

# **Emergency management in the Arabian Peninsula: A case study from the Sultanate of Oman**

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**“Those who cannot remember the past are condemned to repeat it”**

*George Santayana*

## **Introduction**

The Sultanate of Oman is an example of a rapidly growing country with a relatively new emergency management system. The concept of emergency management in Oman existed for years but actual emergency management measures are relatively recent. These measures are a result of recent natural disasters that devastated the country and awakened policymakers to the importance of integrating emergency management into community development.

This chapter will present a case study from the Sultanate of Oman, which arguably has one of the most developed emergency management system in the region. The chapter will address the hazards faced by Oman, drawing on the recent flash floodings in the country (namely Cyclone Gonu in 2007 and Cyclone Phet in 2010) and their impact in the development of the Omani national emergency management strategies. These events have also lead to the formation of the regional Gulf Cooperation Countries (GCC) Crisis Centre. This chapter will also outline the structure of emergency management in the Sultanate and how it has developed over the years to become robust and capable of handling recurrent natural disasters. The current legislation in Oman regarding emergency management will be outlined. Some of the current challenges in this vital area and how the Omani government is implementing new initiatives to deal with them will be outlined. Finally, this case study will present some potential lessons from the Omani Emergency Management system that could be transferred to other systems in the Arabian Peninsula region or across the world.

## **The Sultanate of Oman**

The Sultanate of Oman is located in the south eastern corner of the Arabian Peninsula. Its coastal line extends 3,165 kilometers from the Strait of Hormuz in the North to the borders of the Republic of Yemen in the South. It overlooks three major bodies of water: the Arabian Gulf (Persian Gulf), the Gulf of Oman and the Arabian Sea (Economy 2008). Oman borders Kingdom of Saudi Arabia and United Arab Emirates in the West, the Republic of Yemen in the South, the Strait of Hormuz in the North and the Arabian Sea in the East.

The total area of the Sultanate of Oman is approximately 309.5 thousand square kilometers. The Sultanate is composed of varying topographic areas consisting of plains, dry river beds and mountains. The most important area is the plain overlooking the Gulf of Oman and the Arabian Sea with an area of about 3% of the total area. This area is the most densely populated area in the country with rapid growth and industrialization that creates a challenge for emergency management. The mountain ranges occupy almost 15% of the total land of Oman. The remaining area is mainly dry river beds and desert (about 82% of the total area) (Economy 2008).

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Figure 1: Sultanate of Oman (source: United States, Central Intelligence Agency)

## Hazards in the Sultanate of Oman

For planning purposes, hazards are divided according to their source into two broad categories: human-made hazards and natural hazards (Sundnes and Birnbaum 2003). Human-made hazards are hazards created by humans themselves unintentionally as a by-product of civilization activities (e.g., building a chemical factory next to a residential area) or intentionally (e.g., declaring a war against a neighboring country). Natural hazards are hazards imposed by the force of nature on humans such as the hazards from the geographical location of the country. The distinction between the two categories is arbitrary and, in reality, hazards overlap and have elements from both sources.

### *Human-made hazards in Oman*

Since 1970, when Sultan Qaboos Bin Said (the current Sultan of Oman) became ruler, rapid modernization swept the country. In 1970, only 11% of the country was considered urban. By 2005, it was 79% and is projected to be 86% by the year 2030 (Peterson 2004). A rapidly growing number of Omanis are leaving rural areas to live in the coastal areas around the Gulf of Oman and the Arabian Sea (as the coastal cities are more modern and job opportunities are more available than inner cities). This movement of people from rural to urban areas increases the demand from fast growing cities such as the capital city of Muscat where 30% of people are concentrated in a land that is only 1.2% of the total country's area (Economy 2008). This rapid modernization and dramatic city development means that more people are being exposed to hazards of newly growing cities. One evident example of such a phenomenon in Oman is the case of Sohar Industrial City. This industrial city is built in a coastal residential town (i.e., Sohar) that was turned into a major industrial hub for international corporations within few years. This rapid industrialization of Sohar is not matched by development in infrastructures such as health care system in the city. This mismatch between the industrial modernization and the infrastructure development exposes

the people living in the Sohar to a group of safety and health issues (Al-Kindi, Marikar et al. 2009).

It is incomplete to discuss human hazards in Oman without mentioning that national top endemic hazard - road traffic crashes. Annually there are approximately 10,000 crashes in Oman, causing an average of 700 direct deaths and 8,000 direct physical injuries (Al-Lamki 2010). This is a serious hazard that is another manifestation of rapid modernization and complex behavioural changes of people in Oman that follows urbanization processes (Peterson 2004). This hazard is multifaceted. It has elements of industrial and structural factors such as the safety features and physical composition of cars coupled with behavioural risks of drivers such as the widespread use of mobile phones while driving. The magnitude of the problem in Oman is beyond comprehension and has been reflected in the Sultan's annual speech when he pleaded for the people of Oman to act together to reduce such "national epidemic and crisis" (Al-Lamki 2010). There have been many large road traffic crashes with mass casualties that fit the criteria to be regarded as "national disaster." In one incident in 2006, 23 people died and 9 were injured in a bus crash that required a national-level emergency response.

Another emerging human-produced hazard, which could become potential evident in the future, is the security issues of Oman from the two unstable neighbouring countries, namely the Islamic Republic of Iran and Yemen (Luethold 2004). Currently, Oman entertains good diplomatic relationships with both of them. Nevertheless, the unsettling situation in the south of Yemen could create a hot spot for extremists and radicals that have been recently reported to cross the border of South Oman illegally and vandalized farms and properties (2010). These repeated events could spark a complex emergency in the border area between Oman and Yemen. On the other hand, the continuous global debate over Iran's nuclear development and enrichment program is another focal issue in the North of Oman. The Gulf Countries including Oman are still viewed by the Iranian ruling government as "Friends of the Americans and the West" (Katzman 2007). Clearly, if the relationship between the United States and Iran deteriorates any further, the Gulf countries including Oman might be the closest target for Iran to hit American interests in the region. These security issues are complex and details of such hazards are beyond this chapter.

In short, Oman has developed rapidly in recent years and as a result many human-related hazards have surfaced due to changing in societal structure. Furthermore, other hazards facing the country are a result of the change in international and regional diplomatic dynamics. These factors have to be taken into consideration in planning and implementation of emergency management strategies in the Sultanate of Oman.

### ***Natural hazards in Oman***

The geographical location of the Sultanate of Oman in the eastern most side of the Arabian peninsula exposes the country to multiple natural hazards. The two main important natural hazards are earthquakes and tropical cyclones leading to flash floods.

#### **Earthquakes:**

Tectonically, Oman sits on the South-Eastern part of the Arabian plate. The Arabian plate is one of the youngest plates that make up the surface of the earth. The plate comprises a crystalline basement of Precambrian continental crust about 40-50 km thick (Warren and Miller 2007). The crust itself overlies a basement of sequence of younger Phanerozoic sedimentary rocks that range in thickness from zero to 10 km. This crust sits on top of the basalt and oceanic basin (Bowring, Grotzinger et al. 2007). The separation and splitting of the Arabian Plate from the African Plate along the Red Sea and the Gulf of Aden axes followed by drift of the Arabian Plate to the north and northeast, lead ultimately to a collision with the Eurasian plate that resulted in the formation of the Zagros fold belt (Petit, Fournier et al.

2007). The Zagros fold belt is the major source of earthquakes in the eastern border of the Arabian plate and Oman. These fault systems affect only the North of Oman with the south being spared from any appreciable tectonic activity (Abdulla and Azm 2004). The figure below depicted the major tectonic systems and their vicinity to the Sultanate of Oman.

The south of Oman has very low seismic activities. In contrast, the northern portion of Oman has a moderate to high seismic activities that warrant special attention and could potentially impact on wider population as shown in graph three.

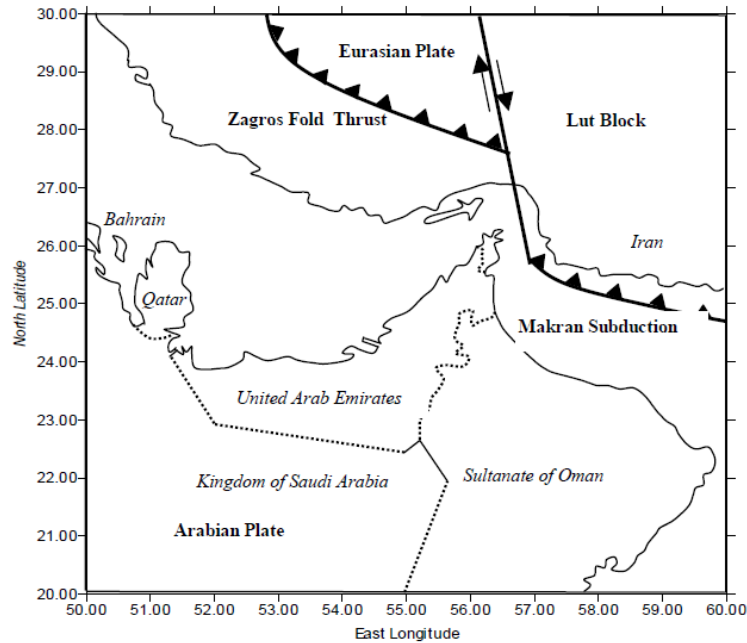


Figure 2: Tectonics of the North Oman (with permission from: Earthquake Hazard Zonation of Eastern Arabia, Abdullah, J)

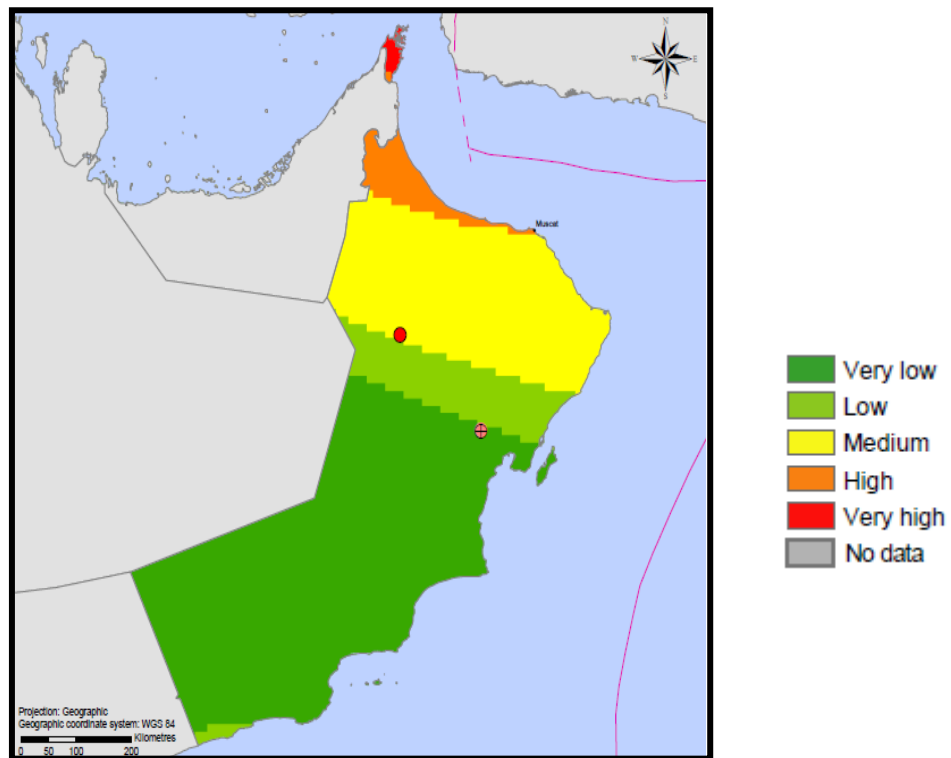


Figure 3: Seismic activity in Oman (adopted from e-atlas database, World Health Organization)

### Tropical cyclones:

Tropical cyclones in Oman are frequent events during the monsoon season from May to August every year. The cyclones themselves are considered low-risk events but they cause terrestrial rains that frequently lead to flash floods. The human distribution in Oman tends to concentrate around water banks and this increases the exposure of the population to the impact of flash floods (Ministry of Regional Municipalities and Water Resources 2009). Adding to the problem is the poorly managed drainage system in many cities in Oman so any small increase in rainfall will cause major flooding (Ministry of Regional Municipalities and Water Resources 2009). For instance, in 2007, tropical cyclone Gonu caused a 24-hour terrestrial rain which was estimated to be 27 times more than the annual rainfall of the country (Al-Shaqsi 2010).

As can be seen, the northern portion of the country is more at risk to natural hazards than the south. The sultanate of Oman is mainly exposed to seismic hazards and tropical cyclones, while the southern portion of Oman is exposed more to political instability and potential human-made conflicts.

### **Vulnerability in Oman**

It is difficult to exactly quantify the vulnerability of populations in Oman. However, there are many factors that have been observed to exacerbate the vulnerability of people to disasters. Some of these factors include, living in industrial areas, low community awareness of risks and hazards, being an expatriate working in a construction industry, and living in rural areas.

As alluded to previously in this chapter, there are several rapidly growing industrial cities in Oman that attract many people to move to them from rural areas for the sake of job opportunities. However, the degree of preparedness of such cities to handle emergencies and crises lags behind the rapid pace of industrialization. Furthermore, the basic services in most industrial cities are not designed to cater for the rising density of workers which further increases the vulnerability of people living in such cities.

Observations from recent disasters in the country highlight the inadequacy of community awareness about the local risks and hazards. Many people do not appreciate that a flash flood caused by a cyclone is different from just a “heavy rain.” During cyclone Phet in 2010, seven people were killed because they did not appreciate the sudden nature of flash floods and were spectators standing on river banks.

Modernization in Oman has driven a workforce of expatriates to work in the construction industry. Like all other Gulf countries, the majority of expatriates in Oman are from the sub-Indian continent. The living conditions of these people are a major contributor to vulnerability. These people tend to live in un-enforced and temporary housing blocks that are usually made of light wooden material and located on construction sites. This style of temporary housing cannot withstand rainfalls, severe winds, storms, and floods. Another issue that clearly impacted this minority group during the recent cyclone, is the language barrier. All civil defense messages during cyclone Gonu in 2007 were in Arabic and English which are not the main languages among the expatriate construction workers. It is striking to know that 57% of fatalities during cyclone Gonu were expatriate construction workers who were living in temporary caravans next to river banks that were washed away by the flood. This problem has been rectified during the response to cyclone Phet when the civil defense messages were broadcasted in seven different languages.

Rural areas are a particular challenge for emergency management planners in Oman. The geographical isolation, the widespread of rural populations, and the sparse distribution of basic community services makes the provision of emergency readiness activities a tough task. There have been many major mass casualty incidents in rural areas that clearly stretched the

national emergency management structure. For instance, a bus crash in 2004 in a rural road in the middle of the night, delayed notification and response to this particular incident. Special rural emergency management considerations has to be taken into account. In summary, the vulnerability for disasters in Oman is multidimensional and emergency planners should be vigilant to such factors and address them adequately.

## Disasters in Oman

The record of disasters in Oman is sketchy and poor. A recent systematic review of the International Disaster Database by the Centre for Research on the Epidemiology of Disasters (CRED), School of Public Health of the Université Catholique de Louvain (UCL) in Brussels, Belgium, found that the country has a history of tropical cyclones almost once every three years (see table below). Some of the most known natural disasters include:

- A major **country wide flood** in 1977. This flood is the first recorded natural disaster in Oman's modern history. It caused major destruction in wide areas of the north of Oman. This flood killed 105 people and directly injured over 5,000 others. It is still regarded as the "worst disaster" in the history of Oman.
- **Salalah Floods** in 2003 caused major disruption of life and services in the south of Oman. Unprecedented torrential rains during the monsoon season lasted for two weeks. This was coupled by poor drainage and flood control system in the city lead to flash floods which claimed the lives of 30 people.
- **Cyclone Gonu** in 2007, was the stimulus for modern emergency management structure in Oman. It brought the country to a standstill for a week. This disaster will be discussed in details later in the paper.
- **Cyclone Phet** in June 2010 which caused damaging flash floods and claimed the lives of 24 people and affected 10,000 others.

There have also been a few man-made disasters in the country but their record is very unreliable. Some of these disasters are:

- A **bus crash** in 2004 on the road between Nizwa and Salalah cities. This crash happened at mid-night and claimed the lives of 24 people and injured 8 others. The armed forces had to be called in to evacuate the dead and injured as the crash site is very remote from any proper services.
- A **building collapse** in 2008 in the capital city of Muscat killing two people. This event was the first to activate the search and rescue national team after its inception in 2007.
- A few **civil disobedience events** in especially in 1995, 2000, and 2005. These events were reminders that internal disasters could also include civil unrest.

Table 1: National disasters in the Sultanate of Oman from 1960 to 2010  
NA= Not Available \* yet to be included in the CRED database.

Type of disaster	Date	No killed	No affected	Cost in US \$
Tropical Cyclone	May 1977	105	5,048	NA
Tropical Cyclone	June 1977	2	1,548	NA
Tropical Cyclone	May 1981	26	NA	NA
Tropical Cyclone	May 2002	7	83	50,000
Tropical Cyclone	April 2003	30	NA	1,000
Tropical Cyclone	June 2007	76	20,000	3,900,000
Tropical Cyclone*	June 2010	24	10,000	NA



## Cyclone Gonu

It would be fair to say that Cyclone Gonu in 2007 was the stimulus for modern emergency management in Oman and the region. Cyclone Gonu was not the first cyclone to hit Oman. However, before this devastating cyclone, complacency in emergency management was prevalent in all levels: national, regional, and local. The event illustrated that it is expensive to wait for such a disaster to kick start emergency management in a country that has had a history of natural disasters.

On May 27, 2007, satellite images showed a widespread convection that persisted in the south eastern region of the Arabian Sea. It gradually intensified into a deep depression and later transformed into a cyclonic storm by June 2<sup>nd</sup>. By June 4<sup>th</sup>, the cyclone was rated as a category five storm. The cyclone moved to the eastern coastline of Oman with wind speed of 260 km/hr and gusts of 315 km/hr. It had an estimated central pressure of 920 mBar while located about 285 km away from land (at latitude 21°N and longitude 83°E). On June 5<sup>th</sup>, it was downgraded to category four after maintaining peak winds for 9 hours. The cyclone hit the land later that day and after 24 hours, the inner core of the cyclone weakened to a wind intensity of 95 km/hr. On June the 6<sup>th</sup>, Gonu hit the eastern coastline of Oman as the strongest tropical cyclone ever to strike the Arabian Peninsula (Al-Shaqsi 2010). The following diagram shows the route of the cyclone.

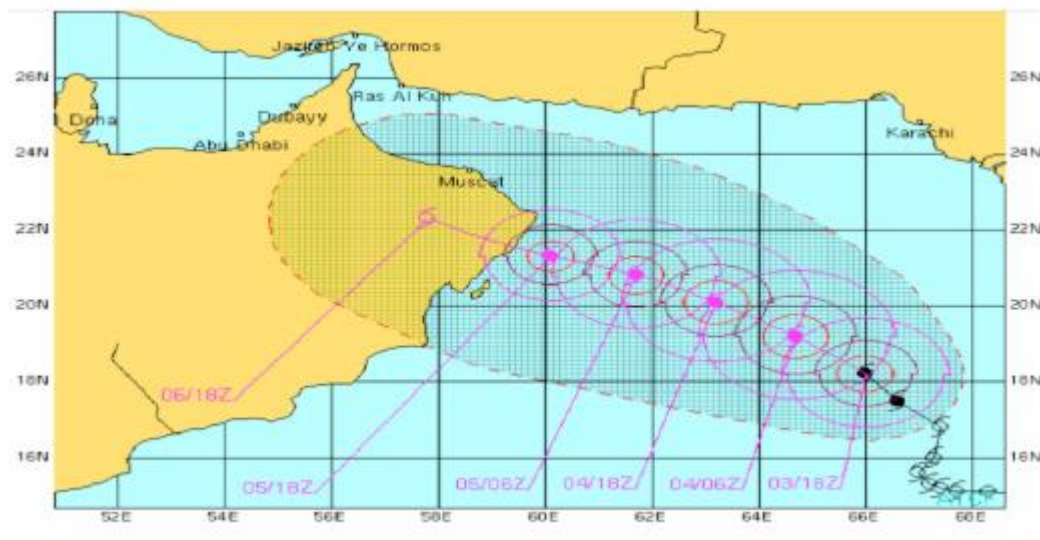


Figure 4: The route of Cyclone Gonu (source: Ministry of Transport and Communications, Sultanate of Oman)

The effect of Gonu began well before the arrival of the actual cyclone. Seven hours before the center of the cyclone hit the Northeastern coastline, the country was already experiencing the impact of rough winds. Strong winds knocked down power lines and communication poles across much of the coastline of the country. Although phone and mobile lines were not 100% affected during the event, the networks were overwhelmed and inaccessible to many individuals. For instance, Muscat suffered loss of power and communication for two days. Torrential rain also fell and left many areas flooded. The amount of rainfall in Gomu, reaching 24 inches near the coastline, lies in stark contrast to the average 3.9 inches per annum in the country. Roads and bridges were therefore washed out and several sites in the capital area were totally isolated and inaccessible for days. Like all other public infrastructures, hospitals were flooded and cut off because of damaged roads. More than 2,000 people were airlifted from damaged areas as a result. The most effected cities were Sur and the Capital City of Muscat, where infrastructure facilities were severely damaged in the early hours of the event. Water was also in short supply in many parts of the

country. Fresh water was delivered by fishing boats to isolated towns near the coastline. The preparedness of the Omani government and community to manage such events was truly tested during this cyclone. Table two below, summarized the impact of Cyclone Gonu.

**Table 2: Impact of Cyclone Gonu in Oman**

	Day one of Gonu	Day three of Gonu
<b>Sheltered people</b>	67,120 people in 139 shelters	2650 people in 4 shelters
<b>Affected roads</b>	90% of all roads	20% of all roads
<b>Electricity cuts</b>	27% of the capital without power	4% of the capital without power
<b>Water supply damage</b>	23% of the capital without water	7% of the capital without water
<b>Affected Tel. Landlines</b>	35% of landline network	1% of landline network
<b>Affected Tel. Mobiles</b>	30% of mobile network	3% of mobile network
<b>fatalities</b>	49 confirmed dead	14 still missing



**Figure 5: The devastation from cyclone Gonu.**

The direct cost of the event was estimated to be around US \$4 billion. Forty-nine people lost their lives directly due to Cyclone Gonu. The majority of these deaths included expatriates from Indian sub-continent region. They were mainly workers living in low-lying areas of the city that were subjected to flash flooding hours before the cyclone arrived. However, it is important to note that this number of deaths does not take into account other people who died from exacerbation of chronic disease and could not get to health care facilities. Despite the wonderful resilience of the Omani community and the heroic rebuilding after the cyclone, there were many lessons learned (Al-Shaqsi 2010). The main lesson is that Gonu awakened policymakers in Oman to the importance and need to be engaged in continuous emergency management activities. This cyclone sparked a comprehensive review of emergency management structure in Oman.

### **The History of Emergency Management in Oman**

The history of Emergency Management in Oman is patchy. The first record of establishing a national-level emergency management system started in the year 1988. The inception of the idea was initiated by four main different government departments: the Royal Oman Police, Ministry of Interior, Ministry of Health and the Ministry of Social Affairs. They together established the National Committee for Emergencies in 1988. According to the best of available records, it appears to be unique in the region at that time. In the same



year, another committee was established – the National Committee for Natural Disasters. However, in the time period between 1988 and 1999 there seems to be a gap in emergency management history in Oman. There is no record of any activities during this time even though few large scale well-documented disasters occurred during this period. Perhaps, it is safe to assume that this time period was one of complacency for emergency management initiatives in Oman. Emergency management measures came to a halt as a result of changes in global and regional diplomatic forces following the Gulf War and the financial crisis that followed in 1991. The nation's priorities had changed.

However, in 1999, the National Committee for Emergencies was revived again and it merged with the National Committee for Natural Disasters to become the National Committee for Civil Defense (NCCD). The new organization was placed under the leadership of the Royal Oman Police. The NCCD was not really active for sometime because it was first established to be a reactive governmental body for national disasters and emergencies (so it did not actively engage in disaster preparedness activities). This was changed in 2002 when the NCCD became an identified semi-autonomous section within the overall structure of the Royal Oman Police. In other words, before 2002 the National Committee for Civil Defense was a section within the civil defense directorate of the Royal Oman Police and in 2002 it became a separate entity with an executive office to run its operations. Perhaps this change followed a global expansion of the concept of emergency management following the 9/11 terrorist attacks. In 2003, 8 subcommittees were formed from the main NCCD body. These committees are specialized regional-level emergency management bodies that were tasked to carry out emergency preparedness activities in 8 regions of Oman. Since 2003, smaller specialized emergency response teams were formulated under the Royal Oman Police. These include the first national emergency medical service (Al-Shaqsi 2009), the national chemical response team, and other search and rescue teams.

As mentioned above, the first national-level disaster was Cyclone Gonu in 2007. Following Gonu, the Sultan Qaboos gave the NCCD the authority to appoint members and he ordered a major reform in the structure of the NCCD (making it more proactive in emergency preparedness measures rather than reacting to disasters in the country). In June 2010, the country was battered again by another cyclone (Cyclone Phet) and the Sultan ordered the NCCD to establish a national-level crisis management experts panel to actively work on comprehensive future plans for emergency management in Oman. The 2010 Sultan's orders directed the NCCD to ramp up its capabilities and decentralise its operations in all parts of Oman. Sultan Qaboos emphasised the need for increased health and search and rescue capabilities for the NCCD as it was previously focused on logistical support to emergency response only.

In a wider sense, the NCCD structure is the foundation for the newly-established Regional Crisis Centre that is based in Kuwait. The Gulf Cooperation Countries (GCC) Regional Crisis Centre is tasked with improving prevention, mitigation, preparedness and response measures to natural and human-made disasters in the region. The following timeline indicates the corner stones of emergency management in the Sultanate of Oman.

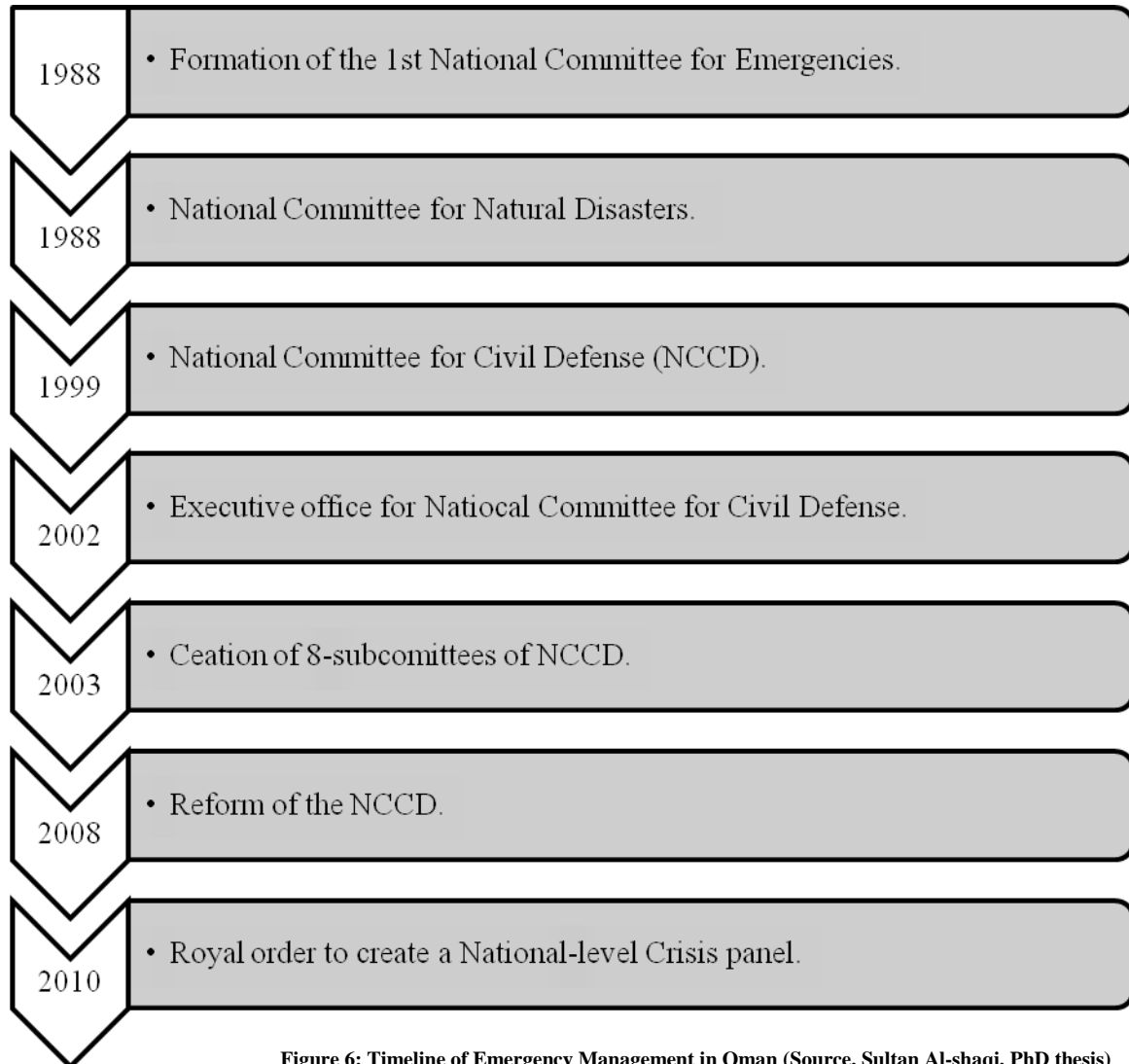


Figure 6: Timeline of Emergency Management in Oman (Source, Sultan Al-shaqi, PhD thesis)

### Current structure of the NCCD

The current National Committee for Civil Defence (NCCD) consists of 16 members from different governmental departments. It has a Chairman who is the Inspector General of the Royal Oman Police as well as a deputy-chairman who is the assistant Inspector General of the Royal Oman Police. The daily operations of the NCCD are coordinated by the Executive Director who is a senior rank police officer. The graph below shows the current members of NCCD in Oman.

There are a few observations to note regarding the current structure of NCCD in Oman. Firstly, the NCCD is still largely attached to Police operations, largely because the original inception of emergency management in Oman in 1988 was championed by the Police. This organizational arrangement may also be a reflection of the wide range of services provided by Police in Oman. Another striking observation is that there is no representative from Non-Governmental Organisations (NGOs) in the overall structure of NCCD. This is somewhat ironic since NGOs, such as Oman Charitable Organization (OCO), have had a long history of disaster relief and response to many incidents in the country and abroad. Besides this omission, there is no representative of private services in Oman. The current emergency management regulations in Oman demands that the government ministries have senior level representation in the NCCD. This is usually the minister or the under-secretary of the

respective ministry. This creates a logistical challenge as it is difficult to arrange meetings with all very senior official of government ministers are present. Therefore, the meetings of NCCD have been sporadic and few.

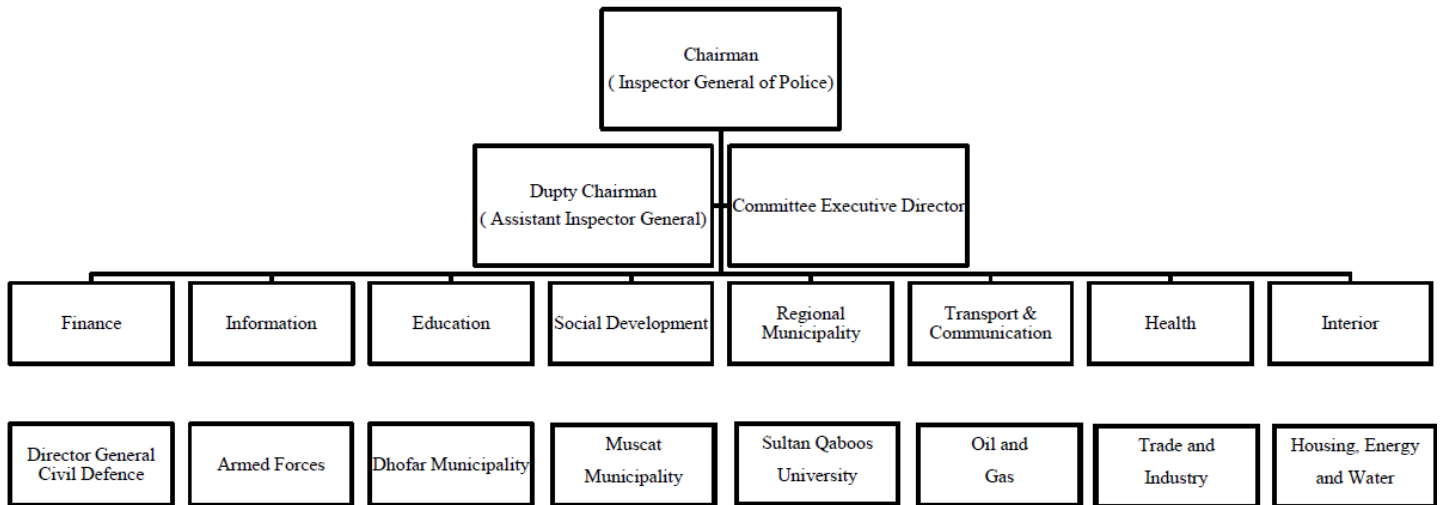


Figure 7: The structure of National Committee for Civil Defense

### Mission and Operations of NCCD

The National Committee for Civil Defense is activated in response to national-level disasters and acts as a focal point of coordination for the overall response. The NCCD is the central part to the paradigm of emergency management in Oman which is depicted in the graph below. Supporting the central NCCD is the armed forces operations and then the operations of other governmental ministries (emergency management legislation in Oman clearly states that the Royal Oman Police is the Commanding agency for the national response and that armed forces and other ministries should support the Police in its mission to effectively response to national-level disasters). Specilized responders are the operational teams and they are run exclusively by the civil defense unless the NCCD request support from the armed forces.

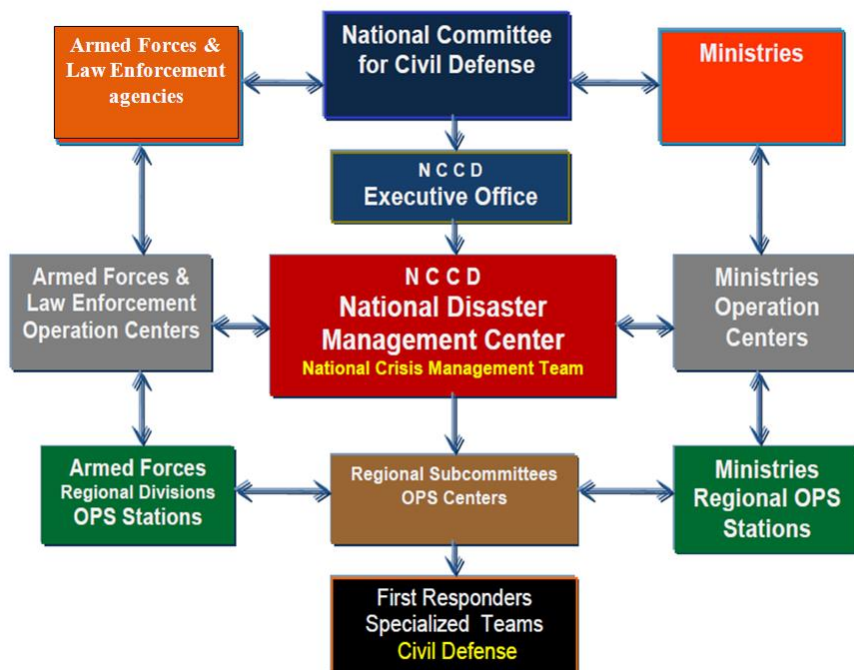


Figure 8: The flow of NCCD operations

The role of the National Committee Civil Defense is to:

- Draw major national policies and protocols for governmental response in emergencies and national crisis situations.
- Establish, update, and maintain national disaster management plan.
- Oversee the functions of the national subcommittees.
- Determine the scope and role of the subcommittees in the civil defence structure and response.

These roles revolve around planning and higher strategic direction and oversight. The NCCD primarily focuses on governmental response with little reference to non-governmental response or private sector response. The roles do not clearly indicate that the NCCD has the authority to enforce the implementation of emergency plans by governmental agencies and it is not clear who is in charge of following up and auditing the implementation of such plans. Overall, the role of NCCD still resembles a reactive approach to disasters and emergencies rather than a proactive and mitigation approach.

The strategic goals of the National Committee for Civil Defence are set to:

- Ensure all governmental departments in the country have well practiced emergency plans.
- Establish an effective national communication strategy.
- Implement a national hazard and vulnerability analysis.
- Develop a tiered emergency strategic measures for the mitigation, preventions and preparedness for emergencies and disasters.
- Establish a network of effective local, regional, and international relief agencies and organizations.

The extent to which these goals have been achieved since the establishment of the NCCD is debatable as there is a lack of audit and evaluation of such national projects.

The National Committee for Civil Defense has achieved some well celebrated corner stones such as the establishment of national specialized response teams. For instance the Chemical, Biological, Nuclear and Radiological (CBNR) response team. The NCCD has also attempted to collate a national emergency database and another database specifically for chemical spillages and chemical emergencies (Al-Kindi 2008). The committee has established strong links with international organizations in the region to enhance the regional early warning systems. In 2007, the NCCD launched the national search and rescue team which has been trained in collaboration with the RAPID agency from the United Kingdom (Al-Kindi 2008).

The response to emergencies in Oman follows a tiered system. The local level response is under-developed and field observations from recent natural disasters indicate that local authorities are unprepared to handle emergencies and therefore regional and national support is almost always needed. This is because the current emergency management system in Oman is still largely centralized and resources are not localized. This limits the extent to which local authorities can cope with emergencies before requesting a regional or a national assistance. The local response level is coordinated by the local governor and representative from various governmental organizations such as local police, local health authorities, and local municipality. The function of local response is to assess the emergency and address the local needs. The next step from local response is the regional response. This is activated by the local governor of the affected area after the approval of the national NCCD representative. This step is an intermediate between local and national and it is often activated as a standby

cautionary measure even in small local emergencies as to prepare a regional and national level.

Level	Actions	Code
Local	Confirm, assess, activate, local resources	Bronze
Regional	Coordinated regional response	Silver
National	National NCCD centre and national resources mobilization	Gold
International	Initiation of relief agencies support request	External assistance (black)

Figure 9: tiered emergency response in Oman

### Emergency Management legislation in the Sultanate of Oman

There are two laws that regulate emergency management in the Sultanate of Oman. The first is the Civil Defense Law that was instituted by the Royal Decree 76 in 1991. The second is the State of Emergency Law, which was outlined by the Royal Decree 75 in 2008. Here is a translated description of these two laws with a specific emphasis on the articles that directly outline emergency management operations in Oman.

*Civil Defense Law (Royal Decree 76/91):* Section one of this law clearly recognizes “Civil Defense” as a Directorate in the Royal Oman Police structure and is headed by a Director General appointed by the Sultan of Oman Himself. In this section, a collection of terms are presented such as the definition of Civil Defense and a State of Emergency. The law also referred specifically to the value of volunteers and defined them as “anyone who steps in by invitation or self-volunteering to help during a national crisis time” (Royal 1991). It is interesting to note that the Civil Defense Law in Oman identified the role of volunteers in emergency management from the early days of emergency management in Oman.

Section two of the Civil Defense Law outlines the measures that Civil Defense should take to achieve the goals of the civil defense operations. These measures include:

1. Proper planning to ensure the safety and security of all people in Oman during the time of emergency.
2. Establishment of evacuation plans for affected areas and rescue the impacted population.
3. Establishment of a mechanism to assess and monitor the radiological hazards in the country.
4. Establishment of national teams for search, rescue and medical care provision during emergencies with defined standards and protocols.
5. Establishment of a national plan to ensure the functionality and backup for all communication systems in the country during a national emergency.
6. Establishment of a national warning system for all-hazard emergencies and designate evacuation zones in all main populated areas.

7. Stockpiling of essential consumables and items required for national emergency response.
8. Establishment, training, and upgrading of national assistance teams ready to be deployed during emergencies.
9. Initiation of a Memorandum of Understanding with the media to increase the awareness of people in Oman to the hazards and the preparedness measures the public should engage into to effectively mitigate, prepare and response to emergencies.

This section therefore outlines the broad goals of the Civil Defense that are common in any civil defense system. However, it is interesting to note that the regional political system at that time influenced this law with a clear emphasis on radiological hazards, as this was a serious threat after the first Gulf War in 1991. Another unique issue alluded to by this section is the importance and need to establish volunteer-based assistance teams to augment the civil defense operations. This issue is very central to contemporary disaster management around the world and lessons from Haiti draws the global attention to the value of proper national level volunteer-based assistance teams (Ivers, Cullen et al.). Currently there are no assistance teams in Oman and the experience from Cyclone Gonu and Phet highlighted again the urgency to establish such teams. The royal orders in 2010, after the review of Cyclone Phet response, call for prompt action in this direction especially the urgency and need to establish the Omani Medical Assistance Teams (OMATs).

Section three of the Civil Defense Law delineates command during an emergency and it gives the authority to the Chairman of the National Committee for Civil Defense to be the Commander of the national response (Royal 1991). This section also gives the authority to the National Committee for Civil Defense to override the normal national laws and regulations in order to save lives and preserve property during emergencies. It allows the Chairman of the NCCD to institute any measure to achieve the mission of the committee during a national emergency response. However, this authority and power of the NCCD chairman has to be endorsed by all members of the NCCD.

Section four of the law recognizes the privileges, financial reimbursement and support for volunteers during national emergencies. The Royal Oman Police is to be the responsible agency to establish, train and assess national volunteer teams. The teams' financial support should follow the Civil Defense salary guidelines. For example, a medical doctor working for the ministry of health that gets deployed to a disaster management mission should be reimbursed for the work done as if he is employed by the civil defense. This regulations provides the incentives guidelines for all people to participate in emergency management missions when required.

Interestingly, article 9 specifically states that it is the responsibility of the Civil Defense to assess health care facilities preparedness to receive victims of national emergencies. This clearly gives the Royal Oman Police an over-arching power to audit the governmental health care preparedness. Article 13 of this section indicates that all governmental departments can request material and logistical support from the Civil Defense to enhance their preparedness. Finally, article 18 of this section outlines that it is paramount to teach civil defense and disaster management skills to all people in all levels of education in Oman including, schools, polytechnics, universities and colleges (Royal 1991). The current reality in Oman is that there is no teaching of civil defense or disaster management skills to the public.

*State of Emergency Law (Royal Decree 75/08):* This law is perhaps a result from the lessons learned from Cyclone Gonu in 2007. The Civil Defense law alluded to above was the



governing law of emergency management in Oman before the inception of this law. Following are the main sections of the Law (Royal 2008).

Section one outlines the process of declaring a “State of Emergency.” It clearly states that the Sultan of Oman is the one to declare a “State of Emergency.” The Sultan’s declaration should include the reasons for the declaration and the extent of the declaration. It is the responsibility of the National Security Council<sup>2</sup> to advise the Sultan about the initiation, extent, and termination of the “State of Emergency.” The Sultan of Oman is the ultimate commander of the national emergency response in the country. This authority is clearly stated in the foundation document of the Omani Law. Article 42 of section 1 in the White book: the Basic Law of the Sultanate of Oman, states that one responsibility of the Sultan is to “declare a State of Emergency, general mobilization, or war and making peace in accordance with the Basic Omani Law” (White 1996).

Section two outlines the authorities and powers of the National Security Council during an emergency. This includes imposing curfews as required, determining the functions of government agencies during emergencies, controlling communication modalities in the country for security purposes, making decisions on evacuations and the command of responders or any other government and non-government personnel to carry out specific tasks to help in the emergency response.

Section three states that the operational arm of the emergency response in Oman is the responsibility of the Royal Oman Police unless ordered otherwise by the Sultan after consultation with the National Security Council. The armed forces are not to be involved in operations of emergency responses unless directed by the commander of the armed forces (i.e., the Sultan of Oman). This section therefore reflects the heavy involvement of the Royal Oman Police and specifically the Civil Defense Directorate in emergency response in Oman.

Section four outlines the regulations during civil unrest that are considered during an internal emergency. This section also refers to the role of the National Security Court in such emergencies. This section could be seen in response to one event in 2005 in which a small group of Omanis were charged with acts of plotting and planning a national unrest(2010).

In summary, there are two main legislations in Oman outlining the emergency management. The laws delineate that the Commander for national-level emergencies is the Sultan Qaboos with assistance from the National Security Council. The operational arm of the emergency response is the Royal Oman Police and the National Committee for Civil Defense with its 20 governmental representatives. The laws also highlight the importance of training, education, public awareness and volunteerism during emergencies.

### **Lessons from emergency management in Oman**

There are many lessons that can be learned from the Omani experience. These lessons are by no means new to the field of emergency management, but it is critical to learn from previous experiences and not to “reinvent the wheel.” The lessons from the Oman can be summarized in the following points:

- The change in global hazards has slowly been appreciated in Oman and the region. The region is well known for human-made disasters but natural disasters are used to be sporadic and that led to a period of complacency. However, this is changing and natural disasters are becoming more frequent and more damaging. It is costly that policymakers in the region wait for such devastating events to decide to act and enhance emergency management measures. This situation is not

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<sup>2</sup> The National Security Council is a high-level committee headed by the Sultan of Oman. There is very little information available about the exact function and structure of the council.

exclusive to Oman, but the same issue has happened in the Kingdom of Saudi Arabia after the Jeddah Floods in 2009. It is critical for nations to be proactive about disaster management rather than learning the hard way after a disaster.

- The concept of emergency management has to be integrated into the developmental process of the nation. Oman as a country is developing too fast and emergency management is lagging behind because it is still – in many ways – not appreciated as an integral part of development process. This could lead to ineffective reactive approach to hazards. Many industrial cities in the country are booming with huge factories and their potential risks and hazards have not been adequately addressed. In simple terms, emergency management measures have to be integrated into the development of infrastructures to be effective and for the development process to be safe for people. Unless emergency management is regarded as a core developmental process by policymakers then complacency will prevail. Emergency management as a reactive strategy to disaster is never effective and is a recipe for failure.
- The current structure of National Committee of Civil Defense does not include any representatives from private sectors in the country nor does from non-governmental organizations. The role of private sector in emergency management has been neglected in Oman for a long time. For instance, some would argue that the response of Petroleum Development Oman to Cyclone Gonu was by far more prompt and adequate than the governmental response(2010). This is because the company regards emergency preparedness as a core value in its mission. Therefore, integrating such local private expertise and resources into the national emergency management will be valuable.
- Successful emergency management systems have mixed centralized and localized approach to resources. It is essential to have a centralized command structure, but it is equally critical to have well-resourced localized depots. One of the main lessons learnt from recent floods in Oman is that centralized storage and stockpiling of resources is limited and dependent on adequate roads and transportation. It is crucial to have redundancy in resource outlets around the country rather than having one huge store that can be damaged or flooded and then render dysfunctional.
- Disasters are destructive events that endanger the basic needs of humans. It is important that nations such as Oman do not get the illusion that emergency management systems are about expensive high technology measures. Rather, successful emergency management systems are based on ensuring the “basics of life” such as food, water, shelter, and electricity. During Cyclone Gonu, many hospitals in Oman sat up Intensive Care Units to provide technology-dependent high-cost medical care and unintentionally neglected the basics. However, the victims were all seeking basic needs such as food, clean water, and shelter. It is a lesson for all countries to focus on the basics, as successful disaster management relays on ensuring human basic needs are met adequately.
- The emergency management legislation in Oman existed for years now but the implementation of some sections is still lagging behind. Things such as including civil defense skills in school curriculum are clearly embraced by the law but nonexistent in reality. As the law itself is important so is the enforcement of the law. There is a need to have an independent body of the government to assess and evaluate the extent to which all government agencies engage in emergency preparedness activities.

- There are still questions of who should run the emergency management system. The Police are in charge in Oman and this has its own advantages such as a clear line of authority and command. However, issues such as the appropriateness of the Royal Oman Police in assessing health care preparedness, for example, is debatable (as police do not usually have the technical expertise to assess health care needs and preparedness to disasters). The bottom line is that each nation should decide on what best suits the local context.

### **Future directions**

Emergency management in Oman is rapidly developing as the importance of such services is appreciated more by policymakers. The emergency management approach in Oman has always been a top-down strategy. The future will show if this strategy allows the grass-root service providers in the country to take up emergency management initiatives as a core value in their missions. Increasing the national capacity to respond to disasters is another pressing issue. The global recession has hit hard on the country with many services are stretched to the limit leading to drastic cuts on programs such as emergency enhancement and capacity building. Decentralization of national resources for rapid mobilization is another concern and the National Committee for Civil Defense has this issue as a top priority. This step will require a logistical support from the local authorities to designate areas where resources can be safely stored for effective and rapid mobilization during emergencies. This shift from centralized ration storage to localized depots establishment is logistically difficult and the maintenance of such local depots should be done regularly by local subcommittees of the national NCCD.

Augmenting public awareness to the importance of self-preparedness for emergencies is a challenging exercise in Oman. For decades, people have not experienced any natural disasters to urge them to be prepared. From observations of recent emergencies in the country, Omani people tend to under-estimate the natural hazard and the lethality of natural disasters. During the recent cyclones many people travelled long distances to see the “new rivers” not appreciating the risk and it is actually a flash flood that can get out of control in a short time with no warnings. The media has a role to play in communicating the right information with the right level of warnings without causing fear and panic.

Finally, there has been no research whatsoever looking at emergency management of different departments in Oman. This will be a future task to understand the current status and the needs of such vital infrastructure. Any development and improvement in emergency management should be based on scientific evidence and local need evaluations rather than random adaptation of ideas from well-resourced countries.

### **Conclusion**

This case study of emergency management in Oman highlights the urgency to integrate emergency management measures in core community development projects. Modernization and development of communities has to be accompanied by robust emergency management structure to ensure that natural and human-made hazards are assessed and managed adequately. It is time to move away from reactive operations of emergency and disaster management to more active and anticipatory activities. It is critical to appreciate that emergency management does not happen on the day of the emergency rather, it should be a well-planned process ahead of the disaster.

Emergency management is never an easy task. It has been and will always be a complex process involving multiple players that have to act as one team aiming to achieve one goal during a disaster. Coordination and cooperation are central to successful emergency

management. The coordination has to be inclusive of all community services and agencies, governmental and private.

Emergency management in Oman is moving in a right direction with a good pace. The challenge is to keep improving continuously because if the process slows down it means development in the community has decelerated and complacency will prevail.

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