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PAPUA NEW GUINEA

Disaster Management Reference Handbook

February 2019

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Disclaimer

This report has been prepared in good faith based primarily on information gathered from open-source material available at the date of publication. Most of the information was from United States (U.S.) or other government sources and is thus considered to be in the public domain. Such sources include the Central Intelligence Agency (CIA) Factbook, U.S. Department of State (DoS), and foreign government's web pages. Where possible, a link to the original electronic source is provided in the endnote (reference) section at the end of the document. Other sources include Non-Governmental Organization (NGO) homepages, Relief Web, United Nations Development Program (UNDP) or other United Nations (UN) agency web pages, World Bank, and Asian Development Bank (ADB). While making every attempt to ensure the information is relevant and accurate, Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) does not guarantee or warrant the accuracy, reliability, completeness or currency of the information in this publication. Any necessary updates will be incorporated in a future version.

Welcome - Note from the Director

Papua New Guinea (PNG) is a culturally and geographically diverse country. Its location in the Pacific Ring of Fire makes it prone to natural disasters such as earthquakes, volcanic eruptions, tsunamis, cyclones, river and coastal flooding, landslides, and droughts.¹ PNG also continues to face challenges in health care, the economy, and with a variety of social issues. As a result, the country has implemented several initiatives toward disaster risk management and mitigation as well as partnered with neighbor nations to meet its objectives for advancement and prosperity.

PNG is also making climate change mitigation a priority. The PNG Vision 2050 maps out the future direction of these efforts and has prompted nationwide improvements in coordination and communication.² In particular, PNG has made strides in Information Sharing (IS) with its Communicating with Communities initiative in collaboration with the United Nations. IS continues to play a major role in the planning, mitigation, and recovery efforts of country's natural disasters.

PNG and the United States (U.S.) have a long and effective defense relationship. Along with partners such as Australia and New Zealand, the U.S. has been proud to assist in the capacity building of the Papua New Guinea Defense Force (PNGDF) in response to domestic and global threats.³ The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) provides education, training and research about disaster management and humanitarian assistance, particularly in international settings that require coordination between the DoD and civilian agencies.

This PNG Disaster Management Reference Handbook, provides the reader not only a baseline understanding of regional-specific factors which influence disaster management; it also provides responders with a robust knowledge of the local mechanisms. Additionally, it gives decision makers, planners, and responders a greater understanding of national disaster management plans and structures, including information on key domestic disaster response entities, basic regional background, local and international humanitarian organizations present in the region. Finally, it details the country's IS capabilities, available resources, and partnerships.



Sincerely,

Joseph D. Martin, SES
Director

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

Overview

The Center for Excellence in Disaster Management & Humanitarian Assistance (CFE-DM) is a United States (U.S.) Department of Defense (DoD) organization that was established by U.S. Congress in 1994. The Center is a direct reporting unit to U.S. Indo-Pacific Command and is located on Ford Island, Joint Base Pearl Harbor-Hickam, Hawaii.

CFE-DM was founded as part of the late Senator Daniel K. Inouye's vision. The Senator had witnessed the effects of Hurricane Iniki that struck the Hawaiian Islands in 1992 and felt the civil-military coordination in the response could have been more effective. He set about to establish CFE-DM to help bridge understanding between civil and military responders, and to provide a DoD platform for building Disaster Management and Humanitarian Assistance (DMHA) awareness and expertise in U.S. forces, and with partner nations in the Asia-Pacific. While maintaining a global mandate, the Asia-Pacific region is our priority of effort and collaboration is the cornerstone of our operational practice.

Mission

CFE-DM increases the readiness of U.S. forces, civilian and military counterparts, and international partners to respond globally to foreign humanitarian assistance and disaster relief operations through Civil-Military coordination, training, information sharing, and regional planning.

Vision

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

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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 Non-Governmental Organizations (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. 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. You may also contact the Center at: (808) 472-0518. Please visit our website (<https://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

The Independent State of Papua New Guinea, conventionally known as Papua New Guinea (PNG) is located in the Pacific ‘Ring of Fire’ making it prone to many natural disasters including cyclones, drought, earthquakes, floods, landslides, tsunamis, and volcanic eruptions.⁴ PNG ranks among the top six countries for the highest percentage of population exposed to earthquake hazards and has the highest percentage of population exposed to severe volcanic risk. Additionally, heavy rains in the country often lead to landslides and damage to road infrastructure and livelihoods.⁵ As a result of its geographic and economic vulnerabilities the country has implemented several long-term strategies to attain sustainable economic development and disaster risk response (DRR), disaster risk management (DRM), and climate change mitigation.

The National Disaster Centre (NDC) was established in 1984 by an Act of Parliament to provide necessary and appropriate disaster management services to the people of PNG. The NDC operates in two divisions providing research analysis, awareness, and education and training for pro-active matters. It also provides rapid response and operations to reduce risk to communities and manage the consequences of disasters in PNG.⁶ Further, with over 80% of the country’s communities living in rural villages isolated by rugged mountains and dense forests, the inaccessibility of transportation networks, and poor communication infrastructure makes providing social services and disaster management key challenges.⁷

The country has an abundance of natural resources. As a result, almost two-thirds of PNG’s export earnings are obtained through mining. The leading exports are commodities such as gold, copper, nickel, palm oil, cocoa, logs, and liquefied natural gas (LNG). The majority of the labor force is employed by the agricultural, forestry and fishing sector.⁸ Subsistence farming accounts for approximately one-third of the country’s gross domestic product (GDP).⁹ PNG’s rapid population growth has also created challenges with providing basic health and education services to the population. The unemployment and underemployment have also exacerbated social issues such as poverty, crime and ethnic tensions.¹⁰ In 2009, PNG initiated the PNG Vision 2050 to develop a long term

strategy for the advancement and prosperity of the country. This visionary document contains a strong focus on environmental sustainability and climate change. The National Climate Compatible Development Management Policy (NCCDMP) was a result of the Vision 2050 and focuses on sustainable development and key policy areas for climate change mitigation and adaptation and provides monitoring and evaluation of these activities. In 2012, the National Disaster Risk Management Plan (NDRMP) was enacted to lay out the Disaster Risk Management (DRM) architecture of the country and provide guidance for DRM interventions at all sectors and levels of government.

More recently, the Climate Change Management Act of 2015 was implemented to outline the Government’s immediate and future steps for adaptation to climate change in the country. However, the National Food Security Policy (2016-2025) is currently the only sectoral strategy to include adaptation concerns. Additionally, the Adaptation Fund project (2012-2016) provides provincial-level adaptation strategies for five provinces with a focus on riverine and coastal populations.¹¹ In 2016, PNG signed and became the 23rd nation member of the Paris Climate Change Agreement and has enacted the Paris Agreement (Implementation) Act of 2016. As part of this agreement, PNG will be required to report actions it has taken to mitigate and adapt to climate change to the United Nations (UN) and chart a course for best practices with regard to national ecological and economic stability.¹²

Although the population’s literacy levels and educational status is fairly low, training to increase the competency, skills and knowledge of citizens has been a priority for successive governments. These priorities include using new scientific methodologies and techniques from various sectors, assessing climate change vulnerabilities and adaptation options, and raising community awareness on the impacts of climate change and variability. Climate change, variability and extreme events have potential impacts on the socio-economic and environmental well-being of PNG and its people. An integrated approach in the area of awareness, capacity building and human resources development are continued priorities for the country.¹³



PAPUA NEW GUINEA

Country Overview

Disaster Management Reference Handbook | February 2019

Country Overview

As a part of Oceania, the island country of PNG is located in the South West Pacific and is the largest of the Pacific island states at 463,000 square kilometers. It occupies the eastern half of the island of New Guinea with three additional islands and over 600 smaller islets and atolls to the north and east. The country is relatively young with a diverse geology characterized by rugged mountain ranges, deep valleys, and swift rivers inland and open plains, tropical forests and swampy inlets on the coast.¹⁴ The main islands are volcanic in origin and mountainous regions can reach in excess of 13,000 feet.¹⁵

PNG lies along the Ring of Fire, a belt of active volcanoes and earthquake epicenters bordering the Pacific Ocean where 75% of the world's volcanoes exist.¹⁶ Its rainforests are subject to deforestation resulting from commercial demand for tropical timber, pollution from mining projects, and severe drought.¹⁷ The country has active volcanoes and is subject to frequent and sometimes severe earthquakes, mudslides and tsunamis.

PNG's diversity encompasses more than just geography, it has a population of over 7 million people. Remarkably, due to the mountainous topography and the isolation of different population groups without contact with each other, PNG has more than 800 distinct languages making it one of the most diverse populations in the world. Although, ethnically, it is also one of the most heterogeneous populations in the world.¹⁸

Historically, the islands were settled over a period of 40,000 years by people generally referred to as Melanesians. The first attempt at colonization was by the British in 1793 followed by the Dutch who claimed the western portion of New Guinea in 1823. In 1885, the country was colonized and divided between Germany in the north and the United Kingdom in the south. In 1902, Australia began occupation of both regions following World War I and continued until 1975 when PNG obtained its independence.¹⁹

PNG is an active member of the Commonwealth with a ceremonial Head of State, elected by Parliament, who represents the British Monarch. PNG enjoys universal suffrage and there is freedom of the press, speech, and religion. The provinces, in addition to the national Capital District of Port Moresby, have similar constitutional arrangements with the

national government and concurrent power in areas such as agriculture, business development, town planning, forestry and natural resources. In conflict, national laws take precedence over provincial laws.²⁰

In 1973, the southern region of Papua and the district to Bougainville began a movement to secede from the Papua New Guinea state. On September 1, 1975 the leaders of Bougainville declared their province independent just as the Republic of North Solomon rejoined PNG. This calmed the secessionist activities until 1989 when a number of disputes over environmental damage caused by mining, perceptions of racism in the mining industry, the large number of mainlanders on the island, and the distribution of mineral revenues among landowners prompted Bougainville's further attempts at secession and initiated a deadly war that raged for ten years and claimed 20,000 lives, without a clear victory on either side.

A peace process began in 1997 sponsored by the Government of New Zealand and a truce was signed. In 2001, after years of negotiation, the leaders of Bougainville and PNG agreed that the province of Bougainville would become an autonomous region. An amendment to the PNG Constitution established that a referendum on independence would be held on Bougainville and in 2005, Bougainville voters elected their own parliament.²¹

PNG has a multi-tiered system of governance with a national parliament, provincial assemblies and district councils, as well as a legislature for the Autonomous Region of Bougainville.²² The country has a national capital district and 19 provinces (8 coastal, 5 highland, and 6 island) administered by Provincial Governments over which the Central Government maintains a strong presence.

Over 80% of the population lives in a rural environment, which has historically been prone to extreme climate (drought and rains) related to the El Niño Southern Oscillation (ENSO). Evidence anticipates that there will be potential for increasing climate variability related to climate change resulting in more and frequent extreme weather-related events in some parts of the country.²³

Despite the abundance of natural resources, including oil, gas, and gold which has fueled the country's economic growth, much of the population continues to live in poverty, particularly women and children.²⁴ PNG remains one of the world's most underdeveloped nations.

More than a decade of strong economic growth has not improved the welfare of most Papua New Guineans. GDP per capita is little different from that at independence 42 years ago. The majority of the population live in areas of poor infrastructure and often rugged terrain which gives them little to no access to basic services such as health, education, sanitation, and safe drinking water. PNG has yet to meet any of the Millennium Development Goals (MDG).²⁵

The majority of the population, 82%, are informally employed as subsistence farmers and only 15% are employed in a formal wage earning sector. Of those earning formal wages, the majority of employment opportunities are available in four industrial sectors: education; agriculture and forestry; real estate, renting and business services; and construction.

PNG also ranks very low in all global indicators in advancing gender equality and elimination of violence against women making it a priority country in UN Women's strategic plan. There is no social security system in PNG however, the equivalent to government sponsored welfare support comes from villager's extended family and neighbors in a system known as "wantok" which translates to "one talk" or "one language" whereby villagers care for those who can't take care of themselves within their own tribal group. In instances of acute emergencies such as earthquakes, severe drought, cyclones, and floods, additional support such as foreign aid has provided supplies and logistics.²⁶

Culture

Papua New Guinea is a country rich in culture and tradition. Over 800 different languages and 200 different cultures have been identified. The majority of the populations from the Highlands to the Coastal region reside in small villages and are primarily dependent on subsistence farming. Despite changing outside influences, the tribal social structure which has been passed down from generations continues to influence the daily lives of the villagers. Women are the primary caretakers for children and animals, and they perform the day to day work of gardening. Male elders control household and material wealth.

Reciprocity and family obligations are fundamental tenants of the society and caring for members of the village is a way of life. As languages differ from village to village so do artistic expressions such as pottery, weapons,

carvings, basketwork, and musical instruments according to their traditional skills and customs.²⁷ Photo 1 shows a Baining fire dancer entering the flames in a ceremony in New Britain, PNG. The fire dance, locally known as *atut* or *qavet* (mask), is performed by the Baining Tribe and originated in the north Baining area. Masks are an important feature of the fire dance, and their designs distinguish and identify them as belonging to a certain clan group.²⁸



Photo 1: Baining Fire Dancer Entering the Flames in New Britain, PNG

The indigenous people of PNG make up several thousand separate communities with only a few hundred people each spread across the country, and they are one of the most ethnically heterogeneous populations in the world. The communities are separated by language, customs, traditions and some have engaged in low scale tribal conflict with their neighbors.²⁹

The spectrum of PNG society ranges from traditional village based living dependent on subsistence and cash crop agriculture to more modern urban populations such as the capital city of Port Moresby, Lae, Goroka, and Rabaul.³⁰ The Highland's social system historically required the separation of men and women with men sleeping in military style barracks and women and children sleeping in separate garden houses. Although with newer cultural influences, the system has been modified in many parts of the country. The culture is primarily patriarchal and social organizations are formed by clans. In some areas land rights can be claimed by either parent so people can belong to the clans of both parents for legal reasons. Large tribes are not the norm, but they do exist and can be seen as federations of the clans.³¹

Many Papua New Guineans believe the land

is a permanent and integral part of the village community as opposed to a commodity that can be bought and sold by individuals. Consequently, by law, the land is owned, maintained, and passed down by generations of clans and cannot be sold.³²

There is a strong social pressure on men to play a masculine, assertive role in the home which has resulted in toxic exhibitions of masculinity resulting in controlling, dominating, and abusive relationships with domestic partnerships. Two out of three women in PNG have suffered from abuse at the hands of their partners and 70% of women in PNG have been victims of rape.³³

Marriage within a clan is forbidden since it is considered incest and therefore marriages are only permissible across clan lines and or boundaries of a tribe. Polygamy was outlawed in 2014, however, in some areas wealthy and prominent men still maintain separate households for multiple wives.

When migrating from rural villages to urban areas, villagers typically carry their language and customs with them and re-create their social structures. These social structures provide support for those struggling in the new location but also create demands on more affluent people who have to carry the burden of support to their kin in a system referred to as “wantok”. Wantok is a traditional welfare system for the tribe wherein everything revolves around the well-being of the tribe and no one is left to go hungry or homeless.

Music and dance celebrations mark important life-cycle events in both villages and cities. They mark birth, death, initiation, menarche, economic transactions, peacemaking, and religious observances. There are also crocodile festivals which celebrate crocodiles. Every August, the Hiri Moale Festival, highly frequented by tourists, is observed to remember historical trading routes, among many other festivals celebrated annually throughout the country.³⁴ Traditional expressions are also sometimes mixed with western and other Pacific Island influences such as string band music and Christian hymns. However, traditional and local customs prevail.³⁵ Photo 2 shows performers in traditional garb in a ceremonial dance called a sing-sing in the Wabag, Enga Province.

Demographics

PNG’s geographical separation of villages and tribes has had a remarkable effect on



Photo 2: Ceremonial Dance in the Wabag, Enga Province

cultural evolution resulting in the isolation and subsequent creation of hundreds of individual cultures and languages although ethnically, the population is not very diverse. The majority of the population of PNG are classified as Melanesian, although there are also some Micronesian and Polynesian in addition to other non-Melanesian populations.

In 1970, the Government of PNG sponsored Filipino immigrants to provide skilled labor. Non-Western groups from China and the Philippines make up the majority of the foreign-born community. In 1975 when PNG confirmed independence, there was a predominately Australian expatriate community of approximately 50,000, including 10,000 people of Chinese origin whose families’ arrival in PNG pre-dates World War I.³⁶

PNG’s population growth tends to be high and life expectancy somewhat low, relative to other countries in the region. Approximately two-fifths of the populations is under 15 years old and the life expectancy for men is 65 and 69.8 for women. Rapid population growth has created difficulties in providing basic health and education services. Unemployment and underemployment have exacerbated the problems of poverty, crime, and ethnic tensions especially in urban areas.³⁷

Ethnic Makeup

The majority of Papua New Guineans are ethnic Melanesians and although their physical and cultural characteristics vary widely, PNG is one of the most ethnically heterogeneous countries in the world.³⁸ The results of the most recent census (2011) showed PNG’s population at approximately 7 million. The primary groups are Melanesian, Papuan, Negrito, Micronesian and Polynesian.³⁹ Photo 3 depicts women living in Lae, PNG.



Photo 3: Women in Lae, PNG

Key Population Centers

The population of PNG is approximately 7 million.⁴⁰ The majority of the country's population lives in rural areas concentrated in the Highlands and Eastern Coastal areas of the island. The southern New Guinea plains are sparsely populated and densely settled in villages and hamlets. Whereas the north coast and northeastern archipelagoes are well populated in spite of the risk of natural disasters.⁴¹

PNG's population density is 10.6 people per square kilometer.⁴² The urban population is growing, as more people move from rural to urban populations which is estimated to be 13.2% of the total population. Compared to other countries in the region, PNG's rate of population growth is high (1.67%) and their life expectancy relatively low (67.4).⁴³ Approximately two-fifths of the population is under 15 years of age.⁴⁴ One-fifth of the population resides in urban areas. Photo 4 shows an aerial photo of the largest and most populated city in PNG, the capital, Port Moresby with 310,000 people.⁴⁵



Photo 4: Capital of PNG, Port Moresby

Language

PNG has three official languages: English, Tok Pisin, and Hiri Motu. Tok Pisin is a pidgin creole evolution of the English language. It is the language used as a means of communication between most populations that are not mutually intelligible. Hiri Motu is an adaptation of the Motu language used in trading and also known as Police Motu because colonial and native police spread it throughout the country in the late 19th century. The PNG Government began implementing a policy of using English as the medium of instruction in all government schools in 2013. The department of Education is providing training and support for teaching English only over Motu and other vernacular languages.⁴⁶

In addition to the three official languages, there are over 823 local languages. The languages belong to two language groups, the Austronesian and non-Austronesian or Papuan. Approximately, 30% of the local languages are considered Austronesian and spoken by 15% of the population. The Austronesian speakers are typically found in the coastal regions and offshore islands. The majority of the people residing on the island are Papuan speakers and are primarily found in the interior of the country.⁴⁷

Religion

In 1870 Methodist missionaries were the first to introduce Christianity to PNG followed by several different Protestant Christian missions setting up churches across the island and according to the 2011 census, 96.4% of the population identified as members of a Christian Church.

However, while self-identification with Christianity is high, much of the population maintain indigenous beliefs and practice traditional rites such as bride pricing, yam festivals, initiation ceremonies, sing-sings, medicine men, and sanguma, a belief in the existence and potency of sorcery, particularly in rural areas.⁴⁸

The Roman Catholic Church in PNG was established in 1847 when French missionaries arrived and today missionaries continue to care for a large number of Catholic converts. The Catholic Church is currently the largest religious group in PNG.⁴⁹

Among Christian religions, the PNG population is made up of the following

denominations: Roman Catholic 27%, combined Protestant churches make up 69.4% including Evangelical Lutheran 19.5%, United Church 11.5%, Seventh-Day Adventist 10%, Pentecostal 8.6%, Evangelical Alliance 5.2%, Anglican 3.2%, Baptist 2.5%, Other Protestant 8.9%, Baha'i 0.3%, indigenous beliefs and other 3.3%.⁵⁰

Vulnerable Groups

According to the World Health Organization (WHO), vulnerability is “the degree to which a population, individual or organization is unable to anticipate, cope with, resist and recover from the impacts of disasters”.⁵¹ Consequently, groups such as women, children, the elderly, disabled, and refugees/displaced persons who already face challenges in PNG may find themselves more adversely impacted by disasters and be less able to rebound after an event. Identifying these groups and the challenges they each face on a day to day level can assist in mitigation strategies for those informing disaster risk management planning and execution.

Children

Children hold a place of high importance in the culture and traditions of PNG. They make up almost half of PNG's population and as the future of the tribe and the State, they carry the hopes and dreams of the tenets of the country's Constitution. PNG ratified the Convention on the Rights of the Child (CRC) in March 1993 and the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in February 1995 underlining its commitment to the human rights of all children, boys, and girls, as well as rich and poor.⁵² However, the country's children are at great risk from multiple grave issues.

There are large variations in infant death rates in PNG dependent on rural or urban areas ranging from 22 to as high as 100 deaths per 1,000 births. And over 35 children under the age of five die each day from preventable illnesses such as malaria, diarrhea, pneumonia, measles, low birth weight and recently HIV/AIDS.

Only about two-thirds of school age children attend school due to the fact that many schools are neither free nor compulsory. Additionally, only 50% of children who begin primary school complete all six years and only one-fourth of those students go on to the secondary level.⁵³ In spite of the rapid economic growth, PNG has the fourth highest child stunting rate in the world. Almost one in two children (48.2%) have stunted

growth due to chronic malnutrition, a rate more than double the global average of 23.8%. Lack of awareness and access to information on proper nutrition is likely an important contributing factor to the high levels of child undernutrition in PNG across all economic classes. In particular, studies have shown that mothers in PNG lack knowledge about optimal breastfeeding and complementary feeding for their children. Consequently malnutrition affects not only the survival and development of over half a million children, but the sustainable economic growth of PNG is also at risk.

Research by Save the Children has shown that the cognitive development of a child's brain are often permanently and irreversibly impaired due to undernourishment in the crucial first 1000 days of development from pregnancy to a child's second birthday. These impairments, affecting the child's ability to learn, grow, and gain an education can limit not only the child's educational development but also his or her employment prospects for a lifetime and trap that child into an intergenerational cycle of poverty.

Malnutrition affects the economy through a number of factors including:

- Losses in productivity from a reduced labor force due to childhood mortality
- Loss in potential income and productivity from poor physical status and reduced cognitive function and;
- Loss from increased healthcare expenditure in treating diseases associated with childhood undernutrition.

Not only does undernutrition affect children's growth, education, and employment, it can also threaten their survival. Approximately 33% of all hospital deaths of children under five are either directly or indirectly caused by malnutrition. Additionally, it is estimated that 4,174 girls and 5,200 boys will die prematurely from malnutrition each year. As a result, childhood undernutrition accounts for 76% of total deaths of children under five which is significantly higher than the 45% global estimate of deaths of children under five associated with malnutrition. Further, malnutrition can weaken a child's immunity and cause them to suffer more frequent and severe effects of disease leading to a potentially lethal cycle.

Childhood undernutrition can also increase mortality risks later in life with stunted children proving greater susceptibility to health risks such as coronary heart disease and type 2 diabetes.

It is estimated that child undernutrition cost the PNG economy the equivalent of USD \$508 million in 2015-2016 and the estimated cost of child undernutrition significantly exceeded PNG's projected health and education sector budgets for 2017 (USD \$38 million and USD \$366 million respectively).⁵⁴ Figure 1 shows UNICEF's Conceptual Framework of Undernutrition.

Women

Women and girls are vulnerable in emergencies and natural disasters because they have specific needs which are often not met during a humanitarian emergency. PNG has been described as one of the most dangerous places in the world to be a woman with an estimated 70% of women in the country victims of rape or assault in their lifetime. According to the World Health Organization, two out of three women in

PNG experience abuse by an intimate partner. Domestic violence is illegal but rarely prosecuted in PNG.⁵⁵ Further, more than half of women experience rape within marriage and 68% of women are beaten at home. Additionally, 41% of men in one region were found to have raped a woman who was not their partner. However, these statistics are believed to be conservative since many women do not report assaults out of fear of retribution and because they do not expect authorities to assist.⁵⁶ Women have not had a significant role in leadership in the country. It is currently one of 5 countries in the world with no women in Parliament and there have only been seven women total elected to Parliament over the last 40 years.⁵⁷

In spite of the dearth of women in leadership, there have been some initiatives toward protecting the rights and safety of women in the country. In 2013, PNG passed the Family

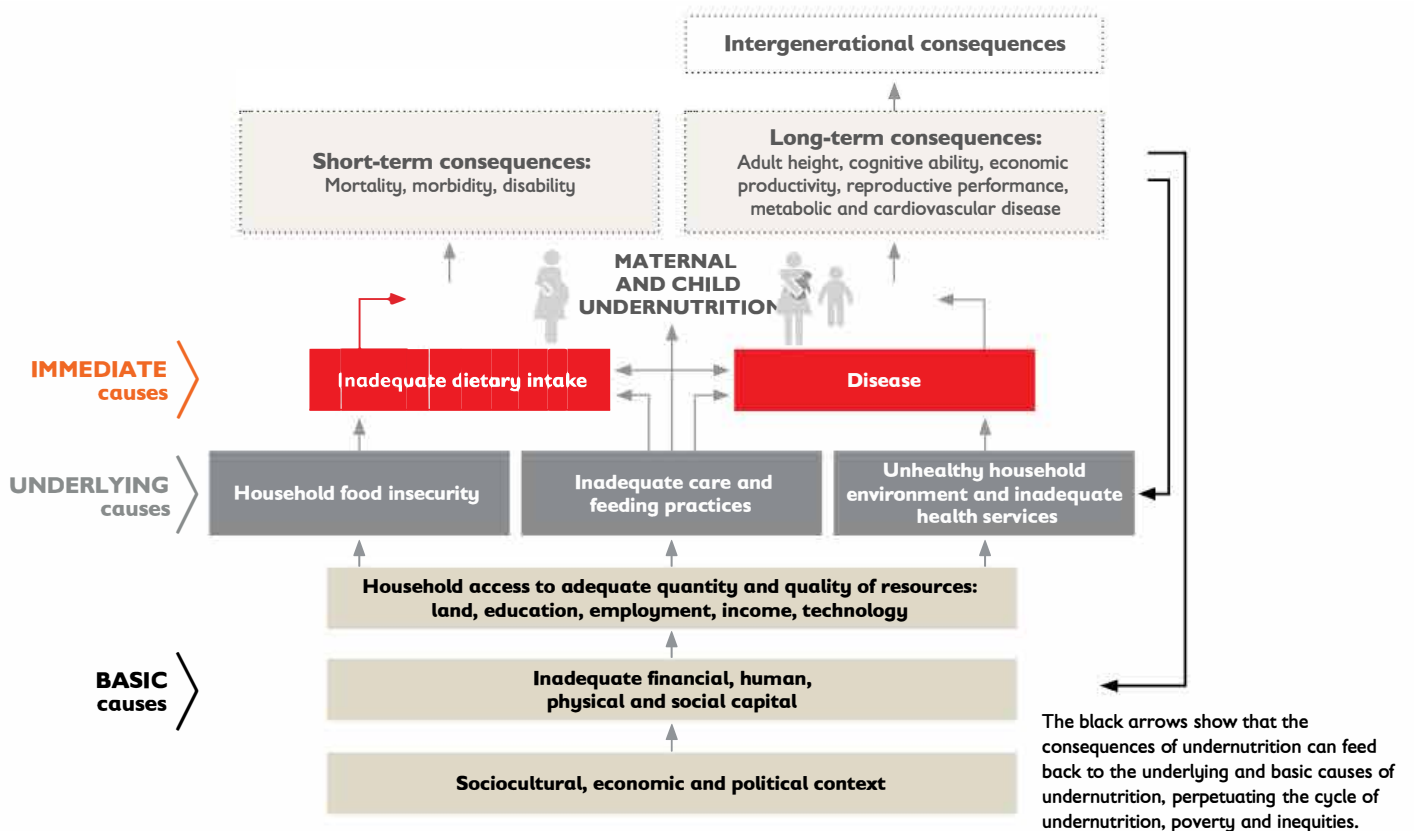


Figure 1: The UNICEF Conceptual Framework of Undernutrition

Protection Act (FPA) criminalizing domestic violence and instituting penalties for family violence and setting up a system for specialized police units to assist victims. Although the World Report has documented that the FPA has not been implemented efficiently citing institutional deficiencies in the system of checks and balances to enforce the prosecution of crimes against women and providing useful services such as safe houses, counselors, and legal aid to victims.⁵⁸

High levels of sexual violence against women in PNG also heightens their risk of being infected with HIV. PNG's growing HIV epidemic, with a reported annual increase of 15-30%, affects women the most with its polygamous culture exposing women to their partner's multiple wives. Additionally the social and cultural acceptability of violence against women severely constrains women's ability to freely move around their communities, go to school, to the market, or to work. Gender inequality and discrimination supported by traditional customs such as polygamy and bride price enable men's belief in 'ownership' of their wives.⁵⁹

PNG has one of the highest rates of maternal death in the world with just over 50% of women and girls giving birth in a health facility or with the help of a skilled birth attendant. Although the government supports the availability of contraception, two out of three women are unable to access it due to geographic, cultural, and economic barriers. Abortion is illegal in PNG except when the life of the mother is at risk.⁶⁰

People with Disabilities

The disabled population is vulnerable in disaster and crisis situations. In PNG, approximately 85% of people live in rural areas and isolated villages with inaccessible terrain, poor communication infrastructure, road networks and transport making access to social services such as health and rehabilitation, mobility, employment and education, and disaster risk preparedness and disaster management extremely difficult and limited. Existing social structures offer little to foster the participation or challenge negative views that result in stigmatization and exclusion of disabled persons in PNG. There are approximately 975,000 people in PNG living with some form of disability or impairment. Only 2% or approximately 19,500 receive services leaving 98% without any support.⁶¹

PNG has 26 special education resource centers (SERC) which provide learning opportunities for physically challenged children. The SERCs are managed by Callan Services National Unit, a faith-based organization who partners with the United Nations International Children's Emergency Fund (UNICEF). UNICEF is supporting the effort of the Department of Education (DoE) to increase access to education for children with various forms of learning challenges, improve the quality of inclusive education services for elementary school children and also build the capacity of the teaching staff.⁶²

PNG's first National Policy on Disability was launched in 2009 establishing a rights-based platform for the disability sector in the country. Prior to this, disability issues were often deemed a welfare issue stemming from the country's Missionary past and later absorbed into the welfare services provided under the post-colonial administration as a health issue where persons with disabilities could be corrected by curative or therapeutic means. The institution of the National Framework on disability illustrates the shift in the disability movement from an old world view of health/welfare model to a more inclusive and rights based model and has continued to gain momentum with a follow up policy in 2015.

The National Policy on Disability 2015–2025 is PNG's national strategy and plan of action for the disabled sector of the country. The policy focuses on promoting responsible and coordinated action to remove barriers that hinder the disabled communities from enjoying the same rights as all others. Further, it addresses the objectives of Vision 2050 toward meeting PNG's commitments made at the September 2013 Convention on the Rights for Persons with Disabilities and sets the pathway for the rights-based agenda in PNG. The policy focuses resources on common priorities of: strengthening policy, budget and legislative aspects of the disability sector; enhancing advocacy and mainstreaming programs, and improving service delivery for persons with disabilities. The policy vision: "Remove Barriers, Make Rights Real" is a call to action for all citizens of PNG to work collaboratively in removing barriers that prevent persons with disabilities from enjoying equal rights and access to services. The aim of the initiative set up systems and structures to support a broad based approach to removing barriers that prevent Persons with Disabilities from enjoying equal rights and access to services.

The NPD's goal to establish and strengthen policy implementation, infrastructure, and coordinated systems to improve the lives of persons with disabilities on an equal basis with others has three objectives:

1. Promoting and protecting the rights of persons with disabilities via organized networking and support for advocates and change agents;
2. Improving delivery of disability services, using inclusive development and Community Based Rehabilitation approaches to positively impact persons with disabilities; and
3. Improved institutional framework, performance management and financing arrangements focused around implementing the policy action plan.

These objectives are accompanied by three corresponding strategies:

1. Advocacy, rights and responsibilities to encourage and advocate to activate the PNG Assembly of Disabled Persons (PNGADP) and the national Disabled Persons Organization (DPO) to raise awareness and guide mainstreaming and inclusion programs;
2. Improve access to quality services and support programs for persons with disabilities to build the reach, quality, number and appropriateness of services delivered and referrals from service providers; enhancing social mobilization programs such as sports, introducing employment and livelihood initiatives, and pursuing service delivery reform for priorities like inclusive education, health, and rehabilitation; and
3. Develop an effective institutional, legal and financial framework for the Disability sector with priorities to implement better stakeholder collaboration, guiding the development of Provincial and District disability plans to build ownership and momentum at local levels, to implement a ten year funding strategy for more Government and alternative support and enhance the data collection and reporting of the Disability administration to strengthen regional collaboration.⁶³

Elderly

Following a natural disaster, the elderly can be more vulnerable because they are often unable to advocate for their own interests because

of physical impairments, and/or cognitive limitations. Sudden loss of medication or loss of access to pharmacies can also severely jeopardize the life of the elderly. PNG has a very low percentage of elderly since the life expectancy is so low. The life expectancy is 67.5 and the population over 60 account for only 4.4% of the population.⁶⁴ Therefore, the elderly population is not a group highly prioritized with regard to support service.

There are no known services specifically for the PNG geriatric population. Although, the tribal social structure would provide for caring for the elders of the village. However, as the large youth population ages, the proportion of persons age 60 years and above is expected to increase to 7% by 2030 and systems will need to be in place to accommodate that growth.⁶⁵

Refugees

In a 2013 deal between PNG and Australia, Australia-bound refugees traveling by boat were diverted to a facility on Manus Island, where they could process asylum claims and settle in PNG rather than in Australia.⁶⁶ As a result, Manus Island, PNG is now home to approximately 770 male asylum seekers and refugees from countries such as Afghanistan, Bangladesh, Burma and Iran. Of those, 35 have signed settlement papers to remain in PNG and 70 are temporarily living in Port Moresby. Although there are available funds for the upkeep of the facilities for the refugees, resettlement arrangements and agreements for them to move out of PNG have not come to fruition. Additionally, the refugees and asylum seekers have reported violent incidents at the hands of local youth and claimed to feel unsafe and unprotected by the local government.

In 2016, the UN Refugee Agency (UNHCR) surveyed 181 refugees and asylum seekers on Manus finding 88% reported anxiety, depression, and post-traumatic stress disorder. Following a 2016 PNG Supreme Court ruling that detaining people was unconstitutional, the Australian government ordered the main regional processing center for refugees closed. Hundreds of refugees refused to leave and remained in the center without power, food or water. PNG and Australian officials offered financial incentives for both refugees and asylum seekers to return home voluntarily and 200 men whose claims for asylum were rejected are pending deportation.⁶⁷

Economics

PNG is a country rich in natural resources. Mining and energy are the primary commodities of the country.⁶⁸ The economy is mainly focused on the export of natural resources which formally employs a small sector of the population. The majority of the population is employed by an informal sector with agriculture being the primary subsistence livelihood employing approximately 85% of the people. PNG was not affected by the global financial crisis because of continued foreign demand for PNG's commodities. Two thirds of the country's export earnings are from mineral deposits. In 1993, following the development of its first oil stream, PNG was the world's fastest growing economy. However, due to a balance of payments crisis in 1994, the country quickly reversed causing the world prices for the country's main exports to fall while drought conditions in 1997-98 further damaged the agricultural and mining sectors.

These events compounded to result in another balance of payment crisis in 1998-99. After which the government began efforts to restore the integrity of state institutions. The development of PNG's economy has primarily relied on commodities leading to unstable growth. The leading exports of PNG are gold, copper, nickel, palm oil, cocoa, logs and liquefied natural gas (LNG). Highly volatile growth rates in PNG have resulted in constant fluctuations in commodity prices. Due to a lack of reliable and available transportation routes to ports and land ownership disputes cash crop revenues have suffered and continue to prevent further development for export markets. Additionally, due to high prices, a variable domestic supply and the low status of traditional food, PNG has a problematic food supply in urban areas. In rural areas, subsistence crops are available and sufficient for the needs of the people and excess are used as cash crops when transportation routes are available. Fishing licenses for foreign fishing fleets provide a substantial source of income to the country. In November 2012, the World Bank began a long-term partnership with the PNG government to provide financial and analytical support to PNG as the country moves toward middle-income status.⁶⁹

Following the USD \$19 billion LNG construction project led by ExxonMobil, PNG began exporting to the Asian market in May 2014. In August 2017, PNG launched its first-ever national trade policy, PNG Trade Policy

2017-2032 with the goal of maximizing trade and investment by increasing exports, reducing imports and increasing foreign direct investment (FDI). Consequently, in 2017 the Gross Domestic Product (GDP), the value of all final goods and services produced within a nation in a year, was estimated at USD \$30.19 billion.⁷⁰

PNG is one of 21 members of the Asia Pacific Economic Cooperation (APEC), which aims to promote balanced, inclusive, sustainable innovative and secure growth by accelerating regional economic integration. They ensure goods, services, investments and people move easily across borders and implement initiatives to increase energy efficiency and promote sustainable management of forest and marine resources.⁷¹

In 2017, imports in PNG were a PGK \$1.876 billion industry and commodities included: machinery and transport equipment, manufactured goods, food, fuels, and chemicals. In the same year, exports contributed to PGK \$8.522 billion with commodities such as LNG, oil, gold, copper ore, nickel, cobalt, logs, palm oil, coffee, cocoa, copra, spices (turmeric, vanilla, ginger and cardamom), crayfish, prawns, tuna and sea cucumber.

Formal salaried work accounts for only one-tenth of the adult workforce with the majority of skilled work performed by thousands of foreign workers. The remaining one third of the country's GDP comes from agricultural production, primarily from subsistence farming. The archipelagoes of the north and northeast produce yams, taro, bananas and sweet potatoes. Most of the commercial produce are exported including a high-quality Arabica coffee grown in the Highlands.⁷²

PNG is implementing significant reforms in the area of trade. Import bans and quotas are replacing low tariff rates consistent with the World Trade organization requirements. Additionally, price controls on locally produced goods are being removed unless a natural monopoly exists such as electric power, telecommunications and water. The focus on industries and business where private sector investment is more likely to contribute significantly to the Government's desired objectives of growth and employment. The implementation of industrial policies remains the responsibility of various statutory authorities which were established for that purpose within the Ministry of Commerce and Industry. These authorities are the Investment

Promotion Authority (IPA), the Small Business Development Corporation (SBDC) and the Industrial Centers Development Corporation (ICDC).

Although the Government's prime objective is macro-economic policy reforms, micro-economic reforms are equally instrumental in facilitating the development of private enterprise. The country is working toward establishment of a stock exchange as a key initiative which will allow greater opportunities for businesses and individual investors' access to a more liquid and transparent capital market. PNG's major economic sectors are: agriculture, forestry, fisheries, manufacturing, minerals and petroleum, retail and wholesale, building and construction, transport and telecommunications, finance and business, and trade. PNG's main imports are sourced from Australia, Japan, the United States of America, Singapore, New Zealand, the United Kingdom, China, and Hong Kong. The main destination of PNG's exports are Australia, Japan, South Korea, China, Germany, the United States of America, the United Kingdom, and Singapore. The primary aim of the Government's economic development and industrial policy is aimed at increasing the value and volume exports of value-added products.⁷³

Government

PNG is a parliamentary democracy governed by Her Majesty Queen Elizabeth II. The Monarchy is hereditary passed on through the ruling British monarch, represented by Governor General Grand Chief Sir Bob Dadae. The Prime Minister is Peter Paire O'Neill. The Prime Minister holds executive power and heads the cabinet.⁷⁴ The Governor General is nominated by the National Parliament and appointed by the chief of state following legislative elections. Additionally, the leader of the majority party or majority coalition usually appoints the prime minister by the governor pending the outcome of the National Parliament vote.

The Legislative Branch consists of the unicameral National Parliament which constitutionally allows up to 126 seats. Currently there are 111 seats consisting of directly elected members in single seat constituents (89 local, 20 provincial), and the autonomous province of Bougainville, the National Capital district who serve 5 year terms and cast vote by majority.

The country has a Supreme Court consisting of the Chief Justice, Deputy Chief Justice, 35

justices and 5 acting justices and the National Courts consist of 13 courts located in the province capitals with 19 resident judges. There are also district, village, juvenile, military, taxation, coronial, mining warden, land, traffic, committal, and grade five courts. There are 45 political parties registered in PNG and citizens must be 18 years old to vote. PNG does not merit citizenship by birth. It is by descent only and at least one parent must be a citizen to obtain.⁷⁵

PNG's Government development objective is to provide an environment conducive to community and private sector growth and development, improved delivery of public services, growing opportunities for increased rural production and improved access to services and opportunities. The Government has taken an integral approach to implementing social, institutional and economic policies as well as the country's competitiveness and profitability with the aim of creating an investment environment to encourage domestic savings.

The Government is pursuing several projects which will have a major impact on investments, including establishing a stock exchange and a securities market in PNG. The government is also encouraging the privatization of its public corporations in order to create areas of the economy previously the domain of State-owned enterprise.

The structural adjustment program's key component is the promotion of non-mining sectors of the economy in order to ensure sustained economic growth in the event of the depletion of mineral resources. As a result, the Government has invested in policies to promote the self-sufficiency of manufacturing, renewable resources, agriculture and business service. Since its independence in 1975, PNG has had the challenge of governing many hundreds of diverse local societies as a viable single nation.⁷⁶

The Government is also committed to providing adequate physical infrastructure and a favorable taxation regime. PNG currently has one of the lowest rates of corporate tax in the Asia Pacific region.⁷⁷ PNG is now one of five countries in the world with no female members of parliament.⁷⁸

Environment

Geography

Located in Oceania, PNG is situated along the Pacific Ring of Fire and is home to several

active volcanos. The island is very diverse and is known for having one of the most biologically diverse ecosystems on the planet.⁷⁹ Photo 5 shows volcanic cones and settlements along the Rabaul Caldera on the northeastern tip of PNG's New Britain Island. Ulawun, one of PNG's most dangerous volcanoes has been deemed a Decade Volcano due to its explosive history and close proximity to human populations.

The north coast of the mainland, unlike the swampy south coast, drops sharply to the sea. Conversely, the mountainous Highlands feature enclosed upland lake basins and the volcanic ash from the nearby volcanos create a very fertile environment, perfect for the high demand of agriculture. As a result, the Highlands are covered in carefully tended gardens, some in a checkerboard pattered defined by drainage ditches and others are circular mounds built on compost to warm and enrich the soil. The fertile soil to the north is populated with forests yielding taro and yam. The more elevated areas away from the main rivers are extensive grasslands used for swidden (slash-and-burn) cultivation and hunting.⁸⁰

The island is 462,840 km² and has a total of 5,152 km of coastline. The principle rivers are the Fly, Purari, Kikori, Sepik, and Ramu. The main river is the Sepik, which runs 1,126 km long and is navigable for the majority of its length. The Fly is the county's second largest river and is navigable for approximately 800 km from its mouth at the Gulf of Papua. 75% of the land is under jungle or forests. However, large scale logging, as with other Pacific Islands is unsustainable felling at a rate of 200,000 hectares per year. Permanent crops cover 1 percent of the land and take the form of subsistence farming with only vanilla, palm oil, coffee exported.⁸¹

The country has steeply sloping mountain areas. This coupled with heavy rainfall have created geologic instability in all except the most southerly areas. This, combined with the rapid growth of the urban population and commercial enterprise have contributed to some of the highest soil erosion rates in the world.⁸²

Much of the coast is lined by mangrove swamp and rainforest covers much of the island up to the elevations of approximately 3,300 feet. PNG is also home to one of the world's largest swamps along its southwest coast.⁸³



Photo 5: Volcanic Cones and Settlements

Borders

PNG shares a land-border with the Indonesian province of Irian Jaya on the world's second largest island, New Guinea. The rest of the country is made up of about 600 small islands, including the Bismarck Archipelago, the Trobriands, the Louisiade Archipelago, the D'Entrecasteaux Islands, and some of the islands in the Solomon group, including Bougainville. Its other near neighbors are Australia to the south and the Solomon Islands to the east.⁸⁴ Figure 2 shows Papua New Guinea in relation to its neighbors. PNG is located east of Indonesia and north of Australia.



Figure 2: Map of Papua New Guinea

Climate

PNG has a tropical climate with high temperatures, humidity, and rainfall and only slight temperature variations, although temperatures vary significantly according to altitude. Rainfall is the main weather feature that differentiates the seasons. Northwest monsoons are prevalent from December to March and southeast monsoons from May to October. There are distinct wet and dry seasons which vary seasonally. There are two major prevailing air streams, the south easterly trade winds and the north westerly monsoon.

Droughts and fires also effect the country causing vegetation and crop loss. Tsunamis are also a threat to low lying areas of the country due

to its position on the edge of the Caroline and Australian tectonic plates.⁸⁵

The mean annual maximum temperatures range from 86 to 90 degrees Fahrenheit and a minimum of between 73 and 75 degrees in the lowlands. The Highlands, are cooler with night frosts common to areas above 7,000 feet and year around daytime temperatures above 72 degrees.⁸⁶

Climate Change

Approximately 80% of the population of PNG lives in rural and remote coastal communities, making them highly vulnerable to the impacts of climate change. These communities are not only exposed to climate related hazards including cyclones, droughts, floods, and landslides, but their livelihood is primarily subsistent farming, fishing and small scale cash cropping, which are at risk by the challenges of climate change.

At the 2016 Pacific Islands Forum, Australian Prime Minister Turnbull announced a AUD \$300 million climate change and resilience support package to the Pacific. This is part of a 2015 AUD \$1 billion pledge Australia made at the Paris Agreement on climate change meeting, to reduce emissions and build resilience for developing countries over five years. Australia's support has centered on climate research and information, building resilience to climate change and disasters and increasing country capacity to respond to disaster events. Australia also collaborates with PNG's commitments to climate change and disaster resilience under its Nationally Determined Contribution to the UN Framework Convention on Climate Change (UNFCCC).

The North Coast and Island regions of PNG, are the most important climate change related hazard threatening both coastal populations and important economic centers. The lack of water impoundments and or water reticulation schemes serves to increase the vulnerability of the largely agrarian communities.⁸⁷

The climate and weather patterns of PNG are heavily influenced by excess heating due to its proximity to the equator and its island location, surrounded by the Pacific Ocean and adjacent to the large land masses of Australia and Asia. Also, influencing the dramatic climate changes are the biannual east-west circulation of warm air masses, weather patterns of Australia, and the variable topography of the country's high mountain ranges. In recent years, surface temperatures have increased while rainfall has reduced in some areas by as much as 15%. Sea

level changes of up to 30 mm per year have been directly related to the El Niño Southern Oscillation (ENSO) phenomenon.⁸⁸

Lake Kutuba is the second largest lake in PNG and has recently been designated a Ramsar site for its ecological importance. (Photo 6). The Convention on Wetlands, also called, the Ramsar Convention recognizes Wetlands as the world's most productive environments and vital to the survival of humanity for its ecosystem services such as freshwater supply, food and building materials, and biodiversity to flood control, groundwater recharge, and climate change mitigation.⁸⁹

With regard to additional climate change reduction and mitigation initiatives, Australia provided an estimated AUD\$ 115 million to support climate change programs in PNG

between 2015 and 2018. Investments including the Transport Sector Support Program bolsters PNG's capacity to apply appropriate standards for road engineering, construction, and maintenance with regard to climate change and disaster risk to update safety standards and satellite navigation capability across PNG. These important actions will decrease the severity of impacts of weather events anticipated as a result of climate change.

Australia also provides support to the Pacific Regional Environment Programme (SPREP) which has a mandate to address priority climate change issues and has also committed AUD\$ 5 million to the global Climate Risk and Warning Systems (CREWS). The SPREP team also runs the regional Specialized Meteorological Centre servicing all Pacific island countries.⁹⁰



Photo 6: Lake Katuba, PNG



PAPUA NEW GUINEA

Disaster Overview

Disaster Overview

PNG is particularly prone to natural disasters including earthquakes, volcanic eruptions, tsunamis, cyclones, river and coastal flooding, landslides, and droughts. The Highlands, which house many thousands of small villages are subject to heavy rainfall and drought. Increasingly, landslides have become an issue due to the population's pressures on uncontrolled land. The coastal areas and the many coral atolls are low-lying and nearly 500,000 people in 2,000 coastal villages are vulnerable to weather extremes and inundation.

PNG experiences 2-3 national level activations (and numerous small local activations) for disaster events per year and in the past 15 years, there have been 7 events of significance covering flooding, volcanic eruption, tsunami, landslide and drought. A study of 26 Asia-Pacific regional countries by Geoscience Australia showed that PNG ranked within the top 6 of countries with the highest percentage of population exposed to earthquake hazard as well as having one of the highest total populations exposed to earthquake in the Asia-Pacific Region. PNG also ranked close behind the Philippines, Indonesia, and Vanuatu in having the highest percentage of population exposed to severe volcanic risk. The economic effects of disasters in PNG have been severe.⁹¹ The country's periodic drought and fires also cause vegetation and crop loss, and low-lying areas remain susceptible to tsunamis.⁹²

PNG has recently scaled up its DRM efforts with the implementation of the Papua New Guinea 2050 in which strategies to attain sustainable development through DRM and Climate Change Adaptation (CCA) are prioritized. In 2005, PNG was among the first countries to adopt the Hyogo Framework for action and launched its own DRM plan with priorities to: 1) build institutional capacity for planning risk informed investments 2) support coordination between DRM and CCA agencies 3) shift the emphasis on response to risk reduction management and 4) address the lack of available historic natural hazard data which hinders the assessments of risk.⁹³

The Papua New Guinea Vision 2050 (PNG Vision 2050), a 40-year development plan envisions that by the year 2050 PNG will be a smart, wise, fair, healthy and happy society. It coincides with the PNG Development Strategic Plan (PNG DSP 2010-2030) which aims to

achieve middle-income country status for PNG by the year 2030.⁹⁴

Hazards

Floods

Papua New Guinea is vulnerable to inland and coastal flooding. Due to heavy rainfall, the country suffered from severe flooding in 2008 where as many as 75,000 people were displaced from 8 different villages.⁹⁵ Flooding in PNG causes significant damage to buildings and critical infrastructure such as roads, bridges, as well as agriculture.

Landslides

PNG's susceptibility to landslides is due to a combination of factors including steep terrain, earthquakes, and aftershocks, as well as seasonal rains. Landslides in PNG are generally associated with earthquakes and or heavy rainfall and flooding. The wet season may be made even more unstable due to periodic earthquakes.⁹⁶ Photo 7 shows recovery efforts in the Southern Highlands Region after a landslide in 2012.



Photo 7: Landslide in Southern Highlands of PNG, 2012

Volcanoes

There are 16 active volcanoes in PNG; 6 of the volcanoes are classified as high risk. A relatively high percentage of the population is exposed to volcanic eruption. The Geoscience Australia report names the Madang and Morobe provinces as highly vulnerable to volcanic tsunami and lists New Britain as the highest concentration of calderas in the Asia-Pacific region reflecting the long-term hazards faced by this region.⁹⁷

Earthquakes

Located on the Australia and Pacific tectonic plates, PNG ranks in the top six countries for the highest percentage of population exposed to earthquake hazards.⁹⁸ The country regularly experiences earthquakes between magnitude 5 and 7. Recent earthquakes have caused severe devastation and loss of human life and property. Accompanying events such as tsunamis, landslides, and floods also result as consequences of these tectonic events.⁹⁹

Droughts

Typically, seasonal rains bring cloud cover, temperatures are moderate, and food and water sources are abundant in PNG. However, little to no cloud cover during El Niño events can lead to a severe drop in temperature causing frost in higher elevations, water sources to dry up, and crop failure. The Highlands are most severely impacted by these events and populations move in search of food and water. In 1997, a CARE International assessment estimated that over 300,000 people were in severe stages of food insecurity caused by drought and frost.¹⁰⁰

From 2015 to 2016, prolonged El Niño induced drought conditions in PNG adversely impacted the agricultural food production system which led to insufficient amounts of water available for crops and human beings to consume. The El Niño occurrence reached its peak towards the end of 2015 resulting in more than 2 million people at risk of famine and disease from contaminated water. CARE International, the World Food Program (WFP), and provincial authorities provided rice to provinces; however, they experienced difficulties reaching people living in remote locations.¹⁰¹

Lingering food scarcity resulted as subsistence and staple crops, such as kaukau can take up to nine months to regrow, depending on location and altitude. Villagers faced substantial periods without food and shortages of many planting materials and/or seeds that are required to rebuild important garden staples.¹⁰²

Recent History of Natural Disasters

Volcano Eruption – December 2018

At 13:00 (local time), on December 20, 2018, the Manam Volcano in the north-eastern part of the island erupted ejecting an ash plume up to 13.7 km above sea level. The eruption resulted in lava flow to the Bokure (Bokuri) and Kolang (NE Manam) communities which were evacuated.¹⁰³

Earthquake - October 2018

A 7 magnitude earthquake struck the island of New Britain in PNG around 7:00am (local time) on October 10, 2018 followed by 2 aftershocks above magnitude 5 and triggering a preliminary tsunami warning that was subsequently cancelled. There were no immediate reports of damage.¹⁰⁴

Earthquake - February 2018

On 26 February 2018, a 7.5 magnitude earthquake struck the Highlands of PNG followed by hundreds of aftershocks including a 6.7 magnitude earthquake affecting over 544,000 people. 54,000 homes were damaged and approximately 18,200 citizens were displaced and forced to seek shelter in informal care centers or with host families. The Government declared an emergency and welcomed international aid for areas of Education, Food Security, Health, Nutrition, Protection, Logistics Coordination, Shelter, and life-supporting and early recovery efforts estimated a need for USD \$62 million.¹⁰⁵ Many organizations came together to assist including USAID's Office of U.S. Foreign Disaster Assistance providing USD \$100,000 in relief supplies, water sanitation, and hygiene assistance.¹⁰⁶ Additionally, the UN established an information line alerting lifesaving messages over mobile phones to the community. Additionally, to reduce the risk of disease and outbreak following the event, the UN initiated a mass vaccination campaign distributing vaccines of different antigens, new-born care survival kits, health kits, Solar Disk Drive refrigerators and reproductive health kits to the affected provinces' health care facilities and Safe Spaces for women and children. The UN also set up Safe Temporary Learning Spaces (STLS) for children to continue their learning since the earthquakes damaged schools and infrastructure. Additional paraphernalia was also provided including tents, school in a box and recreation kits.¹⁰⁷

Volcano Eruption – January 2018

The entire population (591 people) of Kandovar Island, comprised of five community groups including the villages of Manot, Taragauo, Dong Sarakbano, Niukatnam and Rungio, with a total of 145 families in PNG were evacuated and relocated to Blup Blup Island when the Kandovar Island volcano became active with mild volcanic activity on the south east side of the island covering 50-60% of the island in lava. The Prime Minister's Office provided initial provisions of

food and water for the evacuees who were later resettled to the mainland for up to three years. On-going relief efforts have been provided by the National Capital District Commission as well as private sector companies providing in-kind contributions including flour, rice, and sugar. The National Disaster Center developed a PGK4 million response plan (\$1.21 million) to meet the assessed needs of the Kadovar islanders at Dandan Care Center for up to six months.¹⁰⁸

Landslide – November 2016

A massive landslide completely covered two villages while people slept in the southern highlands of PNG, killing at least 40 people. Out of all the villagers, reportedly only three or four people were able to escape the disaster due to the remote location of the landslide and lack of aid available to perform rescue. Heavy rain to the area as well as a possible blast at a nearby quarry are thought to have contributed to the landslide.¹⁰⁹

Country Risks

Disasters have caused economic loss in PNG over the years. Disasters have also claimed many lives. Figure 3 details Nationally Reported Losses for PNG from 1990-2014.

Environmental Degradation

The island of Papua New Guinea has one of the last great expanses of tropical rainforest in the world which is rapidly being developed into more accessible regions with 1.4% of tropical forests being lost annually. Each year 50,000-

60,000 hectares are totally and permanently cleared.

Tropical forests are being cleared for:

- 50% for agriculture
- 25-30% for industrial logging
- The rest for infrastructure.

Natural forests cover approximately 60% of PNG, of which 52% is classified as production forests (for exploitation of timber and other products), and 48% for conservation (not available due to inaccessibility or ecological constraints.) Consequently as PNG's forests are lost and degraded it also loses its diversity of plants, animals and indigenous people. Other direct effects of deforestation include:

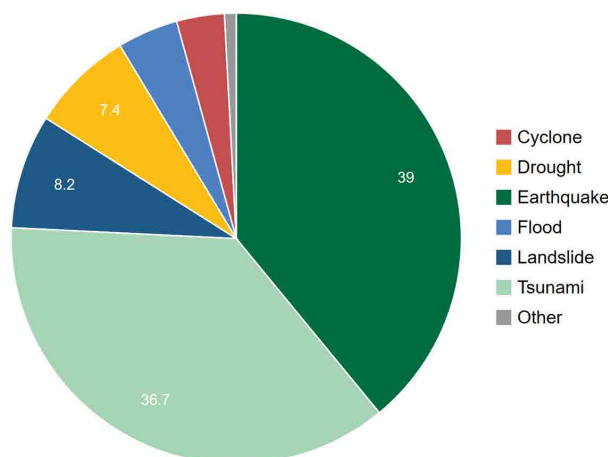
- Soil degradation
- Silting of waterways and offshore reefs
- Loss of wildlife habitat and food resources
- Loss of tourist potential
- Chemical pollution of soil and water; and
- Climatic changes.

Indirect effects of deforestation include:

- Changes in human demography with increases in local population
- Overtaxing of food, water, and hygiene resources
- Dislocation of cultural frameworks and social order; and
- Downgrading of social values and increase in lawlessness.¹¹⁰

In 2005, Parliament passed an amendment to the country's forestry act to enable loggers and the forest minister to be directly involved in the

Mortality



Combined economic losses

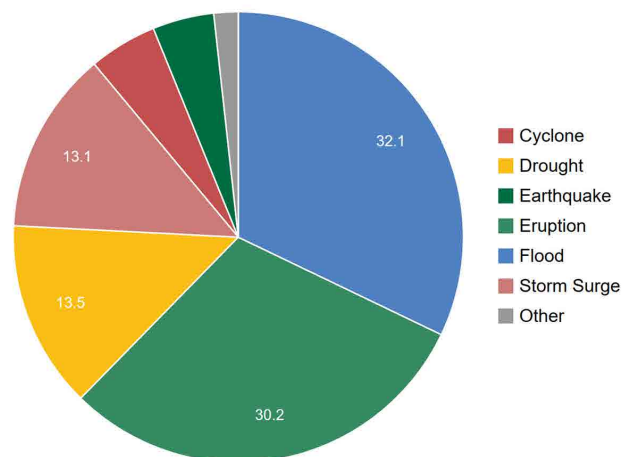


Figure 3: PNG Percent of Nationally Reported Losses for Mortality and Combined Economic Loss

allocation of timber permitted to log. However, despite the increase in logging, deforestation has not increased significantly since the end of the 1990s when 4 million hectares of forest was razed. The annual deforestation rate continues at about 1% per year.

Another significant threat to PNG's forest is agricultural expansion. The country is suffering from an increasing amounts of land being converted for subsistence agriculture. During the 1997-1998 El Niño event, fires burned thousands of hectares of dried out forests resulting in thousands of deaths from food shortage and famine in the Central Highlands. Many of those lands remain felled.

In November 2005, the PNG government announced plans to create 12 new protected areas that would add 771,451 hectares to the country's park system a 50% increase. Additionally, at the 2005 United Nations summit on climate change, PNG led a coalition of tropical developing countries to propose a plan whereby wealthy countries would pay poor countries to preserve their rainforests. A modified proposal was accepted by the UN.¹¹¹

Internal Conflict

PNG has battled secessionist activities from different regions of the country. The Bougainville conflict commenced movement to secede from the Papua New Guinea state in 1973. The conflict escalated when land owners weren't compensated adequately from the Panguna mines and with regard to disagreements about environmental issues, which resulted in a 10-year civil conflict that claimed 20,000 lives. The end result was an agreement with regard to Bougainville's autonomy and their ability to elect its own parliament beginning in 2005.¹¹²

In general, there are no reports of large-scale tribal warfare. Ethnic violence in PNG remains predominantly at the local-level and is typically expressed in the form of local disputes and tribal fighting rather than as a contest for control of the government itself. At the national level, the country's diversity and number of linguistic groups necessitates that a degree of cooperation and accommodation unify the groups. As a result of this unification, particularly with the way the Government is arranged with representatives of each of the provinces, PNG has been able to maintain a system of continuous democracy.¹¹³

Food Security

Food security in PNG is high as most people live in rural communities with access to land and can grow most of their own food

requirements.¹¹⁴ Although, there are concerns about the sustainability of the environment with the growing population. According to the latest census, PNG's population of approximately 7 million is more than double what it was in 1980. And the United Nation Development Program estimates that the population will double again by 2050 causing concerns about the unsustainability of the environment to maintain levels of food security when over 80% of the population subsist on homegrown agriculture.¹¹⁵ PNG's population grows food for household use, but also to bring and sell at markets.¹¹⁶

This concern about food security is also due to the adoption of high-yielding staple crops and people not having access to cash income that can be used to purchase food. The adoption of new staple crops provided a once-off benefit, however, that is now ending in PNG. Food supply problems may be short term or long term. Short-term threats include climatic extremes such as frost and excessive rainfall, cycles in planting rates and human disease epidemics. Long-term threats include very low cash income and land degradation associated with population increase. There are policy implications for both these types of threats.¹¹⁷ Natural disasters that effect crops subsequently affect not only the economy but also the food source of the populations.

Additionally, 4.7 million people in PNG have been affected by El Niño related droughts, erratic rains and frosts resulting in cases of hunger, poverty, and disease. Rainfall in the country has been below average and frost and invasive pests in the Highlands have contributed to destroyed crops and livestock leading to food insecurity and people being forced to cut down on meals and eat less compounding the issue with risk of malnutrition.¹¹⁸

In February 2016, following the El Niño events of 2015-2016, the World Food Program PNG collaborated with the National Disaster Center (NDC) of PNG to launch a telephone based survey using the mobile Vulnerability Analysis and Mapping (mVAM) approach to contact citizens for information on food security and livelihood in PNG. Data was collected using Digicel Mobile Network with operators interviewing 3,708 households experiencing severe, very severe or extreme drought conditions. A follow up survey was conducted to assess the recovery of food security and livelihoods.¹¹⁹

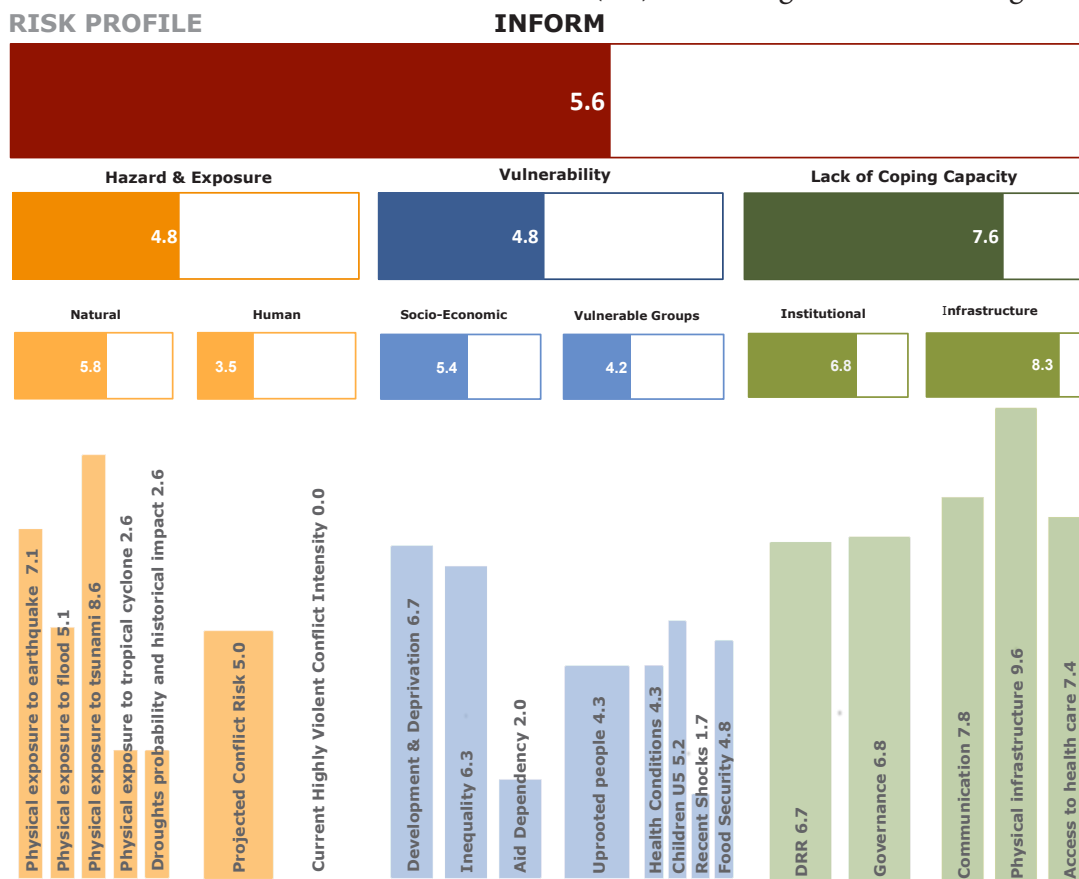
Country Risk Profile

Risk involving exposure to hazards, vulnerability, as well as lack of coping capacity

are important factors in Disaster Risk Management. Figure 4 shows INFORM's risk profile for Papua New Guinea. INFORM is a global, objective, and transparent tool for understanding the risk of humanitarian crises. 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). It is a collaboration of the Inter-Agency Standing Committee Reference Group on Risk, Early Warning and Preparedness and the European

Commission. The index results are published once every year.

INFORM gives each country a risk score of 1-10 (1 being the lowest and 10 the highest) for each of the dimensions, categories, and components of risk, as well as an overall risk score. The higher the score the more vulnerable a country is. The purpose of INFORM is to provide an open, transparent, consensus-based methodology for analyzing crisis risk at global, regional or national level. Papua New Guinea has a 2019 Hazard and Exposure risk of 4.8/10; a Vulnerability score of 4.8/10; and a Lack of Coping Capacity score of 7.6/10. Physical exposures to tsunamis (8.6) and earthquakes (7.1) are the highest as seen in Figure 4.¹²⁰



PAPUA NEW GUINEA

Melanesia Lower middle income

	Value	Rank	Trend (3 years)
INFORM Risk	5.6	26	→
Hazard & Exposure	4.8	55	→
Vulnerability	4.8	57	↓

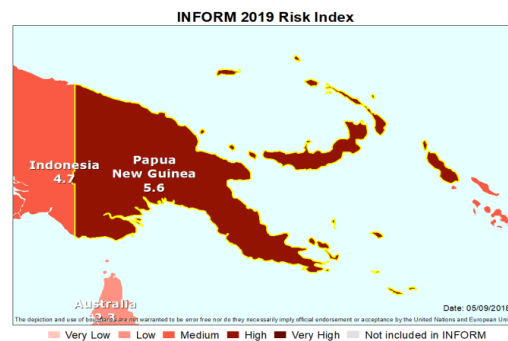
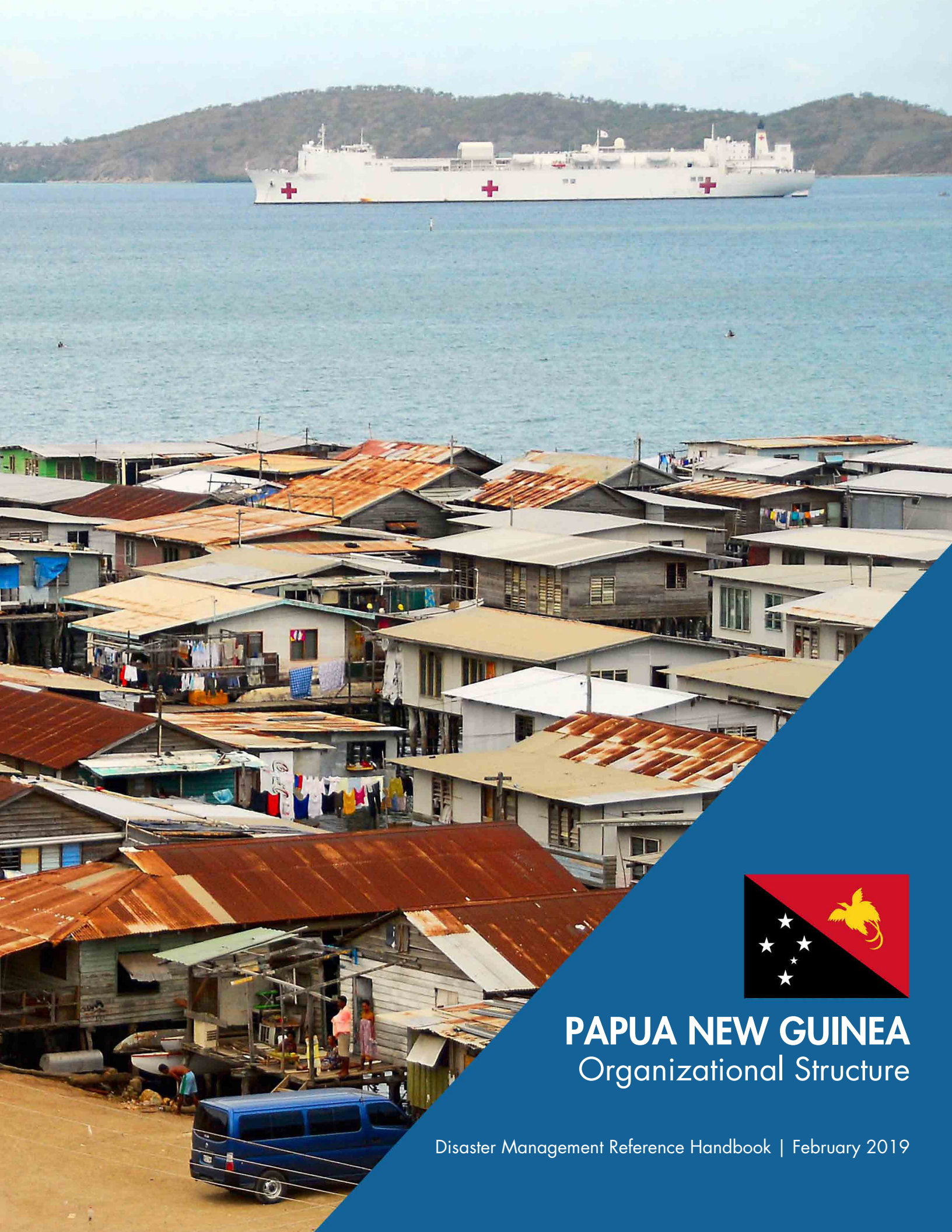


Figure 4: INFORM Country Risk Profile for PNG



PAPUA NEW GUINEA

Organizational Structure

Disaster Management Reference Handbook | February 2019

Organizational Structure for Disaster Management

The institutional disaster management arrangements in PNG include local, district, provincial, national and international players. PNG does have established policies, institutions, systems, and related structures to address DRR and CCA including DRM arrangements with respect to hazard monitoring, emergency response, and relief. However, PNG identified gaps and challenges in the Hyogo Framework for Action (HFA). There are gaps in comprehensive risk assessment to support planning and decision-making by Government and Non-Government agencies. There are also challenges with information sharing within national, provincial, and other agencies. Many are not aware of the existence of hazards and risk information or the planning of development interventions. The National Disaster Centre is

the lead agency for DRM in PNG.¹²¹ Each level of Government is responsible for developing and maintaining a disaster risk management plan, appropriate to their hazard profile and resource capacity.¹²² Figure 5 shows the national disaster risk management structure in PNG.

Figure 6 shows PNG’s management and coordination structure. The National Executive Council is comprised of members of the National Parliament. It makes final decisions for any disaster policy matters. The Disaster Management Act 1984 (revised 1987) provides the mandate for the National Disaster Centre to act as the executive arm of the National Disaster Committee and is responsible for carrying out its day-to-day responsibilities.¹²³

Lead Government Agencies in Disaster Response

Management of disasters and emergencies in PNG has been undertaken in accordance with the Disaster Management Act. PNG has the National Executive Council, the National Disaster Committee, the National Disaster Centre, and the Provincial Disaster Committees.¹²⁴

National DRM Structure

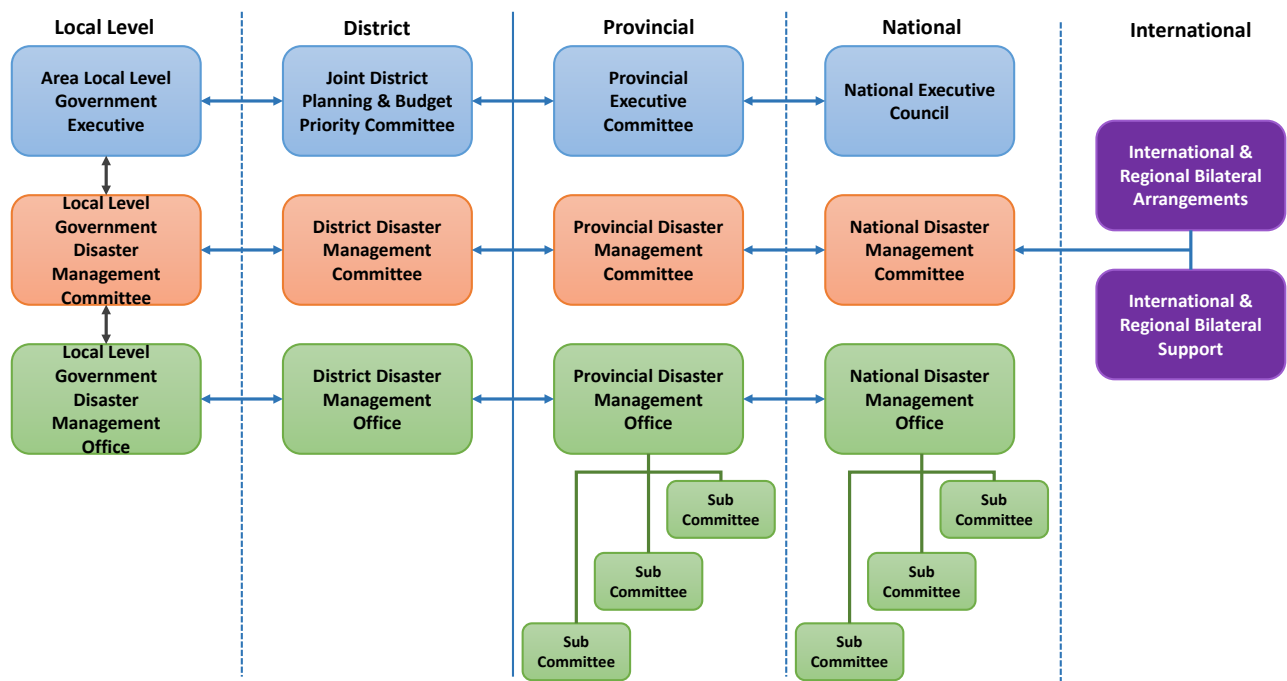


Figure 5: Papua New Guinea National DRM Structure

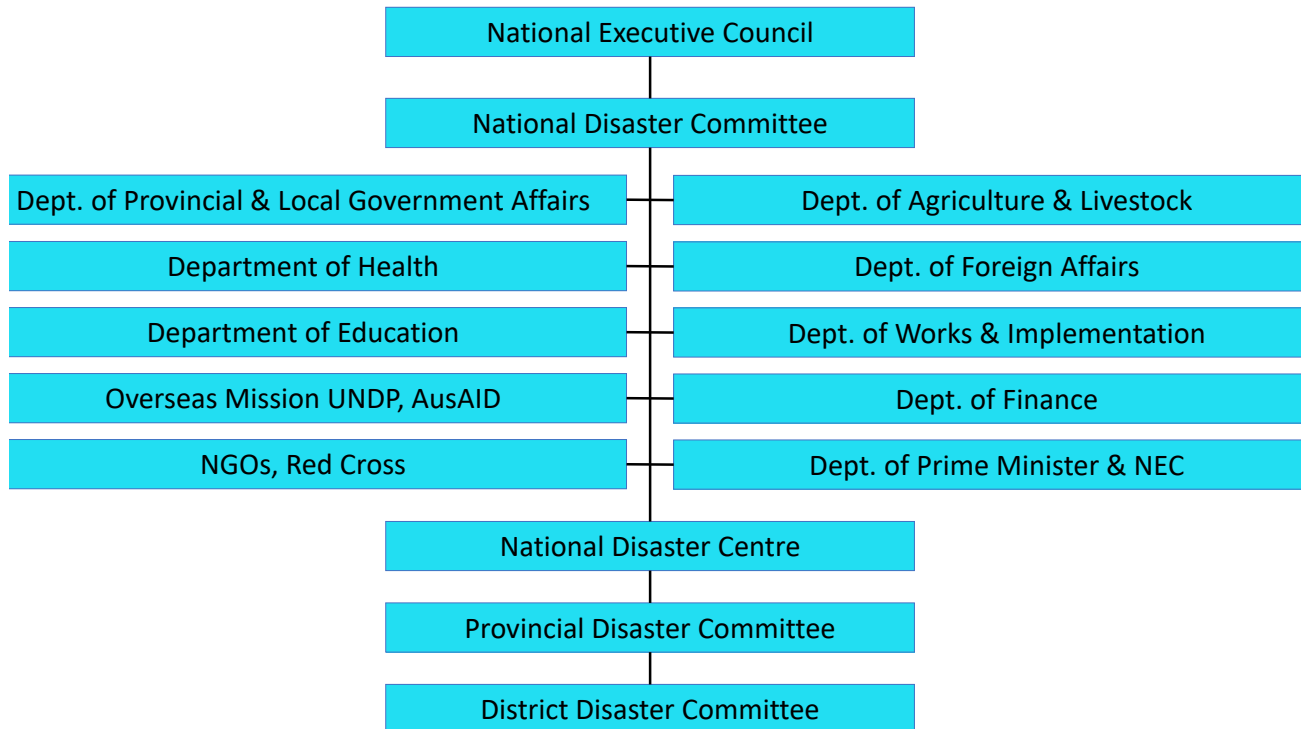


Figure 6: Papua New Guinea Management & Coordination Structure

The National Executive Council

The National Executive Council is comprised of members of the National Parliament. It makes final decisions for any disaster policy matters. The National Executive Council is guided by the National Disaster Committee, which is comprised of heads of key National Government agencies who are vested with additional responsibility of disaster management.¹²⁵

The National Disaster Committee

The National Disaster Committee is comprised of the Commander of the Defence Force, the Police Commissioner, and Departmental heads of various government departments including the Prime Minister's Office, Finance, Health, Works, Defence, Police, Foreign Affairs, National Planning, and Provincial and Local Governments. The Committee is chaired by the Secretary of Department of Provincial & Local Government Affairs (DPLGA).¹²⁶

The National Disaster Committee's responsibilities (as stipulated in the Disaster Management Act) are to:¹²⁷

- Supervise the national state of preparedness for emergencies and disasters and report on it

to the National Executive Council;

- Maintain the National Emergency Plan;
- Assign responsibilities for disaster related activities to Departments and other bodies;
- Advise NEC if assistance is required;
- Lay down guidelines for the preparation and format of provincial disaster plans;
- Approve grants;
- Foster public awareness of the effects of natural hazards & measures which can be taken to reduce their effects;
- Supervise establishment of stockpiles of relief supplies; and
- Advise the National Executive Council of all the circumstances and on the advisability of declaring a National Emergency

The National Disaster Centre

The National Disaster Centre (NDC) falls under the Department of Provincial & Local Level Government Affairs and exists under legislation to provide disaster management services to the people of Papua New Guinea. The NDC was established by the Disaster Management Act of 1984.¹²⁸

The NDC coordinated relief operations when PNG was hit by a 7.5 magnitude earthquake

on February 26th, 2018. The earthquake hit the Highlands Region of PNG, affecting 544,000 people in Enga, Gulf, Hela, Southern Highlands, and Western provinces. Of these, more than 270,000 people were in immediate need of life-saving assistance. On March 1 2018, the Government appointed an Emergency Controller to lead the National Emergency Disaster Restoration Team, overseeing relief and recovery efforts. Two forward operating bases, in Mt Hagen and in Moro, as well as Emergency Operations Centres in the capitals of Hela and Southern Highlands provinces, supported coordination at the field level. The joint inter-agency Disaster Management Team coordinated relief efforts of humanitarian partners and private companies.

The NDC has two divisions that include Risk Management and the Community Government Liaison. The Risk Management Division handles disaster prevention through research, analysis, awareness, education and training. The Community Government Liaison handles rapid response and operations.¹²⁹ The NDC operates under the Ministry of Inter-Governmental Relations and serves the department of Provincial and Local Government Affairs.¹³⁰

The NDC has the following vision, mission, mandate, and core functions:

Vision: Ensure Safe and Sustainable Communities in Papua New Guinea.

Mission: To provide national leadership in the development and maintenance of measures to reduce risk to communities and to manage the consequences of disasters in Papua New Guinea.

Mandate:

- To supervise the national state of preparedness for emergencies and disasters and to report on it to the National Executive Council;
- To maintain the National Emergency Plan (currently known as the National Disaster Management Plan) of the National Executive Council;
- To assign responsibilities for disaster-related activities to Departments and other bodies;
- To coordinate Departmental relief actions and collate national relief requirements;
- To advise the National Executive Council if appeal for international assistance is required;
- To lay down guidelines for the preparation and format of provincial disaster plans;

- To examine and where necessary approve all grants from national funds for emergency relief;
- To foster public awareness of the effects of natural hazards and measures which can be taken to reduce their effects;
- To supervise the establishment of stockpiles of relief supplies; and
- In the case of disaster, to advise the National Executive Council of all the circumstances and on the advisability of declaring a National Emergency.

Core Functions:

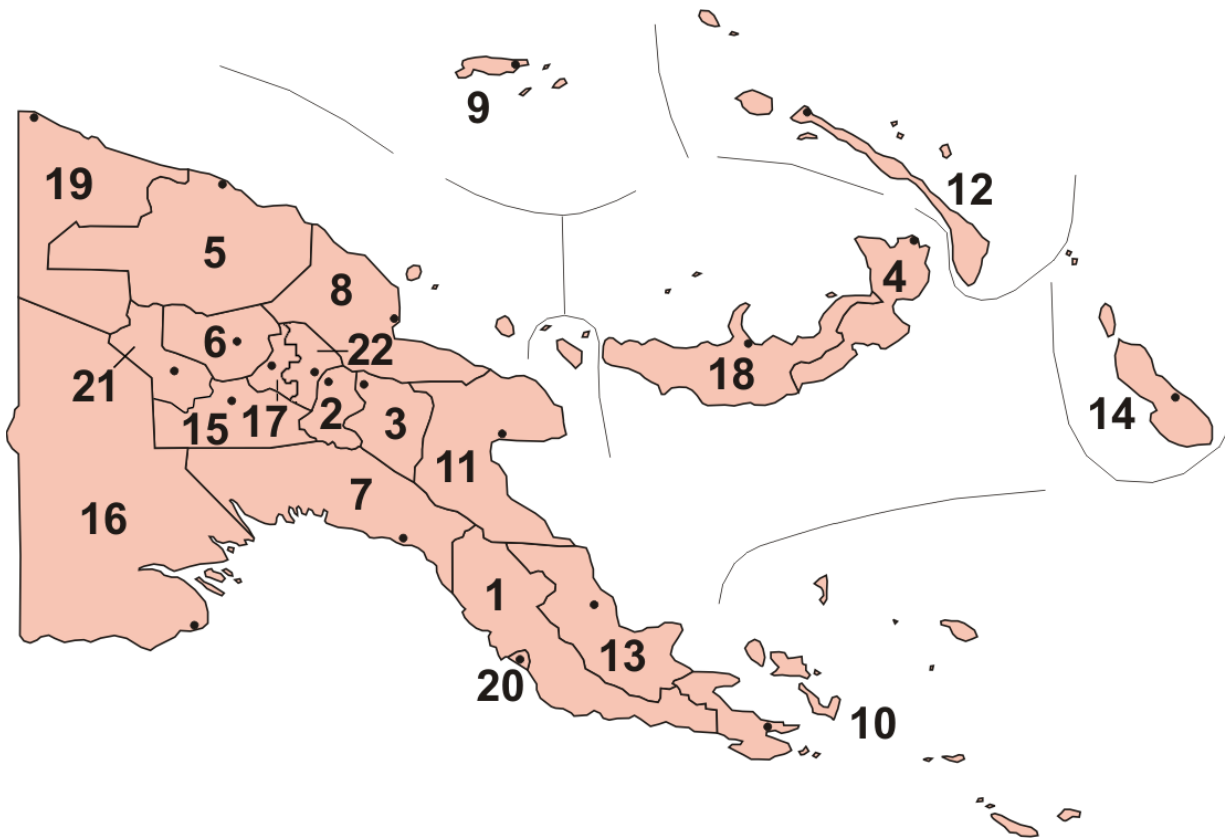
- National Training (Disaster Legislation, Disaster Plans, Mitigation Policy);
- Information and Awareness (Media coordination, Community Education);
- National Operation Centre Management (Assistance & Assessment teams, Incident recording & reporting); and
- Financial Management (Donor & Govt. Funds).

The Provincial Disaster Committees

In addition to the NDC, there are Provincial Disaster Centres in PNG. The draft Framework mentions plans to integrate DRM into provincial level planning and budgeting and include disaster risk assessments into investment decisions at the community level. The National Disaster Management Act provides for the establishment of Provincial Disaster Committees which should be responsible for preparing emergency plans for the provinces and coordinate relief operations. Only four of the 19 provinces have operational disaster management arrangements (according to World Bank assessments). Basic roles and functions of the Provincial Disaster Committees include:¹³¹

- Provide and render advice to the Provincial Executive Council through the Governor in ensuring that development plans for the province take into account hazards prone to the Province;
- Conduct assessments on particular hazards prone or common in the province;
- Prepare contingency plans for respective hazards and supervise the state of preparedness for
- emergencies in the Province; and
- Foster public awareness on natural phenomena and mitigation measures; and organize training of relief workers in the province.

Figure 7 shows the Provincial Disaster Centres' locations on the map.



1. Central Province	5. East Sepik Province	9. Manus Province	13. Northern Province	17. Western Highlands Province
2. Chimbu Province	6. Enga Province	10. Milne Bay Province	14. Autonomous Region of Bougainville	18. West New Britain Province
3. Eastern Highlands Province	7. Gulf Province	11. Morobe Province	15. Southern Highlands Province	19. West Sepik Province
4. East New Britain Province	8. Madang Province	12. New Ireland Province	16. Western Province	20. Hela Province
21. Jiwaka Province				

Figure 7: Provincial Disaster Committees in PNG

Key Disaster Management Partners

Disaster Management Partners in PNG include the PNG Red Cross Society, OXFAM, World Vision, Salvation Army, CARE, Médecins Sans Frontières (Doctors Without Borders), Church Groups, and the Council of Social Services. They are active in the country with disaster and emergency programs, as well as having representatives in most of the provinces and districts of the country. Only registered NGOs are now permitted to be involved in any emergency or disaster in order to provide effective coordination and monitoring of short term and long-term responses.¹³²

The Government of PNG and the UN system have also established a Disaster Management Team mechanism, which involves the above mentioned key partner agencies working on DRM with Government, including development partners, NGOs, church-based organizations, and is co-chaired by the Director of PNG's National Disaster Centre and UN Resident Coordinator with a Disaster Risk Management consultant from the UN Resident Coordinator's Office providing secretarial support.¹³³

The Disaster Management Team, under the overall leadership of the Government, has the roll to activate informal clusters (Education, Food Security, Health and Nutrition, Protection, Shelter, and WASH) and establish an inter-cluster

coordination group to support humanitarian response coordination such as the case with the February 2018 Earthquake Disaster Response. The interagency Disaster Management Team deploys field coordination teams to support response planning, coordination and information management.¹³⁴ The Disaster Management Team is also expected to follow up on the implementation of the UNDAC Mission recommendations; revision of the existing national contingency plan; ensuring that coordination mechanisms are in place; and becoming the Inter-Agency Standing Committee in case of a disaster.¹³⁵

Disaster Management Team Members involved in the PNG Highlands Earthquake response included:¹³⁶

Adventist Development and Relief Agency (ADRA), Americare, Anglicare PNG, Asian Development Bank (ADB), Australian High Commission, Baptist Union PNG (BUPNG), CARE, Caritas PNG, ChildFund PNG, European Union Delegation, Food and Agriculture Organization (FAO), International Committee of the Red Cross (ICRC), International Federation of Red Cross/Red Crescent Societies (IFRC), International Organization of Migration (IOM), Japan International Cooperation Agency (JICA), Japanese Embassy, Latter Day Saints Church, New Zealand High Commission, Oxfam, PNG Red Cross Society, Save the Children, United Church PNG, United Nations Children's Fund (UNICEF), United Nations Development Programme (UNDP), United Nations Entity for Gender Equality and the Empowerment of Women (UN Women), United Nations Population Fund (UNFPA), United States Agency for International Development (USAID), World Bank World Food Programme (WFP), World Health Organization (WHO) and World Vision.

International Federation of Red Cross and Red Crescent Societies

The International Federation of Red Cross and Red Crescent Societies (IFRC) is a humanitarian organization that provides assistance and promotes humanitarian activities by National Societies, with a view to preventing and alleviating human suffering. It was founded in 1919, and includes 190 Red Cross and Red Crescent National Societies. The IFRC carries out relief operations to assist victims of disasters, and combines this with development work to strengthen the capacities of its member National Societies.¹³⁷

Papua New Guinea Red Cross Society

The PNG Red Cross has 500 volunteers, 25 staff and 13 branches spread in all administrative districts.¹³⁸ IFRC released approximately USD \$221,000 from its Disaster Relief Emergency Fund to support the needs of 2,000 people affected by the 7.5 magnitude earthquake, which struck PNG in February 2018. The emergency fund supported assessments and aerial surveillance to identify need, while providing 2,000 people with first aid, water, sanitation and hygiene support, mosquito nets, materials for emergency shelters such as ropes and tarpaulins, water containers, and psychosocial support.¹³⁹

After Tropical Cyclone Pam swept through the Pacific in 2015, the PNG Red Cross assisted communities affected by the storm by providing emergency relief distributions such as tarpaulins, kitchen sets, blankets, water containers, mosquito netting, first aid and hygiene support and education.¹⁴⁰

U.S. Government Agencies in PNG

USAID

USAID focuses on climate change adaptation and disaster preparedness. They also assist PNG in addressing its HIV/AIDS epidemic and advancing peace and security in Bougainville.

USAID assistance in the Pacific covers 12 nations including PNG, Federated States of Micronesia, Fiji, Kiribati, Nauru, Palau, Republic of the Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu. Approximately 8.5 million people make up the Pacific Islands and their islands are threatened by natural disasters, climate change, infectious diseases, and governance issues. USAID supports fisheries and forests that are critical to local livelihoods and the global food supply.¹⁴¹

On October 5, 2011, USAID opened a new Pacific Islands office at the U.S. Embassy in Port Moresby, PNG. USAID helps the Government of Papua New Guinea to scale up public and community-based HIV prevention, care and treatment models; develop the capacity of political parties to formulate issue-based platforms; reach out to and develop their constituencies; improve campaign finance transparency; and support on disaster mitigation, relief and reconstruction.¹⁴²

Contact information for USAID includes:¹⁴³

USAID Papua New Guinea

U.S. Embassy Port Moresby
P.O. Box 1492
Douglas Street, Port Moresby
Papua New Guinea

USAID Mission Contact

Lawrence Hardy II, Mission Director
USAID/Pacific Islands Regional Office
U.S. Embassy
158 Princes Road
Suva, Fiji
Pacific Islands
Phone +679 331-4466 ext. 8220.
Email: infopacificislands@usaid.gov.

USAID Contact in Washington, DC

Michael Glees, Desk Officer
U.S. Agency for International Development
1300 Pennsylvania Avenue, NW
Washington, DC 20523, USA
Phone (202) 712-4728.
Email: mglees@usaid.gov

U.S. Embassy

The U.S. Embassy in Port Moresby supports American citizens, promotes U.S.' interests and develops friendly, cooperative relations with the people and Government of PNG, as well as the Solomon Islands, and Vanuatu.¹⁴⁴

Contact information for the U.S. Embassy in PNG includes:¹⁴⁵

U.S. Embassy Port Moresby
P.O. Box 1492
Douglas Street, Port Moresby
Papua New Guinea

Participation in International Organizations

PNG participates in the following international organizations:¹⁴⁶

African, Caribbean and Pacific Group of States (ACP), Asian Development bank (ADB), Alliance of Small Island States (AOSIS), Asia-Pacific Economic Cooperation (APEC), ASEAN Regional Forum (ARF), Association of Southeast Asian Nations (ASEAN) observer, Commonwealth of Nations (British), Community of Democracies (CD), Colombo Plan (CP), Extractive Industries Transparency Initiative (candidate country) (EITI), Food and

Agriculture Organization of the United Nations (FAO), Group of 77 (G-77), International Atomic Energy Agency (IAEA), International Bank for Reconstruction and Development (IBRD), International Civil Aviation Organization (ICAO), International Red Cross and Red Crescent Movement (ICRM), International Development Association (IDA), International Fund for Agricultural Development (IFAD), International Finance Corporation (IFC), International Federation of Red Cross and Red Crescent Societies (IFRCs), International Hydrographic Organization (IHO), International Labour Organization (ILO), International Monetary Fund (IMF), International Maritime Organization (IMO), Interpol, International Olympic Committee (IOC), International Organization for Migration (IOM) (observer), Inter-Parliamentary Union (IPU), International Organization for Standardization (ISO), International Telecommunications Satellite Organization (ITSO), International Telecommunication Union (ITU), Multilateral Investment Guarantee Agency (MIGA), Non-Aligned Movement (NAM), Organization for the Prohibition of Chemical Weapons (OPCW), Pacific Island Forum (PIF), Sparteca, Secretariat of the Pacific Communities (SPC), United Nations (UN), United Nations Conference on Trade and Development (UNCTAD), United Nations Educational, Scientific, and Cultural Organization (UNESCO), United Nations Industrial Development Organization (UNIDO), The United Nations Mission in South Sudan (UNMISS) United Nations World Tourism Organization (UNWTO), Universal Postal Union (UPU), World Customs Organization (WCO), World Federation of Trade Unions (WFTU) (NGOs), World Health Organization (WHO), World Intellectual Property Organization (WIPO), World Meteorological Organization (WMO), and the World Trade Organization (WTO).

Foreign Disaster Relief and Emergency Response

Figure 8 shows the humanitarian relief coordination structure of PNG's National Disaster Centre during a relief operation following the earthquake disaster in February 2018. A massive 7.5 magnitude earthquake occurred on February 26th 2018 and caused extensive damages to buildings, public lifeline

services, and triggered many landslides in various locations in Hela and the Southern Highlands Provinces. Officers from PNG's National Disaster Centre were deployed to Hela and Southern Highlands to conduct an initial rapid assessment and to help the respective provincial disaster offices to establish and activate its Emergency Operation Centre (EOC). Officers also provided technical support on how to conduct assessments and established the respective EOCs which became an information center and coordination hub.¹⁴⁷

The NDC coordinated relief operations. On March 1, 2018, the Government of Papua New Guinea appointed an Emergency Controller to lead the National Emergency Disaster Restoration Team, overseeing relief and recovery efforts. The provinces of Mt Hagen and Moro were locations for forward operating bases.¹⁴⁸ There were also EOCs in the capitals of Hela (Tari) and Southern Highlands provinces (Mendi) as seen in Figure 9.

The joint inter-agency Disaster Management Team convened to coordinate relief efforts of humanitarian partners and private companies. Seven informal clusters (WASH, Shelter, Food Security, Health, Protection, Education, and

Nutrition) and the Logistics and Communicating with Communities working groups supported the work of the Disaster Management Team.¹⁴⁹

Figure 10 shows the timeline of foreign disaster relief and emergency response in PNG from the time that the country was struck with the earthquake on February 26, 2018 to the response plan that the Disaster Management Team launched on March 28, 2018. It includes PNG's Prime Minister's declaration of a State of Emergency for specific provinces on March 1, 2018.

In March 2018, UNOCHA deployed a UN Disaster Assessment and Coordination (UNDAC) team to PNG to support the PNG Government and the Disaster Management Team, working directly with the National Disaster Centre. UNOCHA mobilized additional surge support to strengthen inter-cluster and field coordination, and information management and reporting.¹⁵⁰ Photo 8 shows UN relief workers unloading food which was flown in by helicopter for people affected in PNG by the earthquake. Access to affected remote and isolated villages complicated the delivery of needed supplies due to the challenging terrain.

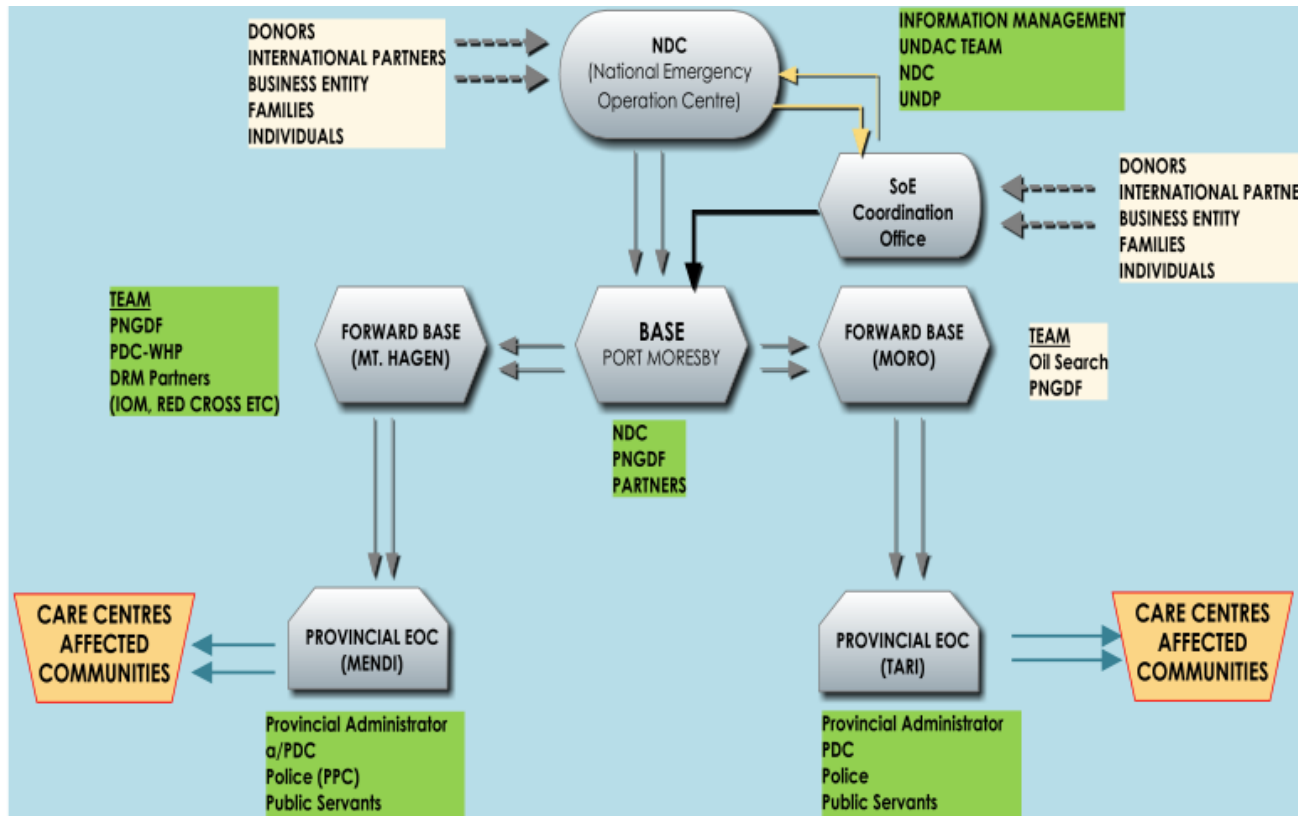


Figure 8: Humanitarian Relief Coordination Structure During a Disaster

IMPACTED AREA

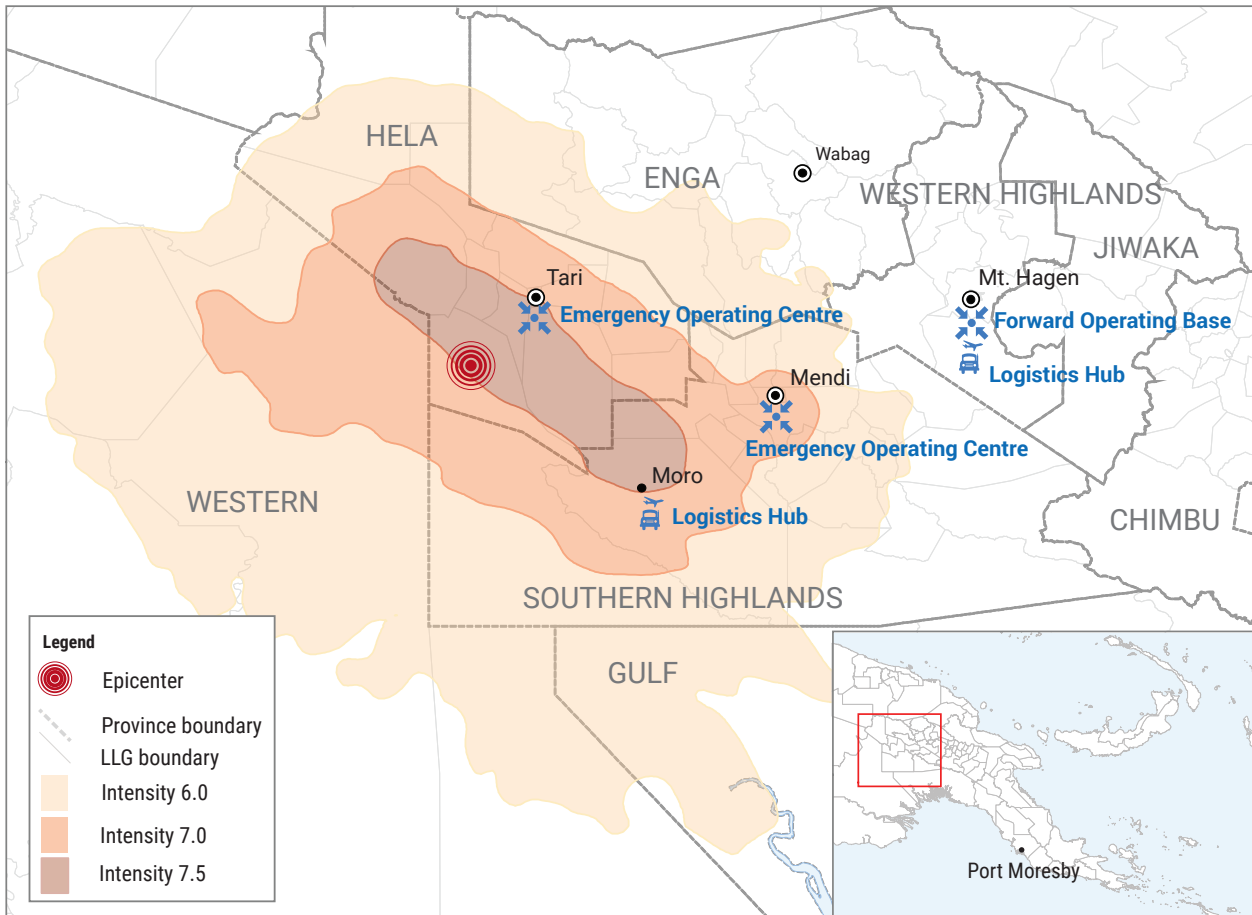


Figure 9: PNG Disaster Management Team Highlands Earthquake Response Plan

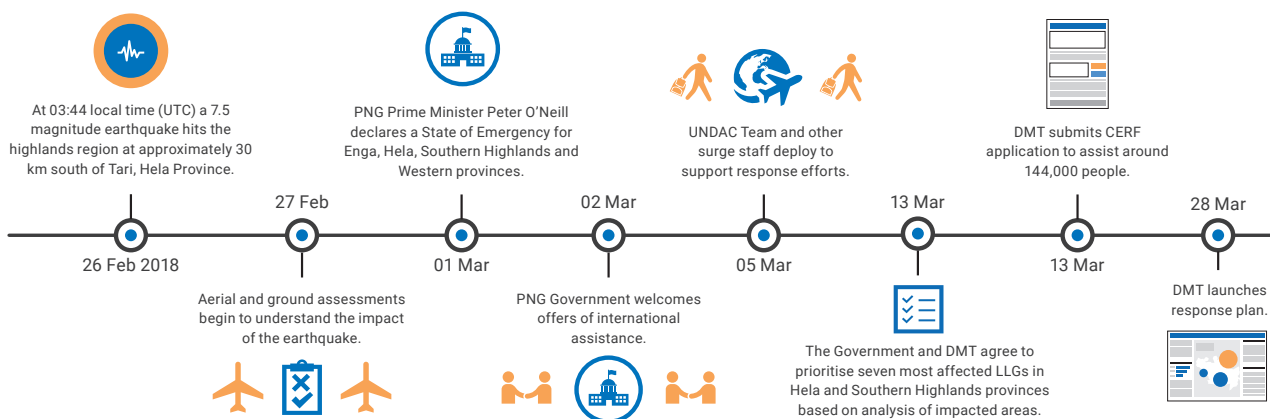


Figure 10: Timeline of Foreign Disaster Relief and Emergency Response in 2018



Photo 8: UN Disaster Relief to PNG after Massive Earthquake, 2018

Laws, Policies, and Plans on Disaster Management

PNG has the following act, plan, framework, and policy regarding disaster management:

Disaster Management Act 1984 of Papua New Guinea (amended in 1987, currently under review)

The National Disaster Management Act of 1984 is the country's Disaster Risk Management law and focuses only on preparedness and response arrangements during disasters.¹⁵¹ The purpose of the Disaster Management Act is to establish a system for forward planning to ensure the efficient, prompt and effective management and control of natural disasters in the country.

The Act is to make provision with respect to emergencies arising out of epidemics, earthquakes, volcanic eruptions and other disasters, and for related purposes.

The Act established that a National Disaster Center (NDC) be established and that it coordinate all disaster situations and surveillance matters. The NDC was also established to supervise the national state of preparedness for emergencies and to report on it to the National Executive Council, maintain the National Emergency Plan of the National Executive Council, assign responsibilities for disaster-related activities to departments and other bodies, and coordinate departmental relief actions and collate national relief requirements, among other roles.¹⁵²

National Disaster Risk Management Plan

This Disaster Management Plan has been in place since 1987, but is considered outdated and not relevant to best practices today in PNG. The current operational document for response management is the 2003 National and Provincial Disaster and Risk Management Handbook; however, information in it is outdated. The National Disaster Management Plan provides guidance and direction for disaster management activities for all stakeholders and partners throughout the country, including all levels and sectors, both government and non-government.

The responsibility for program and projects planning to reflect the aims and the objectives of the National Disaster Management Plan is vested on the National Disaster Committee. The Plan outlines the roles and responsibilities for various government levels, departments, agencies, authorities and communities. The Plan and Act complement each other, and they have other supporting documents such as the Mitigation Policy, Five Year Cooperate Plan, supporting work plans, Standard Operating Procedures, National and Provincial Response Plans, and the PNG Disaster Risk Reduction and Disaster Management National Framework for Action 2005-2015. The National Disaster Centre is currently drafting the National Response Action Plan.¹⁵³

PNG National Disaster Risk Management Framework 2017-2030 (in progress)

PNG is in the process of establishing a National Disaster Risk Framework, with a newly formed Technical Working Group (consisting of Government and Non-Government organizations), at the National Disaster Centre to develop it. The development of this framework is part of a joint project with UNDP and its goal is to ensure that PNG can successfully address immediate and longer-term disaster risk management challenges faced by communities and the country. The Technical Working Group held its first workshop in June 2017 to support the National Disaster Center in developing the new Framework. The new will follow the global Sendai Framework for Disaster Risk Reduction, and is expected to help prioritize risk reduction measures until 2030.¹⁵⁴

The Papua New Guinea Disaster Risk Reduction and Disaster Management National Framework for Action 2005-2015.

The Framework outlines proactive measures for disaster risk reduction in PNG. The responsibilities of the National Disaster Centre is mentioned in this Framework and it is responsible for actively promoting it.¹⁵⁵ This Framework is still in draft form and has not yet been adopted by the Government of PNG. However, various partners and stakeholders (UNDP and the University of Papua New Guinea) have been aligning their work plans and teachings based on it.¹⁵⁶

The guiding principles of the framework are:

- Governance (organizational, institutional, policy and decision-making frameworks);
- Effective, integrated and people focused early warning systems;
- Knowledge, information, public awareness, and education;
- Planning for effective preparedness, response, and recovery;
- Analysis and evaluation of hazards, vulnerabilities, and elements at risk; and
- Reduction of underlying risk factors.

Mitigation Policy

The National Disaster Mitigation Policy was approved by the National Executive Council in 2003 and launched in 2004. This policy changed the emphasis in disaster management from disaster response to preparedness and mitigation.¹⁵⁷

Education and Training

On April 2017, IOM and Humanitarian Benchmark Consulting, delivered a ‘Training of Trainers’ workshop to national and provincial Government Officials from seven provinces on humanitarian response, camp coordination and camp management, shelter and settlements, and disaster risk management in Lae, PNG. The Departments of Provincial and Local Government Affairs, National Planning and Monitoring, and Works and Implementation, were represented. A total of 163 participants (142 men and 21 women) attended. Participants identified historical events, disaster trends and the current situation in their locations in relation to disasters. In addition, they then mapped out potential hazards, identified existing vulnerabilities and possible impacts, and developed strategies for safe shelter.¹⁵⁸

The Papua New Guinea Red Cross Society provides staff and volunteers Emergency Response Training to help prepare and respond to disasters and emergencies. In July, 2016, a four-day training was carried out with the support of the Australian Red Cross, New Zealand Red Cross, and IFRC. The training taught different phases of disaster management and when to provide assistance in impacted communities. It also provided situation training on reporting, and using the right channels to mobilize support.¹⁵⁹

Disaster Management Communications

PNG’s Disaster Management Communications capabilities have historically been a challenge due to the country’s limited radio towers and limited range of radio transmission due to the mountainous topography. However, communications capabilities have vastly improved in recent years with the UN’s provision of mobile phone service to over 500,000 citizens. As a result, mobile communications have been a valuable asset to affected areas after disaster events. For instance, after the 7.5 earthquake in February 2018, humanitarian actors were able to establish a Communicating with Communities Working Group coordinated by the UN Resident Coordinator’s Office to reach communities with lifesaving messages and alerts over Digicel mobile phones. Community members were able to dial in to the information line to hear short updates from humanitarian agencies and receive

text messages sharing key information.¹⁶⁰

The National Disaster Awareness and Preparedness Committee was established in 1999, and is a sub-committee of the National Disaster Committee. The committee is a coordinating and advisory body with functions to:¹⁶¹

- Improve communication and cooperation amongst those concerned with disaster reduction;
- Promote awareness and preparedness of natural and other hazards throughout PNG;
- Provide technical advice to the Government of PNG and other civil authorities in regard to natural and other hazards; and
- Encourage and coordinate scientific investigations that are relevant to natural and other hazards in PNG.

Early Warning Systems

The establishment of an Early Warning System (EWS) is included as a principal theme in the PNG Framework for Action 2005-2015, by the National Disaster Centre.¹⁶² However, communication remains a major challenge in the country. Currently, there is a lack of communication facilities at the provincial and sub-provincial level that provide warnings to communities, especially the ones who live in remote and isolated areas of PNG. In addition, the procedures and protocols for early warning dissemination are unclear. As a result, warnings often do not get disseminated to the communities. The capacities to generate and disseminate warning information for inland and coastal flooding lack adequate technical facilities, capacities, and systems in place.¹⁶³

The UNDP is working with Papua New Guinea's Office of Climate Change and Development (OCCD) to develop EWS for inland and coastal flooding. They completed comprehensive mapping and analysis of existing mechanisms, identified gaps and opportunities for improvements, and produced a report with a set of actions and resources required for establishing effective EWS.¹⁶⁴

The 2016 UNDP report "Assessment of the Early Warning Systems for inland and coastal flooding in Papua New Guinea" showed that there are no flood monitoring and warning systems in place in PNG. Although local communities possess knowledge on flooding and indigenous adaptation and response methods, the flood warnings are not disseminated in any

way. The new warning systems will enhance the country's capacity to adapt to flood-related risks.¹⁶⁵

Responsible Agencies for Hazards and Warnings

The following Government agencies are responsible for hazards and warning:¹⁶⁶

- Volcanic Eruption: The Rabaul Volcano Observatory
- Earthquake: The Port Moresby Geophysical Observatory Office
- Landslide: The Geological Survey Office
- Flood: The Geological Survey Office
- Tsunami: The Port Moresby Geophysical Observatory Office
- Drought: National Weather Office, and NARI
- Frost: National Weather Office, and NARI
- Cyclone: The National Weather Office
- Strong Winds: The National Weather Office
- Disease Outbreaks: The Department of Health
- Fire: The PNG Fire Service
- Plane Crash: The Rescue Coordination Centre (RCC)
- Sea Mishap: The Marine Search and Rescue Centre (MARSAR) Office
- Accidents: Police, and the St. John Ambulance Company

Armed Forces Role in Disaster Response

The Papua New Guinea Defence Forces (PNGDF) have the following core functions:

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

The PNGDF is able to provide a range of support options to the Government in the event of a national disaster. The PNGDF can provide trained, disciplined manpower to undertake a wide variety of tasks as directed.

Disaster relief activities require appropriate national and provincial Government legal and resource coordination mechanisms. It also requires planning and logistical support processes. In the 2005 Manam Disaster, PNGDF supported the restoration of water and sanitation services and provided limited Navy Patrol boat transport services to displaced residents.¹⁶⁷

Information Sharing

Understanding how to overcome the information challenges that civilian and military agencies experience during a typical disaster response mission is important. Knowing what the available HADR resources are will assist Joint Task Force leaders and staff during mission planning.¹⁶⁸ The sharing of information is critical because no single responding entity (whether NGO, IGO, assisting country Government, host Government) can be the source of all the required information.¹⁶⁹

Collaboration, Information Sharing (IS) and networking has been the backbone of successful disaster response and preparation. Disseminating information not only to those in country and threatened by disaster but also to those responding to assist in the emergency has been crucial to timely, efficient and effective disaster response. Recent technology has advanced to aid predicting and alerting of disasters around the world which has resulted in early warning and evacuation measures and well as opportunities to react and prepare for incoming threats to countries. The following are some of the ways in which information regarding disaster risk management and response are shared.

There are many resources, stakeholders, and components to consider with IS before, during, and after a natural disaster. This section will discuss government, country specific, humanitarian, and regional sources.

Country-specific information sources

PNG National Disaster Centre¹⁷⁰
Level 01, Kitpeng Building-Waigani Drive
P.O Box 4970, Boroko
National Capital District
Papua New Guinea
Phone: +675 301 4700/4711
Fax: +675 301 4747
Email: info@pngndc.gov.pg or webmaster@pngndc.gov.pg
Website: <http://pngndc.gov.pg/>
PNG National Weather Services
Phone: +675 311 2385
Forecasting Division: +675 325 5544
<http://www.pngmet.gov.pg/>

Pacific Tsunami Warning Centre (PTWC)
<http://ptwc.weather.gov/>

Mobile Vulnerability Analysis and Mapping (mVAM)

In February 2016, WFP, in close consultation with the National Disaster Center (NDC) of PNG, launched a remote telephone-based food security monitoring system using the mobile Vulnerability Analysis and Mapping (mVAM) approach. Data was collected using Digicel Mobile Network from the Digicel call center in Port Moresby. The purpose of the initial survey was to assess the effect of the 2015-2016 El Niño Southern on food security and livelihoods.¹⁷¹

More information can be found on the VAM Resource Center website in regards to using mobile phones to collect food security data.¹⁷²

VAM Resource Center website: <https://resources.vam.wfp.or/mVAM>

Humanitarian Information Sources

UNOCHA mail list (*request to be added*)

ReliefWeb is a service of UNOCHA that consolidates information and analysis from organizations, countries and disasters for the humanitarian community.
Website: <https://reliefweb.int/>

PreventionWeb is provided by UNISDR to consolidate disaster risk reduction information into an online, easy to understand platform.
Website: <http://www.preventionweb.net/english/>

International Federation of the Red Cross and Red Crescent Societies (IFRC) is an independent, neutral organization ensuring humanitarian protection and assistance for victims of war and armed violence. It takes action in response to emergencies and at the same time promotes respect for international humanitarian law and its implementation in national law.
Website: <http://www.ifrc.org/>
Website: <https://www.redcross.org>

Joint Typhoon Warning Center provides advanced warning for U.S. Government agencies and organizations in relevant areas.
Website: <http://www.usno.navy.mil/JTWC/>

Humanitarian Response is a platform providing the humanitarian community a means to aid in coordination of operational information and related activities.
Website: <https://www.humanitarianresponse.info/>

APCSS is a U.S. Department of Defense institute that addresses regional and global security issues, inviting military and civilian representatives of the U.S. and Asia-Pacific nations to its comprehensive program of executive education and workshops.

Website: <http://www.apcss.org/>

Global Disaster Alert and Coordination System (GDACS)/Virtual OSOCC is a cooperation framework between the United Nations, the European Commission and disaster managers worldwide to improve alerts, information exchange and coordination in the first phase after major sudden-onset disasters.

Website: <https://vosocc.unocha.org/>

The latest alerts can be found here: <http://www.gdacs.org/Alerts/default.aspx>

To subscribe: <http://www.gdacs.org/About/contactus.aspx>

Consider other sites such as:

Humanitarian Country Teams (HCT)

The HCT is a strategic and operational decision-making and oversight forum established and led by the Humanitarian Coordinator in each country. It is generally comprised of representatives from the UN, IOM, international NGOs, and the Red Cross/Red Crescent Movement. During a disaster response, HCT's often produce a Situation Report, often in conjunction with UNOCHA.

Most HCT SitReps can be found through ReliefWeb: <https://reliefweb.int/>.

Humanitarian Data Exchange (HDX) is an open platform for sharing data across crises and organizations launched in 2014 with the goal of centralizing humanitarian data for easy access and analysis. HDX is managed by the Center for Humanitarian Data in The Hague and is part of OCHA the United Nations Secretariat.

Website: <https://data.humdata.org/faq>

Regional Information Sources

Changi Regional HADR Coordination Center (RHCC) was launched in September 2014 to support the military of a disaster affected state in coordinating assistance with foreign military. It aims to provide open, inclusive and flexible platforms that allow both regional and extra-

regional militaries to work together effectively in a multinational disaster response effort. RHCC manages the OPERA CIS web portal to broadcast updated situation status of multinational military responses to disasters to minimize duplication and gaps in the provision of foreign military assistance.

Website: <https://www.changirhcc.org/>

To subscribe to RHCC Weekly and Spot Reports, email: Changi_RHCC@defence.gov.sg

United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) Regional Office for Asia and the Pacific (UNOCHA ROAP) seeks to optimize the speed, volume and quality of humanitarian assistance and coordinates emergency preparedness and response in the world's most disaster-prone region in support of national governments. ROAP covers 41 countries partnering with them for coordinated and effective international responses to emergency situations.

Website: <https://www.unocha.org/roap>

For UNOCHA situation reports, click on "Subscribe" button on bottom of page.

The ASEAN Coordinating Centre for Humanitarian Assistance Center (AHA Centre) on disaster management has developed a Disaster Monitoring and Response System (DMRS). The DMRS is a disaster monitoring tool designed in partnership with the Pacific Disaster Center (PDC), a U.S. Government supported applied science and information center based in Hawaii. The system allows the Jakarta based AHA center to visually monitor, geographically detect and synthesize multiple streams of data on hazardous events or disasters such as earthquakes, tsunamis, volcanic eruptions, cyclones, floods, and other natural disasters. The PDC feeds information to the DMRS which receives constant inputs on hazards in the region as they happen as well as hydrometeorological data such as wind speed and direction, clouds, sea temperature, etc. The maps can provide additional information with overlays based on population density data, location of airports and seaports, and major roads and infrastructure to provide context to threats and enable specific analysis for response and mitigation planning.¹⁷³

Website: <https://ahacentre.org/>

Subscribe at <https://ahacentre.org/subscribe-to-flash-update/>, or email info@ahacentre.org

ASEAN Disaster Information Network (ADINET), is a publicly sourced open repository of information concerning regional hazards and disasters. The platform is run by the AHA Center who receives information and reports submitted from the public regarding hazards and disasters in the area. Once a report has been submitted, AHA will vet the information for relevance and accuracy and then add the new information to the platform. Individuals and agencies can sign up to receive real time alerts to their email address on various categories such as tsunami, volcano, earthquake, floods, oil spills, landslides, etc. The ADINET has been recording disaster information in the region since the AHA Centre was operational in 2012.¹⁷⁴
Website: <http://adinet.ahacentre.org>

The **ASEAN Science-Based Disaster Management Platform** is a one-stop interactive research portal which houses thousands of resources on disasters including documents and publications, reports and research, legislation on disaster risk reduction and disaster management as well as a discussion forum where individuals can pose questions, participate in surveys and create conversation about issues surrounding disaster management and mitigation.¹⁷⁵

The Annual ASEAN Monitor Report (ARMOR) aims to promote collaboration and information sharing among the disaster management community by consolidating disaster risk monitoring knowledge and contribute to the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Priority Programmes 1, 5, 6 and 7 with the following objectives:¹⁷⁶

- Sharing latest Disaster and Climate Risk Monitoring research initiatives, and collaborations;
- Sharing of lessons learnt from past deployments, latest operational initiatives, training activities and best practices;
- Bridging the gap between research and operations through translational and application research initiatives for the benefit of ASEAN communities; and
- Building awareness and increasing potential collaborative efforts between ASEAN Member States and interested stakeholders.

In addition to hosting the aforementioned forums and platforms, the AHA center also disseminates information on a regular basis to

the public to raise awareness on disaster risk reduction and preparedness. During emergency times, the AHA Center releases immediate Flash Updates and Situation Updates. Whereas in non-emergency times, the AHA Center publishes a weekly disaster update called Diasfore, and a monthly newsletter: The Column. All of these publications are available on www.ahacentre.org as well as the AHA Center's social media accounts.

AHA has hosted an official Twitter account @AHACentre since July 2011. They currently have 2,606 followers and have shared over 4500 tweets. <https://twitter.com/AHACentre>

AHA also has a Facebook page with over 14,000 followers. <https://www.facebook.com/ahacentre>. They use these forums to provide disaster management information and provide updates and tools to an international audience. The Weekly Disaster Update is also shared on these sites along with photos and videos of disaster management trainings and exercises.

U.S. Government (USG) Sources

Office of Foreign Disaster Assistance (OFDA)

The U.S. Office of Foreign Disaster Assistance is responsible for leading and coordinating the U.S. Government response to disasters overseas. OFDA responds to an average of 65 disasters in more than 50 countries every year. OFDA fulfils its mandate of saving lives, alleviating human suffering and the reduction of the social and economic impact to disasters worldwide in partnership with USAID functional and regional bureaus and other U.S. government agencies. OFDA works with the international population to assist countries prepare for, respond to and recover from humanitarian crises.¹⁷⁷

USAID/OFDA products *are sitreps and maps* which are available via email mailing lists.

For OFDA updates on a disaster response, ask the OFDA representative for the respective COCOM to add you to the email list:

- OFDAindopacom@ofda.gov
- OFDAsouthcom@ofda.gov
- OFDAafricom@ofda.gov
- OFDAnorthcom@ofda.gov
- OFDAcentcom@ofda.gov
- OFDAeucom@ofda.gov
- OFDAsocom@ofda.gov

U.S. Agency for International Development (USAID)

USAID is committed to responding to crises

around the world to help people and places most in need. They aim to:

- Promote Global Health
- Support Global Stability
- Provide Humanitarian Assistance
- Catalyze Innovation and Partnership
- Empower Women and Girls

USAID produces a monthly newsletter called USAID Newsletter which is available digitally at, <https://www.usaid.gov/news-information/newsletter>

More information and updates from USAID is available via their blog, IMPACT at, <https://blog.usaid.gov/> and on Facebook, Instagram, Twitter, and YouTube.

Website: <https://www.usaid.gov/>

Pacific Disaster Center

The Pacific Disaster Center (PDC) has trademarked an early warning and decision support system called DisasterAWARE®. DisasterAWARE® is primarily for disaster management practitioners and senior decision makers and supports disaster risk reduction and best practices throughout all phases of disaster management from early warning, multi-hazard monitoring, and boasts the largest collection of scientifically verified, geospatial data and modeling tools to assess hazard risks and impacts.

The PDC also hosts a public application, Disaster Alert which is a free, early warning app to receive customizable map based visual alerts of active hazards. The app offers the fastest, most comprehensive global notification system covering every type of natural and man-made hazard to the public. It is available on both iPhone and Android. There is also a link to Disaster Alert without the app to view the world map documenting 18 hazard types.¹⁷⁸

Website: <https://www.pdc.org/>
<https://disasteralert.pdc.org/disasteralert/>

DisasterAWARE® / Emergency Operations (EMOPS) system:

(Request account): <https://emops.pdc.org/emops/>

To subscribe to PDC reports email: response@pdc.org

All Partners Access Network (APAN)

APAN is the Unclassified Information Sharing Service (UISS) for the U.S. Department of Defense. APAN provides the DoD and mission partners community space and collaboration tools to leverage information to effectively

plan, train and respond to meet their business requirements and mission objectives.

Importantly, APAN's technology team has been supporting humanitarian assistance and disaster response (HADR) operations for over 15 years. APAN has played an integral role in the success of disaster responses in the 2015 California Wildfire Response, the 2013 Typhoon Haiyan Response among others in which they provided organizations and militaries a centralized location to share information, increase situational awareness and decrease response time and duplicated efforts for best practices in HADR services.¹⁷⁹

Website: <https://www.apan.org/>

Note: The Multinational Communications Interoperability Program (MCIP) has an APAN site used in planning exercises and real world HADR information sharing.¹⁸⁰

CFE-DM

The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) is a U.S. Department of Defense organization that was established by U.S. Congress in 1994 and is a direct reporting unit to U.S. Indo-Pacific Command. CFE-DM provides training and education to help U.S. and foreign military personnel navigate complex issues in DMHA. They produce country focused disaster management reference handbooks, after action reports and disaster management country assessments which provide best practices and lessons learned for advancement in response coordination. CFE-DM also works to improve cross-coordination and reduce duplication of efforts and promote U.S. involvement in civ-mil consultations and dialogs with relevant HADR parties such as the AHA Center, UNOCHA, and the RHCC.

CFE provides DMHA resources and updates at its website, as well as via their Facebook and Twitter accounts.¹⁸¹

Website: <https://www.cfe-dmha.org/>

CFE-DM Disaster Management Reference Handbooks: (For 23 countries):
<https://www.cfe-dmha.org/DMHA-Resources/Disaster-Management-Reference-Handbooks>

CFE-DM Disaster Information Reports:
<https://www.cfe-dmha.org/Publications/Reports>



PAPUA NEW GUINEA

Infrastructure

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Infrastructure

Airports

PNG’s main international airport is Jackson International, located outside of Port Moresby. Air transport is extremely useful in the country because of the mountainous terrain, remote locations, and nonexistent or poor land-based transport infrastructure.¹⁸² The country has hundreds of airstrips/airports; however, only 21 of the airports have paved runways.¹⁸³ Photo 9 depicts a non-paved air strip. It is a picture of a small grass air strip at Kagi along the Kokoda Track.



Photo 9: Papua New Guinea Grass Air Strip

Jackson International Airport in Port-Moresby (POM) is the only airport that has the capacities for international emergency operations during a disaster. POM is the biggest airport of the country in terms of volume of operations; therefore, special attention should be paid before operating emergency activities in any other airport. Lae has been designed as the POM back-up airport but is not compared to POM. Any large humanitarian operation should bring its own operations team and airport operational equipment to run major air, transitional storage and trans-shipment operations.¹⁸⁴ It is important to note that airports may be temporarily closed and air transport may face problems during volcano eruptions.¹⁸⁵ In 2014, ADB began developing the USD \$480 million Civil Aviation Development Investment Program, in order to provide safe, reliable, sustainable, and affordable aviation services to the country.¹⁸⁶

The 21 large-scale national airports are managed by the National Airports Corporation (NAC) and they provide regular service for jet and large turboprop aircraft. Rescue and fire-fighting services are available at seven airports. Airport safety, security, tarmac conditions, navigation equipment and communications failures often cause flight cancellations.¹⁸⁷ A main list of International and Domestic Airports and associated runway length, surface type, and nearest city information is listed in Table 1.

International Airport Name	Maximum Runway Length	Runway Surface	Nearest Town/City
Jackson International (Port Moresby) *4 total runways, 1 helipad			
Runway #14L	2,750 meters (m) (9,022 ft.)	Asphalt	Port Moresby (8 km)(5 miles)
Runway #32R	3,048 m (10,000 ft.)	Asphalt	Port Moresby (8 km)(5 miles)
Runway #14R	2,050 m (6,726 ft.)	Asphalt	Port Moresby (8 km)(5 miles)
Helipad #1	2,000 m (6,561 ft.)	Asphalt	Port Moresby (8 km)(5 miles)

Domestic Airport Name	Maximum Runway Length	Runway Surface	Nearest Town/City
Nazdab Airport	2,440m (8,005 ft.)	Asphalt	Lae (40 km)(24 miles)
Tokua Airport	1,720m (5,643ft.)	Asphalt	Rabaul (2 km) (1 mile)
Wewak Airport	1,595m (5,234ft.)	Asphalt	East Sepik Province
Mount Hagen Airport	2,190 m (7,185 ft.)	Asphalt	Mount Hagen
Mandang Airport	1,577 m (5174 ft.)	Asphalt	Madang

Table 1: International and Domestic Airports in Papua New Guinea

Figure 11 depicts Papua New Guinea airports.

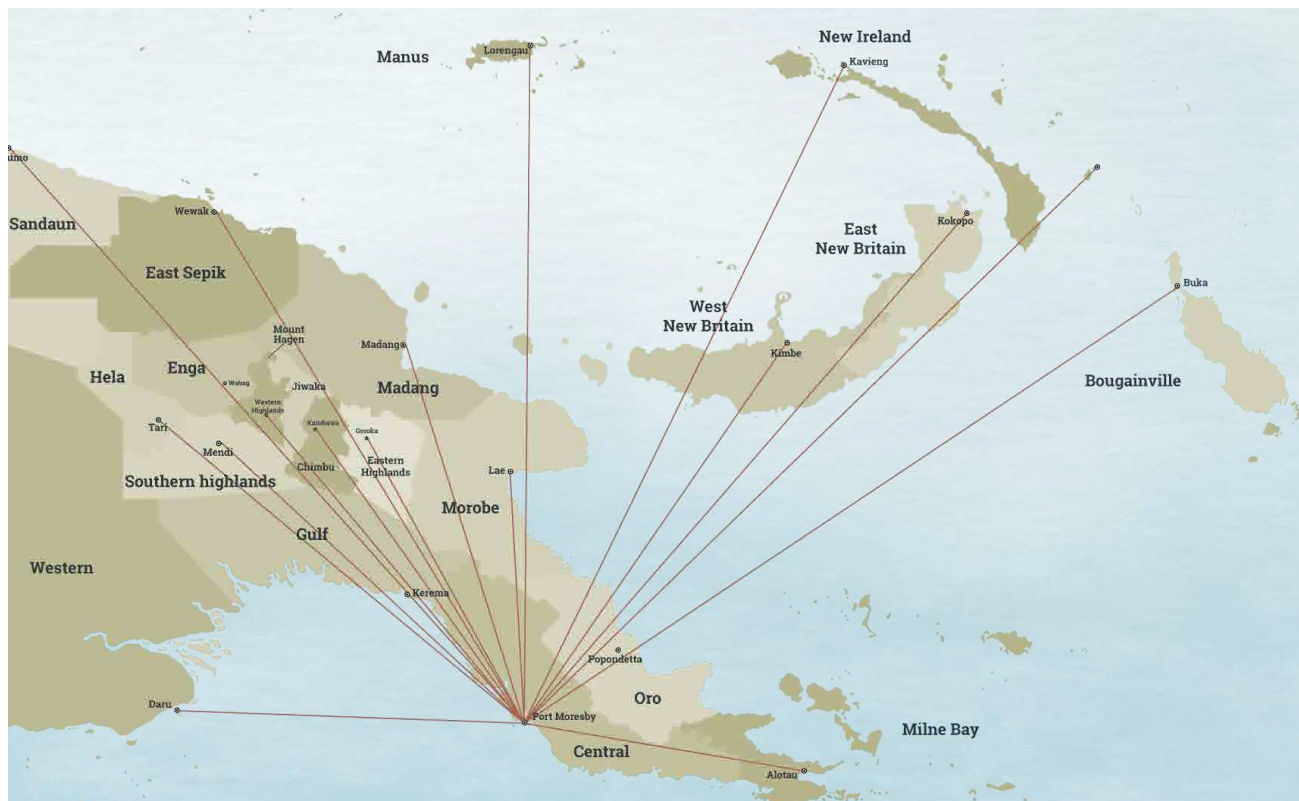


Figure 11: Papua New Guinea Airports

Seaports

Much of the travel in the country is done by sea due to PNG's topography and 600 islands. However, in spite of what might be considered a high demand for a robust marine transportation system, the country has only 22 declared ports.¹⁸⁸ This can make not only the population's mobility, but also the delivery of supplies among other things difficult. Photo 10 shows the delivery of building materials for new classrooms in the Milne Bay Province. Supplies had to be delivered to the closest beach because there was no port there. Items were then carried into the mountainous jungle to their final destination.

In terms of operations management, equipment, infrastructures, and operating companies, six ports are able to host significant emergency operations: Kieta, Port Moresby, Lae, Buka, Madang, and Rabaul. Ten other



Photo 10: Ship Delivering Materials to Milne Bay Province

ports have sufficient infrastructures to act as intermediate operational hubs: Aitape, Alotau, Daru, Kavieng, Kimbe, Lorengau, Oro Bay, Samarai, Wewak, and Vanimo. Their equipment is good, but basic (forklifts, trailers), and it is in limited quantities. Special attention should be paid before operating emergency activities in those ports. Port Moresby port facilities

are often congested. PNG's primary port, Lae has limited wharf space and storage capacity, as well as the absence of large-scale container handling equipment. PNGPCL has expanded and improved Lae's wharves. The Asian Development Bank is funding further port expansion.¹⁸⁹ Table 2 shows various ports in PNG.

Kieta	
Location:	Kieta is situated on the northeast coast of Bougainville Island, at 6° 13'S, 155° 38'E.
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.
Berths:	Maximum size of vessel handled: 12,000 gross tonnage (GT).
Max Vessel Size:	Light engineering services are available.
Dry-docks and repairs:	2,000 m (6,561 ft.)
Port Moresby	
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 cargo that is handled is 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.
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.
Lae	
Location:	Lae is located on the east coast of mainland New Guinea at the northwest end of the Huon Gulf, at 6° 44'S, 146° 59'E.
Overview:	Lae has one wharf for overseas cargo operations, which includes the handling of general, bulk grain as well as oil and natural gas cargo. The wharf has three berths along its length and two coastal berths exist close to the west. Bunkers and water are available.
Berths:	In addition to the three berths on the overseas wharf, there is also a feeder jetty and a tanker berth.
Max Vessel Size:	Vessels with length overall (LOA) of 200 m regularly use the port. Tankers maximum draught 9.5 m.
Dry-docks and repairs:	No repairs available.

Table 2: Seaports in Papua New Guinea

Kumul Marine Terminal	
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.
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.

Madang	
Location:	Madang is situated on the east coast of New Guinea, at 5° 13'S, 145° 49'E.
Overview:	There are three main wharves, one of which can handle tankers, and four minor wharves.
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:	LOA 183 m, draught 11.6 m.
Dry-docks and repairs:	Minor engine and hull repairs are available.

Rabaul	
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.
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 2: Seaports in Papua New Guinea (cont.)

Land Routes

Roads

PNG has approximately 25,000 km (15,534 miles) of roads (Figure 12). About half of the roads are national roads and the other half are provincial roads with most of the interior of the country inaccessible by road and must be traveled on foot.¹⁹⁰ Flash floods and landslides during the wet season can result in road closures, particularly on stretches of the Highlands Highway between Lae and Mount Hagen. Flooded roads are susceptible to landslides and often times cause traffic to come to a standstill and cause people to become stranded.¹⁹¹

The main highways are:¹⁹²

- The Okuk Highway (formerly Highlands Highway): Runs from Lae through to Goroko, Mount Hagen and Madang
- Hiritano Highway: Runs from Port Moresby through to Kerema; and
- Magi Highway: Runs from Port Moresby through to Aroma coast.

The poorest parts of PNG are the most poorly served by the road network. Geographic features such as large rivers divide the road system into several distinct networks. Landslides, floods and other natural disasters are frequent and repeated emergency road work is a result. Road conditions are generally poor; however, the Department of Works (DOW) has made considerable



Figure 12: Papua New Guinea Road Networks

progress in maintaining and upgrading national roads.¹⁹³ There are several ADB-supported transportation projects and programs in PNG. In 2014, three important development projects made progress in the transport sector. A total investment of PGK \$400 million was allocated to reconstructing 115 kilometers of national roads in the Highlands Region. Rehabilitation of this road network is expected to reduce travel times from communities to service delivery points in PNG’s rural regions.¹⁹⁴

Railways

There are no railways in PNG.¹⁹⁵

Waterways

PNG has an extensive system of inland waterways extending nearly 11,000 km (6,835 miles). The waterways are used for commercial trade. It is also the standard means of transportation by canoe for the indigenous people of PNG. These waterways provide a source of drinking water and are used for fishing, washing, cooking, and irrigation. The inland waterways suffer from lack of maintenance of infrastructure such as jetties, goods-handling facilities, and navigation aids. Activities of mining companies and the spread of non-native vegetable pests, such as the water hyacinth has

led to environmental degradation.¹⁹⁶ It is also important to note that during dry seasons and droughts, rivers and connected waterways may become impassible to surface vessels.¹⁹⁷

Schools

PNG has created plans and legislation on education in the country. Importantly, the Universal Basic Education Plan 2010-2019 implemented compulsory primary education to decrease the high number of unschooled children in the country. Additionally, PNG adopted legislation in 2014 aimed at improving the quality of education, notably the Higher Education Bill.¹⁹⁸ More children are enrolled in school in PNG than in previous years. This has been in large part due to the Government’s school fee abolition initiative and implementation of tuition fee-free education.¹⁹⁹ In 2012, PNG implemented the tuition-fee free education policy, which covered the cost of tuition for students in public schools from primary school to grade 10, and extended the policy to include project fees in 2015. The policy had contributed to increased enrollment in schools, especially in primary education, with almost two million children enrolled in 2014 compared with about one million a decade before. However, not every educational institution could benefit from these

funds. Despite the achievements, significant disparities still exist across the country and almost half a million children are still out of school.²⁰⁰ The causes relate to distance from school, security, lack of parental support and the environment in their homes. The country's net enrollment rate is the lowest in the Asia and Pacific region (63%). Children in rural areas are less likely to receive an education, and fewer girls attend school than boys.²⁰¹ Photo 11 shows female students in a classroom in PNG.



Photo 11: Papua New Guinea Secondary School

According to the UN Country Team, stronger monitoring of policy and expenditure is needed, as well as better targeting of the policy, including allocating more resources to remote and less-resourced schools.²⁰² For example, most schools also do not have access to a piped water system, or clean water, with most relying on rainwater to meet the drinking and hygiene needs of students. Adequate toilet facilities are also in shortage. There are extreme water shortages during dry seasons, and some schools are forced to close. Early Childhood Care and Development, which supports the development of babies and toddlers, is not recognized by PNG's National Education System. In addition, there is also very little capacity in the education system to address children with special educational needs and disability.²⁰³

Disaster Risk Reduction in the Education Sector

Many schools in PNG participate in tsunami drills. These are important drills because PNG experienced two earthquakes in 2018 that were exceptionally severe. In February 2018, a 7.5 magnitude earthquake killed 145 people and left 270,000 people in need of emergency aid. A month later, another 6.9 magnitude earthquake prompted a tsunami warning. Hazard awareness

and emergency evacuation drills in schools are important, especially because smart phones are rare and internet connection is close to non-existent in the country. The last deadly tsunami hit PNG in 1998. A regional "Strengthening School Preparedness for Tsunamis" project brought awareness trainings to PNG schools. The project is facilitated by UNDP, PNG's National Disaster Centre, Regional Integrated Multi-Hazard Early Warning System, Mineral Policy and Geo-hazard Management and Department of Education, and funded by the Government of Japan.²⁰⁴

As part of the "Strengthening School Preparedness for Tsunamis" project, a total of six schools in tsunami-prone coastal areas in East New Britain, Milne Bay, and Sohano, have participated in the project activities and have conducted drills and tsunami awareness education for 2,238 participants (students, teachers and community members).²⁰⁵

Photo 12 is of students during a preparedness drill at East Cape Primary School, located at the southernmost tip of PNG, approximately five meters from the shoreline.



Photo 12: Tsunami Drill

Communications

The Government of Papua New Guinea owns the telecommunications system, Post and Telecommunication Corporation (PTC). The service provided by PTC is highly-developed and receives high ratings reliability and performance. Direct dialing and international direct dialing are available throughout the country by using solar-powered microwave transmitters.²⁰⁶ Currently, it is estimated that over 50% of the population in PNG has access to cellphones and internet; however, broadband is limited for those in the rural areas, whom only have access to 2G

services. About 60% of PNG has access to 4G LTE network coverage, but an upcoming project called the Coral Sea Cable System, is expected to increase access to the entire country. The Coral Sea Cable will link PNG, Solomon Islands, and Australia, therefore providing a much larger range of broadband services to PNG.²⁰⁷

The country has also been known as one of the least connected countries in the world due to its rural villages in remote areas assessable only by light aircraft, by foot or by boat. Communications are further complicated by some region's limited radio towers and limited range of communications due to mountains. As a result of this social need to improve communications capabilities, in 2014, the World Bank financed the Rural Communities Project in PNG which installed base mobile services in 59 sites across four regions of the country. This initiative provided improved access to telecommunications infrastructure and basic telephone services in PNG for up to 500,000 people.²⁰⁸ Additionally, after the February 2018 earthquake, the United Nations Resident Coordinator's Office initiated a Communicating with Communities Working Group to provide life-saving messages and alerts using audio streaming over the mobile phones so community members. Citizens were also able to use their mobile phones to dial in to hear updates and receive text messages from humanitarian agencies and have access to a psychosocial counseling helpline to address concerns from the community.²⁰⁹

Additionally, the NDC has a nationwide High Frequency Radio Communication network in PNG. This network links the 19 Provincial Disaster Offices with the NDC. The network is integrated into the Department of Health National radio network, which covers the entire country.²¹⁰

Utilities

Power

Electricity is supplied in PNG by the Government owned PNG Power Ltd (PPL). It serves 27 urban centers as well as about 50,000 industrial, commercial, and domestic customers with its 20 independent power systems.²¹¹ Three main networks distribute electricity throughout PNG: (i) the Port Moresby system; (ii) the Ramu system serving the load centers of Lae, Mount Hagen, Madang, Goroka, Kainantu, Kundiawa,

Yonki, Wabag, Mendi, and Gusap; and (iii) the Gazelle system that services the communities of Rabaul, Kerevat, and Kokopo.²¹²

PNG's main source of electricity is from hydro power, about of it 80%. Solar power is mostly used for domestic hot water systems. In addition, PPL is exploring the use of natural gas for future use in the country.²¹³ PNG is an energy rich country, other than having the potential for natural gas energy, it's also self-sufficiency in fossil fuels.²¹⁴

Water and Sanitation

Water and sanitation are a significant issue in Papua New Guinea, with 61% of the population not having access to safe water. In addition, 55% does not have access to improved sanitation. This increases the risk of the population suffering from diarrhea, malnutrition, and stunting.

In the Pacific region, PNG has the lowest national water coverage. PNG's area of piped coverage is lower than the world's average and it is the lowest in the Pacific.²¹⁵ The country missed their targeted Millennium Development Goals, mostly due to the lack of improvement in the last two decades. However, PNG is trying to make some new policies and changes. In 2015, they adopted the first ever National Water, Sanitation and Hygiene (WASH) Policy. The policy is meant to introduce a framework for funding the expansion, rehabilitation, and maintenance of water and sanitation service delivery primarily in rural and peri-urban settlement areas. There are two development milestones that support this policy, the PNG Vision 2050 Plan, and the Development Strategic Plan 2010-2030.²¹⁶ Photo 13 shows villagers transporting water tanks in the challenging topography of PNG.



Photo 13: Villagers Transport Water Tanks for the Community



PAPUA NEW GUINEA

Health

Health

Health Overview

The healthcare system in PNG is primarily funded by the Government and international donations. PNG's current spending on healthcare is 4.5% of their GDP, and 20% of it comes from donors. Currently, PNG is facing health issues such as high infant mortality rate, where it is estimated that 1 in 13 children die before they reach the age of 5. In addition, only 53% of childbirth deliveries in the country are tended by a skilled professional. PNG has also been impacted by a high number of non-communicable and communicable diseases. Malaria, polio, tuberculosis, cholera, respiratory disease, and an epidemic of HIV are severely impacting the country.²¹⁷ High incidence of cancer have also been problematic in PNG with the PNG World Health Organization listing PNG as having the highest incidence rate of oral cancer in the world.²¹⁸ Also, as a result of challenges in transportation and overall access to health services, PNG has one of the highest rates of death of cancer globally.²¹⁹ Due to this, the Government of PNG is focusing on these areas in the National Health Plan 2011-2020.²²⁰

The National Department of Health is the agency in charge of delivering health services in Papua New Guinea. Subsequently, the National Health Administration Act of 1997, mandates the National Health Plan (NHP) as the single governing policy for the healthcare sector in PNG. The current publication of the NHP is the sixth one to date since they were first published in 1974. Two parts makeup the National Health Plan 2011-2020. Volume 1 is the main document, which includes the policies and strategies, as well as the requirements that need to be accomplished to overcome the crisis in health and health services in PNG. Volume 2 addresses background information on health and health services that have been used as evidence in developing the National Health Plan.²²¹

Additionally, the National Health Service Standards of 2011, exists to complement the NHP by outlining PNG's seven-level model of health services delivery. In the National Health Service Standards of 2011, the minimum standards for health facility infrastructure and staffing levels were defined, standard equipment lists for each level of service delivery were

compiled, and an accreditation system for hospitals and health centers was implemented. This was a ground-breaking point, since it was the first time PNG set such standards in its healthcare system.

The main principal of the National Health Plan is to provide universal health coverage and equal access for the country's rural population and the urban poor. The National Department of Health is responsible to administer health policy at a national level; however, the management of the National Health Plan is left to the provincial, district, and local level Governments to administer under a decentralized system. The Government of PNG is responsible for the administration of the national hospital, as well as the regional, and provincial hospitals.²²²

Healthcare System Structure

The NHP 2011–2020 establishes the strategic direction of Healthcare in PNG, as well as priorities, for the public and private sectors. The NHP is implemented through medium-term plans at the national and provincial levels. These are translated into operational annual implementation plans at all levels of the health system.²²³ PNG's healthcare system places an emphasis on providing basic care for the country's poor and rural population. The NHP aligns with the PNG Development Strategic Plan 2010-30, as well as the Nation's Vision 2050 Goals. PNG seeks to become among the top 50 countries in the UN Development Programme's (UNDP) Human Development Index (HDI) by 2050. PNG also measures its progress against the UN's Millennium Development Goals.²²⁴

Figure 13 shows the current Healthcare Structure in PNG, as well as the expected changes that will occur to the healthcare structure according to the Health Vision 2050.

Challenges in the Healthcare System

PNG's budget on healthcare spending is relatively high when compared to other countries in the region, nonetheless, the country suffers from a burden of poor health, including malnutrition.²²⁵ One of the major challenges that the country faces in respect to healthcare, is the lack of human resources for health. According to the World Health Organization, there are approximately 0.5 physicians and 5.3 nurses per every 10,000 citizens.

Some of the issues PNG is experiencing due to

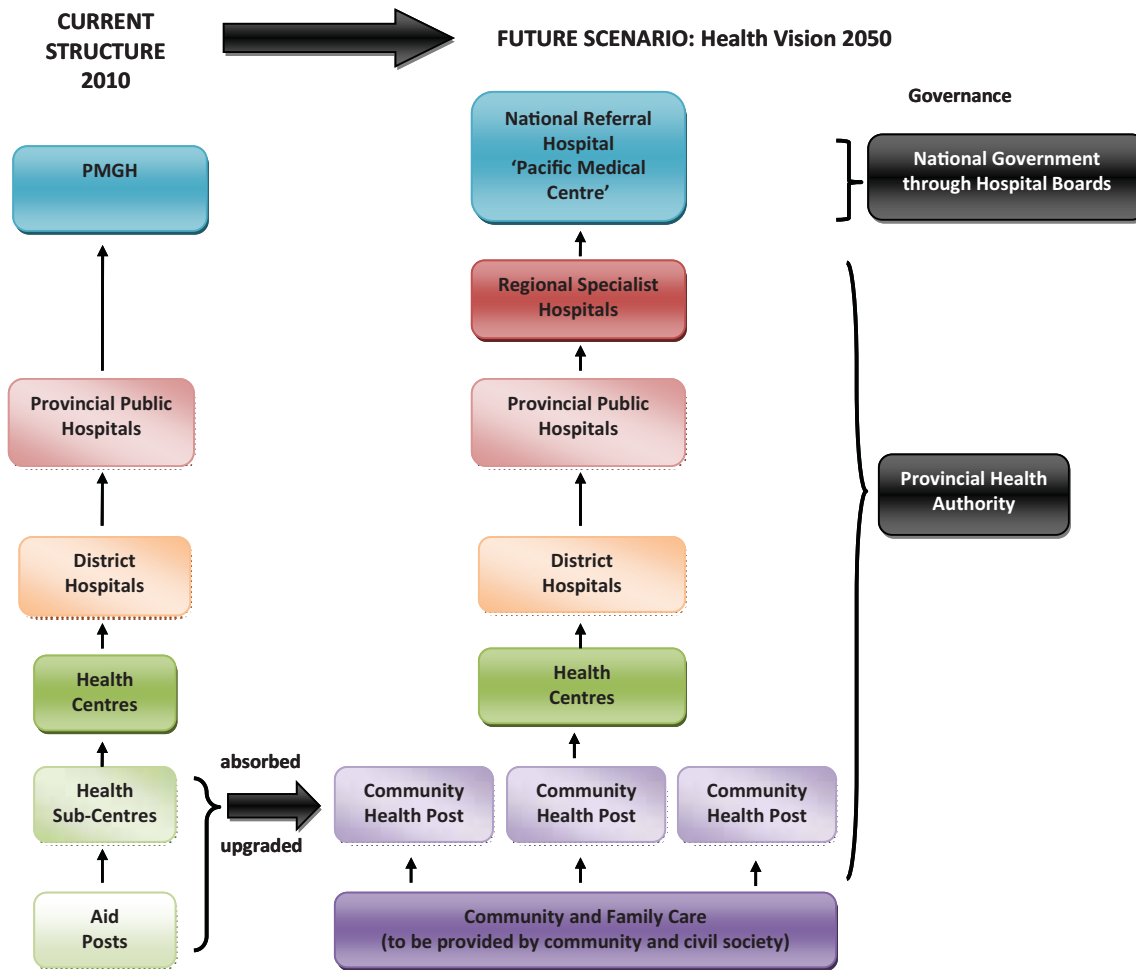


Figure 13: Current and Future Healthcare Structure in PNG

the lack of human resources for health include:

- a workforce that is aging without a replacement;
- low numbers of critical positions, such as midwives and community health workers;
- a workforce that has lost motivation due to poor working conditions such as low pay, and lack of appropriate infrastructure;
- lack of training capacity to develop the number of health workers to meet population needs;
- the lack of adequate distribution of specialist clinical and technical skills (approximately 30% of skilled health professionals are occupying administrative and management positions).²²⁶

The lack of proper infrastructure in PNG adds to the challenges that the healthcare system faces. With difficult terrain and not having proper roads, the transportation cost of patients

and deliveries is very high. This hinders patient referrals and supervision from higher level managers. In addition, the continued problems caused by law and order issues disrupt the effectiveness of service delivery. Healthcare services and personnel are limited when taking assignments which leads to staff being absent and the eventual closure of health facilities.²²⁷

Health Cooperation

In June 2018, the Government of Papua New Guinea declared a Public Health Emergency after confirming multiple cases of poliovirus in the country. Due to the polio outbreak, a response plan was developed and it included four sub-national and national vaccination rounds. The estimated budget for the plan was USD \$15.4 million, and PNG received financial support from multiple donors, which included the Bill

& Melinda Gates Foundation, United States Agency for International Development (USAID), Canada, the Republic of Korea, and Australia through the Department of Foreign Affairs and Trade.

The outbreak became a Public Health Emergency of International Concern (PHEIC) where the World Health Organization played a major role. They deployed more than 50 international polio workers and established an Emergency Operations Center (EOC) at the national level, as well as 22 others located in different provinces of the country.²²⁸

According to the Organisation for Economic Cooperation and Development (OECD), 96% of Official Development Assistance (ODA) for health was received from Australia. In addition, PNG has received loans or grants from: the Asian Development Bank (ADB); United Nations agencies (including WHO), the Government of Japan (JICA), and New Zealand. Smaller contributions have been made by (USAID), the European Union, and the World Bank.²²⁹

In 2015, the Government of Papua New Guinea adopted the Papua New Guinea Development Cooperation Policy (2015–2017). This policy clarifies the protocols of engagement between the Government of Papua New Guinea, development partners, provinces, the private sector, and civil society organizations in mobilizing, coordinating and managing development assistance.

Australia is one of Papua New Guinea's largest donors. DFAT Australia recently reported that in 1975 Australian aid represented 40% of Papua New Guinea's budget, but by 2015 the amount was reduced to about 8%. However, Australia still provides 68% of Papua New Guinea's total ODA.²³⁰

Communicable Diseases

Papua New Guinea is currently suffering from rising rates of communicable diseases such as HIV/AIDS, malaria, tuberculosis, leprosy, and water-borne diseases such as cholera.²³¹

Malaria

Malaria is pervasive throughout most of PNG. The PNG Institute of Medical Research (IMR) shows an almost nine-fold increase in the number of cases of malaria in PNG between the years 2014 and 2017. It affects 10% of children under the age of 5, and in some parts, that number is higher. For instance, in the

Madang province, 16% of children under 5 have malaria and in Sandaun province, the numbers are as high as 20.5%. Governmental funding redistribution has been named as a primary cause reallocating less funding to malaria prevention and treatment.²³² The geography and infrastructure also contribute to the spread of the disease by mosquitos, particularly during the rainy season. For instance, the risk of malaria is particularly high in areas under 1,800 meters (5,900 feet) of altitude which make up a large part of the country.²³³

Tuberculosis

Cases of tuberculosis (TB) have increased in PNG since 2008. The most recent estimate of TB infections counts 432 cases per 100,000 people. The Government initiated a response plan for TB in 2008, the directly observed treatment short course (DOTS) is a global strategy to control the spreading of TB.²³⁴

Sexually Transmitted Infections

Papua New Guinea has a high rate of sexually transmitted diseases such as hepatitis B, syphilis, chlamydia, and gonorrhea. However, HIV is one of the most prevalent diseases affecting the country. PNG has the highest cases of HIV in the Pacific with more than 48,000 adults and children living with HIV.²³⁵ Sex workers, including women and girls that sell or exchange sex, and men that have sex with men (MSM) have the highest risk of contracting HIV in the country. HIV cases affecting FSW are the highest in Mt. Hagen.²³⁶

Dengue

Over the past few years PNG has experienced dengue outbreaks through the country, the latest one being in Port Moresby in 2016. During the 2016 outbreak, 185 cases of dengue were reported.²³⁷ Dengue is contracted by mosquitoes that thrive in areas with standing water, including puddles, water tanks, containers and old tires. Lack of reliable sanitation and regular garbage collection also contribute to the spread of the mosquitoes. The infrastructure in PNG directly affect the spread of dengue through the country.²³⁸

Polio

In June 2018, PNG declared a Public Health Emergency in response to a polio outbreak. Previously, the country had been certified polio-free since 2000. Three provinces were identified as the most high risk, Morobe, Eastern

Highlands, and Madang. 6.7 million Kina was allocated for the initial response and an additional half million U.S. dollars were allocated from the Global Polio Eradication Initiative to support the country. A large scale vaccination campaign and increased health surveillance was launched to help detect illness and the presence of the virus.²³⁹ The WHO, UNIFEC, and multiple NGOs also supported the Government of PNG on these country wide vaccination efforts.²⁴⁰ The lack of infrastructure which lacks proper water and sewage sanitation, has also been problematic in PNG since polio normally spreads in areas of poor hygiene.²⁴¹

Non-Communicable Diseases

There has also been a rise in non-communicable diseases such as obesity, hypertension, diabetes, cancer, and heart disease in PNG.²⁴² In the Pacific region, Non-Communicable Diseases (NCDs) make up more than 70% of all deaths. PNG has a very high risk of malnutrition, stunting, micronutrient, vitamin deficiencies, increasing levels of obesity, high blood pressure, and diabetes.

The significant risk of NCDs can undermine labor productivity and economic growth because it can leave workers disabled by strokes or other NCDs. This indicated the Government's need to allocate adequate resources for the health sector. There are four major behavioral risk factors that will cause NCDs; tobacco use, the harmful use of alcohol, an unhealthy diet, and insufficient physical activity. In addition, the use of betel nut is very common in PNG and it is also a major risk factor, leading directly to increased rates in oral cancers.²⁴³

In PNG, oral cancer is the number one killer of males and the third among females. However, for both males and females, PNG has the highest rate in the world.²⁴⁴ Figure 14 depicts the NCDs affecting PNG.²⁴⁵

Training for Health Professionals

Physicians

In order to become a physician in PNG, entry-level students must complete a five-year, full-time Bachelor of Medicine, Bachelor of Surgery

(MBBS) degree at the University of Papua New Guinea. Following this, clinical rotations must be held at various provincial health care agencies. In addition, specializing in a field requires two years of advanced education and clinical residency. After completing the post-graduate diploma, a Doctorate in Medicine (M.D.) is available and can be completed only after the MBBS program, a thesis, and a and dissertation. In order to continue education for physicians, the Medical Society of Papua New Guinea conducts yearly medical symposium where distinguished local and foreign physicians are invited to present research and/or medical practice updates. For physicians to have continued education, they rely on Non-Governmental Organizations (NGOs) to help them advance with new medical updates, scientific advances, in-service trainings, and refresher programs. NGOs tend to bring international specialists to teach new skill and advancements in areas such as sexual health and care of sexually transmitted infections.²⁴⁶

Nurses

In PNG, there are two kinds of nurses; Community Health Worker (CHW), and the professional Registered Nurse (RN). In order to become a CHW, the course work is less in comparison to becoming a RN. CHW can find their area of study in various technical and vocational schools around PNG, this usually takes two years to complete. CHW are limited on their scope of work, usually tending to patients on duties such as medication administration, wound treatment, and counseling.

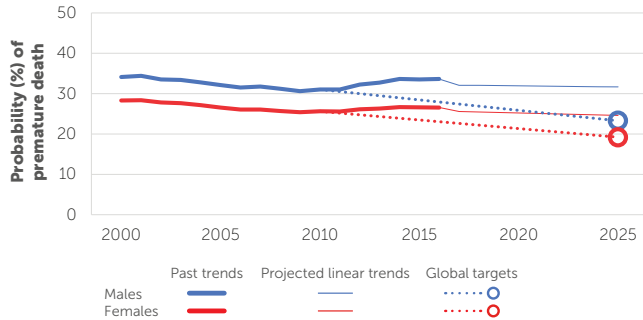
In order to become a RN, students need to complete a three year program at a vocational and trade school, which will provide them with a certificate or diploma. After successfully completing the three year program, graduate nurses sit for a national Nursing Council Examination before licensure (RN).

In addition, the University of PNG offers a Bachelor of Nursing for those licensed nurse wish to pursue a career in nursing management. Currently, the University of PNG does not offer Master's or Doctoral degree programs in nursing. This makes the nursing science careers stagnant and relies heavily on physician training for current practice updates.²⁴⁷

PAPUA NEW GUINEA

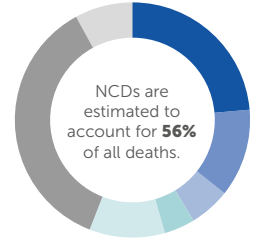
2016 TOTAL POPULATION: 8 085 000
2016 TOTAL DEATHS: 56 000

RISK OF PREMATURE DEATH DUE TO NCDs (%)*



PROPORTIONAL MORTALITY*

- ▶ 24% Cardiovascular diseases
- ▶ 12% Cancers
- ▶ 6% Chronic respiratory diseases
- ▶ 4% Diabetes
- ▶ 10% Other NCDs
- ▶ 36% Communicable, maternal, perinatal and nutritional conditions
- ▶ 8% Injuries



4 500 LIVES CAN BE SAVED BY 2025 BY IMPLEMENTING ALL OF THE WHO "BEST BUYS"

MORTALITY*		NATIONAL TARGET SET	DATA YEAR	MALES	FEMALES	TOTAL
Premature mortality from NCDs	x	Total NCD deaths	2016	16 400	15 000	31 400
		Risk of premature death between 30-70 years (%)	2016	34	27	30
Suicide mortality	-	Suicide mortality rate (per 100 000 population)	2016	-	-	6

RISK FACTORS

Risk Factor	National Target Set	Description	Data Year	Males	Females	Total
Harmful use of alcohol	✓	Total alcohol per capita consumption, adults aged 15+ (litres of pure alcohol)	2016	2	0	1
Physical inactivity	✓	Physical inactivity, adults aged 18+ (%)	2016	10	17	14
Salt/Sodium intake	✓	Mean population salt intake, adults aged 20+ (g/day)	2010	7	6	6
Tobacco use	✓	Current tobacco smoking, adults aged 15+ (%)	2016	50	24	37
Raised blood pressure	✓	Raised blood pressure, adults aged 18+ (%)	2015	20	20	20
Diabetes	✓	Raised blood glucose, adults aged 18+ (%)	2014	12	12	12
Obesity	✓	Obesity, adults aged 18+ (%)	2016	15	24	19
		Obesity, adolescents aged 10-19 (%)	2016	8	9	9
Ambient air pollution	-	Exceedance of WHO guidelines level for annual PM2.5 concentration (proportion)	2016	-	-	1
Household air pollution	-	Population with primary reliance on polluting fuels and technologies (%)	2016	-	-	87

SELECTED ADULT RISK FACTOR TRENDS

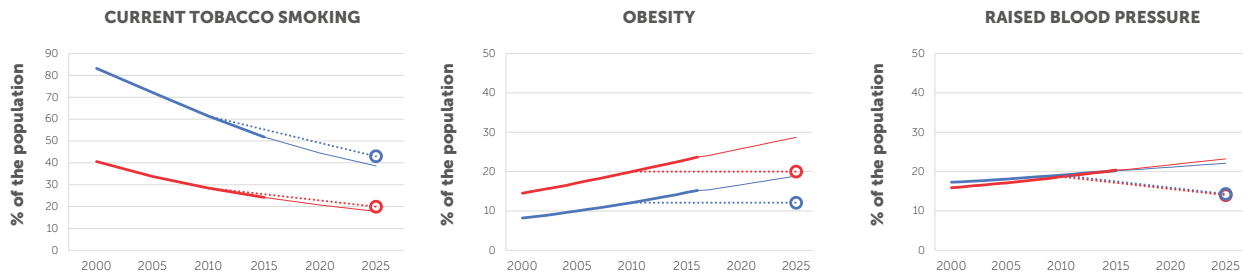


Figure 14: Non-Communicable Diseases Affecting PNG



PAPUA NEW GUINEA

Women, Peace, and Security

Disaster Management Reference Handbook | February 2019

Women, Peace, and Security

Women face many challenges in Papua New Guinea; the country is currently considered one of the most dangerous places for women. It is estimated that 70% of women in PNG are sexually abused or assaulted in their lifetime. PNG has tried to make changes in order to protect women, introducing the 2013 Family Protection Act, which was intended to criminalize violence against women, but it is very rare for perpetrators to be prosecuted²⁴⁸, even in the most serious cases of rape or murder.²⁴⁹

Currently, PNG does not appear on the Global Gender Gap Index, but it acceded to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1995. In 2017, during the Security Council Open Debate, PNG did not support the implementation of United Nations Security Council Resolution 1325 and they have not developed a National Action Plan on the Implementation of Resolution 1325. Even though PNG's Constitution gives men and women equal rights, women face cultural and traditional norms that have a negative impact on them.²⁵⁰ In rural and urban areas, men practice their traditional cultural roles, where tribal discipline and power is given to men and this gives them authority over their clan and family members. Men are the decision makers of the family and they control the finances, while women are expected to follow rules set by society and often have their basic human rights denied.²⁵¹ Photo 14 depicts a Tribal Woman in Mt. Hagen, PNG.

Unfortunately, PNG has the second highest maternal death rate in the world (second to Afghanistan). Roughly 50% of women give birth



Photo 14: Tribal Woman in Mt. Hagen, PNG

in a health facility or are assisted by a skilled birth attendant. Under their universal health policy, contraceptives are permissible for women, but most women still don't have access to them.²⁵²

In 2017, Papua New Guinea ranked 159 out of 160 countries of the Gender Inequality Index, making it the second lowest ranking country for gender equality in the world.²⁵³ Women and girls are challenged by having less access to healthcare and education than men. In Government positions, women are also under represented. There are currently no women in Parliament positions making PNG one of only 5 countries globally without women in parliament. And, there have only been 4 women in the last 40 years who have held a position in Parliament severely limiting the influence and prioritization of women in making changes to public policy.²⁵⁴

In PNG, it is not uncommon for girls and women to be viewed as commodities and used in exchange for money, gifts, or for solving tribal disputes. Due to this practice, women find themselves vulnerable to sexual and gender-based violence, which are now endemic in PNG society. It is estimated that two out of three women have experienced family violence.²⁵⁵

In 2013, as a result of international publicity regarding the deaths of two women accused of witchcraft, the 1971 Sorcery Act condoning accusation of sorcery as a plausible defense in a murder case was repealed.²⁵⁶ Additionally, a new provision was added to the Criminal Code Act of 1974 (Chapter 262) Section 299A criminalizing persons who intentionally kill another on account of accusation of sorcery, punishing them with the death penalty for willful murder. Nevertheless, witchcraft and sorcery accusation related violence (SARV) and murders are still a serious issue. The number of reported incidents rose significantly from two incidents in 1996 to a peak of 46 in 2011. Between 2012 and 2016, the number of annual incidents varied between 19 and 34 with a 20 year total of 610 victims reported as killed, 340 wounded and 493 not physically harmed but having suffered property (usually arson) or psychological damage.²⁵⁷ While victims were both male and female, females were more likely burnt alive, tortured and/or raped before they were killed.²⁵⁸ As a result of initiatives to combat SARV, the PNG Sorcery National Action Plan (SNAP) was drafted in 2015 to provide a comprehensive approach to addressing this issue. Led by the Department of Justice and the Attorney General of Papua New Guinea, the SNAP addresses five core areas of focus: legal and protection, health, advocacy and communication, care and counselling, and research and recommendations for implementation.²⁵⁹



PAPUA NEW GUINEA

Conclusion

Conclusion

Papua New Guinea has one of the most diverse populations and geography in the world.²⁶⁰ The country's history, cultures, and languages contribute to its rich history. The country is also uniquely situated for a variety of challenges. Its position along the Pacific Ring of Fire and the specific challenges of the country's terrain and remote villages and islands have contributed to make disaster risk reduction, disaster risk management and climate change adaptation a priority for PNG and its partner nations and agencies.²⁶¹

PNG continues to make strides towards the improvement of their disaster risk management, mitigation and planning efforts. Over the past 15 years, PNG has suffered from significant events such as flooding, volcanic eruption, tsunami, landslide, earthquake, and drought. PNG also has the highest percentage of population exposed to severe volcanic risk and continues to face many serious health and societal issues.²⁶² The majority of the population, over 80%, live in rural and remote communities, which tend to be the most vulnerable communities to climate change. The myriad threat of natural disasters places the population at risk by threatening not only the physical lives of the citizens but also their livelihoods of farming, fishing, and small-scale cash cropping.²⁶³

PNG continues to face challenges, in spite of past economic growth. Following the global financial crisis and falling commodity prices resulting in severe budget cuts, PNG was forced to reduce government spending on healthcare, education, training, and law in half.²⁶⁴ This was exacerbated by some of the worst droughts seen in the country's history. These issues have had a direct impact on the healthcare sector, which was already struggling in several areas. These areas include human resources, donor fatigue of international partners, recent outbreaks of disease, the difficulty of making headway with a national immunization response, and inability to improve maternal and newborn mortality rates. The World Health Organization has set strategic priorities that will help alleviate some of these issues. They include enhancing the Government's capability in disaster risk management and providing the coordination for the Health Cluster.²⁶⁵ Additionally, Australia has contributed significantly to PNG's overall

prosperity with regard to providing needed aid in disasters to assist with economic, governmental and social success; contributing a total of \$541 million to PNG in 2017-2018.²⁶⁶ As a result, PNG has increased its DRM, DRR, and CCA efforts with the implementation of the Papua New Guinea Vision 2050, where strategies to attain sustainable development through DRM and CCA are prioritized.²⁶⁷ The Vision has shepherded development of long term strategies and initiatives for the advancement and prosperity of the country. The National Climate Compatible Development Management Policy was also a result of the Vision 2050 and focuses on sustainable development and key policy areas for climate change mitigation and adaptation and provides monitoring and evaluation of these activities.

In 2012, the National Disaster Risk Management Plan was enacted to lay out the DRM architecture of the country and provide guidance for DRM interventions at all sectors and levels of Government.²⁶⁸ Management of disasters and emergencies in PNG are executed in accordance with the Disaster Management Act. PNG has the National Executive Council, the National Disaster Committee, the National Disaster Centre, and the Provincial Disaster Committees to support this.²⁶⁹

Disaster Management Communications in the country have historically been a challenge. However the capabilities of reaching the more remote populations of the country are vastly expanding. This is particularly important when it comes to disaster and disaster recovery efforts. This was evident after the 7.5 earthquake in February 2018, when the UN Resident Coordinator's Office was able to provide a Communicating with Communities Working Group. Through this effort, they were able to reach communities throughout the country with lifesaving messages through mobile phones and drastically improving disaster management planning and response. In addition, the Working Group established a psychosocial help line to provide counseling to those affected by the earthquake. This not only served the population, but it also provided the clusters with basic information and key concerns.²⁷⁰



PAPUA NEW GUINEA

Appendices

Disaster Management Reference Handbook | February 2019

Appendices

DoD DMHA Engagements in the Past Five Years (FY 2013-2018)

Asia-Pacific Economic Cooperation Support – November 2018

The USS Green Bay (LPD 20) arrived in Port Moresby, PNG, on November 2018. That visit marked the second time a U.S. ship has visited Papua New Guinea in two months. The ship arrived in Port Moresby to provide security, and to support the upcoming Asia-Pacific Economic Cooperation (APEC) conference to be held Nov. 17-18.²⁷¹

USS Michael Murphy Visits Papua New Guinea – October 2018

Guided-missile destroyer USS Michael Murphy (DDG 112) visited Port Moresby, on Oct. 6. Michael Murphy arrived in preparation of the Asia-Pacific Economic Cooperation (APEC) Leaders' Summit. Such port visit helps strengthen the U.S. Navy's relationship with the maritime forces of Papua New Guinea.²⁷²

Exercise Koa Moana – June 2016

More than 130 service members from the Papua New Guinea Defence Force, U.S. Marine Corps, and Navy participated in Exercise Koa Moana. The exercise enhanced skills in various military fields, resulting in a skills transfer between both countries.²⁷³

Bilateral Defense Talks – 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.²⁷⁴

Pacific Partnership 2015 – June 2015

The USNS Mercy hospital ship 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.²⁷⁵

Exercise Pacific Angel – May 2015

Pacific Angel 15-4 conducted civic assistance projects that provided medical care for 3,859 patients, refurbished three schools for 3,000 students, and helped two local hospitals overhaul their ability to respond to emergencies. The Papua New Guinea Defence Force, Australian Royal air force, Philippines, Indonesia, and New Zealand worked side-by-side with 56 U.S. Airmen, Soldiers, Sailors, and Marines during the operation. Pacific Angel is a joint and combined humanitarian assistance operation conducted in the Pacific area of responsibility to support U.S. Pacific Command's capacity building efforts. The humanitarian and civic assistance program is aimed at improving military-civilian cooperation between the United States and Pacific partners.²⁷⁶

Oceania Pacific Resilience Disaster Response Exercise – May 2015

U.S. Army Pacific and the Government of Papua New Guinea completed the first Oceania Pacific Resilience Disaster Response Exercise and Exchange May 15 in Lae, Papua New Guinea. The Oceania DREE was a five-day exercise hosted by the Papua New Guinea National Disaster Centre and the Papua New Guinea Defence Force. The DREE consisted of presentations and discussions from subject matter experts, a tabletop exercise, a field training exercise, and an after action review.²⁷⁷

Exercise Pacific Wave – February 2015

Exercise Pacific Wave 15 was a Pacific-wide Tsunami Warning and Enhanced Products Exercise and PNG participated in the tsunami simulation exercise. The Papua New Guinea Port Moresby Geophysical Observatory (PMGO) and the NDMO were two key agencies participating. This included the five provincial disaster offices.²⁷⁸

Pacific Unity Operation - 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.²⁷⁹

Pacific Partnership - June 2013

Pacific Partnership 2013 visited six host nations to include Samoa, Tonga, Papua New Guinea, the Republic of the Marshall Islands, Kiribati and the Solomon Island. 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.²⁸⁰

International/Foreign Relations

United States

In 1975, after PNG's independence from a United Nations trusteeship, which was administered by Australia, the United States started relationships with the country. PNG is an important peace and security keeping location in the Asia-Pacific region for the U.S. The United States supports PNG with bilateral and multilateral funding for various public health programs. Assistance funds, such as the ones for public health programs in Papua New Guinea including the President's Emergency Plan for AIDS Relief (PEPFAR), TB, Malaria, and Neglected Tropical Diseases

The U.S. is currently working on the capacity and resilience of Papua New Guinea to adapt to climate change, and this effort entails 12 Pacific Island countries. The U.S. works in PNG to protect biodiversity by contributing to the Coral Triangle Initiative to preserve coral reefs, fisheries, and food security. In addition the U.S. seeks to support disaster preparedness and response in PNG. In 2017, after a 7.5 earthquake in the Highlands, the United States provided funding for relief efforts. U.S. Indo-PACOM also provide training to the Papua New Guinea Defense Force and had a small-scale joint training and engineering exercises.²⁸¹

France

France and Papua New Guinea work together under the Critical Ecosystem Partnership Fund (CEPF), which is an initiative to protect

biodiversity "hot spots", and conducts analysis and promotion of the results of the "La Planète Révisitée" expedition that ended in 2013. France also supports PNG with military efforts, with the participation of Papua New Guinea in French exercises in the region ("Équateur" and "Croix du Sud"). The two countries have also built relationships that has intensified since they obtained exploitation rights for new natural gas concessions in the Elk-Antelope fields.

The countries work on scientific cooperation, which is based mainly on research for development, such as: agronomy, environmental science, natural risk management and geology, in conjunction with regional French research institutes, and on support for Francophonie. Papua New Guinea receives funding from the Pacific Fund financing for the Ambitle Island project to promote coral reef adaptation to climate change, and a project on the resilience of certain environments (forest, coastal), implemented by the French Research Institute for Development (IRD).²⁸²

China

The People's Republic of China and the Independent State of Papua New Guinea maintained a steady growth in their partnership. The Speaker of the National Parliament of Papua New Guinea, Theodore Zurenuoc, has visited China. As well as Prime Minister Peter O'Neill visited China for the second China-Pacific Island Countries Economic Development and Cooperation Forum. The Chinese Vice Minister of Commerce Zhong Shan, has also visited Papua New Guinea.

Cooperation between the two countries in business, energy, resources, and health have been making progress in recent years. The Integrated Government Information Network and the Students Dormitories Project of University of Goroka were both funded with Chinese concessional loans. China has several projects being executed in Papua New Guinea, some of these include: the Ramu Nickel-Cobalt Mine Project jointly developed by China Metallurgical Group Corporation and Papua New Guinea; the sixth Chinese medical aid team that works in Papua New Guinea; and a medical team from Guangdong Province that offered free medical services during its visit to Papua New Guinea.²⁸³

Canada

In 1975, Canada and Papua New Guinea established diplomatic relations. Canada is represented in PNG by the High Commission

of Canada in Australia. Papua New Guinea is officially represented in Canada by the Embassy in Washington, D.C.

Compared to other Pacific Island nations, Canada has more ties with PNG than any other. Some of their work in PNG involves investment (mainly mining), development assistance, and a small but visible Canadian community.

Bilateral relations between the two countries are enhanced by a shared membership in international organizations, such as the Commonwealth, the Asia-Pacific Economic Cooperation, and the United Nations. Canada and Papua New Guinea share interests with respect to fisheries and are both party to a number of agreements such as the United Nations Convention on the Law of the Sea, and the United Nations Fish Stocks Agreement. Canada is also a Dialogue Partner of the Pacific Islands Forum to which Papua New Guinea belongs.

Canada also has a trade relationship with PNG, and it is managed by the Trade Commissioner Service at the High Commission of Canada in Australia. In 2017, Canada's total bilateral merchandise trade with Papua New Guinea was PGK \$14.6 million (down from \$21.4 million in 2016), with PGK \$10.8 million in exports, and PGK \$3.8 million in imports. Main Canadian exports to PNG included machinery and vehicles, while imports included coffee and spices.²⁸⁴

Australia

Australia is Papua New Guinea's closest neighbor, therefore making it an important regional partner and the largest donor to the country. PNG and Australia have a relationship based on economic and strategic partnership. The Australian Government has estimated they will provide an estimated AUD \$572.2 million in total development assistance PNG in 2018-19. This will include an estimated AUD \$519.5 million in bilateral funding to PNG managed by DFAT.²⁸⁵

Force Protection/Pre-Deployment Information

The following information is provided for pre-deployment planning and preparations. Visit www.travel.state.gov prior to deployments for further up-to-date information.

Passport/Visa

Before entering Papua New Guinea, you must ensure that your passport has at least six months validity remaining, a blank page on your passport, a return airline ticket, and proof of sufficient funds. If staying for less than 60 days, U.S. citizens entering Papua New Guinea are able to obtain a tourist visa upon arrival at the international airport.²⁸⁶

Emergency Contact Information

U.S. Embassy Port Moresby
Douglas Street, adjacent to the Bank of Papua New Guinea,
P.O. Box 1492
Port Moresby, NCD 121
Papua New Guinea
Telephone: +(675) 321-1455
Emergency After-Hours Telephone: +(675) 7200-9439
ConsularPortMoresby@state.gov

Currency Information

The currency in PNG is the Kina (PGK). PNG imposes entry and exit currency restrictions. Entry currency restrictions state travelers may not enter or exit PNG with more than PGK 10,000 without declaring it.²⁸⁷

Travel Health Information

Vaccination and Prescriptions

The CDC provides the following recommendations for travel to Papua New Guinea. The information in Table 3 is taken directly from the CDC website.

Medical Care

The following information on recommendations for traveling to PNG, comes directly from the CDC website.²⁸⁸

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

Routine vaccines (for all travelers)	Make sure you are up-to-date on routine vaccines before every trip. These vaccines include Measles-Mumps-Rubella (MMR) vaccine, diphtheria-tetanus-pertussis vaccine, varicella (chickenpox) vaccine, polio vaccine, and your yearly flu shot.
Hepatitis A (for some travelers)	CDC recommends this vaccine because you can get hepatitis A through contaminated food or water in Papua New Guinea, regardless of where you are eating or staying.
Polio (for most travelers)	Health recommendation: You may need a polio vaccine before your trip to Papua New Guinea. If you were vaccinated against polio as a child but have never had a polio booster dose as an adult, you should get this booster dose. Adults need only one polio booster dose in their lives (unless you are fulfilling the country requirement listed below). If you were not completely vaccinated as a child or do not know your vaccination status, talk to your doctor about getting vaccinated. Country exit requirement: If you will be in Papua New Guinea for more than 4 weeks, the Government of Papua New Guinea may require you to show proof of polio vaccination when you are exiting the country. To meet this requirement, you should receive a polio vaccine between 4 weeks and 12 months before the date you are leaving Papua New Guinea. Talk to your doctor about whether this requirement applies to you.
Typhoid (for most travelers)	You can get typhoid through contaminated food or water in Papua New Guinea. 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.
Hepatitis B (for some travelers)	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 (for some travelers)	You may need this vaccine if your trip will last more than a month, depending on where you are going in Papua New Guinea and what time of year you are traveling. You should also consider this vaccine if you plan to visit rural areas in Papua New Guinea 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 (some travelers)	Talk to your doctor about how to prevent malaria while traveling. You may need to take prescription medicine before, during, and after your trip to prevent malaria, especially if you are visiting low-altitude areas.
Rabies (for some travelers)	Rabies is present in bats in Papua New Guinea. However, it is not a major risk to most travelers. CDC recommends rabies vaccine for only these groups: <ul style="list-style-type: none"> • 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).

Table 3: CDC, Travel Health Information for Papua New Guinea

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)
- Unpasteurized milk

Take Medicine

Talk with your doctor about taking prescription or over-the-counter drugs with you on your trip in case you get sick.

Prevent Bug Bites

Bugs (like mosquitoes, ticks, and fleas) can spread a number of diseases in PNG. Many of these diseases cannot be prevented with a vaccine or medicine. You can reduce your risk by taking steps to prevent bug bites.

To prevent bug bites:

- Cover exposed skin by wearing long-sleeved shirts, long pants, and hats.
- Use an appropriate insect repellent (see below).
- Use permethrin-treated clothing and gear (such as boots, pants, socks, and tents). Do not use permethrin directly on skin.
- Stay and sleep in air-conditioned or screened rooms.
- Use a bed net if the area where you are sleeping is exposed to the outdoors.

For protection against ticks and mosquitoes:

Use a repellent that contains 20% or more DEET for protection that lasts up to several hours.

For protection against mosquitoes only:

Products with one of the following active ingredients can also help prevent mosquito bites. Higher percentages of active ingredient provide longer protection.

- DEET
- Picaridin (also known as KBR 3023, Bayrepel, and Icaridin)
- Oil of lemon eucalyptus (OLE) or PMD
- IR3535

If you are bitten by bugs:

- Avoid scratching bug bites, and apply hydrocortisone cream or calamine lotion to reduce the itching.
- Check your entire body for ticks after outdoor activity. Be sure to remove ticks properly.

Note: The Zika Virus is a risk in Papua New Guinea.

Safety and Security

As a first step in planning any trip abroad, check the Travel Advisories for your intended destination.

Note that conditions can change rapidly in a country at any time. To receive updated Travel Advisories and Alerts for the countries you choose, sign up at step.state.gov.

Sendai Framework

The Sendai Framework is the global blueprint and fifteen-year plan to build the world's resilience to natural disasters.²⁸⁹ The Sendai Framework for Disaster Risk Reduction 2015-2030 outlines seven clear targets and four priorities for action to prevent new and reduce existing disaster risks:

The Seven Global Targets include:

- Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rates in the decade 2020-2030 compared to the period 2005-2015.
- Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020 -2030 compared to the period 2005-2015.
- Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.
- Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
- Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.
- Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030.
- Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.²⁹⁰

The Four Priorities of Action include:

- Understanding disaster risk;
- Strengthening disaster risk governance to manage disaster risk;
- Investing in disaster reduction for resilience; and
- Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.

The Sendai Framework aims to achieve the substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries over the next 15 years. It was adopted at the Third United Nations World Conference on Disaster Risk Reduction in Sendai, Japan in 2015.²⁹¹ The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters.²⁹²

Figure 15 is a chart of the Sendai DRR Framework.²⁹³

Chart of the Sendai Framework for Disaster Risk Reduction 2015-2030

Scope and purpose

The present framework will apply to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters, caused by natural or manmade hazards as well as related environmental, technological and biological hazards and risks. It aims to guide the multi-hazard management of disaster risk in development at all levels as well as within and across all sectors

Expected outcome

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries

Goal

Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience

Targets

Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared to 2005-2015	Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared to 2005-2015	Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030	Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030	Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020	Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030	Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030
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Figure 15: UN Sendai Framework for Disaster Risk Reduction 2015-2030

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 HFA for Papua New Guinea are represented in Figure 16 and Table 4. Table 5 provides an overview of the overall challenges and the future outlook statement from the HFA report. The 2011-2013 is the most recent HFA report available for PNG.²⁹⁴

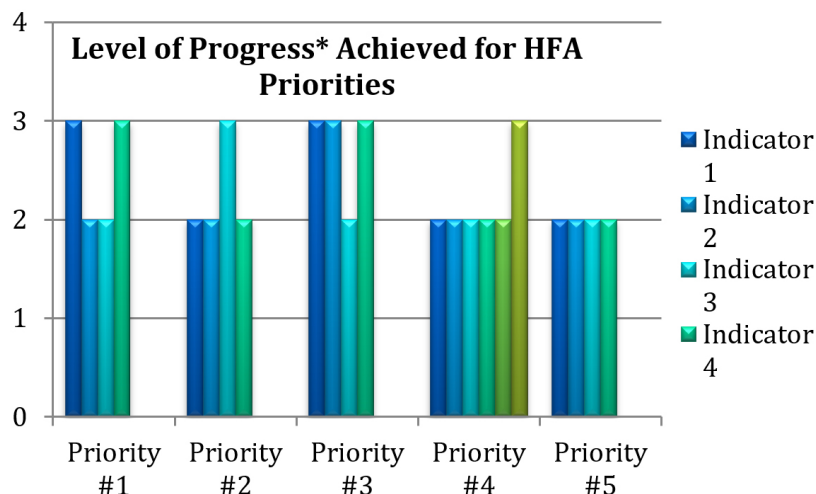


Figure 16: HFA Level of Progress Achieved

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

Table 4: National Progress Report on the Implementation of the HFA

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 disaster risk reduction 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	Disaster risk reduction 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 disaster risk reduction elements, including enforcement of building codes.	2
5	Disaster risk reduction 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 disaster risk management, with a disaster risk reduction 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

Table 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

Table 4: National Progress Report on the Implementation of the HFA (cont.)

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.	
Challenges:	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
Future Outlook Priorities:	DRM systematically incorporated into national and sector plans and policies which appropriate with a focus on risk reduction.
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.	
Challenges:	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
Future Outlook Priorities:	Revision and strengthening of DRM legislation, institutional arrangements and capacities at all levels to enhance the resilience of the communities.
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.

Table 5: HFA Country Progress Report Future Outlook Areas, PNG

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

Challenges:	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 5: HFA Country Progress Report Future Outlook Areas, PNG (cont.)

Country Profile

*The information in the Country Profile section is sourced directly from the CIA World Fact book. Additional numbers on country comparison to the world can be found by going directly to the CIA website.*²⁹⁵

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. Under the terms of a peace accord, 2015 is the year that a five-year window opens for a referendum on the question of independence.

Location:

This entry identifies the country's regional location, neighboring countries, and adjacent bodies of water.

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

Map References:

Oceania

Area:

Total: 462,840 sq km

Land: 452,860 sq km

Water: 9,980 sq km

Country comparison to the world: 56

Area - comparative:

Slightly larger than California

Land boundaries:

Total: 824 km

Border countries (1): Indonesia 824 km

Coastline:

5,152 km

Maritime claims:

Territorial sea: 12 nm

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

Exclusive fishing zone: 200 nm

Measured from claimed archipelagic baselines

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:

Mean elevation: 667 m

Elevation extremes: 0 m lowest point: Pacific Ocean

4509 highest point: Mount Wilhelm

Natural resources:

Gold, copper, silver, natural gas, timber, oil, fisheries

Land use:

Agricultural land: 2.6% (2011 est.)

Arable land: 0.7% (2011 est.) / permanent crops: 1.5% (2011 est.) / permanent pasture: 0.4% (2011 est.)

Forest: 63.1% (2011 est.)

Other: 34.3% (2011 est.)

Irrigated land:

0 sq km (2012)

Population distribution:

Population concentrated in the highlands and eastern coastal areas on the island of New Guinea; predominantly a rural distribution with only about one-fifth of the population residing in urban areas

Natural hazards:

Active volcanism; the country is subject to frequent and sometimes severe earthquakes; mud slides; tsunamis

Volcanism: severe volcanic activity; Ulawun (2,334 m), one of Papua New Guinea'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 (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. See note 2 under "Geography - note"

Environment - current issues:

Rain forest loss as a result of growing commercial demand for tropical timber; unsustainable logging practices result in soil erosion, water quality degradation, and loss of habitat and biodiversity; large-scale mining projects cause adverse impacts on forests and water quality (discharge of heavy metals, cyanide, and acids into rivers); severe drought; inappropriate farming practices accelerate land degradation (soil erosion, siltation, loss of soil fertility); destructive fishing practices and coastal pollution due to run-off from land-based activities and oil spills

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:

Note 1: shares island of New Guinea with Indonesia; generally east-west trending highlands break up New Guinea into diverse ecoregions; one of world's largest swamps along southwest coast

Note 2: Papua New Guinea is one of the countries along the Ring of Fire, a belt of active volcanoes and earthquake epicenters bordering the Pacific Ocean; up to 90% of the world's earthquakes and some 75% of the world's volcanoes occur within the Ring of Fire

Population:

7,027,332 (July 2018 est.)

Country comparison to the world: 105

Nationality:

noun: Papua New Guinean(s)

adjective: Papua New Guinean

Ethnic groups:

Melanesian, Papuan, Negrito, Micronesian, Polynesian

Languages:

Tok Pisin (official), English (official), Hiri Motu (official), some 839 indigenous languages spoken (about 12% of the world's total); many languages have fewer than 1,000 speakers

Note: Tok Pisin, a creole language, is widely used and understood; English is spoken by 1%-2%; Hiri Motu is spoken by less than 2%

Religions:

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

Age structure:

0-14 years: 32.94% (male 1,178,509 /female 1,136,069)

15-24 years: 19.94% (male 710,166 /female 690,848)

25-54 years: 37.13% (male 1,338,558 /female 1,271,008)

55-64 years: 5.59% (male 201,271 /female 191,833)

65 years and over: 4.4% (male 153,922 /female 155,148) (2018 est.)

Dependency ratios:

Total dependency ratio: 67.4 (2015 est.)

Youth dependency ratio: 61.3 (2015 est.)

Elderly dependency ratio: 6.1 (2015 est.)

Potential support ratio: 16.4 (2015 est.)

Median age:

Total: 23.4 years

Male: 23.5 years

Female: 23.4 years (2018 est.)

Country comparison to the world: 171

Population growth rate:

1.67% (2018 est.)

Country comparison to the world: 61

Birth rate:

23.3 births/1,000 population (2018 est.)

Country comparison to the world: 60

Death rate:

6.6 deaths/1,000 population (2018 est.)

Country comparison to the world: 141

Net migration rate:

0 migrant(s)/1,000 population (2017 est.)

Country comparison to the world: 95

Population distribution:

Population concentrated in the highlands and eastern coastal areas on the island of New Guinea; predominantly a rural distribution with only about one-fifth of the population residing in urban areas

Urbanization:

Urban population: 13.2% of total population (2018)

Rate of urbanization: 2.51% annual rate of change (2015-20 est.)

Major urban areas - population:

367,000 Port Moresby (capital) (2018)

Sex ratio:

At birth: 1.05 male(s)/female (2017 est.)

0-14 years: 1.04 male(s)/female (2017 est.)

15-24 years: 1.03 male(s)/female (2017 est.)

25-54 years: 1.06 male(s)/female (2017 est.)

55-64 years: 1.03 male(s)/female (2017 est.)

65 years and over: 1.06 male(s)/female (2017 est.)

Total population: 1.04 male(s)/female (2017 est.)

Maternal mortality rate:

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

Country comparison to the world: 49

Infant mortality rate:

Total: 35.3 deaths/1,000 live births (2018 est.)

Male: 38.6 deaths/1,000 live births (2018 est.)

Female: 31.7 deaths/1,000 live births (2018 est.)

Country comparison to the world: 49

Life expectancy at birth:

Total population: 67.5 years (2018 est.)

Male: 65.3 years (2018 est.)

Female: 69.8 years (2018 est.)

Country comparison to the world: 171

Total fertility rate:

2.97 children born/woman (2018 est.)

Country comparison to the world: 54

Health expenditures:

4.3% of GDP (2014)

Country comparison to the world: 161

Physician density:

0.06 physicians/1,000 population (2010)

Drinking water source:

Improved:

Urban: 88% of population

Rural: 32.8% of population

Total: 40% of population

Unimproved:

Urban: 12% of population

Rural: 67.2% of population

Total: 60% of population (2015 est.)

Sanitation facility access:

Improved:

Urban: 56.4% of population (2015 est.)

Rural: 13.3% of population (2015 est.)

Total: 18.9% of population (2015 est.)

Unimproved:

Urban: 43.6% of population (2015 est.)

Rural: 86.7% of population (2015 est.)

Total: 81.1% of population (2015 est.)

HIV/AIDS - adult prevalence rate:

0.9% (2017 est.)

Country comparison to the world: 48

HIV/AIDS - people living with HIV/AIDS:

48,000 (2017 est.)

Country comparison to the world: 61

HIV/AIDS - deaths:

1,100 (2017 est.)

Country comparison to the world: 64

Major infectious diseases:

Degree of risk: very high (2016)

Food or waterborne diseases: bacterial diarrhea, hepatitis A, and typhoid fever (2016)

Vectorborne diseases: dengue fever and malaria (2016)

Note: active local transmission of Zika virus by *Aedes* species mosquitoes has been identified in this country (as of August 2016); it poses an important risk (a large number of cases possible) among US citizens if bitten by an infective mosquito; other less common ways to get Zika are through sex, via blood transfusion, or during pregnancy, in which the pregnant woman passes Zika virus to her fetus

Obesity - adult prevalence rate:

21.3% (2016)

Country comparison to the world: 91

Children under the age of 5 years underweight:

27.9% (2010)

Country comparison to the world: 12

Education expenditures: NA

Literacy:

Definition: age 15 and over can read and write (2015 est.)

Total population: 64.2% (2015 est.)

Male: 65.6% (2015 est.)

Female: 62.8% (2015 est.)

Unemployment, youth ages 15-24:

Total: 3.6% (2010 est.)

Male: 4.3% (2010 est.)

Female: 3% (2010 est.)

Country comparison to the world: 161

People - note:

The indigenous population of Papua New Guinea (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

Country name:

Conventional long form: Independent State of Papua New Guinea

Conventional short form: Papua New Guinea

Local short form: Papuaniugini

Former: Territory of Papua and New Guinea

Abbreviation: PNG

Etymology: the word “papua” derives from the Malay “papuah” describing the frizzy hair of the

Melanesians; Spanish explorer Ynigo Ortiz de Retez applied the term “Nueva Guinea” to the island of New Guinea in 1545 after noting the resemblance of the locals to the peoples of the Guinea coast of Africa

Government type:

Parliamentary democracy (National Parliament) under a constitutional monarchy; a Commonwealth realm

Capital:

Name: Port Moresby

Geographic coordinates: 9 27 S, 147 11 E

Time difference: UTC+10 (15 hours ahead of Washington, DC, during Standard Time)

Note: Papua New Guinea has two time zones, including Bougainville (UTC+11)

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 Australia-administered UN trusteeship)

National holiday:

Independence Day, 16 September (1975)

Constitution:

History: adopted 15 August 1975, effective at independence 16 September 1975 (2018)

Amendments: proposed by the National Parliament; passage has prescribed majority vote requirements depending on the constitutional sections being amended – absolute majority, two-thirds majority, or three-fourths majority; amended many times, last in 2014 (2018)

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:

Citizenship by birth: no

Citizenship by descent only: at least one parent must be a citizen of Papua New Guinea

Dual citizenship recognized: no

Residency requirement for naturalization: 8 years

Suffrage:

18 years of age; universal

Executive branch:

Chief of state: Queen Elizabeth II (since 6 February 1952); represented by Governor General Grand Chief Sir Bob Dadae (since 28 February 2017)

Head of government: Prime Minister Peter Paire O'Neill (since 2 August 2011); Deputy Prime Minister Charles Abel (since 4 August 2017)

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) reelected prime minister; National Parliament vote - 60 to 46

Legislative branch:

Description: unicameral National Parliament (111 seats; members directly elected in single-seat constituencies - 89 local, 20 provincial, the autonomous province of Bougainville, and the National Capital District - by majority preferential vote; members serve 5-year terms); note - the constitution allows up to 126 seats

Elections: last held from 24 June 2017 to 8 July 2017 (next to be held in June 2022)

Election results: percent of vote by party - PNC 37%; NA 13%; Pangu 14%; URP 11%; PPP 4%; SDP 4%; Independents 3%; and smaller parties 14%; seats by party - NA; composition - men 108, women 3, percent of women 3%

Judicial branch:

Highest courts: Supreme Court (consists of the chief justice, deputy chief justice, 35 justices, and 5 acting justices); National Courts (consists of 13 courts located in the province capitals, with a total of 19 resident judges)

Judge selection and term of office: Supreme Court 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; full-time citizen judges appointed for 10-year renewable terms; non-citizen judges initially appointed for 3-year renewable terms and after first renewal until age 70; appointment and tenure of National Court resident judges NA

Subordinate courts: district, village, and juvenile courts, military courts, taxation courts, coronial courts, mining warden courts, land courts, traffic courts, committal courts, grade five courts

Political parties and leaders:

National Alliance Party or NAP [Patrick Pruaitch]
Papua and Niugini Union Party or PANGU [Sam Basil]

Papua New Guinea Party or PNGP [Belden Namah]

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

People's Party or PP [Peter Ipatas]

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

Social Democratic Party or SDP [Powes Parkop]

Triumph Heritage Empowerment Party or THE [Don Polye]

United Resources Party or URP [William Duma]

Note: As of 8 July 2017, 45 political parties were registered

International organization participation:

ACP, ADB, AOSIS, APEC, ARF, ASEAN (observer), C, CD, CP, EITI (candidate country), FAO, G-77, IAEA, IBRD, ICAO, ICRM, IDA, IFAD, IFC, IFRC, IHO, ILO, IMF, IMO, Interpol, IOC, IOM, IPU, ISO (correspondent), ITSO, ITU, MIGA, NAM, OPCW, PIF, Sparteca, SPC, UN, UNCTAD, UNESCO, UNIDO, UNMISS, UNWTO, UPU, WCO, WFTU (NGOs), WHO, WIPO, WMO, WTO

Diplomatic representation in the US:

Chief of mission: Ambassador (vacant); Charge D'Affaires Elias Rahuromo Wohengu (since 30 September 2017)

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

Telephone: [1] (202) 745-3680

FAX: [1] (202) 745-3679

Diplomatic representation from the US:

Chief of mission: Ambassador Catherine Ebert-Gray (since 23 February 2016); note - also accredited to the Solomon Islands and Vanuatu

Embassy: P.O. Box 1492, Port Moresby

Mailing address: 4240 Port Moresby Place, US Department of State, 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 Papua New Guinea; the bird of paradise - endemic to the island of New Guinea - is an emblem of regional tribal culture and represents the emergence of Papua New Guinea as a nation; the Southern Cross, visible in the night sky, symbolizes Papua New Guinea'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

Economy - overview:

Papua New Guinea (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% of the people. The global financial crisis had little impact because of continued foreign demand for PNG's commodities.

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. Following construction of a PGK \$19 billion liquefied natural gas (LNG) project, PNG LNG, a consortium led by

ExxonMobil, began exporting liquefied natural gas to Asian markets in May 2014. The project was delivered on time and only slightly above budget. The success of the project has encouraged other companies to look at similar LNG projects. French supermajor Total is hopes to begin construction on the Papua LNG project by 2020. Due to lower global commodity prices, resource revenues of all types have fallen dramatically. PNG's government has recently been forced to adjust spending levels downward.

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. In August, 2017, PNG launched its first-ever national trade policy, PNG Trade Policy 2017-2032. The policy goal is to maximize trade and investment by increasing exports, to reduce imports, and to increase foreign direct investment (FDI).

GDP (purchasing power parity):

\$30.19 billion (2017 est.)

\$29.44 billion (2016 est.)

\$28.98 billion (2015 est.)

Note: data are in 2017 dollars

Country comparison to the world: 132

GDP (official exchange rate):

\$19.82 billion (2017 est.) (2017 est.)

GDP - real growth rate:

2.5% (2017 est.)

1.6% (2016 est.)

5.3% (2015 est.)

Country comparison to the world: 131

GDP - per capita (PPP):

\$3,700 (2017 est.)

\$3,600 (2016 est.)

\$3,700 (2015 est.)

Note: data are in 2017 dollars

Country comparison to the world: 184

Gross national saving:

36.8% of GDP (2017 est.)

38% of GDP (2016 est.)

33.7% of GDP (2015 est.)

Country comparison to the world: 14

GDP - composition, by end use:

Household consumption: 43.7% (2017 est.)

Government consumption: 19.7% (2017 est.)

Investment in fixed capital: 10% (2017 est.)

Investment in inventories: 0.4% (2017 est.)

Exports of goods and services: 49.3% (2017 est.)

Imports of goods and services: -22.3% (2017 est.)

GDP - composition, by sector of origin:

Agriculture: 22.1% (2017 est.)

Industry: 42.9% (2017 est.)

Services: 35% (2017 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, livestock (pork, poultry, cattle), dairy products, spice products (turmeric, vanilla, ginger, cardamom, chili, pepper, citronella, and nutmeg), fisheries products

Industrial production growth rate:

3.3% (2017 est.)

Country comparison to the world: 97**Labor force:**

3.681 million (2017 est.)

Country comparison to the world: 97**Labor force - by occupation:**

Agriculture: 85%

Industry: NA

Services: NA

Unemployment rate:

2.5% (2017 est.)

2.5% (2016 est.)

Country comparison to the world: 26**Population below poverty line:**

37% (2002 est.)

Household income or consumption by percentage share:

Lowest 10%: 40.5% (1996)

Highest 10%: 40.5% (1996 est.)

Distribution of family income - Gini index:

50.9 (1996)

Country comparison to the world: 13**Budget:**

Revenues: 3.638 billion (2017 est.)

Expenditures: 4.591 billion (2017 est.)

Taxes and other revenues:

18.4% (of GDP) (2017 est.)

Country comparison to the world: 160**Budget surplus (+) or deficit (-):**

-4.8% (of GDP) (2017 est.)

Country comparison to the world: 168**Public debt:**

36.9% of GDP (2017 est.)

36.9% of GDP (2016 est.)

Country comparison to the world: 144**Fiscal year:**

Calendar year

Inflation rate (consumer prices):

5.4% (2017 est.)

6.7% (2016 est.)

Country comparison to the world: 177**Central bank discount rate:**

14% (31 December 2010)

6.92% (31 December 2009)

Country comparison to the world: 15**Commercial bank prime lending rate:**

8.4% (31 December 2017 est.)

8.38% (31 December 2016 est.)

Country comparison to the world: 99

Stock of narrow money:

\$5.409 billion (31 December 2017 est.)

\$5.05 billion (31 December 2016 est.)

Country comparison to the world: 99

Stock of broad money:

\$5.409 billion (31 December 2017 est.)

\$5.05 billion (31 December 2016 est.)

Country comparison to the world: 102

Stock of domestic credit:

\$7.091 billion (31 December 2017 est.)

\$7.223 billion (31 December 2016 est.)

Country comparison to the world: 119

Market value of publicly traded shares:

\$10.71 billion (31 December 2012 est.)

\$8.999 billion (31 December 2011 est.)

\$9.742 billion (31 December 2010 est.)

Country comparison to the world: 74

Current account balance:

\$4.859 billion (2017 est.)

\$4.569 billion (2016 est.)

Country comparison to the world: 29

Exports:

\$8.522 billion (2017 est.)

\$9.224 billion (2016 est.)

Country comparison to the world: 97

Exports - partners:

Australia 18.9%, Singapore 17.5%, Japan 13.8%, China 12.7%, Philippines 4.7%, Netherlands 4.2%, India 4.2% (2017)

Exports - commodities:

Liquefied natural gas, oil, gold, copper ore, nickel, cobalt logs, palm oil, coffee, cocoa, copra, spice (turmeric, vanilla, ginger, and cardamom), crayfish, prawns, tuna, sea cucumber

Imports:

\$1.876 billion (2017 est.)

\$2.077 billion (2016 est.)

Country comparison to the world: 169

Imports - commodities:

Machinery and transport equipment, manufactured goods, food, fuels, chemicals

Imports - partners:

Australia 30.1%, China 17.3%, Singapore 10.2%, Malaysia 8.2%, Indonesia 4% (2017)

Reserves of foreign exchange and gold:

\$1.735 billion (31 December 2017 est.)

\$1.656 billion (31 December 2016 est.)

Country comparison to the world: 123

Debt - external:

\$17.94 billion (31 December 2017 est.)

\$18.28 billion (31 December 2016 est.)

Country comparison to the world: 95

Stock of direct foreign investment - at home:

NA

Stock of direct foreign investment - abroad:

NA

Exchange rates:

Kina (PGK) per US dollar -

3.179 (2017 est.)

3.133 (2016 est.)

3.133 (2015 est.)

2.7684 (2014 est.)

2.4614 (2013 est.)

Electricity access:**Population without electricity:** 5,568,879 (2012)**Electrification - total population:** 18% (2012)**Electrification - urban areas:** 72% (2012)**Electrification - rural areas:** 10% (2012)**Electricity - production:**

3.481 billion kWh (2016 est.)

Country comparison to the world: 129**Electricity - consumption:**

3.237 billion kWh (2016 est.)

Country comparison to the world: 134**Electricity - exports:**

0 kWh (2017 est.)

Country comparison to the world: 183**Electricity - imports:**

0 kWh (2016 est.)

Country comparison to the world: 184**Electricity - installed generating capacity:**

900,900 kW (2016 est.)

Country comparison to the world: 131**Electricity - from fossil fuels:**

63% of total installed capacity (2016 est.)

Country comparison to the world: 123**Electricity - from nuclear fuels:**

0% of total installed capacity (2017 est.)

country comparison to the world: 162**Electricity - from hydroelectric plants:**

30% of total installed capacity (2017 est.)

Country comparison to the world: 69**Electricity - from other renewable sources:**

7% of total installed capacity (2017 est.)

Country comparison to the world: 95**Crude oil - production:**

50,000 bbl/day (2017 est.)

Country comparison to the world: 52**Crude oil - exports:**

55,600 bbl/day (2015 est.)

Country comparison to the world: 41**Crude oil - imports:**

22,220 bbl/day (2015 est.)

Country comparison to the world: 62**Crude oil - proved reserves:**

183.8 million bbl (1 January 2018 est.)

Country comparison to the world: 57**Refined petroleum products - production:**

22,170 bbl/day (2015 est.)

Country comparison to the world: 88**Refined petroleum products - consumption:**

37,000 bbl/day (2016 est.)

Country comparison to the world: 116**Refined petroleum products - exports:**

0 bbl/day (2015 est.)

Country comparison to the world: 190

Refined petroleum products - imports:

17,110 bbl/day (2015 est.)

Country comparison to the world: 134

Natural gas - production:

11.18 billion cu m (2017 est.)

Country comparison to the world: 39

Natural gas - consumption:

99.11 million cu m (2017 est.)

Country comparison to the world: 109

Natural gas - exports:

11.1 billion cu m (2017 est.)

Country comparison to the world: 21

Natural gas - imports:

0 cu m (2017 est.)

Country comparison to the world: 172

Natural gas - proved reserves:

210.5 billion cu m (1 January 2018 est.)

Country comparison to the world: 41

Carbon dioxide emissions from consumption of energy:

6.082 million Mt (2017 est.)

Country comparison to the world: 129

Telephones - fixed lines:

Total subscriptions: 154,000 (July 2016 est.)

Subscriptions per 100 inhabitants: 2 (July 2016 est.)

Country comparison to the world: 127

Telephones - mobile cellular:

Total subscriptions: 3.782 million (July 2016 est.)

Subscriptions per 100 inhabitants: 55 (July 2016 est.)

Country comparison to the world: 130

Telephone system:

General assessment: services are minimal; facilities provide radiotelephone and telegraph, coastal radio, aeronautical radio, and international radio communication services (2016)

Domestic: access to telephone services is not widely available although combined fixed-line and mobile-cellular teledensity has increased to roughly 55 per 100 persons (2016)

International: country code - 675; submarine cables to Australia and Guam; satellite earth station - 1 Intelsat (Pacific Ocean); international radio communication service (2016)

Broadcast media:

4 TV stations: 1 commercial station operating since 1987, 1 state-run station launched in 2008, 1 digital free-to-view network launched in 2014, and 1 satellite network Click TV (PNGTV) launched in 2015; the state-run National Broadcasting Corporation operates 3 radio networks with multiple repeaters and about 20 provincial stations; several commercial radio stations with multiple transmission points as well as several community stations; transmissions of several international broadcasters are accessible (2018)

Internet country code:

.pg

Internet users:

Total: 652,071 (July 2016 est.)

Percent of population: 9.6% (July 2016 est.)

Country comparison to the world: 145

Broadband - fixed subscriptions:

Total: 17,000 (2017 est.)

Subscriptions per 100 inhabitants: less than 1 (2017 est.)

Country comparison to the world: 155

National air transport system:

Number of registered air carriers: 6 (2015)

Inventory of registered aircraft operated by air carriers: 47 (2015)

Annual passenger traffic on registered air carriers: 2,062,584 (2015)

Annual freight traffic on registered air carriers: 34,827,034 mt-km (2015)

Civil aircraft registration country code prefix: P2 (2016)

Airports: 561 (2013)

Country comparison to the world: 12

Airports - with paved runways:

Total: 21 (2017)

Over 3,047 m: 1 (2017)

2,438 to 3,047 m: 2 (2017)

1,524 to 2,437 m: 12 (2017)

914 to 1,523 m: 5 (2017)

Under 914 m: 1 (2017)

Airports - with unpaved runways:

Total: 540 (2013)

1,524 to 2,437 m: 11 (2013)

914 to 1,523 m: 53 (2013)

Under 914 m: 476 (2013)

Heliports: 2 (2013)

Pipelines: 264 km oil (2013)

Roadways:

Total: 9,349 km (2011)

Paved: 3,000 km (2011)

Unpaved: 6,349 km (2011)

Country comparison to the world: 139

Waterways: 11,000 km (2011)

Country comparison to the world: 12

Merchant marine:

Total: 173 (2017)

By type: container ship 8, general cargo 80, oil tanker 3, other 82 (2017)

Country comparison to the world: 67

Ports and terminals:

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

LNG terminal(s) (export): Port Moresby

Military expenditures:

0.66% of GDP (2014)

0.68% of GDP (2013)

0.72% of GDP (2012)

Country comparison to the world: 135

Military branches:
Papua New Guinea Defense Force (PNGDF, includes Maritime Operations Element, Air Operations Element) (2013)

Military service age and obligation:
16 years of age for voluntary military service (with parental consent); no conscription; graduation from grade 12 required (2013)

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

Refugees and internally displaced persons:

Refugees (country of origin): 9,368 (Indonesia) (2016)

IDPs: 12,000 (natural disasters, tribal conflict, inter-communal violence, development projects) (2017)

Trafficking in persons:

Current situation: Papua New Guinea is a source and destination country for men, women, and children subjected to sex trafficking and forced labor; foreign and Papua New Guinean women and children are subjected to sex trafficking, domestic servitude, forced begging, and street vending; parents may sell girls into forced marriages to settle debts or as peace offerings or trade them to another tribe to forge a political alliance, leaving them vulnerable to forced domestic service, or, in urban areas, they may prostitute their children for income or to pay school fees; Chinese, Malaysian, and local men are forced to labor in logging and mining camps through debt bondage schemes; migrant women from Indonesia, Malaysia, Thailand, China, and the Philippines are subjected to sex trafficking and domestic servitude at logging and mining camps, fisheries, and entertainment sites

Tier rating: Tier 2 Watch List - Papua New Guinea does not fully comply with the minimum standards for the elimination of trafficking; however, it is making significant efforts to do so; the Criminal Code Amendment of 2013, which prohibits all forms of trafficking was brought into force in 2014; the government also formed an anti-trafficking committee, which drafted a national action plan; despite corruption problems, trafficking-related crimes were prosecuted in village courts rather than criminal courts, resulting in restitution to the victim but no prison time for offenders; the government did not investigate, prosecute, or convict any officials or law enforcement personnel complicit in trafficking offenses; the government made no

efforts to proactively identify trafficking victims, has no formal victim identification and referral mechanism, and does not provide care facilities to victims or funding to shelters run by NGOs or international organizations (2015)

Illicit drugs:

Major consumer of cannabis

Acronyms and Abbreviations

Acronym	Definition
ACP	African, Caribbean and Pacific Group of States
ADB	Asian Development Bank
ADINET	ASEAN Disaster Information Network
ADRA	Adventist Development and Relief Agency
AHA Centre	ASEAN Coordinating Centre for Humanitarian Assistance Center
AOSIS	Alliance of Small Island States
APAN	All Partners Access Network
APEC	Asia-Pacific Economic Cooperation
ARF	ASEAN Regional Forum
ARMOR	Annual ASEAN Monitor Report
ASEAN	Association of Southeast Asian Nations
BUPNG	Baptist Union PNG
CCA	Climate Change Adaptation
CD	Community of Democracies
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CEPF	Critical Ecosystem Partnership Fund
CFE-DM	The Center for Excellence in Disaster Management and Humanitarian Assistance
CHW	Community Health Worker
CP	Colombo Plan
CRC	Convention on the Rights of the Child
CREWS	Climate Risk Warning System
DMRS	Disaster Monitoring and Response System
DOTS	Directly Observed Treatment Short course
DPLGA	Department of Provincial & Local Government Affairs
DPO	Disabled Persons Organisation
DREE	Disaster Response Exercise
DRM	Disaster Risk Management
DRR	Disaster Risk Response
EITI	Extractive Industries Transparency Initiative
ENSO	El Niño Southern Oscillation
EOC	Emergency Operations Center
EWS	Early Warning System
FAO	Food and Agriculture Organization
FPA	Family Protection Act
G-77	Group of 77
GDACS	Global Disaster Alert and Coordination System
GDP	Gross Domestic Product
HFA	Hyogo Framework for Action
HADR	Humanitarian Assistance and Disaster Response
HCT	Humanitarian Country Teams
HDI	Human Development Index
HDX	Humanitarian Data Exchange
HIV	Human Immunodeficiency Virus

Acronym	Definition
IAEA	International Atomic Energy Agency
IBRD	International Bank for Reconstruction and Development
ICAO	International Civil Aviation Organization
ICDC	Industrial Centers Development Corporation
ICRC	International Committee of the Red Cross
ICRM	International Red Cross and Red Crescent Movement
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFRC	International Federation of Red Cross and Red Crescent Societies
IHO	International Hydrographic Organization
ILO	International Labour Organization
IMF	International Monetary Fund
IMO	International Maritime Organization
IMR	Institute of Medical Research
INFORM	Index for Risk Management
IOM	International Organization of Migration
IPA	Investment Promotion Authority
IPU	Inter-Parliamentary Union
IRD	French Research Institute for Development
IS	Information Sharing
ISO	International Organization for Standardization
ITSO	International Telecommunications Satellite Organization
ITU	International Telecommunication Union
JICA	Japan International Cooperation Agency
LGV	Lymphogranuloma Venerum
LNG	Liquefied Natural Gas
MARSAR	The Marine Search and Rescue Centre
MBBS	Bachelor of Medicine, Bachelor of Surgery
MCIP	Multinational Communications Interoperability Program
MDG	Millennium Development Goals
MIGA	Multilateral Investment Guarantee Agency
mVAM	mobile Vulnerability Analysis and Mapping
NAC	National Airports Corporation
NAM	Non-Aligned Movement
NCCDMP	National Climate Compatible Development Management Policy
NCDs	Non-Communicable Diseases
NDC	National Disaster Centre
NDP	National Policy on Disability
NDRMP	National Disaster Risk Management Plan
NGO	Non-Governmental Organizations
NHP	National Health Plan
OCCD	Papua New Guinea's Office of Climate Change and Development

Acronym	Definition
ODA	Official Development Assistance
OECD	Organisation for Economic Co-Operation and Development
OFDA	U.S. Office of Foreign Disaster Assistance
OPCW	Organization for the Prohibition of Chemical Weapons
PDC	Provincial Disaster Committee
PDC	The Pacific Disaster Center
PEPFAR	President's Emergency Plan for AIDS Relief
PHEIC	Public Health Emergency of International Concern
PIF	Pacific Island Forum
PMGO	Port Moresby Geophysical Observatory
PNG	Papua New Guinea
PNGADP	Papua New Guinea Assembly of Disabled Persons
PNGDF	Papua New Guinea Defence Forces
PNGDSP	Papua New Guinea Development Strategic Plan
POM	Jackson International Airport in Port-Moresby
PTC	Post and Telecommunication Corporation
PTWC	Pacific Tsunami Warning Centre
PV	Poliovirus
RCC	The Rescue Coordination Centre
RHCC	Changi Regional HADR Coordination Center
RN	Registered Nurse
SARV	Sorcery Accusation-Related Violence
SBDC	Small Business Development Corporation
SERC	Special Education Resource Center
SPC	Secretariat of the Pacific Communities
SPREP	South Pacific Regional Environment Programme
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Infections
STLS	Safe Temporary Learning Spaces
TB	Tuberculosis
UN	United Nations
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
UNCTAD	United Nations Conference on Trade and Development
UNDAC	United Nations Disaster Assessment and Coordination
UNDP	UN Development Programme
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNHCR	United Nations Refugee Agency
UNICEF	United Nations International Children's Emergency Fund
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization

Acronym	Definition
UNMISS	The United Nations Mission in South Sudan
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNOCHA ROAP	UNOCHA Regional Office for Asia and the Pacific
UPU	Universal Postal Union
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
WCO	World Customs Organization
WFP	World Food Programme
WFTU	World Federation of Trade Unions
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WMO	World Meteorological Organization
WTO	World Trade Organization

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