.<sup>117</sup> Table 3 shows PNG's Defense Force strength.

Table 4 shows the monetary appropriations spent on Defense from 2011-2014.<sup>119</sup>

## Foreign Assistance/International Partnering

Below is a Development Partners' List of Activity. Net flows to PNG currently average slightly over U.S.\$910M annually, close to 10 percent of GDP or \$130 per capita.<sup>120</sup>

- Australia is PNG's largest partner, providing annual assistance close to U.S.\$500M. The framework for Australian cooperation is set out in the Partnership for Development, focused strategically on four pillars: primary health, education, transport infrastructure, and law and justice. Australia's whole-of-government program includes support to public finance management and to improved national statistics.
- The ADB has had a long-term engagement in PNG. The ADB Country Operations Business Plan for 2013-2015 outlines a program focusing on infrastructure (transport, power, water/sanitation), state enterprise reform, trade and Production Finance Market, microfinance, and health. The ADB allocation is U.S.\$168.9M and Ordinary Capital Resources total U.S.\$205M, complemented by U.S.\$3.25M in preparatory technical assistance. In March 2015, ADB approved the partnership strategy with PNG for 2016-2020. ADB interventions support inclusive growth by creating livelihood opportunities and improving access to basic services, especially in rural areas

where 87 percent of the population lives. As of 31 December 2014, the active funding portfolio totaled \$1.01 billion.






- The European Commission's country strategy for the period of 2008 to 2013 sets out a framework for engagement with PNG under the 10th European Development Fund. A maximum of €130M (U.S.\$157M) was available during this period, with a focus on rural economic development and human resources development (basic education and vocational training).
- Japan's assistance varies from year to year, totaling U.S.\$131M in 2009. PNG benefits from grants, people-to-people exchanges and scholarships, and the program covers three priority areas: infrastructure and investment environment; education and health human resources; and environmental conservation and climate change mitigation/adaptation.
- New Zealand, under the Joint Commitment for Development with PNG, provides approximately NZ\$35M (U.S.\$28M) per annum, with a focus on agriculture, electrification, basic health, scholarships and training, and a safer and more stable Bougainville. Oxfam New Zealand has worked in PNG for 20 years, operating in the Highlands, Bougainville, Port Moresby and Sepik regions. Oxfam in PNG assists people to diversify food crops, develop small animal husbandry and fish farming, and generate smallholder agro-forestry opportunities across some of the most remote areas of PNG.
- China is an important partner with an active program of grant aid, concessional loans, and personnel training for PNG nationals covering agriculture, engineering construction, industry and telecommunication, sports and education, and infrastructure.
- The U.S. is increasing its support for PNG, both through bilateral and regional programs; two primary areas of support are climate change adaptation and community resilience, and HIV/ AIDs, with a supplementary focus on strengthening governance and reducing gender-based violence. Support averages U.S.\$8-10M per year.
- The UN system is active, working strategically as a "Delivering as One" self-

starter under a multi-agency 2012-2015. UN Development Assistance Framework (including 15 UN agencies) covering four clusters: governance for equitable development; access to basic services; social justice, protection and gender equality; and environment and DRM, within a resource envelope of U.S.\$190M.


- The International Fund for Agricultural Development (IFAD) provides U.S.\$14M equivalent in co-financing for the World Bank Productive Partnerships in Agriculture Project.
- Churches and nongovernmental groups play an especially important role in providing services in rural parts of PNG, particularly in primary and curative health, education (including early childhood readiness for school), and social protection.


PNG's international relations are largely cordial. There is a growing relationship with China primarily thanks to PNG's resource wealth. This will become increasingly important as trade between the two countries flourishes. PNG is also seeking higher-profile relations with Japan, as one of the government's financial backers for its LNG projects and a potential customer. Economic advisers are to be seconded into the finance ministry for resource development.<sup>123</sup>


The Global Facility for Disaster Reduction and Recovery (GFDRR)'s bilateral engagement in Papua New Guinea started in 2012. As a first step, GFDRR started working with the Office of Climate Change and Development and the Department of Agriculture to build and improve upon the resilience of the country's agricultural sector. To date, a pre-feasibility study for agricultural risk insurance has been completed with the help of the Policy and Regulatory Window of the Global Index Insurance Facility managed by GFDRR and the World Bank. In 2012, GFDRR also supported the development of "Acting Today for Tomorrow: A Policy and Practice Note for Climate- and Disaster-Resilient Development in the Pacific Islands Region 5" which informs the dialogue and engagement of the World Bank in the Pacific region. Complimentary technical assistance, funded by the World Bank's Policy and Human Resources Development, through Japan, is supporting the Department of Works to mainstream disaster risk management in the transport sector. GFDRR has


Project	Description
<b>Disaster Risk Management and Climate Adaptation Program (Agriculture Sector)</b>   US\$1,873,200   Start date: 2011 (Ongoing)	Increases disaster and climate resilience in the agricultural sector. Activities include: (i) commodity or crop-specific technical studies that analyze the impacts of climate change and disaster risks and, in turn, offer specific policy recommendations and guidelines; and (ii) a pre-feasibility study for agricultural risk insurance for smallholder farmers.
<b>Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI)*</b>   Start date: 2008 (Ongoing)	Provides 15 Pacific countries with a disaster and climate risk information. Activities include: (i) development of a comprehensive hazard, exposure and vulnerability platform to inform urban and development planning, building codes, rapid disaster impact estimation and risk financing decisions.
<b>Disaster Economic Assessment in the Pacific*</b>  Start date: 2012 (Ongoing)	Increases the accuracy of damage, loss and needs assessments. Activities include: (i) establishment of a regional pool of personnel trained in the application of Damage and Loss Assessment (DaLA) to inform Post-Disaster Needs Assessment (PDNA).

\*Multi-country project

 Pillar 1  
Risk Identification

 Pillar 2  
Risk Reduction

 Pillar 3  
Preparedness

 Pillar 4  
Financial Protection


 Pillar 5  
Resilient Reconstruction

Table 5: Global Facility for Disaster Reduction and Recovery Projects in PNG

several projects awarded for 2007-2015 (Table 5). GFDRR key partners and stakeholders (AusAID, SPC/SOPAC, UNDP, OCCD, DAL, World Bank, Australia’s DFAT, ADB, NSET, CECI) are also listed in Table 6.<sup>124</sup>

### Australia’s Assistance to PNG

In order for multiple Australian Government departments and agencies to engage effectively in complex environments on the international arena, Australia uses a comprehensive whole of government approach to coordinate, synchronize and maximize its actions. The Australia bilateral (government to government) approach is integrated across multiple departments (DFAT, AFP, Finance, Treasury, Electoral Commission, Customs and Attorney General as well as Defense).

The role of DFAT, as the lead department, is the coordinated engagement and communications between AUS and PNG. Within its portfolio, DFAT encompasses many agencies and functions such as aid, Austrade, ASIS and others and is responsible for the overall coordination of Australian engagement.

PNG and Australia share a close and longstanding Defense relationship. Defense cooperation between the two countries has grown significantly in recent years, based on recognition that security is enhanced by the

effectiveness of the two nations successfully working together. This stems from the 55 years it spent as a trust territory under Australian administration until independence in 1975.

In 2008, Australia and PNG signed the PNG-Australia Partnership for Development. The five main aims of this document are to improve transport infrastructure, make progress towards universal basic education, improve health care, strengthens public services, and improve the collection of statistical data. The two countries are also developing the Strongim Gavman Program (SGP), which seeks, according to DFAT, "to progress reform in the areas of economic and public sector governance, border management and transport safety and security, and law and justice". This program currently involves approximately 46 Australian personnel.

The boundaries for the relationship between the two countries are set by the Joint Declaration of Principles, in force since 1987 and revised in 1992. Under this declaration, are specific arrangements including a Trade and Commercial Relations Agreement, an Agreement for the Promotion and Protection of Investment, the Double Taxation Agreement, a Treaty on Development Co-operation, the Agreed Statement on Security Co-operation, and the Torres Strait Treaty. A ministerial forum is held annually.<sup>125</sup>

## GFDRR KEY PARTNERS

<b>AusAID</b>	The Australian Agency for International Development (AusAID) provides support from 2010-2014 in the following five areas: (i) technical support for the National Disaster Center and province of West New Britain; (ii) funding to United Nations Office for the Coordination of Humanitarian Affairs (OCHA); (iii) support for Papua New Guinea's technical agencies through Geoscience Australia; (iv) strengthening community and non-governmental DRM capacity in five priority provinces; and (v) building the capacity of AusAID's Papua New Guinea office to respond to emergencies. AusAID also supports the Pacific Climate Change Science and Adaptation Planning Program, which seeks to develop community resilience to the impact of extreme weather (e.g. droughts and floods) through the development of future scenarios for climate change and country-specific climate projections. These are based upon the analysis of climate trends and natural variability, as well as the downscaling of global circulation models.
<b>SPC/SOPAC</b>	The Secretariat of the Pacific Community Applied Geoscience and Technology Division (SPC/SOPAC) is implementing the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI). The initiative provides 14 Pacific Island Countries and Timor-Leste with a disaster and climate risk information platform, including comprehensive hazard, exposure, and vulnerability information (i.e. assets, probabilistic analyses of risk for buildings, major infrastructure vegetation cover, and topography). This information is used to inform development planning, building codes, rapid disaster impact estimation and risk financing decisions.
<b>UNDP</b>	The United Nations Development Programme (UNDP) manages the Adaptation Fund, which provides support to the project Enhancing Adaptive Capacity of Communities to Climate Change-Related Floods. The project will: (i) enhance the Government's and civil society's capacity to implement environmental adaptation measures aimed at improving community livelihoods in order to reduce the vulnerability of women, girls, men and boys to disaster risk and (ii) develop a framework for climate change policy that public institutions, private sector and local communities may use to implement proper mitigation and adaptation measures to achieve climate resilient and environmentally sustainable economic growth.
<b>World Bank</b>	The following projects are part of the World Bank's efforts to mainstream DRM: <ul style="list-style-type: none"> <li>■ <b>Building a More Disaster and Climate Resilient Transport Sector Project:</b> Improves the resilience of the country to the impact of natural disasters and climate change in the transport sector through building capacity for hazard risk assessments.</li> </ul>

## GFDRR STAKEHOLDERS

<b>National Services</b>	Office of Climate Change and Development (OCCD), Department of Agriculture (DAL), Department of Works
<b>International Organizations</b>	World Bank, UNDP, Australia's Department of Foreign Affairs and Trade
<b>Regional Organizations</b>	Asian Development Bank (ADB), Secretariat of the Pacific Community Applied Geoscience and Technology Division (SPC/SOPAC)
<b>Non-governmental Organizations and Civil Society Organizations</b>	National Society for Earthquake Technology-Nepal (NSET), Centre for International Studies and Cooperation (CECI)

Table 6: Global Facility for Disaster Reduction and Recovery Key Partners and Stakeholders

Two-way merchandise trade was valued by Australia's Department of Foreign Affairs and Trade (DFAT) at AUD5.98 billion in 2011, making Australia PNG's largest trading partner and PNG Australia's 16th largest. Australia remains the major aid donor to PNG. According to figures from DFAT, total official development assistance will amount to some AUD493.2 million over 2012-2013, with AusAID, the Australian government aid agency, contributing AUD474.5 million of this total. According to AusAID, this funding will be targeted at education, health and HIV, law and justice, and transport.<sup>126</sup>

The Australian Defense Organization's Defense Cooperation Program (DCP) helps PNG develop an increasingly professional, capable and sustainable PNGDF, to allow the two forces to work effectively together in regional stabilization, peacekeeping, disaster relief operations and supporting major national projects. The DCP also helps develop a professional and capable PNG DOD that is able to support the PNGDF effectively.

The Australian Defense Force (ADF) recently assisted with the conduct of the 2012 PNG national elections through Operation CATHEDRAL. This logistics support mission helped the PNG Electoral Commission with the transport of officials and equipment across PNG. The ADF also move the PNGDF and RPNGC in support of PNG election security efforts. At the height of the deployment, there were approximately 250 Australian and New Zealand Defense Forces personnel in PNG.<sup>127</sup>

### ***U.S. Assistance to PNG***

U.S. bilateral and multilateral assistance funds public health programs in PNG including the President's Emergency Plan for AIDS Relief, TB, Malaria and neglected tropical diseases. The aim is to advance the country's public health system.

The USAID's Pacific Islands Regional Office and the U.S. Centers for Disease Control and Prevention Country Office are both located in PNG. The U.S. builds the capacity and resilience of PNG to adapt to climate change through regional assistance that covers 12 Pacific Island countries. U.S. assistance supports PNG's efforts to protect biodiversity; it contributes to the Coral Triangle Initiative to preserve coral reefs, fisheries, and food security in six countries including PNG. The U.S. also supports efforts to improve the country's disaster preparedness and

response.

In 2013 the U.S. provided funding for relief efforts in a number of PNG's provinces that had suffered from natural disasters caused by continuous heavy rain. U.S. military forces, through Pacific Command in Honolulu, Hawaii, provide training to the PNGDF and have held small-scale joint training and engineering exercises. The U.S. provides police and other education and training courses to national security officials. U.S. companies based in PNG have also funded a range of health and development projects.

The U.S. Government's Energy Governance and Capacity Initiative is expanding PNG's ability to manage its resource flows effectively and in conformity with international best practices. The ExxonMobil-led construction of a LNG pipeline is expected to increase revenue streams for the government. PNG is a party to the U.S. Pacific Islands Multilateral Tuna Fisheries Treaty, which provides access for U.S. fishing vessels in exchange for a license fee from the U.S. industry. Under a separate Economic Assistance Agreement associated with the Treaty, the U.S. Government currently provides \$21 million per year to Pacific Island parties.<sup>128</sup>





# PAPUA NEW GUINEA

## Infrastructure

Disaster Management Reference Handbook | 2016

# Infrastructure

PNG's economy remains dominated by two sectors: the agricultural, forestry and fishing sector, which engages most of the labor force; and the mineral and energy extraction sector, which accounts for the majority of export earnings and, from 2015, the country's GDP.

In 2014, PNG completed a large LNG plant, which is expected to provide a significant boost to PNG's overall GDP. While exports from this project will eventually provide revenue to the state, they are unlikely to be felt in the short term. To diversify PNG's asset base and increase employment, investment is needed to strengthen capacity in institutions and in physical infrastructure. Electricity, telecommunications, road and other transport infrastructure continue to be a critical need to enable private sector-led growth.<sup>129</sup>

## Airports

Port Moresby's Jackson International Airport is the gateway to PNG and is located 8 kilometers (5 miles) outside Port Moresby.<sup>130</sup> It is the largest and busiest airport in PNG. The two main airlines servicing PNG are Air Niugini and Airlines PNG. Port Moresby is the main airline hub for both airlines.<sup>131</sup>

### Air Niugini

The national airline, Air Niugini, was formed in 1973 by the government, Qantas, Ansett, and Trans Australia Airlines. In 1981, the airline became owned by the government. As of December 2012, it operates scheduled services to Brisbane (Australia), Cairns (Australia), Hong Kong (China), Honiara (Solomon Islands), Kuala Lumpur (Malaysia), Cebu and Manila (the Philippines), Nadi (Fiji), Singapore, Sydney (Australia) and Tokyo (Japan), as well as to over 20 domestic airports. In October 2010, the airline took delivery of a second Bombardier Q400 turboprop aircraft, having received its first such aircraft in July 2010.

### Airlines PNG

Airlines PNG (originally known

as MBA) operates an international and domestic schedule using a fleet of 20 turboprop aircraft consisting primarily of Bombardier Dash 8s and Twin Otters. It operates passenger services between Port Moresby and Cairns, domestic services within PNG, and corporate charters between Cairns and Port Moresby to service oil and natural gas field workers.<sup>132</sup> Table 7 lists airports in PNG.<sup>133</sup>

## Seaports

Due to the remote nature of most of PNG, much of the travel is conducted by sea. Economic activity is also generally constrained by a lack of transport infrastructure on New Guinea and the many other islands of PNG. About 60 percent of PNG's population is reliant on water transport for the delivery of goods and services. This has resulted in a large number of ports and wharfs being regularly used throughout PNG. The ports of Port Moresby, Lae (Photo 5)<sup>134</sup> and Kimbe account for about 80 percent of PNG's sea cargo.

PNG ports, the state-run agency in charge of the country's ports, is currently investing in wharf cranes to increase traffic and is also working to boost container movements at both ports. The agency is also considering the development of another two ports at Vanimo and Wewak to serve a possible gold mine project and expanding facilities at Madang.<sup>135</sup> Table 8 reflects additional information on PNG ports.<sup>136</sup>



Photo 5: Lae Port, PNG

Town	Airport Name	ICAO	IATA	Usage	Customs	Runway	IFR	Runway Length
Aiomi	Aiomi			Civ.		Unpaved	No	3200 ft
Alotau Png	Gurney			Civ.		Paved	Yes	5500 ft
Balimo	Balimo	BLI	OPU	Civ.		Unpaved	No	4200 ft
Biala	Biala	BIA	BAA	Civ.		Unpaved	No	3200 ft
Buka	Buka		BUA	Civ.		Unpaved	Yes	5100 ft
Bulolo	Bulolo	BUO	BUL	Civ.		Unpaved	No	4300 ft
Bwagaioia	Misima		MIS	Civ.	Yes	Unpaved	Yes	3900 ft
Cape Gloucester	Cape Gloucester	CPG	CGC	Civ.		Unpaved	No	3500 ft
Cape Rodney	Cape Rodney	CPR	CPN	Civ.		Unpaved	No	4200 ft
Chimbu Png	Chimbu			Civ.	No	Paved	No	3300 ft
Daru	Daru	DAU	DAU	Civ.		Paved	No	4500 ft
Emirua	Emirua	ERU		Civ.		Unpaved	No	4700 ft
Erave	Erave	ERV		Civ.		Unpaved	No	4000 ft
Esa'ala	Esa'ala	ESA		Civ.	No	Unpaved	No	3200 ft
Finschhafen	Finschhafen	FIN	FIN	Civ.		Unpaved	No	5200 ft
Garaina	Garaina	GNA	GAR	Civ.		Unpaved	No	5200 ft
Girua	Girua		PNP	Civ.		Paved	No	5400 ft
Gonaili	Gonaili	GON		Civ.		Unpaved	No	3400 ft
Goroka	Goroka		GKA	Civ.		Paved	No	5400 ft
Green River	Green River	GRN	GVI	Civ.		Unpaved	No	4700 ft
Guasopa	Guasopa	GPA	GAZ	Civ.		Unpaved	No	3500 ft
Gusap	Gusap	GSP	GAP	Civ.		Unpaved	No	5200 ft
Hayfield	Hayfield	HFD		Civ.		Unpaved	No	3000 ft
Hoskins	Hoskins		HKN	Civ.		Paved	No	5200 ft
Jacquinet Bay	Jacquinet Bay	JCB	JAQ	Civ.		Unpaved	No	5200 ft
Josephstall	Josephstall	JSL	JOP	Civ.		Unpaved	No	3100 ft
Kairuku	Kairuku	KKU	RKU	Civ.		Unpaved	No	3100 ft
Kandep	Kandep	KDP	KDP	Mil.		Unpaved	No	3300 ft
Kandrian	Kandrian	KDR	KDR	Civ.		Unpaved	No	3400 ft
Karimui	Karimui	KRI		Civ.	No	Unpaved	No	3200 ft
Kavieng	Kavieng		KVG	Civ.		Paved	Yes	5800 ft
Kerema	Kerema		KMA	Civ.		Paved	No	3000 ft
Kiriwina	Kiriwina			Civ.		Unpaved	No	5300 ft
Kiunga	Kiunga		UNG	Civ.		Unpaved	Yes	4000 ft
Lae Png	Nadzab		LAE	Civ.		Paved	Yes	7900 ft
Lihir Papua New Guinea	Kunaye			Civ.	No	Unpaved	Yes	3900 ft
Madang	Madang		MAG	Civ.		Paved	Yes	5100 ft
Malalaua	Malalaua	MLU	MLQ	Civ.		Unpaved	No	3600 ft
Malekolon	Malekolon	MKO	MKN	Civ.		Unpaved	No	3000 ft
Mendi	Mendi		MDU	Civ.		Unpaved	No	4300 ft
Menyamyamya	Menyamyamya	MYY	MYX	Civ.		Unpaved	No	3500 ft

Table 7: List of Airports in PNG

Town	Airport Name	ICAO	IATA	Usage	Customs	Runway	IFR	Runway Length
Momote	Momote			Civ.	Yes	Paved	Yes	6100 ft
Morehead	Morehead	MHD	MHY	Civ.		Unpaved	No	4200 ft
Moro	Moro			Civ.	No	Unpaved	No	5700 ft
Mount Hagen	Mount Hagen		HGU	Civ.		Paved	Yes	6100 ft
Namatanai	Namatanai	NTI	ATN	Civ.		Unpaved	No	3400 ft
Nissan	Nissan	NIS	IIS	Civ.		Unpaved	No	3600 ft
Nomad River	Nomad River	NDR	NOM	Civ.		Unpaved	No	3000 ft
Open Bay	Open Bay	OBY	OPB	Civ.		Unpaved	No	3500 ft
Port Moresby	Jacksons		POM	Civ.	Yes	Paved	Yes	9000 ft
Rabaul	Tokua			Civ.		Paved	Yes	5600 ft
Safia	Safia	SFA	SFU	Civ.		Unpaved	No	3500 ft
Saidor	Saidor	SDR	SDI	Civ.		Unpaved	No	3800 ft
Salamo	Salamo	SAO	SAM	Civ.		Unpaved	No	3000 ft
Sehulea	Sehulea	SEH	SXH	Civ.		Unpaved	No	3100 ft
Sule	Sule	SULE	ULE	Civ.		Unpaved	No	2900 ft
Tabubil	Tabubil		TBG	Civ.		Unpaved	No	4200 ft
Tadji	Tadji	TAD		Civ.		Unpaved	No	4100 ft
Tapini	Tapini	TAP	TPI	Civ.		Unpaved	No	3000 ft
Tari	Tari		TIZ	Civ.	No	Unpaved	No	5100 ft
Telefomin	Telefomin	TLF	TFM	Civ.		Unpaved	No	4300 ft
Vanimo	Vanimo		VAI	Civ.		Paved	No	5200 ft
Vivigani	Vivigani	VIV	VIV	Civ.		Paved	No	4200 ft
Wakunai	Wakunai	WAI	WKN	Civ.		Unpaved	No	3100 ft
Wanigela	Wanigela	WGL	AGL	Civ.		Unpaved	No	3200 ft
Wapenamanda	Wapenamanda		WBM	Civ.		Unpaved	No	5000 ft
Wewak	Boram		WWK	Civ.	Yes	Paved	Yes	5200 ft
Witu	Witu	WITU	WIU	Civ.		Unpaved	No	3000 ft
Woitape	Woitape	WTP	WTP	Civ.		Unpaved	No	3000 ft

Table 7: List of Airports in PNG (Continued)

<b>Table Notes (Explanations on technical Data)</b>															
<p><b>ICAO-code:</b> International Civil Aviation Organization (ICAO), a 4-letter airport location indicator. The field above is left blank if no ICAO location indicator is available for the selected airport.</p>															
<p><b>IATA-code:</b> International Air Transport Association (IATA), a 3-letter identifier for the relevant airport. The field above is left blank if no IATA code is available for the selected airport.</p>															
<p><b>Usage:</b> Airports are classified in three categories: civil airports open for public use, military airports and private airports not open to the public. Airports that are joint use, both civil and military, are shown as civil airports.</p> <table border="1"> <tr> <td>Civ</td> <td>Civil airport, open for public use (including joint use).</td> </tr> <tr> <td>Mil.</td> <td>Military airport, not open for public use.</td> </tr> <tr> <td>Priv.</td> <td>Private airport, not open for public use.</td> </tr> </table>		Civ	Civil airport, open for public use (including joint use).	Mil.	Military airport, not open for public use.	Priv.	Private airport, not open for public use.								
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Table 7 Notes

<i>Kieta</i>	
Location:	Kieta is situated on the northeast coast of Bougainville Island, at 6° 13'S, 155°
Overview:	Kieta is the main port on Bougainville Island. It has facilities for overseas as well as coastal traffic. Most of the port's facilities are dedicated to coastal vessels, there being no bunkering or fresh water available for larger tonnage. Tugs and lighters are available through Bougainville Copper Pty Ltd, but there is no suitable anchorage at which large vessels may be lightened.
Traffic Figures:	n/a
Berths:	The port has three berths, the longest of which is 122 m long.
Max Vessel Size:	Maximum size of vessel handled: 12,000 gross tonnage (GT).
Dry-docks and repairs:	Light engineering services are available.

<i>Kumul Marine Terminal</i>	
Location:	Kumul lies to the north of the Gulf of Papua, at 8° 6'S, 144° 34'E.
Overview:	The terminal is an export crude facility, operated by Chevron Niugini Ltd and consists of a control platform with a SBM buoy situated to the south, enclosed by a restricted area. It is the principal crude export facility in the country, transferring oil from a number of onshore fields.
Traffic Figures:	Approximately 23 vessels handled annually.
Berths:	The terminal has been designed for use by tankers up to 150,000-deadweight tonnage (dwt) in a minimum water depth of 25 m under normal operational conditions. A pipeline connected to the shore leads northwest from the platform.
Max Vessel Size:	Draught 17.1 m, 150,000 dwt, displacement 186,000 tons (t), BCM146.3.
Dry-docks and repairs:	No facilities are available.

<i>Port Moresby</i>	
Location:	Port Moresby is situated on the south coast of mainland New Guinea on the Coral Sea at 9° 28'S, 147° 8'E.
Overview:	Port Moresby is a natural harbor and is the second busiest port of PNG. Most of the cargoes handled are imports. There is an oil refinery at Napa Napa, on the west side of the Bay. Good anchorage can be found in the outer harbor. Loading and discharging is carried out by ship's gear. Two tugs are available.
Traffic Figures:	n/a
Berths:	The main wharf has a T-headed pier with a total of four berths, one of which is a tanker berth. There is also a container wharf with one berth and roll-on/off facilities, a small ships wharf with one berth and the PNGDF wharf designed for landing craft.
Max Vessel Size:	Harbor: LOA 236 m, draught 10.5 m, 62,000 dwt. Inter-oil Refinery: LOA 260 m, beam 44 m, draught 14.5 m, 110,000 dwt. Single Buoy Mooring: Draught 14.3m.
Dry-docks and repairs:	Two commercial ship repair yards are available. A new dry-dock, suitable for Panamax vessels, is available at Motukea. The largest of five slipways can accommodate a vessel up to 60,000 t.

Table 8: PNG Ports

<i>Madang</i>	
Location:	Madang is situated on the east coast of New Guinea, at 5° 13'S, 145° 49'E.
Overview:	The port, which is a port of entry, handles a variety of general, container, and liquid bulk cargoes. The approach to the port is clear of any hazards and the harbor lies in a well-sheltered, mostly land-locked lagoon.
Traffic Figures:	Approximately 120 vessels handled annually. Exports include copra, cocoa, coffee, and timber.
Berths:	There are three main wharves, one of which can handle tankers, and four minor wharves.
Max Vessel Size:	LOA 183 m, draught 11.6 m.
Dry-docks and repairs:	Minor engine and hull repairs are available.

<i>Rabaul</i>	
Location:	Rabaul is located in the north of New Britain Island on the St George's Channel at 4° 13'S, 152° 14'E.
Overview:	Port Rabaul lies at the head of Simpson Harbor, the westernmost of the two inlets on the north side of Blanche Bay, and is sheltered from all winds. The port offers good anchorage in depths of up to 26 m. Three 12 m workboats available, also supply barges. Both fresh water and diesel are available alongside and at anchor.
Traffic Figures:	Approximately 600 vessels visit the port annually.
Berths:	The main wharf can handle tankers. There is also a second wharf and a small ships wharf.
Max Vessel Size:	Depth alongside is 7.0 m.
Dry-docks and repairs:	Minor repairs possible. Radio and radar repairs possible. There are 11 slipways, the largest of which is 36.6 m long.

Table 8: PNG Ports (Continued)

## Land Routes

### Roads

PNG's road system comprises 8762 national roads, 8100 km (5033 miles) of provincial links, and around 8000 district, local and other roads. The national roads include 3335 km (2072 miles) of designated "roads of national importance", often called "priority roads." Table 9 shows these priority roads.<sup>137</sup> With assistance from Australia and the ADB, a comprehensive program of rehabilitation and maintenance has been ongoing since 2007. The goal is to expand the national road network to 25000 km (15,534 miles) by 2035.<sup>138</sup>

The main road is the 800 kilometers (497 miles) Highlands Highway, which runs from the port city of Lae in the Morose province to the highlands region. It connects several major cities and is vital for the movement of people and goods between the populous Highlands region and the coast. For most of its length the Highlands Highway is no more than a single



Photo 6: Highway in PNG

carriageway two-lane road which is often hindered by potholes and land slips. It is also notorious, particularly in the Highlands region, for being the place of numerous armed hold-ups and robberies committed by local bandits.<sup>139</sup> Photo 6 reflects a photo of a PNG Highway.<sup>140</sup>

Name	Location: Province
Highlands highway	Southern Highlands/ Western Highlands/Simbu/ Eastern Highlands/Morobe
Buluminsky Highway	New Ireland
Koroba Mendi Road	Southern
Porgera Togoba Highway	Western Highlands/Enga
New Britain Highway	East New Britain/West New Britain
Sepik Highway	East Sepik/Sandaun
West Coast Highway	New Ireland
Baiyer Road	Western Highlands
Hiritano Highway	Central/Gulf
Coastal Highway	Madang/East Sepik/ Sandaun
Kokoda Road	Oro
Wau Highway	Morobe
Coastal Trunk Road	Bougainville
Magi Highway	Central
Ramu Highway	Madang
Northern Road	Oro

Table 9: PNG Priority Roads

## Railways

There are no major railways in PNG.<sup>141</sup>

## Waterways

The presence of high mountain ranges and abundant rainfall leads to high runoff over most of the country.<sup>142</sup> PNG has an extensive system of inland waterways extending nearly 11,000 km (6,835 miles) into the interior of the country. The waterways are used for commercial trade and as the standard means of transport in canoe by the indigenous people as well as a source of drinking water, food, washing, cooking, recreation, ritual and irrigation.

The inland waterways suffer through lack of maintenance of infrastructure such as jetties, goods handling facilities and navigation aids. The waterways are also subject to environmental

degradation, through the activities of mining companies and the spread of non-native vegetable pests such as the water hyacinth.<sup>143</sup>

There are nine hydrological drainage divisions (basins) in the country. The largest river basins of the country are the Sepik, Fly, Purari, and Markham. Even though the Sepik has the lowest annual discharge, it has the largest catchment area, 78,000 km<sup>2</sup> (30,116 mi<sup>2</sup>), followed by the Fly River with 61,000 km<sup>2</sup> (23,522 mi<sup>2</sup>), Purari with 33,670 km<sup>2</sup> (13,000 mi<sup>2</sup>), and Markham with 12,000 km<sup>2</sup> (4,633 mi<sup>2</sup>). The other catchments are less than 5,000 km<sup>2</sup> (1,930 mi<sup>2</sup>) in area and are very steep.

The internal renewable water resources are estimated at 801 km<sup>3</sup> (192 mi<sup>3</sup>). As the country has an abundance of surface water resources and as there are few large-scale consumers, groundwater resources have not been developed much. However, there is evidence that groundwater is being used increasingly as a source of reliable high quality water. In 1974, 34 percent of the villages surveyed relied on groundwater from boreholes, dug-wells, or springs. In the 1970s and 1980s, groundwater was developed for urban water supply schemes in seven major towns. Groundwater resources have not been assessed but it is assumed that most groundwater returns to the river systems and is therefore included in the surface water resources.<sup>144</sup>

## Schools

PNG's primary schools, or community schools, provide six years of instruction for children 7-12, although attendance is not compulsory. Students who reach the sixth grade must pass a national exam to continue their education. PNG maintains two types of secondary schools: the four-year provincial high schools, for grades 7-10, and the two-year national high schools, for grades 11 and 12. Large towns generally have their own secondary schools, but students from rural areas often attend provincial boarding schools.

Up until 1989, most instruction occurred in English. The National Department of Education adopted a language and literacy policy designed to encourage communities to start local language literacy schools, convert first grade into a local language year or a bridging year from local language literacy to English literacy, or have noncore subjects (subjects other than language,



math, science, and social studies) taught in the local languages. The 1989 Language and Literacy Policy also supported local language and cultural instruction at secondary and tertiary schools and local language literacy programs for adults.<sup>145</sup>

In 2013, the PNG government began implementing a policy of using only English as the medium of instruction in all government schools. The Education Department is providing training and support to help teachers make the switch from teaching in Motu and other vernacular languages to using English only. The policy has been criticized by advocates of PNG's indigenous languages and some missionary organizations, which believe in first-language education.<sup>146</sup>

There are seven universities in Papua New Guinea, some of which are state funded while others are private or have religious affiliations. The Pacific Adventist College offers programs in accounting, business, education, secretarial skills and theology, and the University of Technology provides degrees in architecture, business, engineering and forestry. The University of Papua New Guinea founded in 1965, has faculties of medicine, pharmacy, health sciences, physical & natural sciences, law & business, humanities and social sciences.<sup>147</sup>

## Communications

Mobile telephone services are the main form of telecommunications used in PNG. Telikom PNG/Bemobile and Digicel are the main providers. There are radio services (coastal radio, aeronautical radio) including the national broadcasting corporation (NBC). Fixed line and mobile cellular phone network services have increased in recent years. Satellite and cable services are available in major urban areas. There are two television stations, one commercial (EM TV) and the other state-run (Kundu). There are two daily English newspapers, the Post Courier and the National.<sup>148</sup>

The telecommunications sector reform started in 1996 with the separation of the regulatory and service provision roles for postal and telecommunications services. The PNG Telecommunications Authority (PANGTEL) was established as an independent telecommunications regulatory agency. Competition for cabling and the supply, installation, and maintenance of equipment was allowed, but price controls remained

in the telecommunications sector. The telecommunications sector is developing as a result of deregulation. In 2006, two mobile licenses were made available which ended Telikom PNG's long-standing monopoly. Digicel PNG and Bemobile have captured a large share of the mobile phone market, while Telikom enjoys a monopoly in fixed-line services. As such, the country has a reasonably developed telecommunications network when compared with its Pacific island counterparts. Mobile and internet penetration is virtually non-existent outside city centers. In 2006, plans were finalized to link up Port Moresby with the Australian city of Sydney via cable, while during 2007 Fujitsu became the first major supplier of Telikom PNG, reflecting the telecommunications sector's moves to upgrade the network infrastructure across the country.<sup>149</sup>

## Utilities

### Power

PNG power, the government-owned Electricity commission, supplies power to most urban centers and some adjacent rural areas. It was established under the Electricity Commission (privatization) Act 2000, but remains a state owned entity. Hydropower stations generate much of the country's electricity, with the balance generated by thermal stations. There are two oil refineries, one in the Gulf of Papua and one at Port Moresby. Natural gas reserves are estimated at 400 billion cubic meters.<sup>150</sup>

Approximately 80% of the country's electricity is supplied by hydro power stations with the remainder supplied by thermal and privately owned diesel plants. PNG has three large regional power grids. The Port Moresby system serves the NCD and surrounding areas in the Central Province. The Ramu system is serving the load centers of Lae, Madang and Gusap in the Momase Region, as well as the Highlands centers of Wabag, Mendi, Mt Hagen, Kundiawa, Goroka, Kainantu and Yonki. The Gazelle Peninsula system serves the townships of Rabaul, Kokopo and Keravat. Although it is still important to note that almost 90 percent of the population living in rural areas have no access to electricity, with a key development objective to increase accessibility to at least 70% of households by 2030.<sup>151</sup>

## Water and Sanitation

Water PNG was established under the National Water Supply and Sewerage Act 1986 as a state-owned enterprise with responsibility for the provision and management of water supply and sewage services throughout PNG, with the exception of the NCD. The National Capital District Commission Act 1996 saw the formation of NCD Water and Sewerage to take on the responsibility of supplying fresh water and sewage treatment within the NCD.<sup>152</sup>

PNG ranks at the bottom of Pacific countries for all WASH-related health statistics. The 2009 under-5 mortality rate in PNG stood at 69 per 1000 live births, an improvement from 90 in 1990 but insufficient progress to ensure that the country will meet the MDG by 2015. Diarrheal and WASH related malnutrition account for 28 percent of the total 14,000 children under-five who die every year. In 2009, cholera re-emerged in PNG after an absence of almost 50 years, demonstrating the impact of lack of basic sanitation, safe water and hygiene practices on public health.<sup>153</sup>

PNG's basic water supply and sanitation needs are large. Today, an estimated 4.2 million Papua New Guineans, which is 61% of the population, do not have access to safe water, and approximately 3.8 million people, or 55% of the population, do not have access to improved sanitation. PNG would significantly benefit from increased access to water and sanitation. For example, PNG would see improved health of people through reduction in diarrhea, malnutrition, and stunting; increased time and household income through safe and convenient water supply; greater productivity leading to economic development and higher rates of gross domestic product; and business and tourism development. However, water and sanitation are given a low priority in the country. The rural sanitation and rural water supply subsectors are especially overlooked and are in most need of government and external support because more than 90% of people without access to services live in rural areas. The growing peri-urban areas in larger towns and cities are also unserved and deserve immediate attention.<sup>154</sup>

There are significant disparities in coverage in urban areas compared to rural, where more than 85 percent of the population resides.<sup>155</sup> For example, the government reports that urban access to improved water is 60 percent compared with 20 percent for rural areas.<sup>156</sup> World Health Organization and UNICEF's Joint Monitoring

Program (JMP) figures indicate slightly better access for both, though the urban/rural disparity is still marked, with 88 percent and 32 percent access to improved water in urban and rural areas respectively.<sup>157</sup>

The most common source of drinking water for rural communities was unprotected sources, which could be polluted by upstream development. Coastal communities were said to depend heavily upon shallow groundwater wells for domestic consumption. The very low access to improved water supply in rural areas in PNG, which alone represents two-thirds of the total population in the Pacific, renders the regional average to levels comparable to least developed regions.

The sanitation situation is critical in both urban and rural areas. In urban centers outside the national capital, many residents continue to rely on septic tanks or basic pit latrines with soil collected and disposed of into waterways or the ocean. In squatter settlements within and on the edge of urban settlements, sanitation facilities are typically poorly constructed pit latrines or drop toilets over water bodies. In rural areas, open defecation is very common or else waste is disposed of in crude pit toilets. Pit latrines and degraded septic tanks likely cause cross contamination in areas where the water table is used as a drinking source. In addition, diffuse and point source discharges arising from human settlements, infrastructure development, agriculture, forestry, mining and other land uses can affect the quantity and quality of water within a catchment to cater for its various uses.<sup>159</sup>



# PAPUA NEW GUINEA Health

Disaster Management Reference Handbook | 2016

# Health Overview

Life expectancy in PNG is shorter and infant mortality is higher than most neighboring Pacific countries.<sup>160</sup> The 2009 under-5 mortality rate in PNG stood at 69 per 1000 live births, which an improvement from twenty years prior.<sup>161</sup> Both infant and under-5 mortality have decreased steadily since 1990, but not sufficiently for PNG to meet its MDG 4 which calls for reductions by 2015 in under-5 mortality from 90 (in 2000) to 32 per 1000 live births, and in infant mortality from 64 (in 2000) to 24 per 1000 live births. Maternal mortality is a serious problem in PNG, 53 percent of births (only half) are attended by skilled health personnel. The leading health problems are communicable diseases, with malaria, tuberculosis, diarrheal diseases, and acute respiratory disease as major causes of morbidity and mortality. PNG has a generalized HIV epidemic, driven predominantly by heterosexual transmission. Care and treatment for people living with HIV have improved significantly since 2006. As with other countries in the Western Pacific Region, non-communicable diseases are also on the rise. The incidence of malaria is declining, as is the proportion of babies born in hospitals with low birth weight. However, health improvement has not kept pace with the country's economic growth over the past 10 years.<sup>162</sup>

The maternal and child mortality rate in PNG is the highest in the Pacific region and the second highest in Asia and the Pacific.<sup>163</sup> According to the WHO, PNG has the worst health status in

the Pacific region and has one doctor per 17,000 people compared to one in 1,000 in Fiji and one in 300 in Australia. Health expenditure is U.S.\$49 per capita compared to \$154 in Fiji and \$4,700 in Australia. In addition, health outcomes have stalled over the last 25 years and PNG is unlikely to reach any of the UN's Millennium Development Goals. PNG has one of the highest mortality rates with one in 13 children likely to die before their fifth birthday and an estimated five women die in childbirth every day. PNG has 400 doctors of which only 51 work outside Port Moresby leading to mortality rates for infants being higher for rural mothers and less than 10 percent of children are registered at birth. Fifty percent of rural mothers deliver babies attended by skilled health professionals compared to over 88 percent of mothers living in urban areas. In addition, the prevalence rate of infections of attendees to health services in remote locations is relatively high. Rural children also suffer from various health problems due to water borne disease as only 33 percent have access to clean water.<sup>164</sup>

Currently, 87 percent of PNG's people live in rural areas in widely scattered communities that are often not accessible by road. Health indicators are poor, with average life expectancy at 67 years, infant mortality rate at 49 per 1000 live births, and maternal mortality rate at an astounding 733 per 100,000 live births; a figure regarded by some as an underestimate.<sup>165</sup> Table 10 shows data regarding the current health indicators in PNG including life expectancy. After over 30 years of political independence and some early economic and social progress,

Human Development Index (score compared to 1.0)	.491 (2013) <sup>167</sup>
Adult Literacy (average years of schooling)	3.9 years (2012) <sup>168</sup>
Population Living Below the National Poverty Line	28% (2015) <sup>169</sup>
Infant Mortality Rate	49 per 1000 live births (2010) <sup>170</sup>
Under-5 Mortality Rate	57 per 1000 live births (2015) <sup>171</sup>
Maternal Mortality Rate	230 per 100,000 live births (2010) <sup>172</sup>
Life Expectancy at Birth	65 (Female)/69 (Male) (2015) <sup>173</sup>
Human Development (low human development rank out of 187 countries)	156 (2012) <sup>174</sup>
Total Health Expenditure	4.3% (2011) <sup>175</sup>

Table 10: Health Indicators

most of the people remain poor by both regional and international standards. The poor health status is associated with poverty, but it is also widely recognized that a failure of health service delivery is a major contributor to ill health.<sup>166</sup>

The Human Development Index is a composite index measuring average achievement in three basic dimensions of human development (a long healthy life, knowledge, and a decent standard of living).

## Structure

The National Health Plan (2011-2020) which was launched in August 2010 is aligned to the PNG Vision 2050, the Medium Term Development Plan (2011-2015) and the PNG Development Strategic Plan (2010-2030). The Health Vision 2050 is a strategy of the national Health Plan 2011-2020. The National Health Plan 2011-2020 emphasizes strengthening primary health care services delivery and aligns its objectives with the MDGs. Values stated explicitly include equity, gender and people-centeredness, and the National Health Plan states that increasing universal health coverage and equity in access for the rural majority and the urban poor is the first and most important objective. The National Health Service Standards for PNG 2011-2020 outlines a 7-level health service delivery structure and systematically describes a package of health services and the number, types and mix of staff that should be provided at each level of health care. The National Department of Health has responsibility for setting policies, developing standards and guidelines, procuring pharmaceuticals and medical supplies, surveillance, and managing public hospitals including Port Moresby General Hospital, one psychiatric specialist hospital and provincial hospitals. Provincial and local governments are responsible for funding and delivery of rural health services, and implementing all policies and programs according to the set goal and vision of the national government. Health advisors coordinate the health planning process within the provincial government planning framework. Hospitals have independent management boards that receive and administrate national, local and external finances for their service delivery.<sup>176</sup>

To achieve the vision, mission, and goal of the National Health Plan 2011–2020, the sector will focus on the following **Key Result Areas**:

- Improve Service Delivery
- Strengthen Partnership and Coordination with Stakeholders
- Strengthen Health Systems
- Improve Child Survival
- Improve Maternal Health
- Reduce the Burden of Communicable Diseases
- Promote Healthy Lifestyles
- Improve our Preparedness for Disease Outbreaks and Emerging Population Health Issues.<sup>177</sup>

Health Vision 2050 is a forty-year strategy that is aimed at transforming the current health service delivery system in PNG, and links to the National Government's PNG Vision 2050 and the PNG Development Strategic Plan 2010–2030. It includes the progressive introduction of community health posts, district hospitals, regional specialist hospitals, and national referral hospitals, and also incorporates the requirements of two new provinces. This new referral model, underpinned by strengthened health systems intends to create an enabling environment to reverse PNG deteriorating health indicators, and to reduce the accessibility gap for the rural population, which is the majority of the population, and for those living in disadvantaged urban settings.<sup>178</sup>

## Health Care Laws

The following laws contribute to the regulatory framework for health system functioning in PNG:<sup>179</sup>

- Poisons and Dangerous Substances Act (1952)
- Disaster Management Act (1984)
- HIV/AIDS Management and Prevention Act (2003)
- Public Hospitals (Charges) Act (1972): provides for user fees to be charged at public hospitals.
- Organic Law on Provincial Governments and LLG's (1977): devolved the management and service delivery of rural health services from the National Department of Health to the provincial and local governments.

- New Organic Law (1995): went further and delegated public spending to the local governments.
- Public Hospitals Act (1994): made hospitals quasi-statutory authorities and had implications for rural delivery.
- National Health Administration Act (1997): intended to provide a framework for coordination between the National Department of Health and provincial authorities.
- Provincial Health Authority Act (2007): provides for establishing a single provincial health authority to integrate the management of hospital services and rural (primary) health services, instead of hospitals being managed separately by the National Department of Health and rural health services by provincial governments. Implementation of the Provincial Health Authority Act (2007) is voluntary and has been taken up in three provinces: Milne Bay, Eastern Highlands and Western Highlands. The process is ongoing and impact closely watched.

## Health Care System

The healthcare system in PNG is basic in comparison to many other countries. Quality of care varies greatly between medical facilities in cities like Port Moresby and aid posts in more remote rural places. Hospitals can be affected by power cuts, or drug and medical supply stock issues. Provided by the government and church organizations, healthcare is financed by public sector, company, or enterprise-based funders. The National Department of Health is not directly responsible for all healthcare facilities, which results in some rural health services being underfunded. Public health services are supposed to be free to citizens, although small fees are often charged.<sup>180</sup>

### *Emergency Response*

PNG has a very limited emergency services capability. The public ambulance service should not be relied upon. In most situations, it is best to use a taxi or car to get to the hospital. Some Port Moresby hospitals have ambulance services, but their equipment may not be up to international standards and response times may be slow. Outside Port Moresby, local hospitals may provide ambulances of varying service quality. Even in some of the regional centers, ambulances may not be available when required.

### *Standard of Health Care*

In general, the standard of medical and nursing care in Port Moresby is significantly better than outlying regions. Lae offers the next highest standard of medical care. The standard of medical care in PNG is variable and not to an international standard. Shortages of working equipment, medications and medical supplies regularly interfere with the delivery of medical care and medical staffing can be somewhat unreliable. Private facilities offer a higher standard of care and shorter waiting times than public facilities. However, even private hospitals in PNG do not meet international standards. There is a general shortage of experienced specialist care in PNG and therefore any invasive procedures, or complex medical diagnostics, may require international evacuation, usually to Cairns, Townsville or Brisbane, Australia. Remote areas usually have only "aid posts", which include some missionary stations. Aid posts are usually staffed by community healthcare workers and provide first-aid and primary healthcare. There is one hyperbaric chamber for diving related emergencies in Port Moresby; however, the treatment procedures and specialist care may not meet all international standards. Hospitals, clinics and individual doctors are likely to request payment at the time the medical service is provided. Credit cards are not always accepted.

### *Challenges in the Healthcare System*

The vision and goal of the National Health Plan 2011-2020 are firmly based in the values of primary health care such as equity and people-centeredness. Increasing equity in access to rural health services is the first and most important objective. However, poor access and quality of services, user fees and associated expenses are barriers to accessing health care, especially to the rural majority of PNG. Rural areas are further disadvantaged by logistical difficulties associated with the harsh terrain and subsequent high service costs and lower access to services and other health resources.

The availability of basic essential medical supplies in health centers and securing essential drugs has historically been a major problem in many rural facilities. Isolation and lack of supervision maintaining the quality is just part of the problem. Between 1999 and 2010, health centers had only 60 percent of essential medical supplies, roughly half of what they needed. In 2012, the government of PNG updated the Standard Treatment Guidelines, the Essential

Medicines List and developed its first National Medicines Formulary. The government continues to implement reforms to improve procurement and distribution networks. Another challenge is that provincial transit stores have lacked adequate facilities to store and distribute medicines and vaccines. As a result, engagement of third party procurement and distribution channels for drug kits, supported by development partners, resulted in 83 percent availability of essential medicines for 2011. Storage facilities at rural health centers and aid posts need to be upgraded for safekeeping of drugs, vaccines, and intravenous fluids. Continuing education is needed for health managers to strengthen skills in management of drugs and supplies. Illegal sale of medical supplies is common.<sup>181</sup>

PNG has low numbers of health professionals per head of population: 5.3 nurses/midwives and less than one doctor per 10,000 people. Photo 7 shows a patient from Vunapope, PNG getting her blood pressure checked during a Pacific Partnership 2015 surgical screening at St. Mary's Hospital. The hospital ship USNS Mercy (T-AH 19) was in PNG for its second mission port of Pacific Partnership 2015 providing humanitarian assistance and disaster relief preparedness.



Photo 7: Pacific Partnership 2015, Medical Screening, Vunapope, PNG

Community health workers comprise almost 35 percent and nursing officers about 30 percent of the total health workforce, while medical officers and health extension officers (intermediate level workers bridging the gap between doctors and nurses) together comprise less than 8 percent. Rural health services lack a sufficient health workforce. Many aid posts have closed partly due low motivation for staff to work in remote, financially unstable and frequently

dangerous environments. Many rural hospitals do not retain medical officers; more than 80 percent of the medical officers working in urban areas. Medical officers are also often responsible for hospital administration and management. Further staff attrition results when medical officers leave. These factors, combined with an aging workforce mean that short- and long-term human resource supply gaps are expected.

### Health Literacy

Better health is strongly correlated with education, especially of girls and women. Those with education are more likely to access health information through mass media, to access health services, and to give birth to their children in a health facility. Childhood mortality rates fall in direct relationship with greater levels of education. More years of education of girls results in having the first child later and correlates with improved spacing between children, which in turn results in improved health of the mother and the children. Higher education levels are also linked to greater knowledge of methods and sources of family planning, and with improved care of infants and children.<sup>182</sup>

### Communicable Diseases

Communicable diseases account for around 50 percent of mortality according to the World Health Organization. The leading causes of morbidity in the country include pneumonia, malaria, tuberculosis, diarrheal diseases, meningitis and increasingly HIV/AIDS. To help the Government of PNG improve its rural health services, ADB has approved a loan amounting to U.S.\$20 million for the \$81.2 million Rural Primary Health Services Delivery Project. The Rural Primary Health Services Delivery Project was approved by ADB in September 2011 with a procurement date of August 2015. The implementing agency is the Department of Health. A vital part of the project is to establish partnerships between the provincial governments and the NGOs and civil society to effectively conduct health promotion activities in local communities. Carefully designed, the project aims to efficiently deliver high-quality primary health care through the following:

- Enhancing the capacity of the government in developing and implementing community health policies
- Formalizing partnerships between the government and non-state service

providers including churches and NGOs to develop and implement ways to monitor and evaluate the community health outcomes

- Strengthening the skills and capacity of health personnel through training activities
- Upgrading community health facilities, providing medical equipment and small vehicles
- Promoting health in rural communities while also increasing women's involvement in health service delivery
- Monitoring project outcomes and results through formative evaluations<sup>183</sup>

The Center for Disease Control (CDC) has been providing technical assistance to PNG since 2007 through a cooperative agreement with the WHO, National Department of Health and other partners. The CDC-PNG office was established in 2012, and continues to provide technical assistance and support to strengthen the country's public health system to reduce HIV transmission and mortality.

The CDC provides technical assistance to improve and increase workforce capacity through strengthening HIV strategic information systems, to improve the quality of HIV care and treatment, and to help develop a national laboratory system to ensure quality testing and diagnosis for HIV, TB and other opportunistic infections.<sup>184</sup> Below is a list of statistics regarding HIV/AIDS in PNG:

- 0.7 percent Estimated HIV Prevalence (Age 15–49)(2013)
- 1,500 Estimated AIDS Deaths (2013)
- 15,000 Estimated Orphans due to AIDS (2013)
- 11,042 Reported Number of Adults Receiving Antiretroviral Treatment (ART)(2012)
- 84 percent Estimated ART Coverage per WHO 2010 Guidelines (2012)<sup>185</sup>

### Non-Communicable Diseases

The prevalence of non-communicable diseases risk factors for these types of diseases continues to rise in PNG. Lower respiratory infections were the leading cause of death, killing 8.9 thousand people in 2012. Figure 11 represents the top ten causes of death in PNG (2012).<sup>186</sup> In addition, 6.9 percent die from Tuberculosis, 6.2 percent from Diabetes, 5 percent from Malaria, 3.1 from Kidney disease, 6.2 percent from birth related complications/trauma, 3 percent from heart disease, 2.8 percent from Diarrheal diseases, and 2.6 percent from asthma. Tuberculosis, Diabetes, Kidney disease, and Heart disease have increased from 2000-2012.

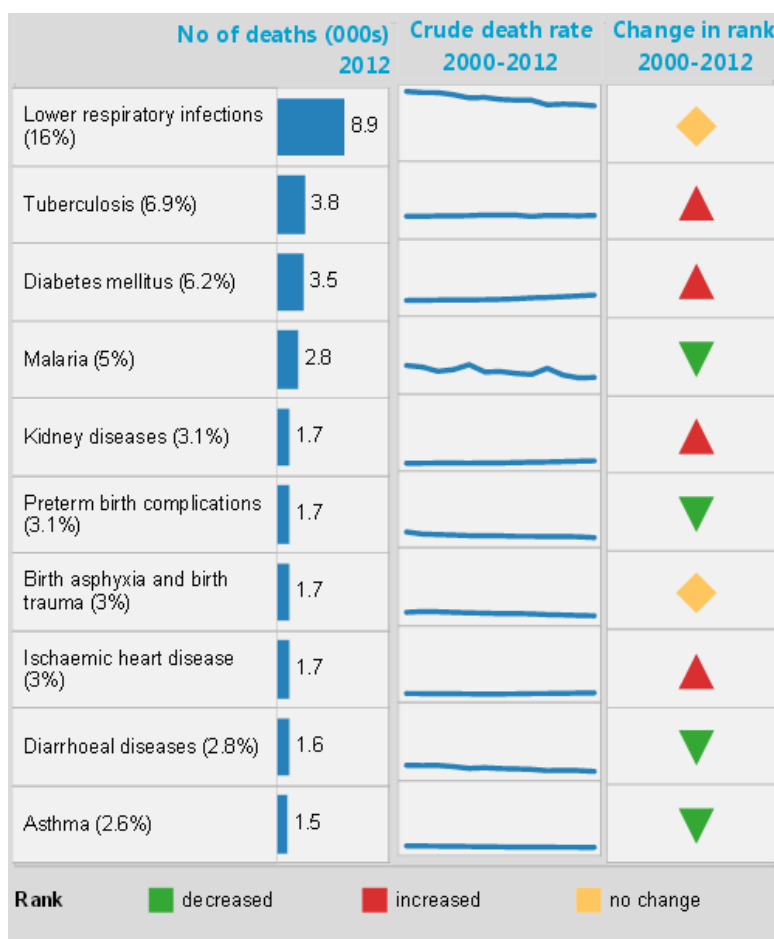


Figure 11: Top 10 Causes of Death in PNG





# PAPUA NEW GUINEA

## Women, Peace, and Security

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# Women, Peace, and Security

Women's empowerment and the promotion of gender equality are key to achieving sustainable development. Greater gender equality can enhance economic efficiency and improve other development outcomes by removing barriers that prevent women from having the same access as men to human resource endowments, rights, and economic opportunities. Giving women access to equal opportunities allows them to emerge as social and economic actors, influencing and shaping more inclusive policies. Improving women's status also leads to more investment in their children's education, health, and overall wellbeing.<sup>187</sup>

Gender inequality is a significant development challenge in PNG. Women have substantially poorer access to health care services, and lower levels of education and literacy pose barriers to their equal participation in economic activity and political life.<sup>188</sup> Most women lack access to credit, banking and markets and women occupy very few seats in government.<sup>189</sup> Gender-based violence is reportedly very high, and women's access to justice and legal protection is low. The government's Medium-Term Development Plan recognizes gender inequality, including gender-based violence, as a "threat to future development."<sup>190</sup>

PNG has a Gender Inequality Index (GII) value of 0.617, ranking it 134 out of 148 countries in the 2012 index. The GII reflects gender-based inequalities in three dimensions –reproductive health, empowerment, and economic activity. Reproductive health is measured by maternal mortality and adolescent fertility rates; empowerment is measured by the share of parliamentary seats held by each gender and attainment at secondary and higher education by each gender; and economic activity is measured by the labor market participation rate for each gender. The GII shows the loss in human development due to inequality between female and male achievements in the three GII dimensions. In PNG, 2.7 percent of parliamentary seats are held by women, and 6.8 percent of adult women have reached a secondary or higher level of education compared to 14.1 percent of their male counterparts. Female participation in the

labor market is 70.6 percent compared to 74.1 for men.<sup>191</sup>

Protecting vulnerable populations from violence and ensuring their human and gender equality rights are critical elements of creating or returning stability to a region. Protection from sexual violence must occur for stability and peace because it damages communities and nations. Protection can involve either removing individuals or groups from a risk, threat, or situation of violence, or in the combat stage of operation, removing the threat. United Nations Security Council Resolution 1325(2000) on Women, Peace, and Security (UNSCR 1325) recognizes that conflict disproportionately affects women and children, and that women are largely excluded from peace processes. It calls on Member States to protect women and girls' human rights and promote their participation in conflict prevention, management, and resolution. It also challenges Member States to integrate gender perspectives into their peace and security efforts.<sup>192</sup>

The Convention on the Elimination of All Forms of Discrimination Against Women committee called on state leaders to put into effect UNSCR 1325 in July 2010, guaranteeing Bougainville women's involvement in peace and reconciliation decision-making. During Bougainville's independence from PNG in 1975, women were systematically abused during the crisis yet they were instrumental in restoring peace. Today, progress towards better implementation of UNSCR 1325 is slow but women do hold three seats in government, which does provide a public voice for women even though small.<sup>193</sup>



# PAPUA NEW GUINEA

## Conclusion

Disaster Management Reference Handbook | 2016

# Conclusion

PNG's volatile environment makes its citizens vulnerable to many hazards such as volcanic eruptions, flooding, landslides, earthquakes, diseases and many more. The high rainfall and topographically influenced local climate is such that floods and droughts occur regularly. Global warming has increased climate variability and the country's vulnerability to severe and frequent floods, droughts, tropical storms, sea level rise and saline intrusion. The high seismic and volcanic activity can also affect water availability through events such as earthquakes, landslides and tsunamis.

Although PNG is blessed with an abundance of freshwater resources, there are many issues that need to be addressed if these resources are to be used for the wellbeing of its citizens and to maintain the country's natural resources. Urgent attention is required to improve access to potable water and safe sanitation for 80 percent of the population.<sup>194</sup>

PNG has scaled-up its DRM efforts; however, it remains an area that needs more emphasis within the country.<sup>195</sup> PNG is in the process of transforming their disaster management infrastructure from a response focus to a more proactive approach focusing on preparedness and mitigation. Disaster relief and rehabilitation has been implemented through a largely reactionary approach and the costs involved have been considerable. Adequate advance preparedness and risk management will ensure that the cost of damages and loss of life is minimized or prevented.<sup>196</sup> Additionally, they have expanded disaster management efforts from not only concentrating on National and Provincial efforts, but also including District and Local levels.

PNG has developed plans that have the potential to significantly improve their DRR capabilities. PNG Vision 2050, PNG Development Strategic Plan (PNGDSP) 2010-2030, and the PNG Medium Term Development Plan (MTDP) provide the foundation for shaping their disaster mitigation and risk reduction efforts. Additionally, the recently published (2014) National Climate Compatible Development management Policy lays the groundwork for Climate Change Adaptation efforts. The NDRMP (2012) includes actions to take at the District and local levels, as well as laying out an institutional framework.

To further advance the DRM agenda,

priorities need to be addressed. These include building institutional capacity for planning risk informed investments; supporting coordination between DRM and Climate Change Adaptation agencies; shifting the emphasis on response to risk reduction and management; and addressing the lack of available historic natural hazard data, which hinders the assessment of risks.<sup>197</sup> Although plans are in place, the country lacks institutional capacity to effectively implement its DRM plan.<sup>198</sup> The key to improving their DRR capabilities is to implement the actions contained in them. This requires program emphasis at all levels of government. For example, monitoring and enforcement will have to be improved in order to minimize water pollution. This involves appropriate legislative, policy, institutional, participatory and financing framework supported by adequate resources, as well as organizing, training and equipping its citizens is critical in their disaster preparedness efforts.<sup>199</sup>



# PAPUA NEW GUINEA

## Appendices

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# Appendices

## DOD DMHA Engagements in the Past Five Years (FY 2011-2015)

July 2015- Representatives from the U.S. Department of Defense and the U.S. Embassy met with key PNG Government and Defense Force personnel for bilateral defense talks. The discussions focused on improving U.S. support, assistance, and capacity building for PNG's Defense Force. The talks highlighted PNG and U.S. cooperation priorities.<sup>200</sup>

June 2015- Mercy completed its second mission port for Pacific Partnership 2015 in Arawa, Autonomous Region of Bougainville, Papua New Guinea. Pacific Partnership is in its 10th iteration and is the largest annual multilateral humanitarian assistance and disaster relief preparedness mission conducted in the Indo-Asia-Pacific region. While training for crisis conditions, Pacific Partnership missions to date have provided real world medical care to approximately 270,000 patients and veterinary services to more than 38,000 animals. Additionally, the mission has provided critical infrastructure development to host nations through more than 180 engineering projects. Hospital Corpsman offers information to attendees following a class on first aid and disaster preparedness. (Photo 8).<sup>201</sup> The class, given at the Arawa Women's Center Lodge, covered multiple areas, including CPR, basic wound care and how to prepare for a disaster.

May 2015- The joint and humanitarian assistance operation Pacific Angel, led by the U.S. Air Force was conducted in PNG. The exercise enhanced PNG's humanitarian assistance and disaster relief capabilities and provided needed humanitarian and medical services to the people of the Unggai-Bena district in the Eastern Highlands Province. The Pacific Angel Goroka team consisted of U.S. and PNGDF medical professionals, logistics personnel, planners, and contracting specialists.<sup>202</sup> In Photo 9, Marine Corps Hospital Corpsman carries a box of medical supplies to Unggai Primary School, where medical professionals are setting up during Pacific Angel 15-4 at Eastern Highlands, PNG,

May 29, 2015. Efforts undertaken during Pacific Angel help multilateral militaries in the Pacific improve and build relationships across a wide spectrum of civic operations, which bolsters each nation's capacity to respond and support future humanitarian assistance and disaster relief operations.<sup>203</sup>

9-11 May 2015- U.S. Army Pacific and PNG conducted a civil-military Humanitarian Assistance and Disaster Relief exercise to support rapid response and recovery from natural calamities.

February 2015- PNG participated in the tsunami simulation exercise Pacific Wave 2015. The PMGO and the NDMO were two key agencies that participated. This included the five provincial disaster offices.<sup>204</sup>

18 September- 24 October 2014- Marine Forces Pacific (MARFORPAC) participates in OLGETTA WARRIOR, a bilateral security cooperation event between Australia and PNG. MARFORPAC provided engineering and medical support.<sup>205</sup>

September 2014- The 154th Hawaii Air National Guard conducted the first Pacific Unity Operation. The primary mission was to construct new dormitories for female students at Togoba Secondary School while promoting interoperability between the U.S. and PNG.

June 2013- Pacific Partnership works to strengthen disaster response preparedness around the Indo-Asia-Pacific region. Working at the invitation of each host nation, Pacific Partnership is joined by partner nations that include Australia, Canada, Colombia, France, Japan, Malaysia Singapore, South Korea and New Zealand.

10-12 September 2012- MARFORPAC attended and participated in the 2012 PNG defense talks in order to open/begin dialogue between MARFORPAC and the PNG Defense Force. The main topic was the PNG/Aus/U.S. trilateral exercise OLGETTA WARRIOR. Other topics included U.S./PNG bilateral exercises and small unit training.

12-23 September 2011- CFE-DM sponsored a coordination workshop in planning response to Health emergencies and disasters in PNG. The

workshop focused on communicable disease control and prevention strategies. Additionally, it identified critical gaps in regional healthcare systems and created a framework to address opportunities to improve the regional performance of health systems.

June 2011- The U.S. Navy participates in Pacific Partnership. Pacific Partnership is a five-month humanitarian assistance initiative that makes port visits to Tonga, Vanuatu, PNG, Timor-Leste and the Federated States of Micronesia. The U.S. Navy conducted dental and surgical operations, held health and anti-gender-based violence exercises as well as host workshops that focus on women, peace and security. The Pacific Partnership teams will also conduct veterinary care and refurbish two local schools.<sup>206</sup> In Photo 10, U.S. Navy Dentist performs teeth checks at Huas Clare Crisis Center for Children during Pacific Partnership 2011 in Lae, PNG (May 21, 2011).<sup>207</sup>



Photo 8: Pacific Partnership 2015, Arawa, Autonomous Region of Bougainville, Papua New Guinea



Photo 9: Pacific Angel Operation 2015, Eastern Highlands, PNG



Photo 10: Pacific Partnership 2011, Lae, PNG

## Force Protection/Pre-Deployment Information

### Passport/Visa

PNG entrance requirements include a valid passport that is valid for at least six months from the date of intended travel, an onward/return airline ticket, and proof of sufficient funds. You do not need a visa to enter PNG if you are coming for business or tourism for stays of 90 days or less. You may obtain a tourist visa (valid for stays of up to 60 days, with extensions available for an additional 30 days) and single-entry business visas (valid for stays of up to 30 days) when you arrive at Jacksons International Airport in Port Moresby. You must apply for a visa in advance if you are traveling for other than business or tourism.

If you transit other countries en route to PNG, please follow all necessary exit/entry procedures for the countries that you transit. You may need to obtain visas or travel authorizations for some of those countries, such as Australia.<sup>208</sup>

### Emergency Contact Information

#### Emergency Numbers

- Ambulance: 111
- Fire and Police: 000

For U.S. Citizens, contact the U.S. Embassy in Port Moresby:

U.S. Embassy Port Moresby  
Douglas Street, adjacent to the Bank of PNG,  
P.O. Box 1492  
Port Moresby, NCD 121  
PNG  
Telephone: +(675) 321-1455 or +(675) 321-0289  
Emergency After-Hours Telephone: +(675) 7200-9439<sup>209</sup>

### Currency Information

The unit of currency is the PNG Kina and is indicated as PGK. As of January 2016, 1 U.S. Dollar equaled 2.97198 Kina.<sup>210</sup>

### Travel Health Information

Unclean food and water can cause travelers' diarrhea and other diseases. Reduce your risk by sticking to safe food and water habits:<sup>211</sup>

#### Eat

- Food that is cooked and served hot
- Hard-cooked eggs
- Fruits and vegetables you have washed in clean water or peeled yourself
- Pasteurized dairy products

#### Don't Eat

- Food served at room temperature
- Food from street vendors
- Raw or soft-cooked (runny) eggs
- Raw or undercooked (rare) meat or fish
- Unwashed or unpeeled raw fruits and vegetables
- Unpasteurized dairy products
- "Bushmeat" (monkeys, bats, or other wild game)

#### Drink

- Bottled water that is sealed
- Water that has been disinfected
- Ice made with bottled or disinfected water
- Carbonated drinks
- Hot coffee or tea
- Pasteurized milk

#### Don't Drink

- Tap or well water
- Ice made with tap or well water
- Drinks made with tap or well water (such as reconstituted juice)

Cholera is a diarrheal disease. People get sick when they consume food or water that has been contaminated by the feces of an infected person. The most common symptom is severe diarrhea. Vomiting is also common. Most cholera infections are relatively mild. People recover on their own by keeping well hydrated. About 10-20 percent of all infected people will suffer severe illness, which can cause life-threatening dehydration. These cases are treated with oral and/or intravenous fluid replacement and antibiotics. Most travelers have a low risk of cholera, as following food and water precautions is usually sufficient to prevent the disease. Healthcare and relief workers who travel to areas of cholera outbreaks and have limited access to safe water are at higher risk. They should consider vaccination against cholera. Cholera reappeared in a large, prolonged outbreak in 2009, with more than one thousand cases in East Sepik, Madang and Morobe provinces. These were the first cases to occur in 50 years. Since



then outbreaks have continued to be reported, including in Port Moresby.<sup>212</sup>

Before visiting PNG, the U.S. CDC advises ALL travelers to get the following vaccines:<sup>213</sup>

- Routine vaccines: Make sure you are up-to-date on routine vaccines before every trip. These vaccines include the measles-mumps-rubella vaccine, diphtheria-tetanus-pertussis vaccine, varicella (chickenpox) vaccine, polio vaccine, and your yearly flu shot.

The CDC advises MOST travelers to get the following vaccines:

- Hepatitis A: CDC recommends this vaccine because you can get hepatitis A through contaminated food or water in PNG, regardless of where you are eating or staying.
- Typhoid: You can get typhoid through contaminated food or water in PNG. The CDC recommends this vaccine for most travelers, especially if you are staying with friends or relatives, visiting smaller cities or rural areas, or if you are an adventurous eater.

The CDC advises SOME travelers (depending on a longer stay, what you will be doing in PNG, and if you are traveling from a country other than the U.S.) to get the following vaccines:

- Hepatitis B: You can get hepatitis B through sexual contact, contaminated needles, and blood products, so the CDC recommends this vaccine if you might have sex with a new partner, get a tattoo or piercing, or have any medical procedures.
- Japanese Encephalitis: You may need this vaccine if your trip will last more than a month, depending on where you are going in PNG and what time of year you are traveling. You should also consider this vaccine if you plan to visit rural areas in PNG, or will be spending a lot of time outdoors, even for trips shorter than a month. Your doctor can help you decide if this vaccine is right for you based on your travel plans.
- Malaria: When traveling in PNG, you should avoid mosquito bites to prevent malaria. You may need to take prescription medicine before, during, and after your trip to prevent malaria, depending on your travel plans, such as where you are going,

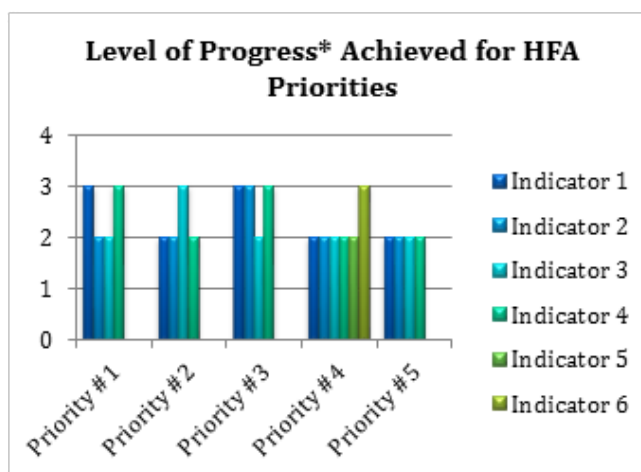
when you are traveling, and if you are spending a lot of time outdoors or sleeping outside. Talk to your doctor about how you can prevent malaria while traveling.

- Rabies: is present in bats in PNG. However, it is not a major risk to most travelers so the CDC recommends this vaccine for the following groups:
  - Travelers involved in outdoor and other activities in remote areas that put them at risk for bat bites (such as adventure travel, and caving).
  - People who will be working with or around bats (such as wildlife professionals and researchers).

Visitors can get Dengue Fever, Chikungunya, and Ross River fever if they are bitten by mosquitos. There is no specific treatment or vaccine for Chikungunya and Ross River fever; infections clear up on their own. A Dengue Fever vaccine has been developed for extreme cases but its availability is very limited in PNG. It is suggested that visitors wear long sleeves and long pants, and use insect repellents to prevent mosquito bites.<sup>214</sup>

## Hyogo Framework for Action Country Progress Report

The Hyogo Framework for Action (HFA) was adopted as a guideline to reduce vulnerabilities to natural hazards. The HFA assists participating countries to become more resilient and to better manage the hazards that threaten their development. The levels of progress of the 2011-2013 results of the Interim HFA for PNG are represented in the graph to the right and Table 11. Future Outlook areas 1-4 are also discussed in Table 12. The following agencies contributed to the report: Office of climate change and development, Department of National Planning, Dept. of Health, Department of Lands and Physical Planning, Department of Geo Hazards, Department of Transport, UN OCHA, UNICEF, AUSAID, WHO, United Nations High Commission for Refugees UNDP, International Committee of the Red Cross IOM, and JICA.<sup>215</sup>



**Priority for Action #1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.**

Core Indicator*	Indicator Description	Level of Progress Achieved
1	National policy and legal framework for disaster risk reduction exists with decentralized responsibilities and capacities at all levels.	3
2	Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels.	2
3	Community Participation and decentralization is ensured through the delegation of authority and resources to local levels.	2
4	A national multi sectoral platform for disaster risk reduction is functioning.	3

**Priority #2: Identify, assess and monitor disaster risks and enhance early warning**

Core Indicator*	Indicator Description	Level of Progress Achieved
1	National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.	2
2	Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities.	2
3	Early warning systems are in place for all major hazards, with outreach to communities.	3
4	National and local risk assessments take account of regional / trans-boundary risks, with a view to regional cooperation on risk reduction.	2

Priority #2: Identify, assess and monitor disaster risks and enhance early warning

Core Indicator*	Indicator Description	Level of Progress Achieved
1	National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.	2
2	Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities.	2
3	Early warning systems are in place for all major hazards, with outreach to communities.	3
4	National and local risk assessments take account of regional / trans-boundary risks, with a view to regional cooperation on risk reduction.	2

Priority #3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels

Core Indicator*	Indicator Description	Level of Progress Achieved
1	Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems, etc.).	3
2	School curricula, education material and relevant trainings include DRR and recovery concepts and practices.	3
3	Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.	2
4	Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities.	3

Priority #4: Reduce the underlying risk factors

Core Indicator*	Indicator Description	Level of Progress Achieved
1	DRR is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.	2
2	Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk.	2
3	Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities.	2
4	Planning and management of human settlements incorporate DRR elements, including enforcement of building codes.	2
5	DRR measures are integrated into post disaster recovery and rehabilitation processes.	2
6	Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure.	3

Priority #5: Strengthen disaster preparedness for effective response at all levels		
Core Indicator*	Indicator Description	Level of Progress Achieved
1	Strong policy, technical and institutional capacities and mechanisms for DRM, with a DRR perspective are in place.	2
2	Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programs.	2
3	Financial reserves and contingency mechanisms are in place to support effective response and recovery when required.	2
4	Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews.	2

Notes:

\*Level of Progress:

1 – Minor progress with few signs of forward action in plans or policy

2 – Some progress, but without systematic policy and/or institutional commitment

3 – Institutional commitment attained, but achievements are neither comprehensive nor substantial

4 – Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/or operational capacities

5 – Comprehensive achievement with sustained commitment and capacities at all levels<sup>163</sup>

Table 11: Hyogo Framework for Action Country Progress Report Priorities & Progress Achieved

<p>Future Outlook Area 1: The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.</p>	
<p>Challenges:</p>	<p>DRR continues to be a low priority for the Government. The current institutional or governance arrangements are weak and focus more on emergency response rather than the overall DRR spectrum. Sectors do not appreciate the need for integrating DRR into their development policies and plans due to lack of hazard risk information. The NDMO as the lead DRM focal point for PNG should be able to lead the process of mainstreaming and effectively manage within existing resource constraints or limitations. The NDMO cannot be reasonably expected to lead a comprehensive process of mainstreaming involving all agencies and covering the entire country since it does not have the human and financial resources to do so. The low profile of DRR in existing discourse is a challenge that needs to be addressed. A significant aspect of the whole issue of DRM is in terms of the inextricable link between disasters and development. However, it is the general interpretation that DRM mainly hovers around disaster or emergency response.</p>
<p>Future Outlook Priorities:</p>	<p>DRM systematically incorporated into national and sector plans and policies which appropriate with a focus on risk reduction.</p>

<p>Future Outlook Area 2: The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.</p>	
<p>Challenges:</p>	<p>The current institutional and legal arrangements does provide for a basis for decentralized DRR. The DRM Plans and legislations are obsolete and need review to ensure that appropriate governance and legal systems are in place at all levels. The decentralized nature of government requires DRM interventions to be focused at provincial and sub provincial level. Most of the communities at risk are still out of the reach of government services. There is a need to strengthen the current institutional or governance arrangements for DRM to improve interaction and dialogue on emergency response and disaster risk mainstreaming into planning and budgeting in a manner that will be sustainable over the longer term. A general issue is the need to strengthen DRM capacities at all levels. While there are institutional mechanisms to foster increased and improved DRM activity at a provincial level the results of previous investments are mixed. Part of this is due to a significant emphasis on addressing preparedness and response rather than also looking at opportunities to address mitigation.</p>
<p>Future Outlook Priorities:</p>	<p>Revision and strengthening of DRM legislation, institutional arrangements and capacities at all levels to enhance the resilience of the communities.</p>

Table 12: Hyogo Framework for Action Country Progress Report Future Outlook Areas

Future Outlook Area 3: The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programs in the reconstruction of affected communities.

Challenges:	Disaster impacts and losses can be reduced if all stakeholders including communities and individuals in hazard prone areas are well prepared, ready to act and are equipped with knowledge and capacities for effective disaster response. Post disaster recovery activities must be implemented parallel to the early stages of response. There must be no line separating preparedness, response, early and long-term recovery from development activities. However, the systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programs is an issue in PNG. There are no recovery plans in place. Only some progress has been made with regard to response planning.
Future Outlook Priorities:	DRR elements are built into disaster response, recovery and reconstruction programs to ensure sustainable development and strengthen disaster preparedness for effective response and recovery practices at all levels.

Future Outlook Area 4: The UN General Assembly Resolution 66/199, requested the development of a post-2015 framework for DRR. A first outline will be developed for the next Global Platform in 2013, and a draft should be finalized towards the end of 2014 to be ready for consideration and adoption at the World Conference on Disaster Reduction in 2015.

Most important element of the 2015-2025 framework:	Establishing sound, integrated and functional legal and institutional capacity for DRM and Improvement of disaster risk identification, assessment and monitoring mechanisms for reducing the underlying risk and vulnerability factors by improving DRM applications at all levels.
Future Outlook Priorities:	DRR elements are built into disaster response, recovery and reconstruction programs to ensure sustainable development and strengthen disaster preparedness for effective response and recovery practices at all levels.

Table 12: Hyogo Framework for Action Country Progress Report Future Outlook Areas (Continued)

## **PNG Government Ministries, Offices and Committees**

### **Department of Agriculture and Livestock**

Address: Spring Garden Road, PO Box 417  
City: Konedobu  
Phone +675 323 1848  
Fax +675 323 0563

### **Department of Commerce & Industry**

Address : 2nd Floor Moale Haus  
City: Waigani  
Phone +675 327 7346  
Fax +675 301 3205

### **Department of Community Development, Religion & Sports**

Address: Sambra Investment House  
City: Waigani  
Phone +675 325 0120  
Fax +675 325 0118

### **Department of Correctional Services**

Address: Kinhil Kramer Building  
City: Boroko  
Phone +675 323 2496  
Fax +675 323 2707

### **Department of Defence**

Address: CDC Haus, MacGregor Street  
City: Port Moresby  
Phone +675 320 0633  
Fax +675 320 0611

### **Department of Environment and Conservation**

Address National Parliament House  
City Waigani  
Phone +675 327 7591  
Fax +675 325 0182

### **Department of Culture & Tourism**

Address: Level 2, Era Rumana Building  
City: Port Moresby  
Phone +675 320 0275  
Fax +675 320 0302

### **Department of Foreign Affairs and Immigration**

Address: 2nd Floor Somare Foundation Building  
City: Waigani  
Phone +675 301 4158  
Fax +675 327 7480

### **Department of Health and HIV/AIDS**

Address: PO Box 446 Waigani, P.S.A. Haus  
City: Port Moresby  
Phone +675 325 4648  
Fax +675 301 3555

### **Department of National Planning & District Development**

Address: 4th Floor Vulupindi Haus  
City: Waigani  
Phone +675 328 8302  
Fax +675 328 8384

### **Department of Personnel Management**

Address: PO Box 519  
City: Waigani  
Phone +675 327 6447  
Fax +675 327 6447

### **Department of Police**

Address: PO Box 85, Konedobu  
City: Port Moresby  
Phone +675 322 6100  
Fax +675 322 6113

### **Department of Treasury**

Address: Vulupindi Haus, Waigani Drive,  
PO Box 542  
City: Waigani  
Post 131  
Phone +675 328 8817  
Fax +675 328 8844

### **Office of the Minister of Internal Security**

Address: Office of the Minister, PO Box 85  
City: Konedobu, NCD  
Phone +675 322 6183  
Fax +675 321 7462

### **Office of the Minister of Sports**

Address 4th Floor, Morauta Haus  
City Waigani, NCD  
Phone +675 327 6613

### **Office of the Minister of Works, Transport & Civil Aviation**

Address Wnga Haus 1-2, 7 Mile, POB 1489  
City Port Moresby  
Phone +675 323 6460

## Country Profile

*The information in the Country Profile section is sourced directly from the CIA World Fact book.<sup>217</sup>*

**Background:** The eastern half of the island of New Guinea - second largest in the world - was divided between Germany (north) and the UK (south) in 1885. The latter area was transferred to Australia in 1902, which occupied the northern portion during World War I and continued to administer the combined areas until independence in 1975. A nine-year secessionist revolt on the island of Bougainville ended in 1997 after claiming some 20,000 lives. Since 2001, Bougainville has experienced autonomy.

**Location:** Oceania, group of islands including the eastern half of the island of New Guinea between the Coral Sea and the South Pacific Ocean, east of Indonesia

**Geographic coordinates:** 6 00 S, 147 00 E

### Area:

Total: 462,840 sq km

Land: 452,860 sq km

Water: 9,980 sq km

Country comparison to the world: 55

**Area - comparative:** slightly larger than California

**Land boundaries:** total: 824 km

**Border countries (1):** Indonesia 824 km

**Coastline:** 5,152 km

**Maritime claims:** measured from claimed archipelagic baselines

Territorial sea: 12 nm

Exclusive economic zone: 200 nm

Continental shelf: 200-m depth or to the depth of exploitation

Exclusive fishing zone: 200 nm

**Climate:** Tropical; northwest monsoon (December to March), southeast monsoon (May to October); slight seasonal temperature variation

**Terrain:** mostly mountains with coastal lowlands and rolling foothills

### Elevation extremes:

Lowest point: Indian Ocean 0 m

Highest point: Mount Wilhelm 4,509 m

**Natural resources:** gold, copper, silver, natural gas, timber, oil, fisheries

### Land use:

Agricultural land: 2.6 percent

Arable land 0.7 percent; permanent crops 1.5 percent; permanent pasture 0.4 percent

Forest: 63.1 percent

Other: 34.3 percent (2011 est.)

Irrigated land: 0 sq. km (2003)

Total renewable water resources: 801 cu km (2011)

Freshwater withdrawal (domestic/industrial/agricultural): total: 0.39 cu km/yr. (57 percent/43 percent/0 percent)

Per capita: 61.3 cu m/yr. (2005)

**Natural hazards:** active volcanism; situated along the Pacific "Ring of Fire"; the country is subject to frequent and sometimes severe earthquakes; mud slides; tsunamis

**Volcanism:** severe volcanic activity; Ulawun (elev. 2,334 m), one of PNG's potentially most dangerous volcanoes, has been deemed a Decade Volcano by the International Association of Volcanology and Chemistry of the Earth's Interior, worthy of study due to its explosive history and close proximity to human populations; Rabaul (elev. 688 m) destroyed the city of Rabaul in 1937 and 1994; Lamington erupted in 1951 killing 3,000 people; Manam's 2004 eruption forced the island's abandonment; other historically active volcanoes include Bam, Bagana, Garbuna, Karkar, Langila, Lolobau, Long Island, Pago, St. Andrew Strait, Victory, and Waiowa



**Environment - current issues:** rain forest subject to deforestation as a result of growing commercial demand for tropical timber; pollution from mining projects; severe drought

**Environment - international agreements:** party to: Antarctic Treaty, Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94, Wetlands. Signed, but not ratified: none of the selected agreements

**Geography - Note:** shares island of New Guinea with Indonesia; one of world's largest swamps along southwest coast

**Ethnic groups:** Melanesian, Papuan, Negrito, Micronesian, Polynesian

**Languages:** Tok Pisin (official), English (official), Hiri Motu (official), some 836 indigenous languages spoken (about 12 percent of the world's total); most languages have fewer than 1,000 speakers. Note: Tok Pisin, a creole language, is widely used and understood; English is spoken by 1-2 percent; Hiri Motu is spoken by less than 2 percent

**Religions:** Roman Catholic 27 percent, Protestant 69.4 percent (Evangelical Lutheran 19.5 percent, United Church 11.5 percent, Seventh-Day Adventist 10 percent, Pentecostal 8.6 percent, Evangelical Alliance 5.2 percent, Anglican 3.2 percent, Baptist 2.5 percent, other Protestant 8.9 percent), Baha'i 0.3 percent, indigenous beliefs and other 3.3 percent (2000 census)

**Age structure:**

0-14 years: 34.45 percent (male 1,169,870/ female 1,128,631)

15-24 years: 19.77 percent (male 668,327/ female 650,672)

25-54 years: 36.43 percent (male 1,253,827/ female 1,177,004)

55-64 years: 7.84 percent 5.3 percent (male 179,075/ female 174,721)

65 years and over: 4.05 percent (male 139,060/ female 131,242) (2015 est.)

**Dependency ratios:**

Total dependency ratio: 67.1 percent

Youth dependency ratio: 62.1 percent

Elderly dependency ratio: 5 percent

Potential support ratio: 19.9 percent (2015 est.)

Median age:

Total: 22.6 years

Male: 22.8 years

Female: 22.5 years (2015 est.)

**Population growth rate:**

1.78 percent (2015 est.)

Country comparison to the world: 66

Birth rate:

24.38 births/1,000 population (2015 est.)

Country comparison to the world: 58

**Death rate:**

6.53 deaths/1,000 population (2015 est.)

Country comparison to the world: 147

**Urbanization:**

Urban population: 13 percent of total population (2015)

Rate of urbanization: 2.12 percent annual rate of change (2010-15 est.)

Major urban areas - population:

Port Moresby (capital) 345,000 (2015)

**Sex ratio:**

At birth: 1.05 male(s)/female

0-14 years: 1.04 male(s)/female

15-24 years: 1.03 male(s)/female

25-54 years: 1.07 male(s)/female

55-64 years: 1.03 male(s)/female

65 years and over: 0.9 male(s)/female

Total population: 1.06 male(s)/female (2015 est.)

## Maternal mortality rate:

215 deaths/100,000 live births (2015 est.)

Country comparison to the world: 51

## Infant mortality rate:

Total: 38.55 deaths/1,000 live births

Male: 42.12 deaths/1,000 live births

Female: 34.81 deaths/1,000 live births (2015 est.)

Country comparison to the world: 53

## Life expectancy at birth:

Total population: 67.03 years

Male: 64.81 years

Female: 69.36 years (2015 est.)

Country comparison to the world: 169

## Total fertility rate:

3.16 children born/woman (2015 est.)

Country comparison to the world: 51

**Contraceptive Prevalence Rate:** 32.4 percent (2006/2007)

**Health expenditures:** 4.5 percent of GDP (2013)

Country comparison to the world: 137

**Physician's density:** 0.6 physicians/1,000 population (2008)

Drinking water source:

*Improved:*

Urban: 88 percent of population

Rural: 32.8 percent of population

Total: 40 percent of population

*Unimproved:*

Urban: 12 percent of population

Rural: 67.2 percent of population

Total: 60 percent of population (2015 est.)

## Sanitation facility access:

*Improved:*

Urban: 56.4 percent of population

Rural: 13.3 percent of population

Total: 18.9 percent of population

*Unimproved:*

Urban: 43.6 percent of population

Rural: 86.7 percent of population

Total: 81.1 percent of population (2015 est.)

## HIV/AIDS - adult prevalence rate:

0.72 percent (2014 est.)

Country comparison to the world: 53

## HIV/AIDS - people living with HIV/AIDS:

37,200 (2014 est.)

Country comparison to the world: 69

## HIV/AIDS - deaths:

900 (2014 est.)

Country comparison to the world: 69

## Major infectious diseases:

Degree of risk: very high

Food or waterborne diseases: bacterial diarrhea, hepatitis A, and typhoid fever

Vector-borne diseases: dengue fever and malaria (2013)

**Obesity - adult prevalence rate:**

25.5 percent (2014)

Country comparison to the world: 115

Children under the age of 5 years underweight: 27.9 percent (2011)

Country comparison to the world: 19

Education expenditures: 5.9 percent of GDP (2011)

Country comparison to the world: 46

**Literacy:**

Definition: age 15 and over who can read and write

Total population: 64.2 percent

Male: 65.6 percent

Female: 62.8 percent (2015 est.)

**People Note:** The indigenous population of PNG is one of the most heterogeneous in the world; PNG has several thousand separate communities, most with only a few hundred people; divided by language, customs, and tradition, some of these communities have engaged in low-scale tribal conflict with their neighbors for millennia; the advent of modern weapons and modern migrants into urban areas has greatly magnified the impact of this lawlessness.

**Government type:** Constitutional parliamentary democracy and a Commonwealth realm

**Capital:** Port Moresby

Geographic coordinates: 9 27 S, 147 11 E

Time difference: UTC+8 (13 hours ahead of Washington, DC, during Standard Time)

**Administrative divisions:** 20 provinces, 1 autonomous region\*, and 1 district\*\*;  
Bougainville\*, Central, Chimbu, Eastern Highlands, East New Britain, East Sepik, Enga, Gulf, Hela, Jiwaka, Madang, Manus, Milne Bay, Morobe, National Capital\*\*, New Ireland, Northern, Southern Highlands, Western,

Western Highlands, West New Britain, West Sepik

**Independence:** 16 September 1975 (from the Australian-administered UN trusteeship)

**National holiday:** Independence Day 16 September (1975)

**Constitution:** Adopted 15 August 1975, effective at independence 16 September 1975; amended many times, last in 2013; note - in September 2015, the Supreme Court nullified the 2013 constitutional amendment that increased the grace period on motions of no confidence (2015)

**Legal system:** mixed legal system of English common law and customary law

**International Law Organization Participation:** has not submitted an ICJ jurisdiction declaration; non-party state to the ICCT

Citizenship by birth: no

Citizenship by descent only: at least one parent must be a citizen of PNG

Dual citizenship recognized: no

Residency requirement for naturalization: 8 years

**Suffrage:** 21 years of age; universal

## Executive branch:

Chief of state: Queen ELIZABETH II (since 6 February 1952); represented by Governor Michael OGIO (since 25 February 2011)

Head of government: Prime Minister Peter Paire O'NEILL (since 2 August 2011); Deputy Prime Minister Leo DION (since 9 August 2012)

Cabinet: National Executive Council appointed by the governor general on the recommendation of the prime minister

Elections/appointments: the monarchy is hereditary; governor general nominated by the National Parliament and appointed by the chief of state; following legislative elections, the leader of the majority party or majority coalition usually appointed prime minister by the governor general pending the outcome of a National Parliament vote

Election results: Peter Paire O'NEILL (PNC) elected prime minister; National Parliament vote - 94 to 12

## Legislative branch:

Description: unicameral National Parliament (111 seats; members directly elected in single-seat constituencies - 91 local and 20 provincial - by majority preferential vote; members serve 5-year terms); note - the constitution allows up to 126 seats

Note: 14 other parties won 3 or fewer seats; association with political parties is fluid

Elections: last held from 23 June 2012 to 27 July 2012 (next to be held in June 2017)

Election results: percent of vote by party - NA; seats by party - People's National Congress Party 27, Triumph Heritage Empowerment Party 12, PNG Party 8, National Alliance Party 7, United Resources Party 7, People's Party 6, People's Progress Party 6, other 22, independent 16

## Judicial branch:

Highest court(s): Supreme Court (consists of the chief justice, deputy chief justice, and 28 other judges); National Courts (10 courts located in the province capitals, with a total of 16 resident judges)

Judge selection and term of office: chief justice appointed by the governor-general upon advice of the National Executive Council (cabinet) after consultation with the National Justice Administration Minister; deputy chief justice and other justices appointed by the Judicial and Legal Services Commission, a 5-member body to include the Supreme Court chief and deputy chief justices, the chief ombudsman, and a member of the National Parliament; citizen judges appointed for 10-year renewable terms; non-citizen judges appointed for 3-year renewable terms; appointment and tenure of National Court resident judges NA

Subordinate courts: district, village, and juvenile courts

## Political parties and leaders:

National Alliance Party or NA [Patrick PRUAITCHI]

PNG Party or PNGP [Beldan NAMAHA]

People's National Congress Party or PNC [Peter Paire O'NEILL]

People's Party or PP (merged with PNC)

People's Progress Party or PPP [Sir Julius CHAN]

Triumph Heritage Empowerment Party or THE

United Resources Party or URP [William DUMA]

note: as of 13 March 2012, 41 political parties were registered

**Political pressure groups and leaders:**

Center for Environment Law and Community Rights or Celcor [Damien ASE]

Community Coalition Against Corruption

National Council of Women

Transparency International PNG or TI PNG (chapter of Transparency International)

**Diplomatic representation in the U.S.:**

Chief of mission: Ambassador Rupa Abraham MALINA (since 10 March 2014)

Chancery: 1779 Massachusetts Avenue NW, Suite 805, Washington, DC 20036

Telephone: [1] (202) 745-3680

FAX: [1] (202) 745-3679

**Diplomatic representation from the U.S.:**

Chief of mission: Ambassador Walter E. NORTH (since 7 November 2012); note - also accredited to the Solomon Islands and Vanuatu

Embassy: Douglas Street, Port Moresby, N.C.D.

Mailing address: 4240 Port Moresby Place, U.S. DoS, Washington DC 20521-4240

Telephone: [675] 321-1455

FAX: [675] 321-3423

**Flag description:** divided diagonally from upper hoist-side corner; the upper triangle is red with a soaring yellow bird of paradise centered; the lower triangle is black with five, white, five-pointed stars of the Southern Cross constellation centered; red, black, and yellow are traditional colors of PNG; the bird of paradise - endemic to the island of New Guinea - is an emblem of regional tribal culture and represents the emergence of PNG as a nation; the Southern Cross, visible in the night sky, symbolizes PNG's connection with Australia and several other countries in the South Pacific.

**National symbol(s):** Bird of paradise; national colors: red, black

**National anthem:** Name: "O Arise All You Sons"

Lyrics/music: Thomas SHACKLADY

Note: adopted 1975

**Economics:** PNG is richly endowed with natural resources, but exploitation has been hampered by rugged terrain, land tenure issues, and the high cost of developing infrastructure. The economy has a small formal sector, focused mainly on the export of those natural resources, and an informal sector, employing the majority of the population. Agriculture provides a subsistence livelihood for 85 percent of the people. Mineral deposits including copper, gold, and oil, account for nearly two-thirds of export earnings. Natural gas reserves amount to an estimated 155 billion cubic meters. A consortium led by a major American oil company is constructing a LNG production facility that could begin exporting in 2014. As the largest investment project in the country's history, it has the potential to double GDP in the near-term and triple PNG's export revenue. An American-owned firm also opened PNG's first oil refinery in 2004 and is building a second LNG production facility. The government faces the challenge of ensuring transparency and accountability for revenues flowing from this and other large LNG projects. In 2011 and 2012, the National Parliament passed legislation that created an offshore Sovereign Wealth Fund (SWF) to manage government surpluses from mineral, oil, and natural gas projects. In recent years, the government has opened up markets in telecommunications and air transport, making both more affordable to the people. Numerous challenges still face the government of Peter O'NEILL, including providing physical security for foreign investors, regaining investor confidence, restoring integrity to state institutions, promoting economic efficiency by privatizing moribund state institutions, and maintaining good relations with Australia, its former colonial ruler. Other socio-cultural challenges could upend the economy including chronic law and order and land tenure issues. The global financial crisis had little impact because of continued foreign demand for PNG's commodities.

## **GDP (purchasing power parity):**

\$18.6 billion (2014 est.)

\$17.13 billion (2013 est.)

\$16.23 billion (2012 est.)

Note: data are in 2014 U.S. dollars

Country comparison to the world: 146

## **GDP (official exchange rate):**

\$16.81 billion (2014 est.)

GDP - real growth rate:

8.5 percent (2014 est.)

5.5 percent (2013 est.)

8.1 percent (2012 est.)

Country comparison to the world: 7

## **GDP - per capita (PPP):**

\$2,500 (2014 est.)

\$2,300 (2013 est.)

\$2,200 (2012 est.)

Note: data are in 2014 U.S. dollars

Country comparison to the world: 197

## **Gross national saving:**

26.4 percent of GDP (2014 est.)

8.7 percent of GDP (2013 est.)

0.2 percent of GDP (2012 est.)

Country comparison to the world: 42

## **GDP - composition, by end use:**

Household consumption: 56.9 percent

Government consumption: 10.3 percent

Investment in fixed capital: 13.6 percent

Investment in inventories: -11.7 percent

Exports of goods and services: 58.1 percent

Imports of goods and services: -50.6 percent (2014 est.)

## **GDP - composition, by sector of origin:**

Agriculture: 25.2 percent

Industry: 37.3 percent

Services: 37.5 percent (2014 est.)

**Agriculture - products:** coffee, cocoa, copra, palm kernels, tea, sugar, rubber, sweet potatoes, fruit, vegetables, vanilla, poultry, pork, shellfish

**Industries:** copra crushing, palm oil processing, plywood production, wood chip production, mining (gold, silver, copper), crude oil and petroleum products, construction, tourism

**Industrial production growth rate:** 7.1 percent (2014 est.)

Country comparison to the world: 18

**Labor force:** 4.171 million (2014 est.)

Country comparison to the world: 91

## **Labor force - by occupation:**

Agriculture: 85 percent

Industry: NA percent

Services: NA percent (2005 est.)

**Unemployment rate:**

1.9 percent (2008 est.)

1.7 percent (2004 est.)

Country comparison to the world: 11

**Population below poverty line:** 37 percent (2009 est.)**Household income or consumption by percentage share:**

Lowest 10 percent: 1.7 percent

Highest 10 percent: 40.5 percent (1996 est.)

Distribution of family income - Gini index: 50.9 (1996)

Country comparison to the world: 18

**Budget:**

Revenues: \$4.671 billion

Expenditures: \$6 billion (2014 est.)

**Taxes and other revenues:**

27.8 percent of GDP (2014 est.)

Country comparison to the world: 100

**Budget surplus (+) or deficit (-):**

-7.9 percent of GDP (2014 est.)

Country comparison to the world: 201

**Public debt:**

41.3 percent of GDP (2014 est.)

33.6 percent of GDP (2013 est.)

Country comparison to the world: 100

**Fiscal year:** Calendar year

**Inflation rate (consumer prices):**

5.3 percent (2014 est.)

5 percent (2013 est.)

Country comparison to the world: 173

**Central bank discount rate:**

14 percent (31 December 2010)

6.92 percent (31 December 2009)

Country comparison to the world: 11

**Commercial bank prime lending rate:**

9.38 percent (31 December 2014 est.)

10.13 percent (31 December 2013 est.)

Country comparison to the world: 88

**Stock of narrow money:**

\$5.034 billion (31 December 2014 est.)

\$4.975 billion (31 December 2013 est.)

Country comparison to the world: 99

**Stock of broad money:**

\$8.085 billion (31 December 2014 est.)

\$7.477 billion (31 December 2013 est.)

Country comparison to the world: 113

**Stock of domestic credit:**

\$6.125 billion (31 December 2014 est.)

\$5.312 billion (31 December 2013 est.)

Country comparison to the world: 116

## Market value of publicly traded shares:

\$10.71 billion (31 December 2012 est.)

\$8.999 billion (31 December 2011)

\$9.742 billion (31 December 2010 est.)

Country comparison to the world: 73

## Current account balance:

\$703 million (2014 est.)

\$4.895 billion (2013 est.)

Country comparison to the world: 114

## Exports:

\$8.941 billion (2014 est.)

\$5.959 billion (2013 est.)

Country comparison to the world: 100

**Exports - commodities:** oil, gold, copper ore, logs, palm oil, coffee, cocoa, crayfish, prawns

**Exports - partners:** Australia 23.6 percent, Japan 15.6 percent, China 9.1 percent (2014)

## Imports:

\$4.013 billion (2014 est.)

\$5.411 billion (2013 est.)

Country comparison to the world: 141

## Imports - commodities:

Electronics, machinery, petroleum products, plastics, vehicles, iron and steel products, chemicals

## Imports - partners:

Australia 26.5 percent, Algeria 23.2 percent, Singapore 11.4 percent, China 8.7 percent, Malaysia 5.9 percent (2014)

## Reserves of foreign exchange and gold:

\$2.966 billion (31 December 2015 est.)

\$2.305 billion (31 December 2014 est.)

Country comparison to the world: 106

## Debt - external:

\$26.51 billion (31 December 2014 est.)

\$21.63 billion (31 December 2013 est.)

Country comparison to the world: 76

**Exchange rates:** Kina (PGK) per U.S. dollar - 2.4614 (2014 est.)

## Energy:

### Electricity - production:

3.35 billion kWh (2012 est.)

Country comparison to the world: 130

### Electricity - consumption:

3.116 billion kWh (2012 est.)

Country comparison to the world: 133

### Electricity - installed generating capacity:

700,000 kW (2012 est.)

Country comparison to the world: 134

### Electricity - from fossil fuels:

61.1 percent of total installed capacity (2012 est.)

Country comparison to the world: 129

### Electricity - from hydroelectric plants:

30.9 percent of total installed capacity (2012 est.)

Country comparison to the world: 75



**Electricity - from other renewable sources:**

0.8 percent of total installed capacity (2012 est.)

Country comparison to the world: 47

**Crude oil - production:**

34,210 bbl/day (2014 est.)

Country comparison to the world: 63

**Crude oil - exports:**

25,400 bbl/day (2012 est.)

Country comparison to the world: 56

**Crude oil - imports:**

14,880 bbl/day (2012 est.)

Country comparison to the world: 72

**Crude oil - proved reserves:**

175.2 million bbl/day (1 January 2015 est.)

Country comparison to the world: 62

**Refined petroleum products - production:**

17,330 bbl/day (2012 est.)

Country comparison to the world: 96

**Refined petroleum products - consumption:**

20,000 bbl/day (2013 est.)

Country comparison to the world: 130

**Refined petroleum products - exports:**

3,536 bbl/day (2012 est.)

Country comparison to the world: 98

**Refined petroleum products - imports:**

5,933 bbl/day (2012 est.)

Country comparison to the world: 154

**Natural gas - production:**

110 million cu m (2013 est.)

Country comparison to the world: 81

**Natural gas - consumption:**

110 million cu m (2013 est.)

Country comparison to the world: 108

**Natural gas - proved reserves:**

155.3 billion cu m (1 January 2014 est.)

Country comparison to the world: 48

**Carbon dioxide emissions from consumption of energy:**

3.385 million Mt (2012 est.)

Country comparison to the world: 138

**Communications:****Telephones - fixed lines:**

Total subscriptions: 150,000

Subscriptions per 100 inhabitants: 2 (2014 est.)

Country comparison to the world: 137

**Telephones - mobile cellular:**

Total: 3.4 million

Subscriptions per 100 inhabitants: 51 (2014 est.)

Country comparison to the world: 132

## Telephone system:

General assessment: services are minimal; facilities provide radiotelephone and telegraph, coastal radio, aeronautical radio, and international radio communication services

Domestic: access to telephone services is not widely available although combined fixed-line and mobile-cellular teledensity has increased to roughly 40 per 100 persons

International: country code - 675; submarine cables to Australia and Guam; satellite earth station - 1 Intelsat (Pacific Ocean); international radio communication service (2009)

Broadcast media: State-owned TV broadcaster operates two TV networks with relays throughout the country, and the leading private commercial media group operates four TV stations with numerous relays throughout the country; satellite TV subscription service is available; state-owned radio broadcaster operates multiple national networks, as well as regional and local stations; many private commercial radio broadcasters and some subscription satellite radio services are available; about 55 radio stations overall (2012).

## Radio broadcast stations:

AM 8, FM 19, shortwave 28 (1998)

## Television broadcast stations:

3 (all in the Port Moresby area; stations at Mt. Hagen, Goroka, Lae, and Rabaul are planned) (2004)

## Internet country code: .pg

## Internet users:

Total: 164,500

Percent of population: 2.5 percent (2014 est.)

Country comparison to the world: 162

## Transportation:

### Airports: 561 (2013)

Country comparison to the world: 12

### Airports - with paved runways:

Total: 21

Over 3,047 m: 1

2,438 to 3,047 m: 2

1,524 to 2,437 m: 12

914 to 1,523 m: 5

Under 914 m: 1 (2013)

### Airports - with unpaved runways:

Total: 540

1,524 to 2,437 m: 11

914 to 1,523 m: 53

Under 914 m: 476 (2013)

### Heliports: 2 (2013)

### Pipelines: oil 264 km (2013)

### Roadways:

Total: 9,349 km

Paved: 3,000 km

Unpaved: 6,349 km (2011)

Country comparison to the world: 138

### Waterways: 11,000 km (2011)

Country comparison to the world: 11

### Merchant marine: 31

By type: bulk carrier 7, cargo 22, carrier 2, petroleum tanker 2.

Foreign-owned: 8 (Germany 1, Malaysia 1, UAE 6)(2010)

Country comparison to the world: 83

**Ports and terminals:**

Major seaport(s): Kimbe, Lae, Madang, Rabaul, Wewak

LNG terminal(s) (export): Port Moresby

**Military:**

**Military branches:** (PNGDF); includes Maritime Operations Element, Air Operations Element) (2013)

**Military service age and obligation:** 16

**Manpower available for military service:**

Males age 16-49: 1,568,210

Females age 16-49: 1,478,965 (2010 est.)

**Manpower fit for military service:**

Males age 16-49: 1,130,951

Females age 16-49: 1,137,753 (2010 est.)

**Manpower reaching militarily significant age annually:**

Male: 67,781

Female: 65,820 (2010 est.)

**Military expenditures:**

0.54 percent of GDP (2012)

Country comparison to the world: 127

**Transnational Issues:**

**Disputes-International:** Relies on assistance from Australia to keep out illegal cross-border activities from primarily Indonesia, including goods smuggling, illegal narcotics trafficking, and squatters and secessionists.

**Illicit Drugs:** Major consumer of cannabis.

## Acronyms and Abbreviations

<b>Acronym</b>	<b>Definition</b>
ADB	Asian Development Bank
ADF	Australian Defense Force
APEC	Asia-Pacific Economic Cooperation
CDC	U.S. Center for Disease Control and Prevention
CFE-DM	Center for Excellence in Disaster Management and Humanitarian Assistance
CIA	Central Intelligence Agency
DEC	Department of Environment and Conservation
DFAT	Department of Foreign Affairs and Trade
DOD	Department of Defense
DoS	Department of State
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DSCA	Defense Security Cooperation Agency
GDP	Gross Domestic Product
HDR	Humanitarian Daily Rations
HFA	Hyogo Framework for Action
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFAD	International Fund for Agricultural Development
IFRC	International Federation of the Red Cross and Red Crescent Societies
IMSO	International Mobile Satellite Organization
IOM	International Organization for Migration
LLG	Local Level Government
LNG	Liquefied Natural Gas
MDG	Millennium Development Goal
MoU	Memorandum of Understanding
MTDP	Medium Term Development Plan
NCD	National Capital District
NDC	National Disaster Center
NCDC	National Capital District Commission
NDMC	National Disaster Management Committee
NDMO	National Disaster Management Office
NDRMP	National Disaster Risk Management Plan
NEC	National Executive Council
NGO	Non-Governmental Organization
OFDA	Office of Foreign Disaster Assistance

<b>Acronym</b>	<b>Definition</b>
OHDACA	Overseas Humanitarian, Disaster, and Civic Aid
PDMC	Provincial Disaster Management Committee
PDMO	Provincial Disaster Management Office
PEC	Provincial Executive Council
PNG	Papua New Guinea
PNGDF	PNG Defense Force
PNGDSP	PNG Development Strategic Plan
PMGO	Port Moresby Geophysical Observatory
R&MSub/C	Risk and Mitigation Sub-Committee
RecSub/C	Recovery Sub-Committee
RVO	Rabaul Volcanological Observatory
U.S.	United States
UN	United Nations
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund Vietnam
USAID	United States Agency for International Development
WHO	World Health Organization

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