REPUBLIC OF MALDIVES

Country Report

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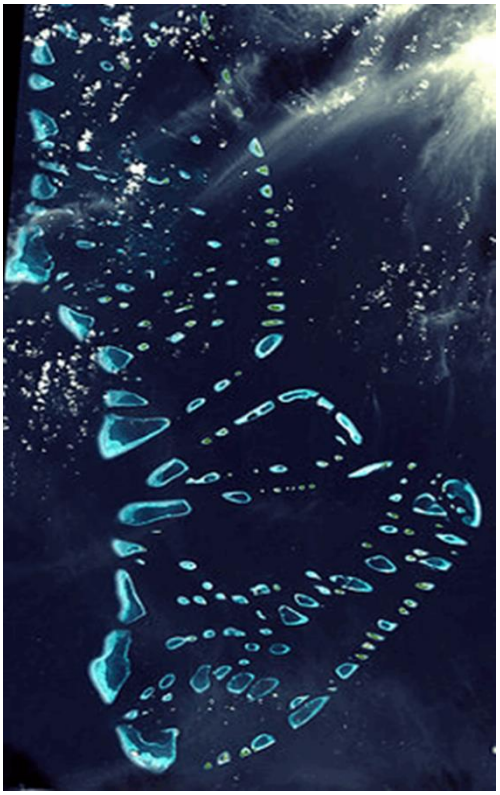
1.General Description

The Republic of Maldives, lying about 420 miles southwest of Sri Lanka, lies between Minicoy Island (the southernmost part of Lakshadweep, India) and the Chagos Archipelago. Being an Island Country of unique geographic and oceanic characteristics, Maldives consists of 26 natural coral atoll with 1,190 coral islands with only 16% (186 islands) spread over roughly 90,000 square kilometers (35,000 sq. mi), making it one of the world's most dispersed countries in the world (9th smallest country in the world). Of this only 190 are inhabited and another 105 are registered as resorts or marinas.

The largest island of Maldives is Gan, which belongs to Laamu Atoll or Hahdhummathi Atoll. The capital Malé is an area of under 2 square kilometers Maldives is the lowest country in the world, with a maximum natural ground level of only 2.4 meters (7 ft. 10 in), with the average being only 1.5 meters (4 ft. 11 in) above sea level.

FIQURE 1 : MALE' CITY



The Maldives are a group of scattered islands in the Indian Ocean, located to the south west of Sri Lanka. It consists of approximately 1,190 coral islands grouped in a double chain of 26 atolls, spread over roughly 90,000 square kilometers, making this one of the most disparate countries in the world.

Composed of live coral reefs and sandbars, the atolls are situated atop a submarine ridge 960 kilometers long that rises abruptly from the depths of the Indian Ocean and runs from north to south. Most Atolls of the Maldives consist of a large, ring-shaped coral reef supporting numerous small islands. Islands average only one to two square kilometers in area, and lie between one and 1.5 meters above mean sea level. Although some of the larger atolls are approximately 50 kilometers long from north to

south, and 30 kilometers wide from east to west, no individual island is longer than 8 kilometers. Maldives has no hills, but some islands have dunes which can reach 2.4 meters / 8 feet above sea level.

Maldives largest attraction is the underwater coral gardens, with its colorful inhabitants the richest collection of multicolored fish and live coral reefs which add up to a diver's paradise. It has 73 holiday resorts from over a thousand uninhabited islands.

FIQURE 2: MALDIVES CORAL PADDLE BOARDING HUVAFEN FUSHI

FIQURE 3: BANYAN TREE MALDIVES

1.1 Geography

The Maldives archipelago stretches 823 km north to south and 130 km east to west. Over 99% of the Maldives is made up of the sea: only 0.331% (115 square miles) of its 35,000 square mile surface area is dry land. How the islands actually formed is something of a mystery. The theory that has most support was first suggested by Charles Darwin in 1842 (after he had studied similar atolls in the Pacific and Atlantic Oceans). Darwin's theory suggests that the islands were formed when volcanoes rose from the sea and coral reefs grew around their edges. The volcanoes subsequently sank back into the sea leaving the coral reefs to circle a shallow water-filled lagoon. Islands then formed when currents and tides swept dead coral and other organic debris into the lagoons which in turn became filled-in and were eventually colonized by plants and trees.

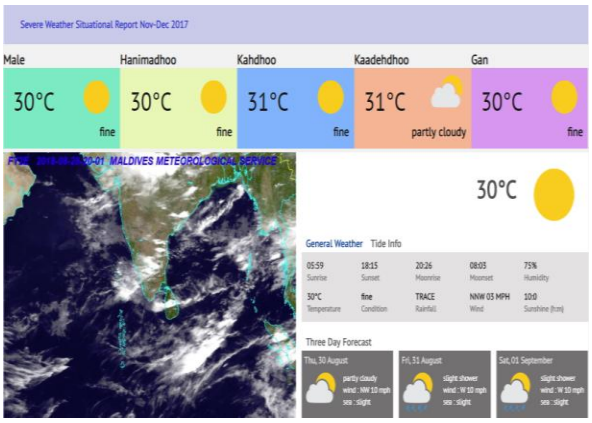
The islands that make up the Maldives are very small (most can be walked across in 10 minutes; only a few are longer than 2 kilometers) and low-lying (they rarely reach more than six feet above sea-level). This makes them particularly vulnerable to sea erosion. In 1812 and again in 1955, devastating gales destroyed many northern islands, while in 1987 the capital, Male, was flooded by a severe storm. If, as some scientists predict, global sea levels continue to rise as a consequence of global warming, it will pose a particular risk to the Maldives.

1.2 Climate

Maldives experiences warm and humid tropical climate. The southwest (rainy) monsoon and northeast (dry) monsoon with yearly temperatures of 27ºC to 34ºC.

FIQURE 4: MONSOON PERIOD (MAY - NOVEMBER)

The Maldives has a tropical climate with warm temperatures throughout the year and many hours of sunshine. With an average temperature of 33°C and an average minimum temperature of 26°C there are only minor variations in daily temperature throughout the year.



FIQURE 5: DRY PERIOD (JANUARY - MARCH)

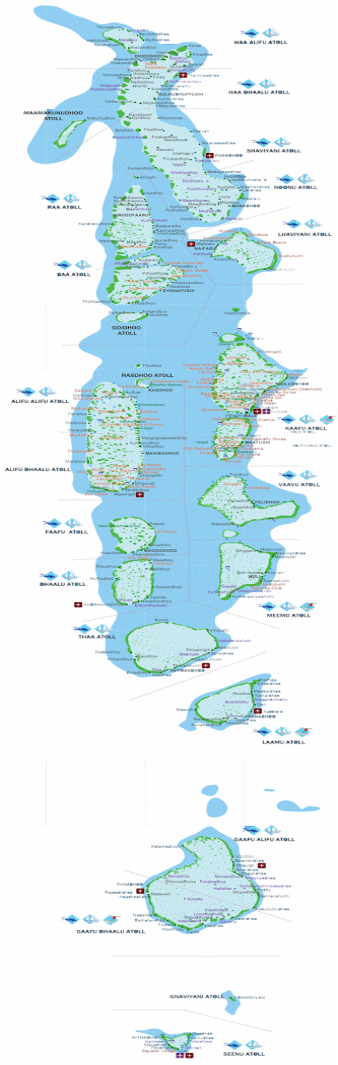
1.3 Demography

Ethnically from South Indians, Sinhalese, And Arabs

National Language: Dhivehi

Script used in Maldives - Thaana, derived from Arabic

Religion of State - Islam



Est Population (2014)
402,071

Unemployment Population

100,602 (5.5%)
(2006)

145,757 (5.2%)
(2014)

Even though not officially quoted, English is the second language of the Maldives and the majority of the populace can speak and write in English.

1.4 Government

The Maldives received Its independence from the British on 26th of July 1965. For 45 years we have been a presidential republic country with the given name 'Republic of Maldives'. The Governments organization structure comprises of the president office, parliament and the judiciary[1]. The public elects the president and there must be at least 51% in favor for an individual to take office. Presidents are limited to 5 years two terms with the introduction of new constitution in 2008. The cabinet is elected by the president and approved by The Maldives Parliament is also known as the People's Majlis.

Members of Majlis serve five-year terms, with the total number of members determined by atoll populations. At the 2009 election, 77 members were elected. The People's Majlis, located in Male, houses members from all over 20 administrative divisions (atolls), each headed by an atoll council with the exception of Addu Atoll (Seenu Atoll) which, along with has been declared as a city. Addu and Male' city has a city council. Every other island has an island council and operates under a decentralized system. All the councilors are elected at the respective levels.

FIQURE 6: PARLIAMENT / PEOPLES MAJILIS

FIQURE 7: PAST AND PRESENT PRESIDENTS

PRESIDENT YAMEEN, PRESIDENT DR WAHEED, PRESIDENT NASHEED, PRESIDENT UZ MAUMOOM, PRESIDENT NASIR AND PRESIDENT AMEEN (LEFT TO RIGHT)

The current is His Excellency president Abdulla Yameen elected on 17 November 2013. However, September 2018 people of Maldives will cast their vote after five years.

[1] Organization Structure of Government of Maldives - : https://goo.gl/o6DxWy

1.5 Economy

The population of the Maldives has grown from 29,8968 in 2006 to 33,8434 in 2014. The population growth rates have declined during the period from 2.69 % to 2.65%. Maldives economy has grown over the years reaching the GDP to MVR 26,043.7 million in 2014. Tourism sector covers 29.9% being the largest sector which contributes to the Maldives GDP.

FIQURE 8: ARRIVAL OF TOURISTS

Currency: Rufiyaa

(1 USD = 15.42 MVR)

Overall government deficit (including grants) for the year 2016 is 4,304.1 (In Million MVR)

NBS, 2016

The Maldivian economy is heavily dependent on tourism (NEOP, 2018) while fisheries sector covers 1.3%. Exporting fish and fish products has been the real deal for the country for years. From the islands contribution agriculture sector contributes 1.6% of the GDP[2].

Out of the total fish produced during the year 2016, majority of the fish was exported (52.9%)

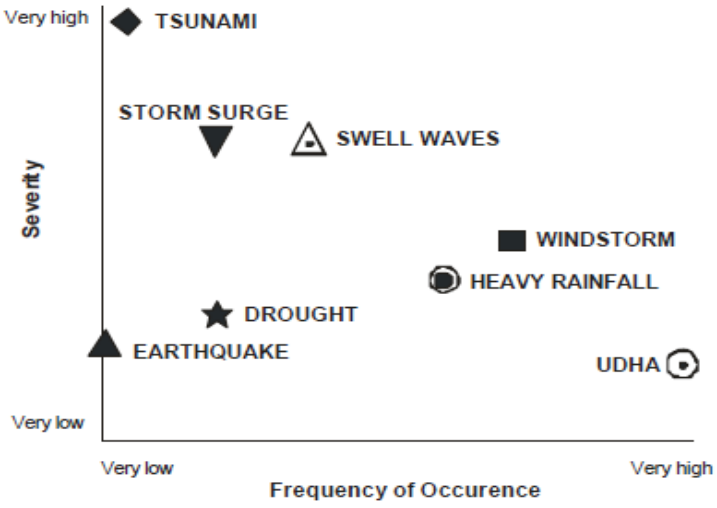
NBS, 2016

FIQURE 9: TRADITIONAL POLE AND LINE FISHING

[2] State of the environment report, MoEE, page 24

2. Overview of Hazards and Disaster Risk

Maldives is a low lying island nation comprising of over thousand tiny islands. All islands are subjected to physical vulnerability due to the country's extremely low elevation and the flat topography. The wide dispersal of its population of 3 hundred thousand, across the islands is also a significant contributing factor. The frequency of natural disaster of large scale is relatively low in Maldives. However, the 2004 Indian ocean Tsunami brought devastating impact to the life of its people, economy and development progress.



FIQURE 10: HAZARD PATTERNS IN MALDIVES, DIRAM 2007

The impact of a hazard in higher population concentration areas will be likely higher than in less populated areas. The Haa Dhaalu, Seenu, Raa, Haa Alifu, and Kaafu (Figure 11) are having higher population concentration and are exposed to various levels of hazards. It has to be noted that the islands in Seenu Atoll and Malé island in Kaafu atoll are densely populated, which increases the probable chances of impacts to the exposed hazards.

Generally, the Maldives, regularly get affected by high frequent low impact seasonal events such as monsoonal flooding, coastal erosion, salt water intrusion and intense sea surges related flooding due to sea level rise.

Atoll Names	Population	Earthquake	Tsunami	Heavy rainfall	Drought	Tropical Cyclone/ Storm surge	Swells/ Udha
Haa Alifu	13004	Low	High	Low	High	High	Moderate
Haa Dhaalu	18570	Low	High	Low	High	High	Moderate
Shaviyani	12127	Low	High	Low	High	High	Moderate
Raa	14934	Low	Moderate	Low	High	High	High
Noonu	10556	Low	High	Low	High	High	Moderate
Lhaviyani	7996	Low	High	Low	High	High	Moderate
Baa	8919	Low	Moderate	Low	High	High	High
Kaafu (North and South)	12232	Low	High	Low	High	Moderate	Moderate
Alifu Alifu	5915	Low	Moderate	Low	High	Moderate	High
Alifu Dhaalu	8183	Low	Moderate	Low	High	Moderate	High
Vaavu	1622	Low	High	Low	High	Moderate	Moderate
Faafu	4140	Low	Moderate	Low	High	Moderate	High
Meemu	4711	Low	High	Moderate	Moderate	Moderate	Moderate
Dhaalu	5329	Low	Moderate	Moderate	Moderate	Moderate	High
Thaa	8923	Low	High	Moderate	Moderate	Moderate	High
Laamu	11841	Moderate	High	Moderate	Moderate	Moderate	Moderate
Gaafu Alifu	8477	Moderate	High	High	Low	Low	Moderate
Gaafu Dhaalu	11653	Moderate	Moderate	High	Low	Low	Moderate
Gnaviyani	8095	High	High	High	Low	Low	Moderate
Seenu	19829	High	Moderate	High	Low	Low	High

FIQURE 11: POPULATION EXPOSURE TO HAZARDS BY ATOLL (DIRAM, 2008)

2.1 Cyclonic wind

The northern atolls are exposed to higher hazard level from cyclonic winds and their associated storm surge. The hazard level reduces gradually to very low in the southern atolls. The maximum probable wind speed expected in zone 5 is 96.8 knots (180 kmph) over the Maldives region, which is lower than the cyclonic storm category 3 on a Saffir-Simpson scale. At this speed, high damage is expected from wind, rain and storm surge hazards.

The islands of Maldives are less prone to tropical cyclones. The northern islands of the country were affected by weak cyclones that formed in the southern part of the Bay of Bengal and the Arabian

Sea. The number of cyclones directly crossing Maldives is small. Only 11 cyclones, which were formed during the months of October to January, crossed the islands over 128 years.

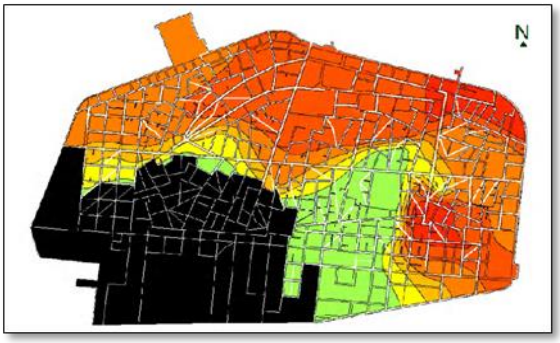
The vulnerability of the islands in the northern atolls is heightened due to their poor accessibility compared to other parts of the country. In a post cyclone situation, affected areas are inaccessible for several days due to poor weather and rough sea conditions. In cyclones, risk to livelihoods in the primary sectors such as agriculture and fishing, and in the service sectors is high.

2.2 Sea Level Rise

Sea level rise due to climate change threatens the entire country. Estimations are that the projected sea level rise of 0.09m to 0.88 m is going to take place between 1990 - 2100. As three quarters of the land area of Maldives is less than a meter above mean sea level, the slightest rise in sea level will prove extremely threatening. As per an estimate, 15 % land area of Male will be inundated by 2025 and 50% by 2100. For people living on low-lying islands, a rise in sea levels by 50 cm could see significant portions of the islands being inundated or washed away by erosion.

As a result of the rise in sea level, a variety of impacts may be expected in Maldives. These include loss of land, flooding of low lying coastal areas, displacement of population, loss of crop yield, impacts on coastal aquaculture, and erosion of sandy Beaches. As most of the economic activities in Maldives are heavily dependent on the coastal ecosystem, sea level rise will impact Male' in the year 2050 - 31% of Male' inundated under IPCC worst case scenario (IS92e)[3]

Damages caused to the beach due to sea level rise. Damages caused to livelihood of people due to sea level rise the social and economic development of the country. Residential areas, industry and vital infrastructure of the country lie close to the shoreline[4], within 0.8 to 2m of mean sea level. Even now some islands are seriously affected by loss not only of shoreline but also of houses, schools and other infrastructure, compelling the government to initiate urgent coastal protection measures.



FIQURE 12

FIQURE 13

[3] Figure 12
[4] Figure 13

2.3 Coastal flooding

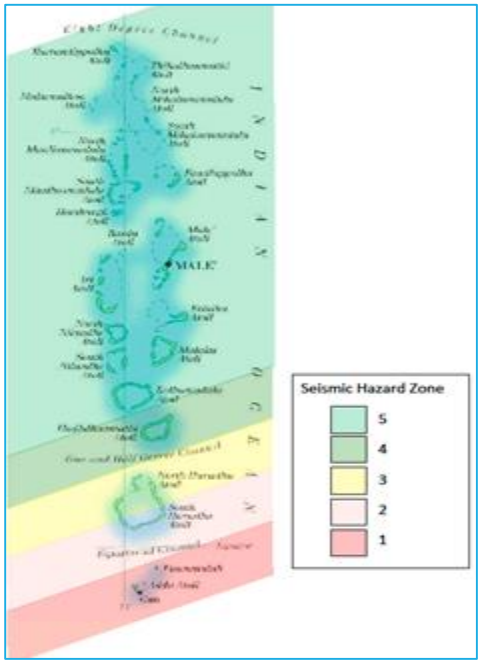
In addition to storm surge, Maldives also experiences coastal flooding through swells. [Udha], rise in the water surface on the coast during the southwest monsoon season causes flooding up to 0.6m, particularly the western ridge of the atolls in Maldives. (DIRAM 2008)

2.4 Heavy rainfall events

Sudden downpour associated with low pressure systems and thunderstorms activities results in flooding. The southern atolls receive abundant rainfall and are exposed to heavy rainfall extremes than the central tolls and northern atolls. The northern atolls are exposed to heavy rainfall episodes associated with cyclonic storms. Northern and central atolls experience more drought conditions (uneven rainfall distribution or suppressed seasonal rainfall quantity) when compared to southern atolls.

2.5 Earthquake

Situated on the Indo-Australian plate, the Maldives is tectonically very stable and aseismic. It is located far away from high-seismicity regions. But traumas have been felt by people across a wide area and on many islands. These traumas are said that, were not caused by nearby seismic events, but by the relatively large events that have occurred in the western Indian and Sumatra region. But it is possible that a major earthquake to suddenly occur in a region that has not been seismically active in the past. And attention is given to the possibility of a tsunami generated from the active seismic zones around Sumatra, Western India and in the waters west and south west of Maldives. The Waters of ocean lying south of Maldives and the Carlsberg oceanic ridge zone, which has a high level of seismic activity.



FIQURE 14: EARTHQUAKE SESIMIC HAZARD ZONES

2.6 Tsunami

Maldives has tsunami hazard largely coming from the east (Sumatra), and relatively low hazard is also present from the north (Makran) and south (Carlsberg Transform fault zone). Islands along the eastern fringe of eastern atolls are more exposed compared to the islands along the western fringe of western atolls.

FIQURE 15: AFTERMATH OF 2004 TSUNAMI

The probable maximum tsunami wave height is estimated at 5.2m. The return period of the 26 December 2004 tsunami is found to be one in 219 years (one of numerous probable events).

Except for Seenu, Gnaviyani and Gaafu atolls, the earthquake hazard is low across the country. The probable maximum Modified Mercali Intensity (MMI) is estimated as 7- 8 in zone 5. This level of MMI can cause moderate to high damage. And it is possible that a tsunami to be generated from the active seismic zones around Sumatra, Western India and in the waters west and south west of Maldives. The Waters of ocean lying south of Maldives and the Carlsberg oceanic ridge zone, which has a high level of seismic activity

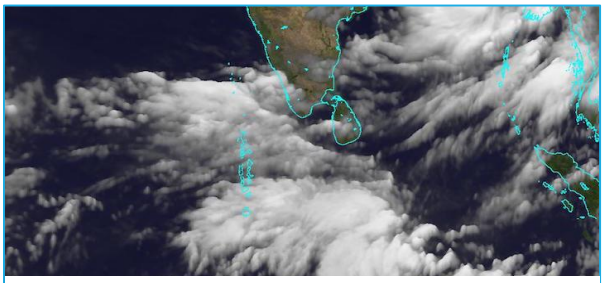

FIQURE 16: AFTERMATH OF 2004 TSUNAMI (CLASSROOM DAMAGED)

3. Recent Major Disasters in Maldives

Capital city Male' is one of the densely populated City in the world susceptible to many incidents due its vulnerability like the local islands. During the recent history residential fire has increased in Male' while the islands experience incidents related to monsoon flooding.

Heavy rainfall and flooding/ Tornado (17 May 2017 - 1st June 2017)

During the month of 2017 May, G. Dh Thinadhoo experienced heavy rainfall and 19 houses was affected. On the 17th may 2017, S. Hithadhoo, ward in Addu City was affected damaging 46 houses. A cyclone hit Nilandhoo in Faafu atoll on the 1st of June 2017 affecting 18 houses of F. Nilandhoo Island. Torrential rain and strong winds caused damages in 14 islands as a bout of bad weather continues to wreak havoc across the Maldives. Soldiers from the military's southern area command helped clear fallen trees that were blocking roads. Noting that the usual rainfall with the onset of the south-west monsoon in mid-May is lasting longer than expected, Government advised islands to maintain food stores and to communicate shortages of staple food stuff. The Maldives Meteorology Service issued a yellow alert for northern and central atolls Thursday morning, advising against sea travel for four hours and warning of torrential rain, squally showers, and gusts of 55 miles per hour.



FIQURE 18: DAMAGES TO CROPS

Flooding caused by heavy downpours meanwhile damaged farm fields on the northern islands of Uligamu in Haa Alif atoll and Vaikaradhoo in Haa Dhaal atoll. The prices of fruits and vegetables at the busy local market in Malé have soared in the first week of Ramadan due to reduced supply from farming islands affected by the bad weather. Demand for local produce such as watermelons is high during the fasting month.

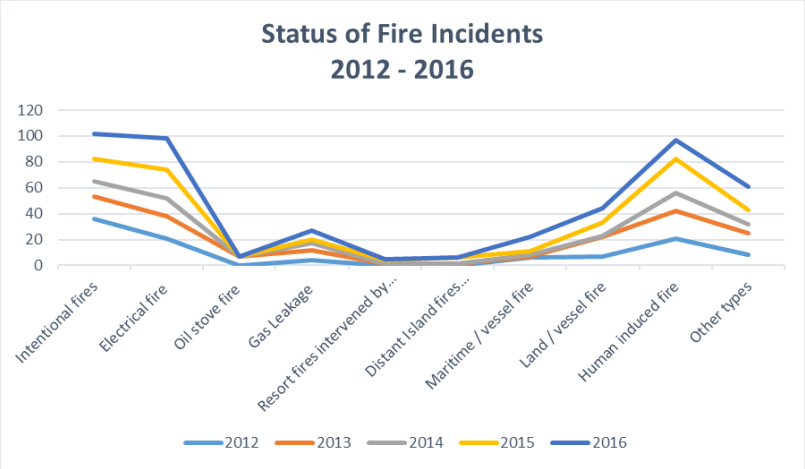
According to the met office, wind speeds in the capital reached 55 miles per hour Thursday morning. Some roads were inundated with water and branches fell off trees planted by the roadside.

FIQURE 17: DEPRESSION OVER MALDIVES ON 17 MAY 2017

Fire Incidents (2012- 2016)

With urbanization residential fire incidents are increasing. Among different type of disasters fire incidents pose a great risk and threat to life and property. Building fires, especially residential fires remains a critical concern as the rate has increased over the previous years. To minimize the loss and damage to the property and buildings two packages were introduced to the community, in partnership with Bank of Maldives and Ayady Takaful. An Insurance package has been formulated with Ayady Thakaful for the property and buildings while a bank loan scheme is active with a little interest fee for the people's property and buildings are directly affected by fire.

Records from 2012 to 2016 shows that a total of 111 fires has occurred in 2012, 109 in 2013, 54 in 2014, 97 in 2015 and 98 fire incidents in 2016. The most common type has been human induced, intentional and electrical fire incidents over the span on four years.



Over the year's society has responded to the Fire threats, with Maldives Fire and Rescue Service intervention. The table explains the data recorded by the MNDF Fire department from 2012 to 2016.

FIQURE 20: FIRE AT COASTLINE HARDWARE SHOWROM

FIQURE 21: A SPEEDBOAT OF MAKUNUDHU ISLAND RESORT, DOCKED AT THE NUMBER 6 JETTY IN THE NORTHERN HARBOR OF MALE',

Cyclone (3rd December 2017)

2% of the whole island of Lhaviyani Hinnavaru was affected while 11 more islands experienced the cyclone. 3 Houses were damaged in Lhaviyani Hinnavaru Island.

Addu City Flood Crisis (24-25 November 2015)

Addu Atoll in the south of the Maldives has been hit by severe flooding after several hours of torrential rainfall. Homes and businesses in Addu City have been inundated by floodwaters and the storm damage has been described as the worst in 40 years. The City experienced 228.4 mm rainfall between 8am Tuesday to 8am Wednesday and was the highest recorded in the country history in 24 hours. It also experienced an alarmingly high rainfall in an hour with 54.9mm. The islands of Feydhoo, Maradhoo feydhoo and Maradhoo households were severely affected. About 297 houses got flooded and loss is estimated at US$0.3 million.

Water Shortage (Throughout the year)

Freshwater is in short supply in the Maldives, where the traditional reliance on groundwater supplies for both potable and non-potable uses has recently been brought into question - particularly on densely populated islands - as a result of Over-extraction of groundwater by

growing populations, Contamination of groundwater with toxins reaching the aquifer as a result of poor sanitation, Salinization of aquifers during storm surges, and especially as a result of the 2004 tsunami, which seriously damaged public perceptions of groundwater quality and led to calls for sewerage systems and the provision of other sources of freshwater. Although not considered as a disaster, but due to the programming and logistical costs, the government faces every year it is considered as a crisis.

The government provides thousands of tons of freshwater to islands in order for drinking and cooking.

According to 2014 Census report one third of the population (38%) 15,3904 resides in the Capital Male' City which only covers 5.8km. Dating back to 30 years most households in male' has water tanks and used to drink rainwater. However, with start of mass migration from islands to capital subjected to construction of high-rise buildings in the already compact space subjecting to water salinity and other sewerage issues. To solve this in 1995,

FIQURE 22: PUBLIC WATER TANK

Male' water and sewerage company (MWSC) was inaugurated aiming to desalinate saltwater into drinking water. Although with the high demand they faced lot of challenges to cater the need of male' population too.

Male Water Crisis (4 December 2014)

A catastrophic fire broke out on 4 December 2014 inside the Maldives Water and Sewerage Company (MWSC)'s Generator Unit and has disrupted Male' City's water supply. The water supply was suspended across the capital city as MWSC is the sole provider of clean desalinated water in the capital and the unit was severely damaged in the fire. This caused panic among the locals and in the chaos, packaged drinking water, water buckets and containers price skyrocketed.

FIQURE 23: MNDF ATTENDING TO MALE' WATER CRISIS

For a week male' was out of water until the problem was fixed. State of Emergency was declared by the government of Maldives on December 5,2014 and an operation to distribute safe drinking water in the Male' City started immediately.

FIQURE 24: PUBLIC COLLECTING WATER

Residents of Male' received local and international aid from local bottling and packaging companies (Coca Cola, Taza, etc) and from neighboring countries (India, Srilanka, China, Bangladesh). The loss and the cost of relief operation were estimated to be US$20 million and lasted for 10 days.

Maldives National Defense Force (MNDF), Maldives Police Service (MPS) were being tasked to manage the distribution of safe drinking water. Meanwhile, the Maldives Red Crescent and various private sector companies supported and deployed to assist in the wider delivery of clean water to the households.

FIQURE 25: MRC ATTENDING TO MALE' WATER CRISIS

Cyclone Nilam (October-November 2012)

Tropical cyclone that originated from the Bay of Bengal hit Maldives late October and continued until the first few days of November flooding 51 islands. 28 islands were severely flooded, and 4 islands were in a critical state. The cyclone affected 33,826 people and caused an estimated US$ 133,090 in damage.

Surge Waves (15-17 May 2007)

On 15-17 May 2007, a series of swells, between 10 - 15 feet, hit an estimated 68 islands in 16 Atolls across the Maldives, causing the inundation of up to 600 meters from the coastline. The most affected atolls were Gaafu Dhaalu, Dhaalu, Thaa and Laamu, which include over 24 islands. There were no human fatalities from the coastal flooding. However, 1649 people were evacuated from their homes. A total of 579 housing units were damaged by the high tide floods. 33 islands were affected

by salt water intrusions that caused significant damage to crops, agriculture farms, home gardens and vegetation, which most people depend upon for livelihood and food supplies. The wave surges also caused minor damage to harbors and jetties in 17 islands and 58 out of the 68 islands inundated have reported to have significant area of the coastlines eroded.

FIQURE 26: SANDBAGS TO PROTECT PROPERTY

Tsunami (26th December 2004)

Indian Ocean Tsunami occurred off the Sumatra Island on 26 December 2004 devastated the Maldives, causing 82 people killed, 26 people missing and more than 27,214 people affected. The total economic loss was approx. US$ 470 million, about 62% GDP. Total (World Bank, 2005).

In Maldives, islands along the east are more prone to tsunami hazard than those along the north, south and west ones, where the threat is considered low. As such, the islands with lower elevation and higher population are at greater risk.

FIQURE 27: AFTERMATH OF TSUNMAI

The Indian Ocean Tsunami in 2004 was the first Tsunami to hit Maldives. It caused great damage to the delicate islands as well as the economy of the country and the livelihood of its people. 53 of 99 islands were severely damaged. ⅓ of the populated was directly affected and 30,000 people displaced across the nation.

Economic damages and losses equivalent to 62% of GDP while the communication network went completely down with the Tsunami with severe damages to essential infrastructures in most islands. E.g. jetties, power house, etc. Total asset losses were estimated to be $472 million

4. Disaster Management System

4.1 Administrative system in Maldives

There are 20 administrative atolls and 3 City Councils in the Maldives with over 653 council members in 186 Administrative islands. 135 are resort islands (NBS, 2014) and 128 are Industrial islands.

In April 2010 the Decentralization Act was passed by the parliament. This act formalized the roles and responsibilities of atoll and island councils and required that they be democratically elected. The Local Government Authority was established in late 2010 and the first local council elections were held in February 2011.

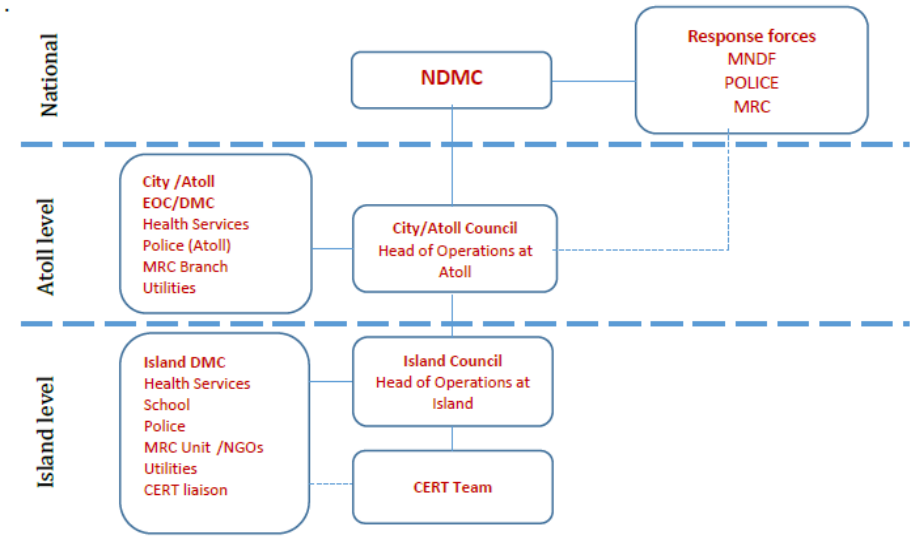
Detailed below are the institutional arrangements, roles and responsibilities to ensure effective and efficient emergency response, established at different levels through the Disaster Management Act.

	National	Atoll/City	Island/Local Level
Decision Making/Strategic	National Disaster Management Council Disaster Management Steering Committee	Atoll/City Disaster Management Committee	Island Disaster Management Committee
Emergency Management / Tactic	National Disaster Management Centre National Emergency Operations Centre	Atoll/City Disaster Management Committee	Island Disaster Management Committee
Field Level First Responders/ Field Operations	National Emergency Response Force (NERF)	*(A team will be created at this level as/when needed using neighboring islands (CERT)*	Community Emergency Response Team (CERT)

FIQURE 28: INSTITUTIONAL ARRANGEMENTS FOR EMERGENCY RESPONSE

If disaster occurs at City, Atoll and Island level, City Mayor, or Council president or the person in charge of the island will play a lead role with local level stakeholders. The City/Atoll/Island Council/DMC also interacts with both national and local volunteer groups for timely dissemination of information to vulnerable communities and to responding and coordinating agencies.

FIGURE 29: EMERGENCY RESPONSE CORDINATION



Local Councils (Atolls, Island, and cities) are responsible for first response to incidents/emergencies impacting their jurisdictions including the application of fiscal procedures and remedies designed and available to be used for various applications during local emergencies. NDMC may receive emergency funding from it tier partner organizations or from state funding sources and shall provide reports of their ongoing costs and emergency finance activities. The assumption of the situation will be as follow:

- The Local councils will seek emergency supplemental response and recovery funding when funding resources within their jurisdiction have been exhausted.
- The Local councils will seek supplemental response and recovery funding from the government through the NEOC when incident-related costs meet or exceed their thresholds and declaration factors.
- Islands, atolls, and cities will follow laws, regulations, applicable policies, and grant guidance when grants are made available.
- During and after a local response, accurate accounting of and for income and expenses related to the incident need to be documented and recorded.

4.2 Legal system and framework

Disaster Management in the Maldives has become a national concern since the Indian ocean Tsunami of 2004. Within the last decade, tremendous efforts have been undertaken to create laws stipulating disaster management

Below are the applicable laws and ordinances that provide legal basis to the practice of disaster management in the Maldives:

- Under the Armed Forces Act of 1/2008, article 7 (d), (e), and (f) assign disaster relief operations to the Armed Forces

  (Chapter 1, Article 7 d), (e), and (f) – Armed Forces Act (1/2008)

- Under the Police Act of August (5/2008), article 6 (II) mandate the Police Services to protect live and Properties

  (Chapter 1, Article 6 (11) Police Act of August (5/2008)

- Under the Maldivian Red Crescent Act 7/2009,

  Chapter 1, Article 2 (d) and 3 (a) Maldives Red Crescent Act (7/2009)

  - ★ Article 2(d) establishes as an independent voluntary aid organization that's auxiliary to the public authorities in the humanitarian field.
  - ★ Article 3 (a) assigned the Maldivian Red Crescent the primary task to provide humanitarian aid, prevent and alleviate human suffering in disaster.

- Presidential Decree of December 2004 established the National Disaster Management Center.

- Under the Constitution of 2008, the following elements provide legal support to disaster management: Article 253 of Chapter II, Article 22 of Chapter II, and Article 23.

- Under the Decentralization Act of 7/2010, the Article 24 of Chapter 4 assigned Island Council to establish a mechanism that provides assistance in times of an emergency.

  Chapter 4, Article 24, Decentralization Act (7/2010)

- Disaster Management Act of 2015, provides full legal basis to the disaster management practice in the Maldives.

  (Disaster Management Act (Government of Maldives 2015)

As per the Disaster Management Act (Chapter 4, Article 28 (a) (7) of Disaster Management Act (Government of Maldives 2015)), the National Disaster Management Authority (NDMA) is vested with the responsibility to draft the NEOP, and set instructions for all sectors of the government for the purpose of integrating disaster prevention and mitigation measures in their sectoral disaster management plans and provide assistance.

Currently the role of NDMA is carried out by the National Disaster Management Centre (NDMC).

FIGURE 30: WORKSOP FOR ATOLL COUNCILLORS

FIGURE 31: NATIONAL PLATFORM ON DRR

4.3 Organizational and Institutional Mechanisms

Ensuring effective disaster response and Understanding and strengthen societal capacity for resilience has been two of the key priority areas NDMC has been working along with other stakeholders. In this regard several policies/ plans / SOP's has been developed ad programs have been implemented in Maldives.

4.3.1 National Organizations for Disaster Risk Reduction

Apart from the NDMC, Maldives have very few national organizations that undertake the DRR process. Maldivian Red Crescent conducts programs and workshops mainly focusing on disaster management as a core strategic area. And the United Nations office in the Maldives provides funding and conducts various programs in coordination with the Maldivian government.

And National Disaster Management Centre conducts workshops and awareness programs in atoll and in islands, in collaboration with Maldives National Defence Force to rise disaster risk reduction capabilities at the island and atoll level.

FIGURE 32: IDMP WORKSOP CONDUCTED BY MNDF

Maldives National Defence Force also conducts annual emergency management workshops in different areas of the country aimed at local counselors and staff who work at schools, health sector, Maldives Police Service, and other government agencies.

DM plans completed in 56 island from 2013 - 2017

FIGURE 33: IDMP WORKSOP CONDUCTED BY MNDF

These workshops introduce them to the concept of managing a crisis before help could arrive, how to deal with evacuations, and to raise awareness about the importance of being prepared.

4.3.2 Local Organizations for Disaster Risk Reduction

Non-governmental Organizations such as CARE Society, have a focus on DRR and Climate Change. Other thematic NGOs working in areas such as women, children, people with disabilities, autism, heart disease etc advocate for mainstreaming DRR into development and the planning processes that cater to the needs of the most vulnerable people.

FIGURE 34: CARE SOCITY STUDENTS

5. Disaster Management Strategy, Policy, and Plan

The Third Constitution of the Maldives and the Disaster Management Act provide statements of the highest national policies and priorities of the nation. In addition, the Strategic National Action Plan (SNAP) for Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) aims to promote collaboration among policy makers, experts and practitioners of disaster risk reduction and climate change adaptation throughout the country in order to develop a comprehensive risk management approach. The work to formulate national disaster management plan (NDMP) is underway and the national emergency operational plan (NEOP) has been now approved by the president. DM Act compels to produce and maintain these two plans. Other plans include the establishment national early warning system, commissioning of disaster management plan for tourism sector, development of Safe Island Strategy and integration and mainstreaming of climate change adaptation and disaster risk reduction into the resilient island development planning of the Maldives.

6. Budget Size on National Level

NDMC deals with running the DRR and awareness programs and the funding is to be through the government budget. But there is no state budget for preparedness and awareness. NDMC budget only covers administrative costs and staff salaries and did not receive funding for any proposed programs for disaster related activities. Mostly the DRR activities are run by partnership projects from international organizations. But usually partnership projects do not allow for investment in infrastructure and equipment. A separate fund for response is allocated at the Ministry of Finance and Treasury.

7. Progress of the Implementation Hyogo Framework for Action (HFA) in the Maldives

The progress of implementation of Hyogo Framework for Action (HFA) 2005-2015: Building the resilience of nations and communities to disasters has been going on in the Maldives since the time of its inception. In order to achieve the goals outlined by the HFA, the Government of the Maldives committed to HFA's five priority for action. Following is a summary of the National Progress Report on the implementation of HFA in the Maldives from 2011-2013, reported by the National Disaster Management Centre.

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.

Outcome:

Disaster risks consideration has been integrated in the Government's National Development Plan. Specifically, 2011 Strategic National Action Plan on Climate Change Adaptation and Disaster Risk Reduction for 2010-2020 was designed to promote collaboration among policymakers, experts and practitioners of DRR and climate change adaptation in the country for the development of a

comprehensive risk management approach. It aims to build resilience of the nation and the island communities to disasters by sustaining the progress made by consolidating learned best practices and by incorporating risk reduction into the strategy for decentralization. Once harmonized with the policies, plans and sustainable development strategy, it will identify a consolidated set of programs and projects that can be undertaken with

Government budget and considered for donor assistance. Few government agencies' programs have already integrated disaster considerations such as the Safe Island program; a new proposal for mosques as safe shelters has been developed. These mosques will act as a base for food and water storage, and communication equipment, acting as a stronghold in each island in case of disaster.

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

Outcome:

Established government institutions lack adequate capacity and resources thus have limitations in implementing DRR initiatives at all levels including interventions for communities. The Disaster Management Act 28/2015, which was published in the government gazette on 6 September 2015, stipulates the basic tenets and principles that govern the disaster management in the Maldives. The Act states the policies, rules and guidelines that need to be formulated in order to reduce disaster risk and manage disasters. The implementation of Decentralization Act also hindered by the lack of sufficient capacity and resources all national, atolls and islands levels including communities. In the absence of a legal DRR framework and insufficient funding, government agencies have collaborated on ad hoc basis to implement programs. The approach has mobilized trained staff from different Ministries and institutions at the national and international level in disaster management, risk reduction and other related fields with many yet to be fully utilized. The civil society organizations have made good progress in conducting trainings to strengthen capacities of government agencies, private sectors and communities.

AREA 3:

The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

Outcome:

The government agencies, private sector and civil society organization have supported key sectors and several communities on emergency preparedness, response and recovery. This includes development of Community-based Disaster Preparedness Plans for affected communities with guidance on preparedness, response and recovery based on Vulnerability and Capacity Assessments (VCA). During the process, trainings for response including trainings for 1st Aid, search and rescue, psycho-social support and early warning were provided as well as simulation exercises conducted for some islands. School level Standard Operating Procedures (SOPs) were completed for most schools in the country with staff being trained on emergency preparedness and decentralized management including regular mock drills being conducted within the school as well as activities carried out for community awareness with the involvement of parents in DRR. Ministry of Health and Family have specific SOP for the health sector while Ministry of National Defence Force, Ministry of Tourism, Arts and Culture SOPs in place for their respective sectors.

7.1 Implementation of Sendai Framework for Disaster Risk Reduction (SFDRR)

To strengthen understanding of the Sendai Framework for Disaster Risk Reduction in coherence with the 2030 Agenda for Sustainable Development and the Paris Agreement of Climate Change, and the particular role of States together with other relevant stakeholders in developing national and local disaster risk reduction strategies by 2020, a 3 day workshop on the National implementation of the Sendai Framework; Development of Risk Reduction Strategies and Plans in the Maldives was carried out in Male' from 7-9 March 2017. This was the initial step in the implementation of the Sendai Framework where the targets and indicators were discussed.

Among other countries, Maldives also has reported 2017 data of target A, B, C, D and E related to the SDG's before 31st March 2018 for the first reporting. Work is ongoing for the reporting of 2015 - 2017 data for all global targets before the 1 October 2018.

8. Recent Major Projects on Disaster Risk Reduction in the Maldives

From 2013 onwards NDMC has been working towards disaster preparedness and resilience after recovering from the 2004 Indian Ocean Tsunami working hand in hand with local and international partners. Most of the projects thus far have been small programs conducted by the NDMC, MNDF and the Maldivian Red Crescent with a focus on DRR at the island level. DRR is implemented mainly through partnership projects. But these partnership projects do not allow for investment in infrastructure and equipment. The ongoing projects include.

1. UNDP
2. UNICEF
3. ADPC
4. Resort programs
5. Community Based Disaster Risk Management program
6. Flood mitigation projects for islands
7. World Bank - Urban Resilience project, 2018
8. Japan Non-Project Grant Aid 2015 - Japan's Grant Aid for the Provision of Japanese Disaster Reduction Equipment - JICS

8.1 UNDP Project

8.1.2 Scaling up the National Capacity for Disaster Risk Reduction and Management in Maldives

National Disaster Management Centre and the United Nations Development Programme (UNDP) signed the project “Scaling up the National Capacity for Disaster Risk Reduction and Management in Maldives” on 17th February 2016. The new project duration is from February 2016 to January 2018. This Project is funded to the Amount of US $ 380,000.

Objectives:

- Build-upon the achievements of the Government on disaster management
- Scale up, ensure continuity and enhancement of the current policies and programs

FIGURE 35: ESTABLISHING EW BACK SYSTEM

Activities

- Enhancement of community capacity for disaster response
- Strengthening the Early Warning Systems
- Enhancement of capacity in disaster statistics

FIGURE 36: DRONE FLIGHT TRAINING

8.1.3 Enhance National Capacity for Disaster Risk Reduction and Management in Maldives

The UNDP country programme document for Maldives for 2011-2015 supports sustainable human development goals and is fully aligned with the United Nations Development Assistance Framework (UNDAF) 2011-2015 and national development priorities articulated in the Government's Strategic Action Plan, 2009- 2013.

The National Disaster Management Centre (NDMC) and the United Nations Development Programme (UNDP) signed a project to address disaster risk management in the Maldives on 28th July 2013. The "Enhance National Capacity for Disaster Risk Reduction and Management in Maldives", project will be funded to the tune of US $ 400,000 by the UNDP Bureau for Crisis Prevention and Recovery (BCPR).

The project supported in;

- The establishment of the institutional and legal systems for disaster risk reduction and effective disaster risk reduction organizations/ institutions.
- Strengthening of the end-to-end early warning systems and implementation of public awareness campaigns and knowledge building on disaster risk reduction and climate change adaptation.

- Increasing community capacities for disaster preparedness for effective response. (CBDRM)
- Flood response mechanism
- Involving multi-stakeholder engagement, and
- Assessing and strengthening the capacities of the NDMC as the lead national institution on disaster risk reduction and disaster risk management and coordination.

8.2 UNICEF Project

8.2.1 Low Emission Climate Resilient Development (LECReD)

The UN Agencies present in the Maldives and the Government of Maldives launched the Low Emission Climate Resilient Development (LECReD) Programme on 18 May 2014 in Laamu Atoll Fonadhoo Island.

The LECReD is a three-year joint programme worth US$ 9.2 million aims at responding to the United Nations Development Assistance Framework (UNDAF) Outcome 9: Enhanced capacities at national and local levels to support low carbon lifestyles, Climate Change Adaptation and Disaster Risk Reduction. The programme will assist Laamu Atoll and its islands to realize low emission and climate resilient development while attempting to mainstream issues pertaining to LECReD into local development planning and service delivery for greater community-level ownership and sustainability. (Source: UNDP)

National Disaster Management Center manages the following components under the project:

- Age and gender specific advocacy on child centered community based DRR in Laamu atoll Development and implementation of community based Disaster resilient plans and training of community of members on the plans including emergency drills
- Develop training package on PDNA and conduct training for communities in Laamu atoll
- Flood response mechanism

FIGURE 37: LAAMU ATOLL DM PLAN WORKSHOP

- Emergency Water supply safety Program
- Support in Strengthening capacity of NDMC to response to national emergency operations and functions in collaboration with sectors

- Support to Develop SOPs to strength NDMC coordination with atolls in island councils and to prepare plan and response to emergencies
- Establishment of emergency information database through technical support

FIGURE 38: WORKSHOP IN LAAMU ATOLL

8.3 ADPC Project

During the ADPC "Priority Implementation Partnership on Mainstreaming Disaster Risk Reduction into Local Development Planning Processes" (2014 - 2015) project period, mainstreaming local level DRR and CCA into Local Development Programmes was the project's main goal with the following completed activities.

- National templates on preparedness and response plans (Country Report and Action Plan document).
- National guideline on integrating CBDRM activities into local government authorities' programs (National CBDRM Framework / CBDRM Training Handbook).
- Training package modules.
- Jointly organize workshop on National Training of Trainers.
- Organize orientation workshop for key stakeholders to finalize National Community based DRR framework.
- Island Level Disaster Management Unit Formation Training of Trainers workshop.
- Mainstreaming Disaster Risk Reduction into Development Training.
- Model Resilient Island Development Plan Developed in K. Maafushi.

FIGURE 40: DM UNIT FORMATION IN K. MAAFUSHI

8.4 Resort Resilience Program

Resort Resilience Program is a public-private partnership (PPP) model where NDMC gives technical support to resorts to develop DM Plans and build capacity. Resorts makes in-kind contribution to NDMC and at risk communities to strengthen DRR and Response capacities.

A 10-day program is conducted by trained and experienced facilitators from the Maldives National Defense Force and the National Disaster Management Centre of the Maldives. The program is

designed to include both technical training and hands on exercises to ensure that resort management and staff would develop an understanding and knowledge of coordinating and controlling chaotic emergency situations due to natural and manmade hazards.


FIGURE 41: RESORT RESILIENCE DRILL IN GILI LANKANFUSHI RESORT

The objectives of the program is to understand disaster risk management concepts, Undertake vulnerability capacity assessments for effective disaster preparedness and disaster risk reduction, Establishment of an Incident Command System, Develop basic understanding of fire awareness, Development of a fire fighting squad, Build awareness on maritime safety, Understand and develop maritime safety skills such as search and rescue, swimming rescue, seamanship, etc and Support develop multi-hazard Emergency operations Plan

8.5 Community Based Disaster Risk Management Programme

The CBDRM Programme aims to reduce vulnerabilities and strengthen people's capacities to cope with hazards. It offers particularly effective means to reduce local risks and is a cost-effective approach for a geographically-isolated country such as the Maldives. CBDRM is the approach and process of disaster risk management in which communities at risk are actively engaged in the

FIGURE 42: CBDRM WORKSHOP FACILITATION

identification, analysis, treatment, monitoring and evaluation of disaster risks in order to reduce their vulnerabilities and enhance their capacities to prevent and withstand damaging effects of hazards. CBDRR contributes to progressive realization of safety, disaster resilience and development of all.

8.5.1 Island Disaster Management Planning (IDMP)

The Community Based Disaster Risk Management (CBDRM) Programme is currently one of the most successful programmes run by NDMC as part of its efforts to reduce risk and increase preparedness and resilience. Formulating Island disaster management plans in a component of the program where over 56 islands have now undergone in the past three years. With support of UNICEF through the LECReD programme all 11 islands of Laamu Atoll had also undergone this programme while over 30 Islands were funded by UNDP.

FIGURE 43: CBDRM WORKSHOP FACILITATION

Through the CBDRM 2.0 Programme, communities are encouraged to integrate DRR strategies and measures in all island level sectors. These include ensuring Schools have necessary School Emergency Operations Plans in place, hospitals and/or health posts, other public offices and community institutions have the necessary Standard Operating Procedures in place.

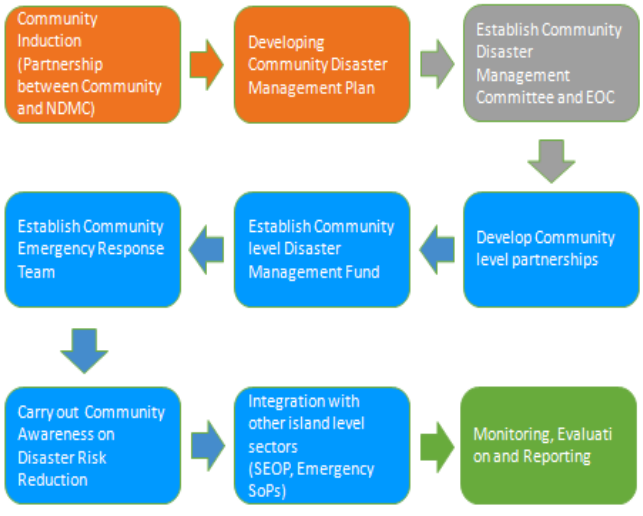


FIGURE 43: CBDRM 2.8 PROGRAMME

8.5.2 Community Emergency Response Teams

The aim of Community Emergency Response Teams (CERT) is to mitigate and control emergency situations during its initial stages. The primary objective of CERT is to respond to all Island level emergencies. CERT comprises of volunteers, trained in preventing any emergency from escalating into a major disaster. Island level emergencies are best responded by locals, it is therefore essential that all CERT members belong to the respective island community (preferably those who live and work in the same island).

An induction program will be conducted to enhance their DRR knowledge to guide them how to react and respond efficiently and effectively to local emergencies, attend to those affected and most vulnerable, take action to mitigate any further loss or damage and to carry out initial field assessments to assess the situation and to coordinate further relief efforts

FIGURE 44: CERT INDUCTION WORKSHOP

Any member of the island community who are above age 18 can become a CERT Member with the ability to communicate clearly (both spoken and written language). Each island community with a CERT team will have at least 15-20 members based in the community after completion of a CERT induction training who has to adhere to the Humanitarian Principles and Affirm the CERT Code of Conduct in order to carry out the primary objectives and act as an emergency responder.

CERT comprises of volunteers, trained in preventing any emergency from escalating into a major disaster. CERT members will undergo various response related trainings from CERT training partners; MRC, MNDF (FRS and Coast Guard) and Police. These teams will be managed at island level by the Local Island Councils / Community Disaster Management Committee.

FIGURE 45: CERT INDUCTION WORKSHOP WITH PRACTICAL SESSIONS

9.0 ADRC Counterpart in the Maldives

Name of Focal Point	National Disaster Management Center
Position	
Website	www.ndmc.gov.mv
Email	info@ndmc.gov.mv