



Nicobar Is. (India)

Banda Aceh

George Town

Kota Baharu

KUALA LUMPUR

MALAYSIA

Natuna

Simeulue

Medan

Kuantan

SINGAPORE

Nias

Padang

Singkawang

Sibu

Siberut

Sumatra

Palembang

Banjarmasin

Borneo

JAVA SEA

Telukbetung

JAKARTA

Semarang

Bandung



# SINGAPORE

## Disaster Management Reference Handbook

May 2017

## Cover and section photo credits

Cover Photo: The Singapore Civil Defence Force (SCDF) team led its search and rescue operations at Lalitpur, Nepal after the 2015 Nepal Earthquake. Singapore Civil Defence Force.  
<https://www.scdf.gov.sg/home/media-gallery>

Regional Overview Section Photo: Flag Photo from the Singapore Institute of International Affairs.  
<http://www.siiionline.org/will-malaysia-meet-expectations-as-aseans-chair/>

International Framework Section Photo: A 69-member Home Team contingent, comprising officers from the SCDF Operation Lionheart and officers from the Singapore Police Force (SPF) departed for Nepal to support search and rescue and other disaster relief efforts on RSAF C-130 planes.  
<https://www.scdf.gov.sg/home/media-gallery>

National Framework Section Photo: Singapore's Ministry of Home Affairs (MHA) has a SGSecure program that focuses on strengthening Singapore's domestic community preparedness, cohesion and resilience through Emergency Preparedness Days as seen in the photo. Home Team News (Singapore).  
<https://www.facebook.com/hometeamnews/photos/a.133316686732069.25296.108240409239697/1391808880882837/?type=3&theater>





U.S. DOD DMHA Recent Engagements with Singapore Section Photo: Ex COORES 2017. Director of Joint Operations, RADM Frederick Chew (Pictured left), launching the Changi Regional HADR Coordination Centre (RHCC) website together with COL Lee Kuan Chung, Director of RHCC (Pictured right). The Singapore Army. Photo contributed by: LCP Toh Xing Jie (HQ Guards).  
<https://www.facebook.com/oursingaporearmy/posts/10154831938261063>

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# Welcome - Note from the Director

When a natural disaster or crisis occurs and creates humanitarian needs, many countries will deploy their militaries or paramilitary organizations in response. Regional partners in the Indo-Asia-Pacific region will and do provide training and assistance to its ASEAN (Association of Southeast Asian Nations) neighbors before, during, and after a disaster. Singapore values the exchange of ideas and sharing of expert knowledge and technology in disaster prevention and management. They have on-going programs with countries in the Asia-Pacific, Europe and the U.S.

Singapore is located just outside the Pacific Rim of Fire and is spared from destruction caused by natural disasters; however, they do have unique expertise and have provided emergency assistance to its ASEAN neighbors in search and rescue and firefighting. Singapore is proficient in areas of disaster preparedness response, particularly in the area of disaster prevention and education, and in handling and mitigating disasters in an urban environment. Singapore is able to share their knowledge with other countries and provide assistance to affected states in the region.

Singapore is well positioned to respond to disasters and is a key player in disaster management and humanitarian assistance efforts in the region.<sup>1</sup> The Indo-Asia-Pacific region remains the region with the highest number of natural disasters, accounting for over 41 percent of the world's disasters.<sup>2</sup> More disaster related deaths occur in this region (almost 89 percent of the global total).<sup>3</sup> More than 90 million people worldwide were affected by natural disasters in 2015.<sup>4</sup>

This guide serves as an initial source of information for those individuals preparing for Disaster Risk Reduction (DRR) activities or immediate deployment with Singapore partner responders in crisis. Additionally, it highlights the important role Singapore plays in preparing for, mitigating, responding to, and recovering from a natural or man-made disaster in the Indo-Asia-Pacific region. It also provides decision makers, planners, responders and disaster management practitioners' greater insight into Singapore Disaster Management (DM) capabilities, thereby enhancing regional civil-military response. Discussion includes key areas such as the Singapore organizational structure for domestic and foreign disaster management, international DM agreements, regional training programs and exercise support. An in-depth understanding of Singapore's and other partner nation capabilities improves collaboration before, during and after a disaster response. The Changi Regional HADR Coordination Centre (RHCC) and The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) have recently (January 2017) signed a Memorandum of Understanding (MOU) showing growing cooperation between the U.S. and Singapore. The MOU establishes a framework for cooperation between them. Therefore, this handbook focuses on strengthening partnerships and is not an assessment of Singapore's capabilities.

These handbooks provide a context for country and regional-specific factors that influence disaster management. CFE-DM provides education, training and research about disaster management and humanitarian assistance, particularly in international settings, which require coordination between the Department of Defense (DOD) and civilian agencies.



Sincerely,

Joseph D. Martin, SES  
Director

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

## Overview

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

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

## Mission

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

## Vision

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

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## Disclaimer

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

# Executive Summary

Singapore helps fight the common threat posed by transnational security challenges and participates in overseas operations which provide assistance to other nations and enhances Singapore's own security. Singapore has participated in United Nations' (UN) peacekeeping, peace support, and other humanitarian missions and provided humanitarian assistance to countries in need.<sup>5</sup>

As a maritime nation, Singapore has an interest in preserving freedom of navigation and the safety of international shipping and in combating threats at sea such as piracy and maritime terrorism. Singapore is well positioned to respond and act to promote, disaster risk reduction and preparedness, in addition to collaborating with countries such as the U.S. to strengthen their ability to manage and respond to crises. Singapore is a key player in disaster management and humanitarian assistance (DMHA) efforts in the region.<sup>6</sup>

For Singapore, the lead ministry to manage requests for support in humanitarian assistance from affected states is the Ministry of Foreign Affairs (MFA). Requests can be made to the international community, or bilaterally through Singapore's embassies or missions in the Affected States. At the operational level, such requests can also be made directly to the National Disaster Management Organization (NDMO) or the established National Focal Point (NFP) of Singapore, which is the Singapore Civil Defence Force (SCDF). The Singapore Civil Defence Force has provided assistance to some of its ASEAN neighbors in rescue and firefighting.<sup>7</sup> Singapore also has Search and Rescue (SAR) capability, which has provided assistance during international and domestic missions.

Singapore has sought to build a strong network of bilateral and multilateral relationships within their region and around the world. Exercise-Coordinated Response (Ex COORES) (January 2017) is a good example of growing cooperation between the U.S. and its allies and partners in Southeast Asia on humanitarian assistance disaster relief (HADR). Ex COORES was done with the Singapore Armed Forces' (SAF's) Changi Regional HADR Coordination Centre (RHCC) along with the Armed Forces of the Philippines (AFP), and the U.S. Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM).<sup>8</sup> The SAF also engages and works with other militaries. Singapore and the U.S. have a strong military-to-military cooperation, including joint exercises, personnel exchanges, and cross-attendance of courses. These exercises build up interoperability between the militaries and facilitate joint operations.<sup>9</sup>

The SAF has participated in a number HADR missions at both regional and international levels. These include deploying personnel and/or assets to assist with the Indonesia forest fires in October 2015, Nepal's earthquake in April 2015, Thailand's forest fires in March 2015, and Malaysia's floods in December 2014.<sup>10</sup>

Singapore has participated in regional exercises including Rim of the Pacific (RIMPAC), Exercise Cobra Gold, Exercise Deep Sabre, and ADMM-Plus field training exercises (FTXs). These activities strengthen international partnerships when responding to natural and man-made disasters.





# SINGAPORE

## Regional Overview

# Regional Overview

The area surrounding Singapore is the most disaster prone region in the world; however, Singapore sits just outside the “Ring of Fire” and is positioned to respond to international crisis rapidly and effectively. Singapore is situated just south of Malaysia. A causeway and link bridge connects the two countries. Cambodia, Brunei, Indonesia, and Malaysia are all countries in this disaster prone region. Figure 1 depicts this regional area around Singapore.<sup>11</sup>

The Indo-Asia-Pacific region has experienced increasingly frequent small, medium, and large scale disasters. As a result there has been an unprecedented scale of response by international civilian and military organizations in support of the affected state. The region, due to geological and environmental factors, is highly vulnerable and responders are required to operate in unique circumstances. In some areas of the region, disaster warning systems are limited and post disaster communications with the affected population is extremely challenging due to the vast distances and level of economic infrastructure.<sup>12</sup>

The region also holds some of the greatest challenges, including natural disasters, poverty, urbanization, and environmental degradation.<sup>13</sup>

It is highly vulnerable to tsunamis, earthquakes, floods, tropical cyclones, drought, volcanic eruptions, and other hazards. Natural disasters are becoming more frequent and more severe within the region.<sup>14</sup> Additionally, the effects of climate change are expected to change the frequency, severity, and, unpredictability of weather related events across the region, increasing the intensity of the hazards. Climate change impacts are likely to affect global stability, health, resources, and infrastructure. Many of the Pacific Island Countries (PICs) in this region are vulnerable to disasters and they rely on external assistance for aid in times of disasters.<sup>15</sup>

Asia and the Pacific are most at risk from natural disasters, according to a report from the United Nations Office for Disaster Risk Reduction. More than 90 million people worldwide were affected by natural disasters in 2015. Asia is the world’s most disaster-prone continent, with 152 out of the 346 reported disasters worldwide. Earthquakes, tsunamis, and typhoons were among the deadliest natural hazards in the world in the last few decades. For instance, Nepal suffered from a magnitude 7.8 earthquake in April 2015 that claimed more than 8,000 lives and caused widespread damage in Gorkha and its surrounding areas. In addition, Taiwan experienced an earthquake which resulted in more than a hundred casualties.<sup>16</sup>



Figure 1: Regional Map





# SINGAPORE International Framework

Disaster Management Reference Handbook | May 2017



# International Framework

## Guiding Principles (Civil-Military)

Many countries will deploy their militaries or paramilitary organizations when a natural disaster or crisis occurs and creates humanitarian needs. Bilateral support to disaster-affected States can also be provided through international deployment of foreign military actors and assets. The United Nations Humanitarian Civil-Military Coordination (UN-CMCoord) facilitates dialogue and interaction between civilian and military actors, essential to protect and promote humanitarian principles, avoid competition, minimize inconsistency and, when appropriate, pursue common goals.

### *UN-CMCoord*

UN-CMCoord is a framework which enhances a broad understanding of humanitarian action and guides political and military actors on how best to support that action. It helps to develop context-specific policy based on internationally agreed guidelines, and it establishes humanitarian civil-military coordination structures, ensuring staff members are trained to make that coordination work. UN-CMCoord is particularly essential in complex emergencies/high-risk environments in order to facilitate humanitarian access, the protection of civilians, and the security of humanitarian aid workers. Foreign Military and Civil Defence Assets (MCDA) may be requested through the Civil-Military Coordination Section (CMCS) by a United Nations agency or the government of an affected country (usually through the UN Resident/Humanitarian Coordinator) when all other sources have proved to be insufficient, exhausted, or unavailable.<sup>17</sup>

Singapore civil-military approach to emergency preparedness programs and disaster management activities are based on the following main principles:

- Man-made disasters can be prevented, and their tragic consequences, minimized through a set of stringent and comprehensive government regulation on fire and building safety, coupled with strict enforcement.

- Emergency and contingency plans should be developed to deal with disasters should they occur. Such plans should also be tested and fine hone through regular exercises and drills.
- The community should be educated on the need for and importance of emergency preparedness. Where possible, they should also be involved in exercises, training and physical preparations.
- Emergency response and management of disasters should be a coordinated multi-agency effort. All available expertise and resources should be coordinated and swiftly channeled to the disaster site to maximize the chances of survival of the injured and to minimize damage to infrastructure.
- Restoration work and the rehabilitation of the injured should be an integral part of the total disaster management program.<sup>18</sup>

Adherence to the principles helps departments and agencies to maintain purpose, unified economic efforts, and assist international partners. Singapore and the United Nations Office for Disaster Risk Reduction (UNISDR) have a partnership in disaster risk management by providing a joint specialized training course in Singapore for the last two years providing practical support and knowledge for the implementation of the Sendai Framework for Disaster Risk Reduction to participants from 18 countries.<sup>19</sup> More information on this training is provided in the Foreign Disaster Management Activities section of this book on page 24.

### *Sendai Framework*

The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. It is the outcome of stakeholder consultations initiated in March 2012 and inter-governmental negotiations held from July 2014 to March 2015 which were supported by the UNISDR upon the request of the UN General Assembly. The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) is the first major agreement of the post-2015 development agenda, with seven targets and four priorities for action. Targets, scope and purpose, expected outcomes, and goals are shown in Figure 2.<sup>20</sup>

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

## Scope and purpose

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

## Expected outcome

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

## Goal

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

## Targets

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

There is a need for focused action within and across sectors by States at local, national, regional and global levels in the following four priority areas.

<b>Priority 1</b> Understanding disaster risk	<b>Priority 2</b> Strengthening disaster risk governance to manage disaster risk	<b>Priority 3</b> Investing in disaster risk reduction for resilience	<b>Priority 4</b> Enhancing disaster preparedness for effective response, and to «Build Back Better» in recovery, rehabilitation and reconstruction
--------------------------------------------------	-------------------------------------------------------------------------------------	--------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------

Figure 2: Sendai Framework for Disaster Risk Reduction 2015-2030



The four priorities include:

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

## Partnerships, Agreements, and Memberships

Singapore has produced numerous partnerships, agreements and memberships with its partners and stakeholders in disaster response.

### Bilateral Partnerships

Singapore has sought to build a strong network of bilateral relationships within their region and around the world. The SAF engages and works with other militaries, which range from exchanges of visits and joint exercises to attendance of each other’s courses. This diverse network of defense relationships contributes to regional and international security. The networks and partnerships foster understanding, build confidence, and facilitate practical cooperation between militaries.<sup>21</sup>

Singapore is a member of the Association of South East Asian Nations (ASEAN). ASEAN is the cornerstone of Singapore’s foreign policy as a means to enhance its own economic competitiveness and provide the region with a strong platform to engage key international players. Singapore also sees strengthening its existing relations with its immediate neighbors, Indonesia and Malaysia, as a key foreign policy priority. Singapore has bilateral relationships with the following countries (separated by regions):<sup>22</sup>

- **Central Asia**  
Central Asia and Singapore share a continued interest in collaborating in the field of education and capacity-building. Singapore has shared their experience with more than 1000 participants from Central Asia through the Singapore Cooperation Programme (SCP). Singapore holds regular business forums with Kazakhstan

- and Uzbekistan.
- **Southeast Asia**  
Brunei, Cambodia Indonesia, Laos, Malaysia, Philippines, Thailand, and Vietnam
- **Northeast Asia**  
Japan, China, Korea, Hong Kong Special Administrative Region, Macao Special Administrative Region
- **South Asia**  
India
- **Oceania**  
Australia, New Zealand, The Pacific Islands and Timor-Leste
- **Americas**  
U.S., Canada, Latin America
- **Europe**
- **Africa**
- **Middle East**

More details regarding how Singapore engages with the U.S., Australia, Indonesia, and Malaysia is explained in the following section.

### *Singapore and the U.S.*

Although Singapore and the U.S. are not formal allies, they have enjoyed a broad and deep partnership which has spanned decades. The relationship, based on a shared belief that a strong U.S. presence in the region is vital for peace, stability, and prosperity, extends across the security, economic, and people-to-people realms and has made important contributions to regional stability. This has benefitted the U.S., Singapore, and other countries in the region.

In 2005, Singapore and the U.S. signed the Strategic Framework Agreement for a Closer Cooperation Partnership in Defense and Security (“2005 SFA”), which serves as a formal framework bringing together existing and future areas of bilateral defense and security cooperation. The agreement expanded the scope of cooperation in areas such as: counterterrorism, counter-proliferation, joint military exercises and training, policy dialogues, and defense technology. The 2005 SFA included within it a Defense Cooperation Agreement (DCA). This subsumed all defense-cooperation activities and provided for new areas of mutually beneficial cooperation, including developing military expertise and defense capabilities to deal with the wider range of threats.<sup>23</sup>

In 2015, on the 25th anniversary of the 1990 memorandum and the 10th anniversary

of 2005 SFA, Singapore and the US agreed to elevate defense relations through an improved DCA. They agreed on a broad framework for defense cooperation in five key areas, namely in the military, policy, strategic, and technology spheres, as well as cooperation against non-conventional security challenges, such as piracy and transnational terrorism. They also agreed to enhance cooperation in new areas, including humanitarian assistance and disaster relief, cyber defense, and biosecurity. Singapore and the U.S. engage in military-to-military cooperation, including joint exercises, personnel exchanges, and cross-attendance of courses. These exercises facilitate joint operations and increase interoperability between the militaries.<sup>24</sup> The U.S. and Singapore have participated in readiness training together during Cooperation Afloat Readiness and Training (CARAT). In its 22nd year, CARAT is an annual, bilateral exercise series with the U.S. Navy, U.S. Marine Corps, and the armed forces of nine partner nations including Bangladesh, Brunei, Cambodia, Indonesia, Malaysia, the Republic of Philippines, Singapore, Thailand, and Timor-Leste. The exercise included conventional maritime warfare

capabilities in the areas of anti-air, anti-surface and anti-submarine operations, as well as maritime air operations. A total of 700 personnel from both countries were involved in the 2016 exercise. The exercise involved four ships, a submarine, a naval helicopter, a maritime patrol aircraft and fighter aircraft from the Republic of Singapore Navy and the Republic of Singapore Air Force, while the U.S. Navy and Marine Corps participated with three ships, a submarine and a maritime patrol and reconnaissance aircraft.<sup>25</sup>

Photo 1 shows U.S. Marines assigned to the 3rd Law Enforcement Battalion and Republic of Singapore Navy sailors conducting military operations during CARAT 2013.<sup>26</sup>

Singapore hosts the littoral combat ships enabling a constant American Navy presence in Southeast Asia, supporting shared strategic interests, responding to humanitarian disasters, and conducting exercises and visits with regional partners and allies. The ships are ideal in both size and capability for the missions because of their shallow drafts, the ability to drive at high speeds and large below deck capacities. The littoral combat ship USS Coronado (LCS 4) arrived in Singapore in October 2016 to begin a



Photo 1: United States and Singapore Military Forces Perform Training

rotational deployment to the Indo-Asia-Pacific. The USS Coronado is the third littoral combat ship in Singapore and it represents American interests and assists in growing regional relationships and partnerships.

The Republic of Singapore Air Force (RSAF) participated in the United States Air Force (USAF) hosted Exercise Red Flag at Nellis Air Force Base, Nevada, U.S., from 17 to 28 August 2015. The RSAF has been participating in Exercise Red Flag since 1982. Exercise Red Flag enhances the combat readiness and operational capabilities of the participating air forces. During the exercise, participants engaged in air combat and strike missions in a realistic environment, which allowed them to hone and sharpen their capabilities. The exercise underscores and long-standing defense relationship between the U.S. and Singapore.

Singapore also participates in Exercise Commando Sling. This exercise focuses on enhancing and evaluating tactical coordination of air tactics, techniques and procedures between U.S. and RSAF aviation units, improves procedures for sustained operations at a non-U.S. base, and provides an opportunity to promote closer relations between U.S. and Singaporean service members. The annual Commando Sling exercise began in 1990 to provide combined air combat training for USAF and RSAF fighter units.

Exercise Tiger Balm was first conducted in 1981 and is the longest-running bilateral exercise between the Singapore Army and the U.S. Army. This annual exercise allows both armies to collaborate and share tactics, techniques and procedures, and is a hallmark of the excellent and long-standing ties between both armed forces. This was the first time that a “Live-Virtual-Constructive” (L-V-C) training approach was employed for an army bilateral exercise across two different countries and at such a large scale. This was a realistic training environment and enhanced the interoperability between the two armies. The “Live” aspect of the exercise comprised the Combined Arms Live Fire Exercise (CALFX) between the two armies, whilst the “Virtual” aspect involved the employment of the Virtual Battlespace Simulator 2 (VBS2) for surveillance tasks. The “Constructive” aspect saw the linking of the US’ Joint Conflict and Tactical Simulation (JCATS) with the SAF’s Army War-game Simulation System (AWSS) to allow the exchange of ground tactical information.<sup>27</sup>

### ***Singapore and Australia***

Singapore and Australia cooperate on many issues integral to trade and security. Singapore and Australia have a bilateral relationship based on defense, education, political, trade and tourism links, as well as on the two countries’ similar strategic outlook.

The 50th anniversary of Singapore’s independence, and the 50th anniversary of Australia-Singapore diplomatic relations, was celebrated in 2015. To mark this occasion, on 29 June 2015, the two countries signed a Joint Declaration on the Comprehensive Strategic Partnership (CSP). The CSP is expected to add to existing areas of cooperation between the two governments and be the catalyst to start new ones. These ideas are built upon the 1996 Joint Declaration “A New Partnership” which encompassed cooperation in cultural, economic, political and security matters. Singapore and Australia have a ten year plan to enhance these strategic economic goals.<sup>28</sup>

### ***Singapore and Indonesia***

Singapore and Indonesia have strong economic relations. Bilateral trade between Singapore and Indonesia reached more than S\$58 billion in 2015. Indonesia is Singapore’s fourth largest trading partner while Singapore is Indonesia’s third largest trading partner. Singapore was also Indonesia’s top foreign investor in 2015. Both countries are the top source of visitor arrivals for each other. May 2016 marked the 6<sup>th</sup> Singapore-Indonesia six bilateral economic working group ministerial meeting. The six working groups include (1) Cooperation in the Islands of Batam, Bintan and Karimun (BBK) and other Special Economic Zones (SEZs); (2) Investments; (3) Transport; (4) Tourism; (5) Manpower; and (6) Agri-business. Both government’s leaders and ministers work bilaterally, as well as at ASEAN and various international arenas to advance common interests.<sup>29</sup>

### ***Singapore and Malaysia***

Singapore and Malaysia have a long-standing relationship in regards to bilateral trade, investment, and tourism. There are regular high-level exchanges including the Leaders’ Retreat, Joint Ministerial Committee (JMC) meetings on Iskandar, Malaysia and Ministerial level visits. Some bilateral cultural events, such as the Titian Budaya showcase, have fostered stronger bonds between the two countries.<sup>30</sup>



The signing of the Kuala Lumpur-Singapore High Speed Rail (HSR) Bilateral Agreement (BA) in December 2016 marked a historic moment in bilateral relations. This project improves connectivity and increases economic cooperation. A Memorandum of Understanding (MOU) on the Singapore-Malaysia High-Speed Rail (HSR) project was signed by the neighboring countries in July 2016. The 350km line is expected to reduce travel time between Singapore and Kuala Lumpur (Malaysia) to around 90 minutes and is expected to be completed in 2026. The proposed rail will connect Malaysia to Singapore.<sup>31</sup>

## Multilateral Partnerships

Singapore has helped to facilitate the U.S. multilateral engagement with the region through promoting U.S. ties with the Association of Southeast Asian Nations (ASEAN). Greater engagement with the organization increases Washington's flexibility and influence. Singapore's role within ASEAN is enhanced as the country coordinator until mid-2018 of ASEAN-China dialogue relations. In 2018, Singapore will also take over as the ASEAN Chair.<sup>32</sup>

Singapore is party to multilateral partnerships including:

- The East Asia Summit (EAS)
- Asia-Pacific Economic Cooperation (APEC)
- Indian Ocean Rim Association (IORA)
- ASEAN Preparedness and Response Working Group
- ASEAN Committee on Disaster Management (ACDM)
- United Nations Office for Disaster Risk Reduction (UNISDR)

## Agreements and Memberships

### *Defense Cooperation Agreement Signing-December 2015*

U.S. Secretary of Defense Ash Carter and Singapore Minister for Defence Dr. Ng Eng Hen signed the enhanced defense cooperation agreement (DCA) in 2015 providing a new framework for an expanded defense relationship between the two nations. Singapore and the U.S. have a previous 1990 Memorandum of Understanding (MOU) and the 2005 Strategic Framework Agreement (SFA), which is founded on the shared belief that a strong United States

presence in the Asia-Pacific is vital for peace, prosperity and stability.<sup>33</sup>

The United Nations Office for Disaster Risk Reduction (UNISDR) and Singapore are interested in strengthening the disaster risk management capacity of small island developing states and other countries that are on the front line of climate change. A first joint specialized training course in Singapore provided practical support for the implementation of the Sendai Framework for Disaster Risk Reduction in several countries and territories, including Fiji, Mauritius, China, Panama, Pakistan, Seychelles, Solomon Islands, Trinidad and Tobago, India, Sudan, Zimbabwe, and Palestine. Representatives from Singapore and UNISDR shared their expertise on early warning systems, hazard and vulnerability assessment, emergency preparedness plans, resilient public health systems, climate change adaptation and mitigation measures, and sustainable urban planning.<sup>34</sup>

Singapore and the U.S. belong to a number of the same international organizations, including the United Nations, ASEAN Regional Forum, Asia-Pacific Economic Cooperation forum, International Monetary Fund, World Health Organization (WHO), and the World Trade Organization (WTO).<sup>35</sup>

Singapore is party to multilateral agreements including the Five Power Defense Arrangements, the ASEAN Regional Forum (ARF), Association of Southeast Asian Nations (ASEAN), International Federation of Red Cross and Red Crescent Societies (IFRC), United Nations High Commissioner for Refugees (UNHCR), and the World Health Organization (WHO).

### *Five Power Defence Arrangements*

Following the withdrawal of the United Kingdom from Malaysia and Singapore, a multilateral agreement was established between Australia, New Zealand, Malaysia, Singapore and the United Kingdom in 1971 to provide security for the newly formed states. The Five Power Defence Arrangements with Malaysia, Singapore, New Zealand and the United Kingdom remain valued as a mechanism for engaging with important partners in the region.<sup>36</sup>

The purpose of the Five Power Defence Arrangements is to cultivate cooperation and interoperability between member armed forces through combined training exercises, which aim to develop a joint operational capability. Through the conduct of multilateral military exercises,

Australia is able to practice their ability to inter-operate with other militaries through desk-based and field training activities in order to respond to security issues, and jointly provide assistance and relief to humanitarian and disaster events in the region.<sup>37</sup>

### ***ASEAN Regional Forum (ARF)***

ARF is an important forum for security dialogue. It draws together members, which have a bearing on the security of the Asia Pacific region. It provides a setting in which members can discuss current regional security issues and develop cooperative measures to enhance peace and security in the region. The 27 members included the 10 ASEAN member states (Brunei, Cambodia, Indonesia, Laos, Malaysia, Burma, Philippines, Singapore, Thailand, and Vietnam), the 10 ASEAN dialogue partners (Australia, Canada, China, the European Union, India, Japan, New Zealand, the Republic of Korea, Russia, and the United States), one ASEAN observer (Papua New Guinea), as well as the Democratic People's Republic of Korea, Mongolia, Pakistan, Timor-Leste, Bangladesh, and Sri Lanka.

### ***Association of Southeast Asian Nations (ASEAN)***

ASEAN is an inter-governmental arrangement formed by Indonesia, Malaysia, Philippines, Singapore, and Thailand to promote political, economic and social cooperation and regional stability. Brunei, Vietnam, Laos, Myanmar (Burma), and Cambodia later joined and became members. ASEAN Member States represent some of the most disaster prone countries in the world. ASEAN may help its members through agreements, structures, guidelines, and standards it has established for disaster management.

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

The IFRC is the world's largest humanitarian network that reaches 150 million people, and is comprised of over 17 million volunteers. IFRC acts before, during, and after disasters and health emergencies to meet the needs and improve the lives of vulnerable people. They are guided by Strategy 2020, which is a collective plan of action to tackle the major humanitarian and development challenges. IFRC focuses their work in three key areas: 1) disaster response and recovery, 2) development and 3) promoting social inclusion and peace.

### ***United Nations High Commissioner for Refugees (UNHCR)***

UNHCR is a global organization dedicated to saving lives, protecting rights, and building a better future for refugees, forcibly displaced communities and stateless people.

### ***World Health Organization (WHO)***

The WHO works through offices in more than 150 countries. WHO staff work side by side with governments and other partners to improve health. Their primary role is to direct and coordinate international health within the United Nations' system. In addition to the above organizations, Singapore is also a member of the following international organizations:

Asian Development Bank (ADB), Alliance of Small Island States (AOSIS), Asia-Pacific Economic Cooperation Forum (APEC), Arctic Council (observer), Bank for International Settlements (BIS), Food and Agriculture Organization (FAO), Financial Action Task Force (FATF), Group of 77(G-77), International Atomic Energy Association (IAEA), International Bank of Reconstruction and Development (IBRD), International Civil Aviation Organization (ICAO), International Chamber of Commerce (ICC) (national committees), International Council on Clean Transportation (ICCT), Institute of Catastrophe Risk Management (ICRM), INFOCOMM Development Authority of Singapore (IDA), International Hydrographic Organization (IHO), International Labor Organization (ILO), International Monetary Fund (IMF), International Maritime Organization (IMO), International Mobil Satellite Organization (IMSO), Interpol, International Olympic Committee (IOC), Inter-Parliamentary Union (IPU), International Organization for Standardization (ISO), International Telecommunications Satellite Organization (ITSO), International Trade Union Confederation (ITUC), Multilateral Investment Guarantee Agency (MIGA), Organization for the Prohibition of Chemical Weapons (OPCW), Pacific Alliance (observer), United Nations (UN), United Nations Conference on Trade and Development (UNCTAD), United Nations Education, Scientific, Cultural Organization (UNESCO), United Postal Union (UPU), World Customs Organization (WCO), World Intellectual Property Organization (WIPO), World Meteorological Organization (WMO), World Trade Organization (WTO).<sup>38</sup>



## Singapore Government Departments Involved in Crisis Response

### Ministry of Defence (MINDEF) and Singapore Armed Forces (SAF)

The mission of MINDEF and the SAF is to enhance Singapore's peace and security through deterrence and diplomacy. Since 1970, the SAF has participated in a number of peace support operations and humanitarian assistance disaster relief (HADR) missions at both regional and international levels. Singapore helps fight the common threat posed by transnational security challenges and participates in overseas operations which provides assistance to other nations and enhances Singapore's own security. Since 1989, Singapore has participated in United Nations' (UN) peacekeeping, peace support, and other humanitarian missions and providing humanitarian assistance to countries in need. Singapore has also contributed to the multinational reconstruction efforts in Iraq and Afghanistan.<sup>39</sup> A list of the peace support operations and HADR missions at both regional and international levels is provided in the Foreign Disaster Activities section (under Operations) in this document.

### Changi Regional HADR Coordination Centre (RHCC)

The Changi RHCC was implemented to facilitate military-to-military coordination in HADR, supporting the military of a disaster affected state in coordinating assistance provided by foreign militaries. It provides flexible platform which allows both regional and extra-regional militaries to collaboratively and effectively implement a multinational disaster response effort. The Changi RHCC supports and complements the efforts of existing HADR mechanisms such as the UN Office for the Coordination of Humanitarian Affairs (UNOCHA) and the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management Centre (AHA Centre), which focus on supporting a disaster affected state's national disaster management authorities in coordinating the overall relief effort.<sup>40</sup>

RHCC's operations include day-to-day monitoring, sharing of information, and

planning on regional disasters; supporting disaster relief efforts through situation updates, coordination, and deployment of teams and mobile coordination units; and capacity-building efforts like workshops, forums, trainings, and exercises. Singapore is a hub for the regional HADR issues.<sup>41</sup>

Minister Ng and ASG Kang briefed the features of the RHCC in Singapore on 13 April 2015.<sup>42</sup>

The Changi RHCC is housed at the Changi Command and Control Centre (CC2C), Singapore, and leverages on ready facilities available at the CC2C for large-scale multinational operations and exercises. The RHCC will:<sup>43</sup>

- Focus on supporting a disaster affected state's military in coordinating assistance provided by foreign militaries.
- Support and complement other existing mechanisms such as the ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre) and UN Office for the Coordination of Humanitarian Affairs (OCHA), which focus on supporting a disaster affected state's national disaster management authorities in coordinating the overall relief effort.

Prior to predictable events such as a typhoon, the Changi RHCC will:

- Fuse information from regional disaster and early warning centers.
- Distribute the situation picture to the partner militaries through its OPERA Computer Information System (CIS).
- This will allow partner militaries to prepare their response mechanisms.
- If the affected state agrees, the RHCC will also concurrently conduct initial planning and scale up for a possible multinational military HADR operation.

If the natural event develops into a natural disaster:

- The Changi RHCC will continue to broadcast the updated situation picture, including contributions of international aid, to partner militaries to facilitate decision-making, and minimize duplication and gaps in the provision of foreign military assistance.

- This can be done via the OPERA\CIS as well as the RHCC's network of international liaison officers and linkages with operations centers of regional militaries.
- The Changi RHCC will also coordinate and facilitate the deployment of foreign military assistance into theatre.
- If required, the RHCC can forward deploy a scalable coordination unit to support the affected state's military in coordination efforts on the ground.
- Once the disaster relief efforts reach a steady state and the affected state's military is able to coordinate the foreign military assistance provided without external support, the Changi RHCC will draw down its operations.

The Changi RHCC hosted its first multinational HADR exercise (Ex COORES) in January 2017 (Photo 2).<sup>44</sup>

Exercise Coordinated Response (Ex COORES) 2017 was conducted from 23 to 25 January 2017 at the Changi Command and Control Centre in Singapore, and was co-organized by the Armed Forces of the Philippines (AFP), the U.S. Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) and the Singapore Armed Forces (SAF)'s Changi

RHCC. Ex COORES aims to establish military linkages, enhance mutual understanding and interoperability, and strengthen military cooperation in HADR operations. The exercise had about 150 participants from 18 militaries from across the Asia-Pacific region and Europe, and observers from 12 international organizations, governmental agencies and non-governmental organizations (NGOs). The regional role of the RHCC was evident during the execution of Ex COORES itself, which was based around a scenario simulating two major disasters striking the Philippines in succession: a volcanic eruption at Mount Mayon followed by a Category 5 typhoon in the city of Legazpi. The RHCC sent an advance team to support the Philippine military's establishment of a multinational coordination center (MNCC) to coordinate incoming foreign assistance, which allowed militaries as well as civilian agencies to familiarize themselves with its concept of operations in anticipation of future HADR operations.<sup>45</sup>

The scenario provided valuable opportunities to test and exercise the working process in the coordination of a multinational military HADR efforts, from the perspective of both the affected state and the assisting militaries. Participants were able to familiarize with both the AFP MNCC and the Changi RHCC's concept of



Photo 2: Exercise Coordinated Response (Ex COORES) 2017

operations, in anticipation of cooperation in future HADR operations. The U.S. CFE-DM contributed to Ex COORES 2017 by providing its expertise in the development of the exercise scenario and in exercise control, as well as facilitating large-group discussions on the best practices in conducting HADR operations. During the exercise, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) also played its part in enhancing civil-military understanding, by demonstrating the operations of its Humanitarian Country Team.<sup>46</sup>

The Changi RHCC and CFE-DM have recently signed a Memorandum of Understanding (MOU) in January 2017 showing growing cooperation between the U.S. and Singapore. The MOU establishes a framework for cooperation between them (Photo 3).<sup>47</sup>



Photo 3: MOU Between the RHCC and CFE-DM

## Singapore Civil Defence Force (SCDF)

The Singapore Civil Defence Force (SCDF) maintains a dedicated 76-man standby contingent round-the-clock codenamed Operation Lionheart where its core function is to provide urban search and rescue and/or humanitarian relief assistance to countries afflicted by major disasters. The Operation Lionheart contingent comprises rescuers from the SCDF's elite Disaster Assistance & Rescue Team (DART) and from the frontline units including Operationally Ready National Service (ORNS) men. They are equipped with specialized equipment including life detecting devices and lifting and cutting tools to aid them.

DART is highly trained in urban search and rescue, height rescue, medical trauma incidents, water search and rescue, and heli-bucket

operations. Besides rescuers, the contingent also consists of search dogs and technical experts such as civil engineers and doctors who specialize in trauma and emergency medicine.<sup>48</sup> Photo 4 shows a commander of Ops Lionheart Contingent discussing tactical plans with the International Urban Search and Rescue Teams during the Nepal Earthquake response in 2015.<sup>49</sup>

The SCDF has an on-going program with several Asia-Pacific and European countries to exchange views and experiences on emergency preparedness and disaster management. It has United Nations Disaster Assistance and Coordination (UNDAC) trained officers on stand-by for deployment under UNOCHA to disaster-affected countries for disaster assessment and coordination. It is also one of the founding members of the Asia-Pacific Humanitarian Programme (APHP) under UNOCHA to support UNDAC teams and it has officers who are APHP members on stand-by for deployments. As part of SCDF's effort for Global Humanitarian Outreach, SCDF has obtained the International Search and Rescue Advisory Group (INSARAG) External Classification of its Operation Lion Heart Contingent as a Heavy Urban Search and Rescue (USAR) Team, being the first in Asia to attain this classification. This seal of approval (classification) allows disaster affected countries to regard SCDF's USAR capabilities favorably when prioritizing acceptance of international response support.<sup>50</sup>

The SCDF has two training establishments - the Civil Defence Academy (CDA) and National Training Service Institute (NSTI). Its CDA has assisted in providing training to rescue/firefighting outfits to countries such as Australia, Bhutan, Brunei, Cape Verde, China, Cyprus, Ghana, India, Malta, Malaysia, Qatar, and UAE. It has also established collaborations with regional organizations such as the Japan International Cooperation Agency (JICA) which is done in conjunction with the Ministry of Foreign Affairs (MFA), the Asian Disaster Reduction Centre (ADRC) and the Asian Network of Major Cities 21 (ANMC 21) to conduct courses for other countries at the CDA. Besides collaborations in conducting courses, SCDF maintains an active role in regional organizations such as the ASEAN Committee on Disaster Management (ACDM), as well as the sectoral forums of the ASEAN Regional Forum (ARF) and Asia Pacific Economic Cooperation (APEC).

Since 1990, it has been deployed throughout the Asia-Pacific region to render humanitarian



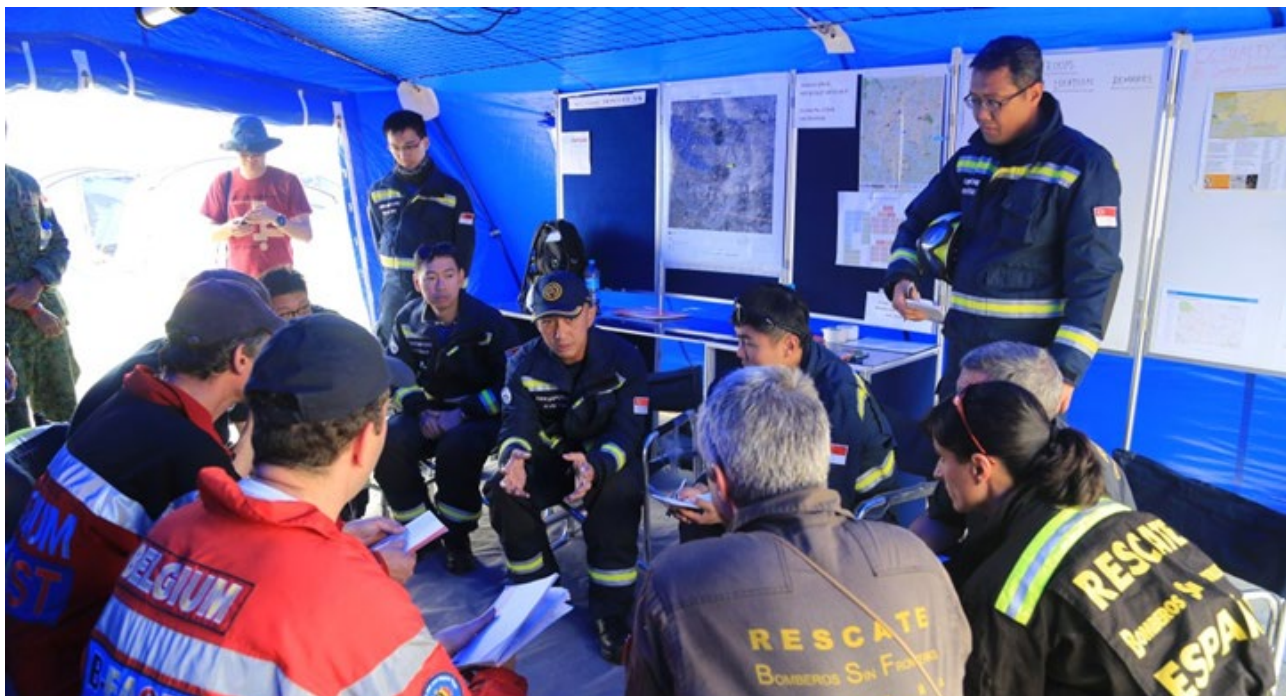


Photo 4: Search and Rescue Teams (Nepal Earthquake)

assistance to countries hit by major disasters. Its most recent deployment was as part of the Home Team contingent to Nepal to conduct rescue and recovery operations and to provide humanitarian aid in the immediate aftermath of an earthquake. The list of Operation Lionheart missions since 1990 include:<sup>51</sup>

- Palembang, Indonesia, Peat Land Fire (2015)
- Nepal, Earthquake (2015)
- Chiang Mai, Thailand Forest Fire (2015)
- Kelantan, Malaysia Floods (2014)
- Japan, Earthquake (2011)
- Christchurch, New Zealand, Earthquake (2011)
- Padang City, Sumatra Earthquake (2009)
- Sichuan Earthquake (2008)
- Central Java Earthquake (2006)
- South Asian Earthquake, Muzaffarabad, Pakistan (2005)
- Rokan Hilir Bush Fires, Sumatra, Indonesia (2005)
- Sumatra Earthquake, Nias Island, Indonesia (2005)
- Asian Tsunami Disaster, Khao Lak, Thailand (2004)
- Asian Tsunami Disaster, Aceh, Indonesia (2004)
- Tai Chung County Earthquake (1999)
- Highland Towers Collapse in Kuala Lumpur, Malaysia (1993)

- Baguio City Earthquake, Philippines (1990)

Domestically, the SCDF exists to ensure the safety of the population of the economy to near-normal condition during any eventuality. Its main roles are to provide fire-fighting, rescue and emergency medical services; as well as formulate, implement and enforce regulations on fire safety and civil defense shelter matters. To fulfil its roles, the SCDF has established four systems to cater to Singapore's emergency needs including Warning, Protection, Rescue, Command, Control and Communications.<sup>52</sup>

## Internationally Focused Organizations in Singapore

Singapore is currently home to around 140 international non-profit organizations. The prominent ones include:<sup>53</sup>

### **World Bank Group**

The World Bank Group's agreement with Singapore will increase the focus on solutions to address urban development challenges, infrastructure financing, information communications technology and accounting and auditing services.

### ***Worldwide Fund for Nature***

The Worldwide Fund for Nature (WWF) is one of the world's largest environmental conservation NGOs. In March 2006, it opened its Asia-Pacific office in Singapore. WWF currently employs over 20 staff in Singapore, who oversee and develop all of WWF's conservation projects in this region, including events and programs, and educational and outreach initiatives. It also conducts training workshops for corporate partners in the region (e.g. The One Planet Leaders Asia Pacific Executive Program).

### ***World Vision International***

As one of the largest humanitarian organizations, World Vision International (WVI) has been working to serve the well-being of children in poverty across the world. WVI was one of the first international non-profit organizations to set up Asia Pacific HQ operations in Singapore. It recently expanded its Asia Pacific Office in Singapore to include South Asia & Pacific. The Singapore office manages many of its global programs. In particular, WVI has located its Asia Pacific Humanitarian and Emergency Affairs unit in Singapore, which deploys supplies, volunteers and funds during emergency response. WVI also works with industry associations and logistics companies to leverage on Singapore as a hub for humanitarian response efforts.

### ***Asian Venture Philanthropy Network***

The Asian Venture Philanthropy Network (AVPN) was set up in Singapore in 2011. Following the success of the European Venture Philanthropy Network which has more than 140 members in 20 countries in Europe, the AVPN aims to grow and develop venture philanthropy in Asia Pacific. AVPN will build a coalition of individuals and organizations who want to help non-profits achieve impact and scalability in the region. It provides a range of services to address the needs of its member using Singapore as its regional base.

### ***Save the Children***

Save the Children (SC) is the leading independent organization creating lasting change in the lives of children in need around the world, operating in over 120 countries with more than 15,000 employees and raising US\$1.3 billion annually. In 2010, Save the Children's work reached 100 million children.

Also in 2010, SC initiated a global restructuring to consolidate 34 regional offices into seven regional headquarters (RHQs). Two of its seven RHQs are now co-located in Singapore to form the Asia Regional Office, which oversees 40 percent of its global programs and covers core management of its operations in 15 countries across South & Central Asia and Southeast and East Asia. SC's Asia Regional office in Singapore will lead SC's strategy for Asia, including regional implementation and resource allocation of global campaign strategies, human resource management and training, IT systems management and training, emergency response management, and security and safety management.

### ***International Air Transport Association***

The International Air Transport Association (IATA), founded in April 1945, aims to represent, lead and serve the airline industry. IATA has over 230 members from 118 countries and is the prime vehicle for inter-airline cooperation. Since establishing its Asia Pacific headquarters in Singapore in 1994, IATA made the decision to significantly ramp up its regional headquarters in 2005, in particular increasing the number of courses available in their IATA Training and Development Institute (ITDI) and consolidating more regional functions within the Singapore office as well as increasing its geographical coverage responsibilities. With staff strength of about 100 currently, IATA recently signed an updated Memorandum of Understanding with the Singapore Government, and also held its inaugural aviation human capital summit in Singapore in 2011.<sup>54</sup>

## **Foreign Disaster Management Activities**

Singapore has an on-going exchange program with several countries in the Asia-Pacific region and Europe. The various emergency authorities in Singapore, especially the Ministry of Home Affairs, the Singapore Civil Defence Force and the Singapore Police Force meet their respective foreign counterparts from time to time to exchange views and experiences on emergency preparedness and disaster management.<sup>55</sup>

Over the past years, Singapore was involved in the following areas in co-operation in disaster management:



## ***International Relations Program***

Singapore has an on-going exchange program with a number of countries from the Asia-Pacific and Europe. The various emergency authorities in Singapore, especially the Ministry of Home Affairs, the Singapore Civil Defence Force, and the Singapore Police Force meet their respective foreign counterparts from time to time to exchange views and experiences on emergency preparedness and disaster management.

## ***Overseas Rescue Assistance***

The Singapore Civil Defence Force has since assisted the Philippines in the Baguio Earthquake rescue operation in 1990 and Malaysia in rescue operation in the collapse of the Highland Towers in Kuala Lumpur in 1993. This contingent is registered with the United Nations Disasters Reduction Organization (UNDRO) as an International Search and Rescue Team.

## ***Training***

The Singapore Civil Defence Force has provided assistance to some of its ASEAN neighbors in rescue and firefighting. Some examples include the training attachments for the Brunei fire services and training for the Special Malaysia Disaster Assistance and Rescue Teams (SMARTs). A number of Singapore Civil Defence Force's personnel were attached to the fire services of Japan and Hong Kong for training in order to benefit from the experiences of these countries.

The Singapore Civil Defence Force also offers its training courses on Urban Search and Rescue and Emergency Behavior Management to its ASEAN neighbors. These training will be conducted with realism in the Civil Defence Academy, with its modern innovation like training simulators and facilities.

Singapore values the exchange of ideas and sharing of expert knowledge and technology in disaster prevention and management. They have on-going programs with countries in the Asia-Pacific, Europe, and the United States. Singapore has been learning and adopting suitable ideas for the use in local context and has been able to develop proficiency in some areas of disaster preparedness response, particularly in the area of disaster prevention and education, and in handling and mitigating disasters in urban environment.

Singapore and the United Nations Office for Disaster Risk Reduction (UNISDR) joined forces to strengthen the disaster risk management

capacity of Small Island Developing States (SIDS) and other countries that are on the front line of climate change.

The first joint specialized training course was held in Singapore and it provided practical support for the implementation of the Sendai Framework for Disaster Risk Reduction in several countries and territories, including Fiji, Mauritius, China, Panama, Pakistan, Seychelles, Solomon Islands, Trinidad and Tobago, India, Sudan, Zimbabwe, and Palestine.

The Sendai Framework is a voluntary, non-binding agreement which recognizes that the State has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders. It aims for the following outcome:

The substantial reduction of disaster risk and losses in lives, livelihoods and health in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.<sup>56</sup>

During the training course, representatives from Singapore and UNISDR shared their expertise on early warning systems, hazard and vulnerability assessment, emergency preparedness plans, resilient public health systems, climate change adaptation and mitigation measures, and sustainable urban planning.<sup>57</sup>

Singapore itself has benefited from training provided by other countries and international organizations.

In 1992, the Singapore Cooperation Programme (SCP) was established to serve as the primary platform in which Singapore gives various technical assistance programs. Through the SCP, the range and number of training programs were increased to share Singapore's development experience with other developing countries. To date (2017), Singapore has sponsored training courses and study visits for over 90,000 officials from more than 170 countries. The SCP is managed by the Technical Cooperation Directorate of the Singapore Ministry of Foreign Affairs.<sup>58</sup>

## **Procedures to Request Support for Humanitarian Assistance**

For Singapore, the lead ministry to manage requests for support in humanitarian assistance from affected states is the Ministry of Foreign

Affairs (MFA). Such requests for assistance can be made to the international community, or bilaterally through Singapore's embassies or missions in the Affected States. At the operational level, such requests can also be made directly to the National Disaster Management Organization (NDMO) or the established National Focal Point (NFP) of Singapore, which is the Singapore Civil Defence Force (SCDF).<sup>59</sup>

Any requests for specific assets or capabilities, such as the military, will be forwarded to the respective agencies to support. For instance, the Ministry of Defence (MINDEF) will assess the request for military assistance and a Joint Operations Planning Group (JOPG) will be convened to process, plan and coordinate such requests.<sup>60</sup>

## Military Cooperation (Training and Exercises)

### *Exercise COORES 2017*

Representatives from 18 militaries gathered in Singapore for an Exercise Coordinated Response (ex COORES) was designed to strengthen cooperation in the area of humanitarian assistance and disaster relief (HADR). Organized Singapore, the Philippines, and the United States, the exercise was a good example of the growing cooperation between the United States and its allies and partners in Southeast Asia on HADR. Ex COORES was done with the Singapore Armed Forces' (SAF's) RHCC along with the Armed Forces of the Philippines (AFP), and the United States Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM). In a sign of growing cooperation between the United States and Singapore, on the sidelines of Ex COORES, the director of Changi RHCC, Colonel Lee Kuan Chung, and the director of CFE-DM, Joseph D. Martin, SES inked a memorandum of understanding to establish a framework for cooperation between the two bodies.<sup>61</sup>

### *Exercise Deep Sabre 2016*

From September 27-30, 2016, the third multinational PSI (Proliferation Security Initiative) exercise was hosted by Singapore, Exercise Deep Sabre. It involved more than 800 personnel from 21 countries including Canada, Germany, Japan, the Republic of Korea, Laos, New Zealand, the United Kingdom and the United States.

During the exercise, participants took part in a series of shore and sea activities designed to

promote capacity building among participating countries. Part of the exercise included table-top policy simulation with representatives from border control, customs, defense, and foreign affairs, legal and military agencies on key counter-proliferation policy dilemmas.

A simulated maritime interdiction of a merchant vessel suspected of carrying illegal WMD-related materials; and a port search demonstration on a shipping container suspected of containing WMD-related materials led by Singapore Customs, together with the Singapore Armed Forces Chemical, Biological, Radiological and Explosives (CBRE) Defence Group and Singapore Civil Defence Force will also be performed. This will take place in the South China Sea, and the Changi Naval Base.<sup>62</sup>

### *Exercise Safkar Indopura*

The Singapore and Indonesian armies conduct a bilateral exercise on an annual basis. A combined battalion field exercise conducted alternately in each of the two countries, was hosted by Singapore. The exercise included professional exchanges, cross training on urban operations, live firing, a map training exercise, and a combined field training exercise.<sup>63</sup>

## Operations

Since 1970, the SAF (Singapore Armed Forces) has participated in a number of peace support operations and humanitarian assistance disaster relief (HADR) missions at both regional and international levels.<sup>64</sup>

### *Forest Fires in Sumatra, Indonesia (Oct 2015)*

Following Indonesia's acceptance of the Singapore Government's offer of haze assistance, the Singapore Armed Forces (SAF) deployed personnel and assets from the Singapore Army, and the Republic of Singapore Air Force (RSAF) to assist in fighting forest fires in Sumatra, Indonesia. They were accompanied by a six-man Disaster Assistance and Rescue Team (DART), and equipment from the Singapore Civil Defence Force (SCDF).

### *Earthquake in Nepal (Apr 2015)*

A 7.8 magnitude earthquake struck Nepal on 25 Apr 2015, killing thousands of people, collapsing buildings and triggering an avalanche on Mount Everest. The SAF deployed a C-130 aircrafts to airlift the Singapore relief contingent and their equipment to assist in the affected

area (Photo 5).<sup>65</sup> The contingent consisted of the Changi Regional Humanitarian Assistance and Disaster Relief (HADR) Coordination Centre advance team and members of the Singapore Civil Defence Force and Singapore Police Force. Singapore will continue to work with the Nepalese authorities and other agencies to help with rescue and aid efforts.

### ***Forest Fires in Chiang Mai, Thailand (Mar 2015)***

Thailand was hit by fierce forest fires in March 2015 and the Singapore Armed Forces (SAF) was called upon to assist. Equipped with a 5,000L water bucket from the Singapore Civil Defence Force (SCDF), the SAF's helicopters were mobilized to help. After almost two weeks, with fewer hotspots and the haze in Chiang Mai lifted, the SAF and SCDF concluded their firefighting operations in northern Thailand.

### ***Flood in Kelantan, Malaysia (Dec 2014)***

Malaysia was hit by one of the worst floods in decades in Dec 2014. When the Singapore Armed Forces (SAF) C-130 transport plane flew over Kelantan on 30 December, all that the soldiers in the flight could see were rooftops of submerged houses and buildings. Onboard the flight was the SAF water purification team which was in route to the north-eastern state of Peninsular Malaysia, one of the worst affected areas. Their mission was to produce clean drinking water for the affected residents.

### ***Air Disaster - AirAsia Flight QZ8501 (Dec 2014)***

The Singapore Armed Forces (SAF) joined international search and recovery efforts for AirAsia plane, flight QZ8501, which crashed in route from Surabaya, Indonesia to Singapore on 28 Dec 2014.

### ***Air Disaster - MAS Flight MH370 (Mar 2014)***

The SAF has supported the Search and Locate operation in the South China Sea for the missing MAS aircraft flight MH370 with C-130 aircraft, a Formidable-class frigate (RSS Steadfast) with a Sikorsky S-70B naval helicopter on board, a Victory-class missile corvette (RSS Vigour) as well as a submarine support and rescue vessel with divers on board.<sup>66</sup>

Older international HADR efforts and peace support operations include:<sup>67</sup>

- During the New Zealand earthquake in February 2011, 116 SAF personnel, a C-130 transport aircraft and a KC-135 tanker aircraft were deployed to Christchurch to provide disaster relief and to support the evacuation of civilians and emergency workers.
- Since 2009, more than 700 sailors, soldiers and airmen have operated under the ambit of the multinational CTF 151 as part of the counter-piracy effort in the Gulf of Aden (GoA). In 2015, a task group comprising an RSN frigate and a naval helicopter was deployed to the GoA for the same mission under CTF 151.



Photo 5: SAF Loading Relief Supplies for Nepal Earthquake Assistance



- Since 2007, more than 350 SAF personnel have been deployed to Afghanistan to participate in the NATO-led International Security Assistance Force (ISAF) peace support operations and reconstruction efforts in Afghanistan.
- Indian Ocean tsunami (26 December 2004), more than 1500 SAF personnel were deployed to Indonesia and Thailand to provide HADR assistance in the largest SAF overseas operation conducted so far. The SAF deployed three Landing Ship Tanks, eight CH-47 Chinook and four Super Puma helicopters, six C-130 transport aircraft and two F-50 utility aircraft for the relief effort.
- Between 2003 and 2008, more than 990 SAF personnel participated in the multinational effort to assist in the reconstruction of Iraq.
- Timor-Leste, the SAF, in support of the UN peacekeeping mission in Timor-Leste, contributed over 1000 personnel and equipment like Landing Ship Tanks and UH-1H helicopters in the international effort to restore peace and security to Timor-Leste (between 1999 and 2003, and between 2008 and 2012).
- In 1993, four Super Puma helicopters and 65 SAF personnel were dispatched to Cambodia to assist the UN Transitional Authority in Cambodia (UNTAC) (the UN mission overseeing the electoral process in Cambodia).
- Participation in the UN Iraq Kuwait Observer Mission (UNIKOM) in 1991 to monitor the demilitarized zone along the Iraq-Kuwait border after the first Gulf war. The SAF had deployed a total of nine teams by the time the mission ended in 2003.
- A 14-man team was deployed to Namibia, Southwest Africa to assist the UN Transition Assistance Group (UNTAG) during the country's elections in 1989.
- A 47-man team was deployed in 1970 to provide humanitarian assistance to East Pakistan (now Bangladesh) when the country was hit by a deadly cyclone.

## Evacuation from Affected States

In the event of an unprecedented natural disaster in the region, the Ministry of Foreign Affairs of Singapore (MFA) will work with the affected state government to repatriate Singapore citizens. Once approval has been given by the affected state, MFA will work with relevant agencies in Singapore to facilitate the repatriation of Singapore citizens back to Singapore.<sup>68</sup>

## Women, Peace and Security

In October 2000, the United Nations Security Council passed Resolution 1325 (UNSCR 1325) and it helped recognize the pivotal link between gender equality, international peace and security.<sup>69</sup> The blueprint for Women Peace and Security (WPS) is rooted in UNSCR 1325.<sup>70</sup> Though humanitarian crises cause widespread and often unavoidable destruction, it does not impact everyone equally. Women are frequently among the most affected in crises, especially when they are poor. Natural disasters have a disproportionate effect on women. For example, females often lose their shelter and face a reduction in economic opportunities in the aftermath of a disaster. Women in crises can also be victims of violence.<sup>71</sup> Experiences and needs of women and girls differ from those of men and boys in conflict and post-conflict situations, particularly in relation to human rights violations such as sexual and gender-based violence.<sup>72</sup>

The UNSCR 1325 is the first formal document highlighting women's role in conflict situations. This international legal framework that can be used to provide the basis of why and how women's participation could lead to more secure peace-building during humanitarian crises including natural disasters. The document provides an understanding of the unique role women play in crises based on four pillars – participation, prevention, protection, and relief and recovery.<sup>73</sup> UNSCR 1325 affirms the role of women in the prevention and resolution of conflicts and peacebuilding, and stresses their equal participation and full involvement in all efforts for the promotion of peace and security. It also affirms the need to integrate a gender perspective across United Nations operations.<sup>74</sup>

The resolution was an important international step in recognizing women's critical role in peace and security. The impact of the resolution

on women and children in the region and the implications surrounding the resolution are important during periods of natural disasters. The UN Security Council (in 2000) noted the need to increase women's participation and influence in conflict resolution, peace keeping and peace building and to highlight, prevent and combat the negative impact of armed conflict on women. Seven more resolutions have since been adopted and together they constitute the international agenda for WPS.<sup>75</sup> Although UNSCR 1325 on WPS is recognized internationally, its promise to transform women from victims to peacebuilders has been criticized by not being realized and put into practice. Women's International League for Peace & Freedom (WILPF) and other civil society organizations have routinely called for clearer monitoring and evaluation of the resolution by the UN and its Member States.<sup>76</sup>

There are organizations within Singapore that support this WPS agenda. The Singapore Committee for UN Women is a non-profit organization working towards women's empowerment and gender equality in the region. It originally functioned as a National Committee of the United Nations Development Fund for Women (UNIFEM). In July 2010, the United Nations General Assembly created UN Women, the United Nations Entity for Gender Equality and the Empowerment of Women. UNIFEM merged with other women's entities to bring together resources and under the United Nations to form UN Women. The Singapore Committee for UN Women support programs, which provide women and girls with access to education, healthcare, economic independence and a life free of violence.<sup>77</sup>

The Singapore Committee for UN Women's Mission includes the following three efforts:<sup>78</sup>

- **Ending Violence Against Women** - promote actions to eliminate violence against women, including projects in the areas of: HIV/AIDS, female infanticide, trafficking, forced prostitution, domestic violence, sexual abuse, rape and other various forms of abuse.
- **Economic Empowerment Programs** - support women in developing livelihood, business and entrepreneurial skills that will enable them to access local, national and global markets. Projects also assist women in gaining access to financial services, technology and information.

- **Governance and Leadership Programs** - give women and girls a voice and visibility by encouraging their participation in the decision making processes that shape their lives.

The Singapore Committee for UN Women's Mission has provided support to the following beneficiaries:<sup>79</sup>

- Women, Peace and Security in Aceh (2009)
- Humanitarian Organisation for Migration Economics (2007)
- Anti-Trafficking Program in Mekong Region (2007-2008)
- Cambodian Women's Crisis Center (2007)
- Anti-Trafficking Program in Batam (2001-2006)
- UN Trust Fund to End Violence Against Women (2005)
- East-Timor Medical Mission (2004)
- Laos Woven Dreams Project (2002)
- Nepal Bhotia Education Centre (NTEC) (2000)
- Karenni National Women's Organisation (KNWO) Midwives Training Project (1999)
- Karreni National Women's Organisation (KNWO) Animal Husbandry Pig Rearing Project (1999)
- Bintan Education (1999)
- Vietnam Sao Mai Project (1998)
- Vietnamese Scholarship Project (1998)
- Vietnam Sewing and Embroidery Project (1998)
- Bintan Medical Mission (1998)

The Singapore Committee for UN Women's Mission does a lot of work domestically in Singapore. This includes the following programs:<sup>80</sup>

- **Biz@TIP:** A campaign and conference in partnership with Singapore's InterAgency Taskforce on TraffickingIn-Persons, BIZ looks at four of Singapore's biggest industries to bring their business leaders together, discuss how to effectively combat trafficking, and develop concrete industry roadmaps to achieve these goals.
- **Project Inspire:** Project Inspire presents 1835 year olds with a 5minute platform to pitch their inspired idea (to create a better world of opportunities for women and girls in Asia Pacific, the Middle East and Africa) to the world and win a U.S. grant.

It was launched in 2011 in celebration of the 100th anniversary of International Women's Day.<sup>81</sup>

- **Girls2Pioneers:** A long-term program to encourage more girls to enter careers in Science, Technology, Engineering & Mathematics through fun and innovative day camps, field trips and mentorship to spark and sustain their interests.
- **HeForShe:** A HeForShe is a solidarity movement for gender equality that brings together one half of humanity in support of the other half of humanity, for the benefit of all. Singapore Committee for UN Women supports the mission of UN Women to unify efforts.
- **Help Anna:** A site dedicated to tell the stories of women and girls who have been subjected to violence and abuse. Visitors of the site can do their part by encouraging victims of such to reach out to various organizations and communities.
- **Day off Campaign:** Each year an estimated two million women from Myanmar, Indonesia, Nepal, Thailand and the Philippines migrate overseas to seek work. These women risk exploitation in their host countries and enjoy little, if any, redress in society. Of the 170,000 foreign domestic workers currently employed in Singapore, over half do not enjoy a regular day off. The goal of this campaign is to have more Singaporeans agree that domestic workers are entitled to a day off.

Singapore also has Aidha, a registered non-profit organization in Singapore, dedicated to helping lower income and migrant women create sustainable futures through financial education. Aidha is a micro-business school for foreign domestic workers in Singapore. Aidha prepares migrant women to start small successful businesses in their home countries to support their families.

Singapore has engaged in UN Women's public awareness campaigns to stop domestic violence, end trafficking of women, and to ensure that foreign domestic workers can take advantage of their recently gained weekly day off. UN Women is a leading advocate of the UNSCR 1325.<sup>82</sup> Women's rights activists in Singapore work to prevent human trafficking, migrant worker's rights, social justice and equality.<sup>83</sup>

The Constitution of Singapore states that all persons are equal before the law and entitled

to the equal protection of the law, and the government generally respects these provisions. Singapore has made progress in many areas in regards to gender equality. Despite the progress Singapore has made, gender equality has not been achieved in terms of women's educational attainment, economic empowerment or political participation.<sup>84</sup> The employment rate for women in Singapore is at its highest levels, reaching 76 percent for the working ages from 25 to 54.<sup>85</sup> Although the employment rate for women is at an all-time high, there are still issues surrounding gender equality. There are many women doctors, lawyers, bankers, entrepreneurs, office workers, and legislators, but some women are still not equally paid as their male counterparts for the same job.<sup>86</sup>

In the 2014 Labour Force Statistics, it was stated that women earn less than men in all occupational categories except clerical and support. In most categories, this differential is more than 10 percent. Singapore women are poorer than men and face a higher risk of poverty than men in all ages.<sup>87</sup>

Another common issue with women in the workforce is the men's lack of willingness to help with household chores. About four in 10 women in Singapore agree that a wife's first role is to look after her husband. According to the Global Report on Attitudes on Gender Equality, Singaporean women also believe that it is likely to cause problems if a woman earns more money than her husband.<sup>88</sup>

According to the World Economic Forum (WEF), in 2016, Singapore is ranked 55 out of 144 countries in the Global Gender Gap Report. The report evaluates countries on their gender gaps based on four main areas: economic participation and opportunity, educational attainment, health and survival, and political empowerment.<sup>89</sup> Singapore has a low overall rank of 55, which is positive. The lower the number, the less of a gender gap the country has. However, this number is an average number meaning that Singapore has done well in closing the gaps in many of the areas.

Figure 3 depicts Singapore's Global Gender Gap report for 2016.<sup>90</sup> As you can see on the Figure, that Singapore has an overall score of 0.712, meaning overall Singapore has closed approximately 71 percent of the average gender gap and approximately 30 percent remains to be closed across the four Index dimensions in order to achieve universal gender parity. 100 percent would be perfect, but no country has reached



that. It provides a country snapshot of the gender gap in the four sub-indexes. The gaps between women and men on economic participation and political empowerment remain wide. Figure 3 shows indicates only 79.3 percent of the economic participation and opportunity gap has

been closed and only 1.1 percent of the political gap has been closed. However, Singapore has done well in the areas of educational attainment (97.5 percent closing the gap), and health and survival (96.7 percent closing the gap).<sup>91</sup>



# 0.712 / 55

# SGP

Figure 3: Singapore's Global Gender Gap Report for 2016



# SINGAPORE National Framework



# National Framework

Republic of Singapore is a small island city state with a total land area of approximately 232 square miles (600 square kilometers). The Singapore population is representative of a multi-racial population with approximately 2.9 million residents. The majority of the Singaporean populace (nearly 80 percent) dwells in urban areas which house approximately 4,700 high-rise apartments and public housing estates. The republic also has a bolstering business district made up of hundreds of high-rise commercial buildings, with some exceeding a height of over 3,000 feet (280 meters), mostly in its central business district.<sup>92</sup> Photo 6 depicts the skyline of the Singapore business district. Singapore is one of the world's leading financial centers.<sup>93</sup>

Geographically, Singapore lies outside the boundaries of the 'pacific Rim of Fire' and is not susceptible to the majority of natural disasters causing mass destruction in the region, such as earthquakes and volcanic eruptions. The republic

however has suffered variable man-made disasters and significant incidents which have affected the nation.<sup>94</sup>

Singapore believes in being prepared for major disasters and national preparedness plans are in place as to ensure minimum disruption by any disaster to its community, environment, and infrastructure. Singapore welcomes all efforts to promote and institutionalize emergency preparedness among its people, while developing and exercising contingency plans for a range of probable disasters to be implemented by a variety of emergency agencies in close-coordination. Where appropriate, Singapore serves as an international actor in humanitarian and disaster response through sharing their experience and rescue resources with nearby countries in need of assistance.<sup>95</sup>

Photo 7 depicts Fire & Disaster Asia (FDA) 2014 which was launched at the 2014 Singapore EXPO.<sup>96</sup> FDA seeks to offer solutions and introduce new technologies designed to enhance fire safety to South-east Asia's key markets such as Indonesia, Thailand, Philippines, Malaysia, and Singapore.



Photo 6: Singapore Business District





Photo 7: Singapore EXPO, Fire & Disaster Asia (FDA) 2014 Launching Ceremony

## National Policies, Plans, Frameworks, and Agreements

### Operational DM Frameworks

#### *Whole-of-Government Integrated Risk Management (WOG-IRM) Policy Framework*<sup>97</sup>

The Singapore government implements a cross-ministerial policy framework through a Whole-of-Government Integrated Risk Management (WOG-IRM) process, for disaster risk reduction (DRR) and disaster management. The WOG-IRM approach seeks to improve risk awareness at multiple levels. The framework provides an integrated approach to DRR awareness for the government and the general public. In addition, the framework recognizes cross-agency hazards that may receive less focus in the government system. WOG-IRM also incorporates medical response systems during emergencies, mass fatality management, risk reduction legislation for fire safety and hazardous materials, police operations, information and media management during crises, and public-private partnerships in emergency preparedness. The WOG-IRM policy framework in Singapore

operates in peacetime and in times of emergency. WOG-IRM develops a framework for all applicable agencies to work collaboratively within an established structure, with unified communication and synchronization to manage the risk. During peacetime operations, the home team consists of four fundamental agencies at the central government level.<sup>98</sup>

These four agencies constructing the peacetime home team are the Strategic Planning Office, the Home front Crisis Ministerial Committee (HCMC), the National Security Coordination Secretariat, and the Ministry of Finance at the policy layer. The Strategic Planning Office provides management and direction as the principal platform to direct and evaluate the overall development of the WOG-IRM framework. For the period of peacetime, the Strategic Planning Office assembles meetings four times a year for the permanent secretaries from the various ministries across government. In a crisis, the Home front Crisis Management system provides a ‘ministerial committee’ accountable for all crisis situations in Singapore.<sup>99</sup>

In the WOG-IRM framework, the HCMC is headed by the Ministry of Home Affairs (MHA). In peacetime, MHA is the primary

policy-making governmental body for safety and security in Singapore. In the occurrence of a national disaster, the MHA leads at the strategic level of incident management. The incident management system in Singapore is identified as the Home front Crisis Management System (HCMS). Under the HCMS, the SCDF is appointed as the Incident Manager, taking responsibility of managing the effects of disasters and civil emergencies.

HCMC oversight includes an administrative group known as the Home front Crisis Executive Group (HCEG), which is chaired by the Permanent Secretary for MHA. The HCEG is in charge of planning and managing all categories of disasters in Singapore. Within operations, there are various functional inter-agency crisis management groups with detailed duties, unified by the various governmental crisis management units. At the tactical layer, there are the crisis and incident managers who oversee service delivery and coordination. The Singapore government holds appropriate ministries responsible in accordance to the nature and scope of the disaster.<sup>100</sup>

Singapore's emergency preparedness program and disaster management initiatives are supported by various laws. The main legislation supporting emergency preparedness and disaster management activities in Singapore are:

**Civil Defence Act 1986**– This Act provides the legal framework for the declaration of a state of emergency and the deployment of operationally ready national service rescuers to support the SCDF.<sup>101</sup>

**Fire Safety Act 1993**– This Act provides the legal framework to impose fire safety requirements on commercial and industrial premises as well as the involvement of the management and owners of such premises in emergency preparedness against fires.<sup>102</sup>

**Civil Defence Shelter Act 1997**– This Act provides a legal framework to require all new houses and flats and suitable buildings owned by statutory boards to be provided with civil defense shelters and to designate any part of any building as civil defense shelters for use by persons needing to take refuge therein during a state of emergency, and to regulate the use of civil defense shelters.<sup>103</sup>

**Infectious Disease Act**– This act provides provisions for and deals with the prevention and control of infectious diseases.

**National Tsunami Response Plan**- The National Tsunami Response plan serves as a multi-agency government effort comprising of an early warning system, tsunami mitigation and emergency response plans, and public education.

## National Disaster Management Agency

### **Ministry of Home Affairs (MHA)**

The MHA is the primary policy and governing authority responsible for civil defense emergency preparedness and disaster management in Singapore. The MHA oversees two emergency agencies, the Singapore Civil Defence Force and the Singapore Police Force which are responsible for planning, coordination, and the implementation of DRR programs and activities. Several other Ministries, Statutory Boards, and government departments are also involved in supporting roles (e.g. the Ministry of Health). MHA leads at the strategic level of incident management for all DRR and disaster management activities.<sup>104,105</sup>

For civil emergencies –The **Singapore Civil Defence Force (SCDF)** is the primary agency for the implementation of disaster management activities.

Primary responsibilities of the SCDF include:

- Emergency response
- Fire safety enforcement
- Public protection
- Community engagement

For public health emergencies – The **Ministry of Health (MoH)** is the primary agency for the implementation of disaster management activities. Other relevant lead agencies include:

- Ministry of Communication and Information
- National Environment Agency (NEA)
- Ministry of Health (MoH)

### **Singapore Civil Defence Force and the Singapore Police Force**

SCDF and the Singapore Police Force are the primary agencies under the direction of the Ministry of Home Affairs (MHA) responsible for on-site disaster management. The SCDF is responsible for the administration of firefighting and rescue operations in the disaster affect

area and the transportation of casualties to hospitals for medical treatment. The Singapore Police Force is responsible for the security, investigation and traffic management as well as coordination matters. The SCDF also has an elite rescue team, the Disaster Assistance and Rescue Team (DART), to carry out complex rescue operations, including tunneling, Mass Rapid Transport rescue and high-rise rescue. DART is outfitted with state-of-the-art equipment, such as the robots, search cameras, fiber-optical scopes, thermal imaging cameras, trapped persons locator, as well as rescue dogs.<sup>106</sup> During the management of disasters, the SCDF and the Singapore Police Force are supported by additional government agencies:<sup>107</sup>

- The Ministry of Community Development is responsible for management of the homeless in respite facilities.
- The Ministry of Information and The Arts coordinates media relations and public information.
- The Ministry of Environment is responsible for removal of the deceased and debris disposal.
- The Public Works Department provides guidance on engineering and structural safety.
- The Public Utilities agencies are responsible for cutting power to affected areas, the diversion of power, gas and water supplies to facilitate the fire-fighting and rescue operations, and for the restoration of all utilities in the aftermath of a disaster.

## Humanitarian Action Policy

The initial responders in any emergency are the disaster-affected people and their local governments. When governments request international humanitarian support to respond to disasters, national legal systems are the main regulatory frameworks to ensure the protection of disaster-affected people. Humanitarian action is also regulated by binding and non-binding international humanitarian and human rights law, as well as the humanitarian principles of humanity, neutrality, impartiality, and independence.<sup>108</sup>

Regulation of international humanitarian action in Asia and the Pacific can be understood according to three categories:

- Binding regulatory agreements between States;

- Non-binding regulatory agreements between States; and
- Voluntary guidelines governing humanitarian action of State and non-State actors.

There are two binding agreements between States in Asia and the Pacific that regulate disaster preparedness and response action:

- ASEAN Agreement on Disaster Management and Emergency Response
- SAARC Agreement on Rapid Response to Natural Disasters

### ***ASEAN Agreement on Disaster Management and Emergency Response (AADMER)***<sup>109</sup>

AADMER is a legally-binding regional multi-hazard and policy framework for cooperation, coordination, technical assistance, and resource mobilization of disaster management in the 10 ASEAN Member States. The objective of AADMER is to provide an effective mechanism to achieve substantial reduction of disaster losses in lives and in social, economic and environmental assets, and to jointly respond to emergencies through combined national efforts and strengthened regional and international cooperation.

Through its Standard Operating Procedure for Regional Standby Arrangements and Coordination of Joint Disaster Relief and Emergency Response Operations (SASOP), the AADMER enables ASEAN Member States to mobilize and deploy resources for emergency response throughout the region. The AADMER was signed by the 10 ASEAN Member States in 2005 and entered into force in December 2009.

### ***South Asian Association for Regional Cooperation (SAARC) Agreement on Rapid Response for Natural Disasters (ARRND)***<sup>110</sup>

ARRND is a regional disaster management agreement that reinforces existing mechanisms for rapid response to disasters. ARRND obliges SAARC Member States to take legislative and administrative measures to implement agreement provisions. These include measures for requesting and receiving assistance; conducting needs assessments; mobilizing equipment, personnel, materials and other facilities; making regional standby arrangements, including emergency stockpiles; and ensuring quality control of relief items. ARRND was signed by SAARC Member States in 2011 and is in the process of being ratified by them.



## Protection in Humanitarian Action Framework

A secondary body of voluntary guidelines governs relations among humanitarian actors and between humanitarian actors and disaster-affected people. These guidelines apply to a variety of audiences within the international humanitarian community. The below list focuses on some of the most important humanitarian guidelines, but is not exhaustive.<sup>111</sup>

- Code of Conduct for the International Red Cross and Red Crescent Movement (RCRC) and NGOs in Disaster Relief;
- Sphere Handbook - Humanitarian Accountability Partnership Standard in Humanitarian Accountability;
- Inter-Agency Emergency Situation (IASC) Operational Guidelines on the Protection of Persons in Situations of Natural Disasters;
- Guiding Principles on Internal Displacement;
- Oslo Guidelines on the Use of Foreign Military and Civil-Defense Assets in Disaster Relief;
- Asia-Pacific Regional Guidelines for the use of Foreign Military Assets in Natural Disaster Response Operations;
- Management of Dead Bodies after Disasters Field Manual;
- Guidelines for Environmental Emergencies;
- IASC Guidelines for Gender-Based Violence Interventions in Humanitarian Settings and;
- IASC Gender Handbook in Humanitarian Action.

The Joint Standards Initiative is co-led by the Humanitarian Accountability Project (HAP), People in Aid, and the Sphere Project. Code of Conduct for the RCRC Movement and NGOs in Disaster Relief is a voluntary code adhered to by the RCRC Movement and participating NGOs. It lays down 10 points of principle to which signatory agencies commit to adhere in their disaster response work and describes the relationships they should seek with affected communities, donor governments, host governments and the UN system. To date (2017), 492 separate organizations have signed the Code of Conduct.

## Aid Policy

Singapore is an ASEAN Member State and therefore adheres to the established ASEAN Aid Policy. Where international aid is concerned, the AHA Centre is the first point of contact for ASEAN states in the event of a disaster. The AHA Centre is governed by NDMO representatives from all 10 ASEAN member states in their capacity as ACDM representatives and ASEAN National Focal Points. If a Government requests and/or accepts external assistance, a variety of international humanitarian actors may be asked to support disaster response and disaster response preparedness, including the UN, RCRC Movement, regional intergovernmental bodies, non-governmental organizations (NGOs), assisting Governments, and the private sector.<sup>112</sup> Established in 2011, the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) is responsible for the operational coordination of all activities envisaged under the AADMER. The AHA Centre facilitates co-operation and co-ordination among the ASEAN Member States, and with relevant United Nations and International organizations, in promoting regional collaboration. AHA Centre offers a range of tools and services, including trainings and capacity building of ASEAN National disaster management organization (NDMOs) and deployment of emergency response teams. ASEAN Disaster Monitoring and Response System (DMRS) and the ASEAN Disaster Information Network (ADInet) provide monitoring services and disaster information to NDMOs through web-based facilities. The AHA Centre also manages an inter-agency partnership framework between ASEAN and seven major international NGOs, called the AADMER Partnership Group (APG) to promote a civil-society approach to the implementation of the AADMER. The Secretariat of AHA Centre is located in Jakarta, Indonesia.

### *Aid Scenario*

Photo 8 depicts Singapore, Philippines and U.S. militaries during an organized multinational disaster relief exercise conducted in January 2017.<sup>113</sup>

## Government Disaster Response Plan

In Singapore, the lead agency for disaster response is the Singapore Civil Defence Force



Photo 8: Exercise Coordinated Response, Singapore 2017

(SCDF). It has a workforce of about 5,100 staff and operates on a three-tier command structure which consists of four Civil Defense Divisions (CDDs). The CDDs command 14 fire stations, which provide the resources for incident management on the ground. Satellite Fire Posts (SFPs) have also been established for firefighting and emergency response enabling faster response to incident sites whenever incidents occur. The SFPs, unlike fire stations, were built into existing buildings and infrastructure. The advantage of these SFPs is that they can be relocated quickly and at a low cost when the need arises. To date, the SCDF has established 22 SFPs within the community heartlands and residential districts.

In addition, the SCDF also operates two training institutions, namely the Basic Rescue Training Centre (BRTC) and the Civil Defense Academy (CDA). The latter is a purpose-built training academy, equipped with a wide range of training facilities. The CDA is dedicated to equipping not only SCDF officers, but also the international community with the knowledge and skills to protect and save lives and property.<sup>114</sup>

The SCDF has a well-developed disaster response framework. In the event of any major disaster, the SCDF will activate the national response plan, the Operations Civil Emergency (Ops CE) Plan, which outlines the work of the SCDF and all the Related Agencies (RAs) in the

management of an incident. Under this plan, the SCDF as the Incident Manager (IM) is in overall charge of multi-agency response. The IM directs and coordinates all the agencies' ground response forces through the Joint Planning Staff (JPS), consisting of representatives from all agencies) who support the IM with specialist advice for planning and mitigation of the incident.

The Ops CE Plan is exercised according to various scenarios, such as oil refinery fires, air crashes, fires in high-rise buildings and building collapses. Such exercises are conducted regularly on an annual basis to ensure that all agencies involved are familiar with their roles and function and to validate the capabilities for incident management. Singapore also has a response plan for international disasters. Under this plan, the SCDF has a rotating Overseas Rescue Contingent on standby at all times, ready at two hours' notice to render assistance. This Contingent was deployed in several regional incidents such as the 1990 Baguio City earthquake in the Philippines, the 1993 Kuala Lumpur 12-story condominium collapse, and the 1999 Taiwan earthquake.<sup>115</sup>

Singapore's emergency preparedness and disaster management activities are developed with the following main principles:<sup>116</sup>

- Man-made disasters can be prevented, and their affects, minimized through a set of stringent and comprehensive government

regulations related to fire and building safety, coupled with strict enforcement codes. Emergency and contingency plans shall be developed to respond effectively to a disaster should they occur. Such plans should also be tested through regular exercises and drills;

- The community should be educated on the need for and importance of emergency preparedness. Where possible, they should also be involved in exercises, training, and physical preparation;
- Emergency response and management of disasters should be a coordinated multi-

agency effort. All available expertise and resources should be coordinated and swiftly channeled to the disaster site to maximize the chances of survival of the injured and to minimize damage to infrastructure and;

- Restoration work and the rehabilitation of the injured should be an integral part of the total disaster management program.

## Government Agencies

Table 1 represents a list of Government Agencies.<sup>117</sup>

Organization	Resource
<p>Ministry of Communications and Information (MCI)</p> <p>Old Hill Street Police Station 140 Hill Street #01-01A, Old Hill Street Police Station, Singapore 179369 Tel : 1800-837-9655 (toll-free) Fax: +65 6837 9480 Email: MCI_Connects@mci.gov.sg</p>	<p>The MCI oversees the development of the info-com technology, cyber security, media and design sectors; the national library, national archives and public libraries; as well as Government's information and public communication policies.</p>
<p>Ministry of Culture, Community, and Youth (MCCY)</p> <p>Old Hill Street Police Station 140 Hill Street, #01-01A, Singapore 179369 Republic of Singapore Tel: +65 6338 3632 Fax: +65 6837 9459</p>	<p>The MCCY seeks to inspire Singaporeans through the arts and sports, deepen a sense of identity and belonging to the nation, strengthen community bonds, engage youths and promote volunteerism and philanthropy, to build a gracious and caring society we are proud to call home.</p>
<p>Ministry of Defense (MINDEF)</p> <p>MINDEF Building Gombak Drive Singapore 669645 Tel: 1800-367-6767 Fax: +65 6853 7894</p>	<p>The mission of MINDEF and the Singapore Armed Forces is to enhance Singapore's peace and security through deterrence and diplomacy, and should these fail, to secure a swift and decisive victory over the aggressor.</p>
<p>Ministry of Education (MOE)</p> <p>Customer Service Centre Ministry of Education, Singapore 1 North Buona Vista Drive Singapore 138675 Tel: +65 68722220 Fax: +65 67755826</p>	<p>The MOF focuses on development, rather than control. As such, their goal is to collaborate with industry experts to make Singapore a world-class financial and business hub. Given the rapid rate of technological development and a fast-moving environment, our regulatory policies and statutes must keep pace. Therefore, they actively review rules to ensure they remain relevant to the business and financial environment through close consultation with industry experts and key stakeholders.</p>

Table 1: Government Agencies in Singapore



Organization	Resource
<p>Ministry of Foreign Affairs (MFA)</p> <p>Tanglin, Singapore 248163  Tel : +65 6379 8000  Fax : +65 6474 7885  Email : mfa@mfa.sg</p>	<p>MFA is currently divided into 11 Directorates which deal with political and economic matters, and 7 Directorates which oversee matters relating to protocol, consular issues and the Singapore Cooperation Programme among others. The Corporate Affairs Directorate oversees organisational and resource management while the Human Resource Directorate and Diplomatic Academy manages the development of personnel and training. One third of our staff serves in the MFA's 50 overseas missions. In addition, we have 46 non-resident High Commissioners/Ambassadors based in Singapore and 31 Honorary Consuls-General/ Consuls abroad.</p>
<p>Ministry of Health (MOH)<sup>118</sup></p> <p>16 College Rd,  College of Medicine Building  Singapore 169854  Tel : +65 6325 9220  Fax : +65 6224 1677  Email : moh_info@moh.gov.sg</p>	<p>Through MOH, the Government manages the public healthcare system to ensure that good and affordable basic medical services are available to all Singaporeans. We achieve this through providing subsidized medical services while promoting individual responsibility for the costs of healthcare services. The population is thus encouraged to adopt a healthy lifestyle, taking responsibility for one's own health. Safety nets are provided however, to ensure that no Singaporean is denied access into the healthcare system or turned away by public hospitals because of lack of money.</p>
<p>Ministry of Home Affairs (MHA)</p> <p>New Phoenix Park  28 Irrawaddy Road  Singapore 329560  Tel: +64787010  Fax: +62546250</p>	<p>The Singapore Civil Defense Force (SCDF) is a uniformed organization under the purview of the Ministry of Home Affairs. The main role of SCDF is to provide fire-fighting, rescue and emergency medical services; mitigating hazardous materials incidents, as well as formulate, implement and enforce regulations on fire safety and civil defense shelter matters.<sup>119</sup></p>
<p>Ministry of Law (MINLAW)</p> <p>100 High Street  #08-02 The Treasury  Singapore 179434  Tel: 1800-CALL-LAW (1800 2255 529)  Fax: +65 6332 8842</p>	<p>The Ministry of Law plays the following key roles:</p> <ul style="list-style-type: none"> <li>• To formulate and review legal, intellectual property, land, insolvency, public trustee, moneylending, pawn broking, legal aid and community mediation policies, as well as legislation and strategies under MINLAW's purview;</li> <li>• To provide legal and policy input for other Ministries' proposed Bills and programmes;</li> <li>• To develop the legal services, alternative dispute resolution and intellectual property sectors and;</li> <li>• To regulate and license all law practice entities and register foreign-qualified lawyers in Singapore.</li> </ul> <p>The Ministry of Law's Community Legal Services Group handles matters relating to insolvency, public trustee, moneylending, pawn broking, legal aid and community mediation.</p> <p>The Ministry of Law also comprises these Statutory Boards and Agency:</p> <ul style="list-style-type: none"> <li>• Intellectual Property Office of Singapore</li> <li>• Singapore Land Authority</li> <li>• Land Surveyors Board</li> </ul>

Table 1: Government Agencies in Singapore (cont.)

Organization	Resource
<p>Ministry of Manpower (MOM) 18 Havelock Road #07-01 Singapore 059764 Tel: +6438 5122</p>	<p>Ministry of Manpower (MOM) mission is to develop a productive workforce and progressive workplaces, for Singaporeans to have better jobs and a secure retirement. Their vision is to develop a great workforce where Singaporeans can aspire to higher incomes and fulfilling careers. MOM also seeks to create great workplaces where companies have outstanding employment practices and organizational cultures.</p> <p>The four shared values of the MOM guide the behaviors and actions of MOMers towards building a Great Workforce and a Great Workplace for Singapore.</p> <p><b>People-centredness:</b> MOM succeeds by making people the heart of our work. Being people-centred helps understand the needs of our customers and get the best from the people.</p> <p><b>Professionalism</b> MOM are professional in our behaviours and actions, exercising our power fairly to achieve the best outcomes for Singapore.</p> <p><b>Teamwork:</b> MOM succeeds through teamwork. This is achieved by leveraging on the diverse talent within MOM to be an effective organisation. They also work with partners outside to create a vibrant workforce and progressive workplace.</p> <p><b>Passion for progress</b> The MOM is passionate about seeking progress. They are constantly learning and improving so as to be prepared to deal effectively with change to create a better future for Singapore.<sup>120</sup></p>
<p>Ministry of National Development (MND)</p> <p>5 Maxwell Road #21-00 &amp; #22-00 Tower Block MND Complex Singapore 069110 Tel: +62221211 Fax: +63257254</p>	<p>Established in 1959, the MND is the key government ministry responsible for national land use planning and development. MND guides Singapore’s land use planning, urban redevelopment and building conservation, deliver affordable and quality public housing, develop an efficient construction industry to ensure a safe, quality and sustainable built environment, provide and manage parks, open spaces and the conservation of nature areas, maintain a high standard of primary food safety and animal and plant health, as well as protect consumer interest by raising the professionalism in the real estate agent industry.</p>

Table 1: Government Agencies in Singapore (cont.)

Organization	Resource
<p>Ministry of Social and Family Development (MSF)</p> <p>MSF Building 512 Thomson Road Singapore 298136 Tel: +63555000 Fax: +63536695</p>	<p>MSF develops the "heart-ware" for Singapore through policies, community infrastructure, programmes and services. MSF mission is to nurture a resilient and caring society that can overcome challenges together. Previously known as the Ministry of Community Development, Youth and Sports, the Ministry was officially restructured on 1 November 2012.</p>
<p>Ministry of the Environment and Water Resources (MEWR)</p> <p>40 Scotts Road #24-00 Environment Building Singapore 228231 Tel: +67319000 Fax: +67319456</p>	<p>MEWR is committed to providing Singaporeans with a quality living environment. Having achieved a clean and green environment and a system in place to maintain and safeguard it, the ultimate goal is long-term environmental sustainability. Together with its two statutory boards, the National Environment Agency (NEA) and PUB, the national water agency, MEWR continues to manage Singapore's limited resources and address Singapore's environmental sustainability challenges through innovation, vibrant partnerships and co-operation across the 3P sectors - private, public and people.</p>
<p>Ministry of Transport (MOT)</p> <p>460 Alexandra Road #39-00 &amp; #33-00 Storeys PSA Building Singapore 119963 Tel: +62707988 Fax: +63757734</p>	<p>Ministry of Transport (MOT) mission is to strengthen Singapore's transportation connectivity and develop the transport sector's potential to advance our economic competitiveness and the quality of life in Singapore. The MOT aims to be a proactive and forward-looking organization where they are anticipatory and responsive to the needs of their clients and changes in the environment, both domestically and internationally.</p> <p>The earliest milestone in their journey towards organizational excellence was attained when they were awarded the ISO 9002 certification in June 2000. Since then, they have been an ISO certified organization.<sup>121</sup></p>
<p>Prime Minister's Office (PMO)</p> <p>Orchard Road Istana Singapore 238823 Tel: +62358577 Fax: +63328983 (PM) Fax: +68356621 (General Office)</p>	<p>The Prime Minister's Office (PMO) comprises nine agencies and two statutory boards that support and advise the Prime Minister. The agencies operate independently and each reports to its own Accounting Officer.</p> <p>The statutory boards are the Monetary Authority of Singapore (MAS) and the Civil Service College (CSC). MAS is the central bank of Singapore. Its mission is to promote sustained non-inflationary economic growth, and a sound and progressive financial centre. MAS has its own governing Board, chaired by Deputy Prime Minister Tharman Shanmugaratnam. The Civil Service College is the central learning institution for the Singapore Public Service. It operates under the purview of the Public Service Division, Prime Minister's Office</p>

Table 1: Government Agencies in Singapore (cont.)



## Organizations (Domestically Focused)

Table 2 represents Organizations with a Domestic Focus.

Organization	Resource
British Council for International Development-Singapore	Creates opportunities for people in Singapore, in East Asia and around the world. Helps societies achieve change in education, skills, the public sector, civil society and justice. Through close collaboration with governments around the world and international donors they manage national and international development initiatives. Strong local networks have enabled the development of a solid understanding of Singapore's education, training and creative industries.
Global Compact Network Singapore  10 Hoe Chiang Rd #22-01, Keppel Towers Singapore 089315 Phone: +(65) 6827-6825 Email: info@csrsingapore.org	The Global Compact Network Singapore advances the UNGC initiative and its 10 principles at the country level. Helps companies understand what responsible business means within different national, cultural and language contexts and facilitate capacity building, outreach, learning, thought leadership and partnerships.
Save the Children Singapore  South East and East Asia 352 Tanglin Road Tanglin International Centre #03-01 Strathmore Building Singapore 247671 Tel: +65 6511 3160	<ul style="list-style-type: none"> <li>• Provide lifesaving supplies and emotional support for children caught up in disasters like floods, famine and wars.</li> <li>• Campaign for long-term change to improve children's lives.</li> <li>• Improve children's access to the food and healthcare they need to thrive.</li> <li>• Secure a good quality education for the children who need it most.</li> <li>• Protect the world's most vulnerable children, including those separated from their families because of war, natural disasters, extreme poverty and exploitation.</li> <li>• Work in the poorest countries to help families out of the poverty cycle, so they can feed and support their children.</li> </ul>
Singapore Red Cross Society  15 Penang Lane Singapore 238486 Tel: +65 6664 0500 Fax: +65 6337 4360	The work of the Red Cross in Singapore began on 30 September 1949 as a branch of the British Red Cross. On 6 April 1973, it was incorporated as an Act of Parliament and became known as the Singapore Red Cross (SRC). The SRC is governed by a 19-member Council headed by a Chairman who is appointed by the President of the Republic of Singapore, the Patron of the SRC. The Council is responsible for pursuing the objective of the SRC as laid down by the Act of Parliament and its Constitution. The general management of the SRC is overseen by the Management Committee, headed by the Secretary General / Chief Executive Officer (CEO) of the SRC. Implementation of the policies and directives laid down by the Council is done by the Secretariat which is headed by the Secretary General / CEO. The Secretariat is organized into three divisions; Operations, Administration and the Red Cross Youth. The strength and commitment of our volunteer corps is critical for the realization of our vision and to carry out our vision. Volunteers and staff work closely together in planning, organizing and implementing the activities and programs of the SRC.

Table 2: Domestically Focused Organizations in Singapore

Organization	Resource
World Vision Singapore 10 Tannery Lane #06-01 Singapore 347773 Tel: +(65) 6922-0100 Fax: +(65) 6922-0140	Transformational Development: That is community-based and sustainable, focused especially on the needs of children; Emergency Relief: That assists people afflicted by conflict disaster; Promotion of Justice: That seeks to change unjust structures affecting the poor among whom we work; Partnership with Churches: To contribute to spiritual and social transformation; Public Awareness: That leads to informed understanding, giving, involvement and prayer; Living out our Christian Values: By life and deed.

Table 2: Domestically Focused Organizations in Singapore (cont.)

## Domestic Disaster Management Activities

### Roles and Responsibilities of the State, Territory and Local Governments

In Singapore, the lead agency for disaster response is the Singapore Civil Defence Force (SCDF). Singapore values public safety and security. It believes in being prepared to face major disaster so as to ensure minimum disruption by any disaster to its community, environment and infrastructure. It garners all efforts to promote and institutionalize emergency preparedness among its people, while developing and exercising contingency plans for a range of foreseeable disasters to be executed by various emergency agencies in close co-ordination. Where appropriate, it also shares its experience and rescue resources to nearby countries in need of assistance.<sup>122</sup>

#### **Multi-agency Planning Multi-agency Approach**

Singapore has adopted a multi-agency planning approach for the development of emergency and contingency plans covering the following types of disasters:<sup>123</sup>

- Fires in commercial and residential buildings;
- Fires in petro-chemical installations and oil refineries;
- Release and spread of hazardous and toxic materials;
- Collapse of buildings and other major structures and;
- Accidents involving land, air, sea and rail transport.

#### **Drills and Exercises**

Local and national-scale drills and exercise are conducted to ensure the contingency plans are comprehensive and effective, drills and exercises are conducted by the various emergency authorities. Such exercises and drills also involve the owners and occupants of the building premises as well as the general public. An example is the weekly Morning Fire Exercise conducted by the SCDF for various commercial high-rise buildings. In addition, the SCDF also conducts regular training exercises to hone the operational readiness and capability of the emergency response personnel.<sup>124</sup>

#### **Public Awareness, Education & Participation**

An effective emergency preparedness program involves the general population. The SCDF implemented community relations programs for emergency preparedness. The public is kept informed and reminded on the need for emergency preparedness through various communications tools. The underlying message to the public is "Readiness is your only protection". Public education programs covering fire prevention and safety, evacuation, rescue, and first aid have been developed for different target groups. These target groups include children, housewives, senior citizens, schools, factories and commercial premises. The long-term goal is to have at least one person in each household to be educated or trained in emergency preparedness. An extensive community and grassroots network has also been established by the SCDF to promote civil defense and involve the population in emergency preparedness activities, especially rescue, water rationing and blood collecting exercises.<sup>125</sup>

## **Shelters**

The Civil Defence Program, in particular the provision of shelters for the population, is a key component of national security and total Defense. Apart from building household shelters to protect residents, the Singapore government also recognized the need to augment this with a network of public shelters in selected buildings and underground train stations. This is to provide an additional shield and protection for commuters and members of public who are caught in the open during an emergency. It was with this need in mind that the Government decided in June 1995 to harden 13 of the underground North East Line stations as public shelters. This will add to the existing nine MRT shelters in operation. Today, all the 13 new shelters have been completed and tested to be in compliance with the SCDF's technical standards for shelters.<sup>126</sup>

## **Civil Defence Emergency Handbook**

The SCDF provide Singapore's public with shelter management information and updated information on civil defense emergency procedures. Apart from conventional topics like first aid and fire safety, the handbook also contains information to raise awareness to threats, such as Anthrax and bomb threats. In addition, procedures to implement 'In-Place

Protection', which help prevent harmful vapors from entering homes during a chemical incident, are also included.<sup>127</sup>

## **Community Emergency Preparedness**

SCDF has enhanced its instructional public education program. The revamped program was introduced in September 2003. The modular-based program provides both theory and practical training and comprises five modules which cover First Aid, Cardio-Pulmonary Resuscitation (CPR), Fire Safety and Casualty Evacuation, Emergency Preparedness for War and Emergency Preparedness for Unconventional Threats. Additionally, a Multi-Lingual Video Broadcast System was developed to meet the needs of various Non-English segments of the community and reach out to wider audiences. With this system in place, the SCDF serves as an impartial and capable provider of Emergency Preparedness (EP) information in meeting the needs of specific target groups as well as the general population. It provides a solution of reaching a wider audience using less manpower for each ethnic group.<sup>128</sup>

Photo 9 depicts emergency response training conducted in Singapore through the Association of Company Emergency Response Teams (A-CERTS, Singapore).<sup>129</sup>



Photo 9: Emergency Response Training, Singapore 2012





CHANGI CENTRE  
CFE-DM  
COORDINATOR 7

FRED CHEW

K G LEE

SINGAPORE



# SINGAPORE

## U.S. DOD DMHA Recent Engagements with Singapore

Disaster Management Reference Handbook | May 2017



# U.S. DOD DMHA Recent Engagements with Singapore

Defense relations between Singapore and the U.S. are strong.<sup>130</sup> A list of some U.S. DOD and Singapore engagements include the following.

***Exercise Coordinated Response (Ex COORES) 2017-*** The Changi RHCC hosted its first multinational HADR exercise in January 2017.<sup>131</sup> Ex COORES 2017 was conducted from 23 to 25 January 2017 at the Changi Command and Control Centre in Singapore, and was co-organized by the Armed Forces of the Philippines (AFP), CFE-DM and the SAF's Regional RHCC.<sup>132</sup> Ex COORES aims to enhance mutual understanding and interoperability, establish military linkages, and strengthen military cooperation in HADR operations. The exercise had approximately 150 participants from 18 militaries from across the Asia-Pacific region and Europe, and observers from 12 international organizations, governmental agencies and NGOs.<sup>133</sup> The exercise created a scenario simulating two major disasters striking the Philippines in succession: a volcanic eruption at Mount Mayon followed by a typhoon in the city of Legazpi. The regional role of the RHCC was evident during the scenario, as they sent an advance team to support the Philippine military's establishment of a multinational coordination center (MNCC) to coordinate incoming foreign assistance, allowing militaries as well as civilian agencies to familiarize themselves with its concept of operations in anticipation of future HADR operations.<sup>134</sup> The scenario provided opportunities to test the working process of multinational military HADR efforts, from the perspective of both the assisting militaries and affected states.<sup>135</sup>

Participants were able to familiarize with both the AFP MNCC and the Changi RHCC's concept of operations, in anticipation of cooperation in future HADR operations.<sup>136</sup> CFE-DM provided its expertise in the development of the exercise scenario and in exercise control, as well as facilitating large-group discussions on the best practices in conducting HADR operations. During the exercise, UNOCHA also

demonstrated the operations of its Humanitarian Country Team, increasing civil-military understanding.<sup>137</sup>

***Exercise Rim of the Pacific (RIMPAC)-July/August 2016-*** Hosted by the U.S. Navy, Exercise RIMPAC is the world's largest international maritime exercise and is held biennially off the coast of Hawaii. The Republic of Singapore Navy participated. 25 other countries, including 45 ships, five submarines, and more than 200 aircraft and 25,000 personnel participated.<sup>138</sup>

***Exercise Cobra Gold-February 2016-*** The SAF has been a full participant of this exercise since 2000. The annual multilateral military exercise, co-hosted by United States Pacific Command and the Royal Thai Armed Forces, was held in February 2016 at the Utapao Royal Naval Airbase in Thailand. The 56-member delegation from the SAF, led by Commander 9th Singapore Division and Chief Infantry Officer Colonel Ng Ying Thong, undertook various roles within the Multinational Combined Task Force of the exercise, alongside representatives of other participating armed forces from South Korea, Indonesia, Japan and Malaysia. The focus of this year's exercise was on peace support operations and maritime security.<sup>139</sup>

***ADMM-Plus field training exercises (FTXs)-2016 -ASEAN Defense Ministers' Meeting (ADMM)-Plus Military Medicine (MM) / Humanitarian Assistance and Disaster Relief (HADR).*** These four exercises covered maritime security, counter-terrorism, peacekeeping operations, humanitarian mine action, HADR and military medicine. This was a multinational exercise that challenged the 18 ADMM-Plus countries' militaries to coordinate MM/HADR operations in response to disaster scenarios involving tsunamis and earthquakes. As part of the exercise scenario, the SAF responded to the call for aid and dispatched two Super Puma helicopters and their crew for SAR operations, a medical team as well as a team from the Changi Regional HADR Coordination Centre (RHCC), which set up the OPERA Computer Information System (CIS) to aid the MNCC in its coordination efforts.<sup>140</sup>





# SINGAPORE Conclusion



# Conclusion

Singapore's geographic location, within the Indo-Asia-Pacific (located just outside the "Ring of Fire") is positioned to respond to international crisis rapidly and effectively. Singapore is a key player in disaster management and humanitarian assistance efforts in the region. The region is highly vulnerable to tsunamis, earthquakes, floods, tropical cyclones, drought, volcanic eruptions, and other hazards. Natural disasters are becoming more frequent and more severe within the region. Additionally, the effects of climate change are expected to change the frequency, severity, and, unpredictability of weather related events across the region, increasing the intensity of the hazards. Climate change impacts are likely to affect health, resources, infrastructure, and global stability. Many of the affected states in this region rely on external assistance for aid in times of disasters. Besides natural disasters, the region faces many other challenges including poverty, urbanization, and environmental degradation.

The CFE-DM Singapore Disaster Management Handbook serves as an initial source of information for those individuals preparing for DRR activities or immediate deployment with Singapore partner responders in crisis. It highlights the important role Singapore plays in preparing for, mitigating, responding to, and recovering from a natural or man-made disaster in the Indo-Asia-Pacific region.

Discussion includes key areas such as regional training programs and exercise support, organizational structure for domestic and foreign disaster management, and international DM agreements. The handbook also provides general information in regards to multi-national response activities and further explains how the U.S. and Singapore DMHA responses interrelate with one another in order to provide an effective, timely and cohesive response throughout the region. Singapore's international framework and whole-of-government (domestic) framework provides a general guide for U.S. forces, who may work closely under a unified disaster management effort. Singapore has numerous policies and frameworks, and has several bilateral and multilateral agreements with its partners and stakeholders in disaster response. Strong international collaboration is a key element in preventing, preparing, responding

to and recovering from the myriad of disaster threats facing the Indo-Asia Pacific region. The development of strong global partnerships saves lives and mitigates the effects of natural disaster hazards.



# SINGAPORE

## Appendices



# Appendices

## Country Profile

The information in the Country Profile section is sourced directly from the CIA World Factbook.<sup>141</sup>

**Background:** Singapore was founded as a British trading colony in 1819. It joined the Malaysian Federation in 1963 but was ousted two years later and became independent. Singapore subsequently became one of the world's most prosperous countries with strong international trading links (its port is one of the busiest in world in terms of tonnage handled) and with per capita GDP equal to that of the leading nations of Western Europe.

### Geography:

Location: Southeastern Asia, islands between Malaysia and Indonesia

Geographic coordinates: 1 22 N, 103 48 E

Map references: Southeast Asia

### Area:

Total: 697 sq km

Land: 687 sq km

Water: 10 sq km

Country comparison to the world: 192

### Area comparative:

Slightly more than 3.5 times the size of Washington, DC

**Land boundaries:** 0 km

**Coastline:** 193 km

### Maritime claims:

Territorial sea: 3 nm

Exclusive fishing zone: within and beyond territorial sea, as defined in treaties and practice

**Climate:** Tropical; hot, humid, rainy; two distinct monsoon seasons - northeastern monsoon (December to March) and southwestern monsoon (June to September); inter-monsoon - frequent afternoon and early evening thunderstorms

**Terrain:** Low-lying, gently undulating central plateau

**Elevation:** Elevation extremes: lowest point: Singapore Strait 0 m; highest point: Bukit Timah 166 m

**Natural resources:** fish, deepwater ports

### Land use:

Agricultural land: 1 percent

Arable land 0.9 percent; permanent crops 0.1 percent; permanent pasture 0 percent

Forest: 3.3 percent

Other: 95.7 percent (2011 est.)

Irrigated land: 0 sq km (2012)

**Natural hazards:** NA

### Environment - Current issues:

Industrial pollution; limited natural freshwater resources; limited land availability presents waste disposal problems; seasonal smoke/haze resulting from forest fires in Indonesia

### Environment - international agreements:

Party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Ozone Layer Protection, Ship Pollution

Singapore is the focal point for Southeast Asian sea routes

### People and Society:

Population: 5,781,728 (July 2016 est.)

Country comparison to the world: 114



**Nationality:**

Noun: Singaporean(s)

Adjective: Singapore

**Ethnic groups:** Chinese 74.2 percent, Malay 13.3 percent, Indian 9.2 percent, other 3.3 percent (2013 est.)

**Languages:** Mandarin (official) 36.3 percent, English (official) 29.8 percent, Malay (official) 11.9 percent, Hokkien 8.1 percent, Cantonese 4.1 percent, Tamil (official) 3.2 percent, Teochew 3.2 percent, other Indian languages 1.2 percent, other Chinese dialects 1.1 percent, other 1.1 percent (2010 est.)

**Religions:** Buddhist 33.9 percent, Muslim 14.3 percent, Taoist 11.3 percent, Catholic 7.1 percent, Hindu 5.2 percent, other Christian 11 percent, other 0.7 percent, none 16.4 percent (2010 est.)

**Age structure:**

0-14 years: 12.94 percent (male 382,479/female 365,595)

15-24 years: 17.02 percent (male 484,355/female 499,940)

25-54 years: 50.45 percent (male 1,420,833/female 1,496,125)

55-64 years: 10.34 percent (male 299,446/female 298,562)

65 years and over: 9.24 percent (male 243,418/female 290,975) (2016 est.)

**Dependency ratios:**

Total dependency ratio: 37.4 percent

Youth dependency ratio: 21.4 percent

Elderly dependency ratio: 16.1 percent

Potential support ratio: 6.2 percent (2015 est.)

**Median age:**

Total: 34.3 years

Male: 34.2 years

Female: 34.4 years (2016 est.)

Country comparison to the world: 83

**Population growth rate:** 1.86 percent (2016 est.)

Country comparison to the world: 58

**Birth rate:** 8.4 births/1,000 population (2016 est.)

Country comparison to the world: 221

**Death rate:** 3.5 deaths/1,000 population (2016 est.)

Country comparison to the world: 217

**Net migration rate:**

13.6 migrant(s)/1,000 population (2016 est.)

Country comparison to the world: 5

**Urbanization:**

Urban population: 100 percent of total population (2015)

Rate of urbanization: 2.02 percent annual rate of change (2010-15 est.)

**Major urban areas:** population (capital) 5.619 million (2015)

**Sex ratio:**

At birth: 1.07 male(s)/female

0-14 years: 1.05 male(s)/female

15-24 years: 0.97 male(s)/female

25-54 years: 0.95 male(s)/female

55-64 years: 1 male(s)/female

65 years and over: 0.83 male(s)/female

Total population: 0.96 male(s)/female (2016 est.)

Mother's mean age at first birth: 30.5

Median age (2015 est.)

**Maternal mortality rate:**

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

Country comparison to the world: 182

**Infant mortality rate:**

Total: 2.4 deaths/1,000 live births

Male: 2.6 deaths/1,000 live births

Female: 2.2 deaths/1,000 live births (2016 est.)

Country comparison to the world: 222

**Life expectancy at birth:**

Total population: 85 years

Male: 82.3 years

Female: 87.8 years (2016 est.)

Country comparison to the world: 2

**Total fertility rate:**

0.82 children born/woman (2016 est.)

Country comparison to the world: 224

**Health expenditures:**

4.9 percent of GDP (2014)

Country comparison to the world: 146

**Physicians density:**

1.95 physicians/1,000 population (2013)

**Hospital bed density:**

2 beds/1,000 population (2011)

**Drinking water source:**

Improved: Urban: 100 percent of population

Unimproved: Urban: 0 percent of population (2015 est.)

**Sanitation facility access:**

Improved: Urban: 100 percent of population

Unimproved: Urban: 0 percent of population (2015 est.)

HIV/AIDS - adult prevalence rate: NA

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

HIV/AIDS - deaths: NA

**Major infectious diseases:**

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

**Obesity - adult prevalence rate:** 6.8 percent (2014)

Country comparison to the world: 142

**Education expenditures:** 2.9 percent of GDP (2013)

Country comparison to the world: 140

**Literacy:**

Definition: age 15 and over can read and write

Total population: 96.8 percent

Male: 98.6 percent

Female: 95 percent (2015 est.)

**Unemployment, youth ages 15-24:**

Total: 7 percent

Male: 5.4 percent

Female: 9 percent (2013)

Country comparison to the world: 121

**Country name:**

Conventional long form: Republic of Singapore

Conventional short form: Singapore

Local long form: Republic of Singapore

Local short form: Singapore

Etymology: name derives from the Sanskrit words "singa" (lion) and "pura" (city) to describe the city-state's leonine symbol

**Government type:** Parliamentary republic  
Capital name: Singapore

**Geographic coordinates:** 1 17 N, 103 51 E

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

**Administrative divisions:** none

**Independence:** 9 August 1965 (from Malaysian Federation)

**National holiday:** National Day, 9 August (1965)

**Constitution:** several previous; latest adopted 22 December 1965; amended many times, last in 2015 (2016)

**Legal system:** English common law

**International law organization participation:** has not submitted an ICJ jurisdiction declaration; non-party state to the ICCT

**Citizenship:**

Citizenship by birth: No

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

Dual citizenship is not recognized

Residency requirement for naturalization: 10 years

Suffrage: 21 years of age; universal and compulsory

**Executive branch:**

Chief of state: President Tony Tan Keng Yam (since 1 September 2011)

Head of government: Prime Minister Lee Hsien Loong (since 12 August 2004); Deputy Prime Ministers Teo Chee Hean (since 1 April 2009) and Tharman Shanmugaratnam (since 21 May 2011)

Cabinet: Cabinet appointed by the president on the advice of the prime minister; Cabinet responsible to Parliament

Elections/appointments: President directly elected by simple majority popular vote for a single 6-year term; election last held on 27 August 2011 (next to be held by August 2017); following legislative elections, leader of majority party or majority coalition usually appointed prime minister by president; deputy prime ministers appointed by the president

Election results: Tony Tan Keng Yam elected president; percent of vote - Tony Tan Keng Yam (independent) 35.2 percent, Tan Cheng Bock (independent) 34.9 percent, Tan Jee Say (independent) 25 percent, Tan Kin Lian (PP) 4.9 percent

**Legislative branch:**

Description: Unicameral Parliament (101 seats; 89 members directly elected by popular vote, 9 nominated by the president, and up to 9 - but currently 3 - non-constituency members from opposition parties to ensure political diversity; members serve 5-year terms)

Elections: Last held on 11 September 2015 (next to be held in 2020)

Election results: percent of vote by party - PAP 69.9 percent, WP 12.5 percent, other 17.6 percent; seats by party - PAP 83, WP 6

**Judicial branch:**

Highest court(s): Supreme Court (consists of the president or chief justice and 16 justices and organized into an upper tier Appeal Court and a lower tier High Court)



Judge selection and term of office: all judges appointed by the president from candidates recommended by the prime minister after consultation with the chief justice; justices appointed for life

Subordinate courts: district, magistrates', juvenile, family, community, and coroners' courts; small claims tribunals

### **Political parties and leaders:**

National Solidarity Party or NSP [Lim Tean]

People's Action Party or PAP [Lee Hsien Loong]

Singapore Democratic Party or SDP [Chee Soon Juan]

Workers' Party or WP [Low Thia Kiang]

Political pressure groups and leaders: none

### **International organization participation:**

ADB, AOSIS, APEC, Arctic Council (observer), ARF, ASEAN, BIS, C, CP, EAS, FAO, FATE, G-77, IAEA, IBRD, ICAO, ICC (national committees), ICCT, ICRM, IDA, IFC, IFRC, IHO, ILO, IMF, IMO, IMSO, Interpol, IOC, IPU, ISO, ITSO, ITU, ITUC (NGOs), MIGA, NAM, OPCW, Pacific Alliance (observer), PCA, UN, UNCTAD, UNESCO, UNHCR, UPU, WCO, WHO, WIPO, WMO, and WTO

### **Diplomatic representation in the US:**

Chief of mission: Ambassador Ashok Kumar Mirpuri (since 24 July 2012)

Chancery: 3501 International Place NW, Washington, DC 20008

Telephone: [1] (202) 537-3100

Fax: [1] (202) 537-0876

Consulate(s) General: San Francisco

Consulate(s): New York

### **Diplomatic representation from the US:**

Chief of Mission: Ambassador Kirk W. Wagar (since 25 September 2013)

Embassy: 27 Napier Road, Singapore 258508

Mailing address: FPO AP 96507-0001

Telephone: [65] 6476-9100

Fax: [65] 6476-9340

### **National symbol(s):**

Lion, merlion (mythical half lion-half fish creature), orchid; national colors: red, white

### **Economy - overview:**

Singapore has a highly developed and successful free-market economy. It enjoys a remarkably open and corruption-free environment, stable prices, and a per capita GDP higher than that of most developed countries. Unemployment is very low. The economy depends heavily on exports, particularly of consumer electronics, information technology products, medical and optical devices, pharmaceuticals, and on its vibrant transportation, business, and financial services sectors.

The economy contracted 0.6 percent in 2009 as a result of the global financial crisis, but has continued to grow since 2010 on the strength of renewed exports. Growth in 2014-15 was slower at under 3 percent, largely a result of soft demand for exports amid a sluggish global economy and weak growth in Singapore's manufacturing sector.

The government is attempting to restructure Singapore's economy by weaning its dependence on foreign labor, addressing weak productivity, and increasing Singaporean wages. Singapore has attracted major investments in pharmaceuticals and medical technology production and will continue efforts to strengthen its position as Southeast Asia's leading financial and high-tech hub. Singapore is a member of the 12-nation Trans-Pacific Partnership free trade negotiations, as well as the Regional Comprehensive Economic Partnership negotiations with the nine other ASEAN members plus Australia, China, India, Japan, South Korea, and New Zealand. In 2015, Singapore formed, with the other ASEAN members, the ASEAN Economic Community.

**GDP (purchasing power parity):**

\$486.9 billion (2016 est.)

\$478.8 billion (2015 est.)

\$469.4 billion (2014 est.)

Note: data are in 2016 dollars

Country comparison to the world: 41

**GDP (official exchange rate):**

\$296.6 billion (2015 est.)

GDP - real growth rate:

1.7 percent (2016 est.)

2 percent (2015 est.)

3.3 percent (2014 est.)

Country comparison to the world: 153

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

\$87,100 (2016 est.)

\$86,500 (2015 est.)

\$85,800 (2014 est.)

Note: data are in 2016 dollars

Country comparison to the world: 5

**Gross national saving:**

46 percent of GDP (2016 est.)

46.1 percent of GDP (2015 est.)

46.4 percent of GDP (2014 est.)

Country comparison to the world: 2

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

Household consumption: 36.1 percent

Government consumption: 10.8 percent

Investment in fixed capital: 23.4 percent

Investment in inventories: 2 percent

Exports of goods and services: 176.9 percent

Imports of goods and services: -149.2 percent (2016 est.)

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

Agriculture: 0 percent Industry: 26.6 percent

Services: 73.4 percent (2016 est.)

**Agriculture - products:** Orchids, vegetables; poultry, eggs; fish, ornamental fish

**Industries:** Electronics, chemicals, financial services, oil drilling equipment, petroleum refining, rubber processing and rubber products, processed food and beverages, ship repair, offshore platform construction, life sciences, entrepot trade

**Industrial production growth rate:** 1 percent (2016 est.)

Country comparison to the world: 145

**Labor force:**

3.661 million

Note: excludes non-residents (2016 est.)

Country comparison to the world: 97

**Labor force - by occupation:**

Agriculture: 1.3 percent

Industry: 14.8 percent

Services: 83.9 percent

Note: excludes non-residents (2014)

**Unemployment rate:**

2.1 percent (2016 est.)

1.9 percent (2015 est.)

Country comparison to the world: 14

**Population below poverty line:** NA

**Household income or consumption by percentage share:**

Lowest 10 percent: 2.3 percent

Highest 10 percent: 11 percent (2014)

Distribution of family income - Gini index:

46.4 (2014)

46.3 (2013)

Country comparison to the world: 32

**Budget:**

Revenues: \$46.86 billion

Expenditures: \$44.83 billion

Note: expenditures include both operational and development expenditures (2016 est.)

**Taxes and other revenues:**

15.8 percent of GDP (2016 est.)

Country comparison to the world: 181

Budget surplus (+) or deficit (-):

0.7 percent of GDP (2016 est.)

Country comparison to the world: 20

**Public debt:**

110.5 percent of GDP (2016 est.)

104.7 percent of GDP (2015 est.)

Country comparison to the world: 9

**Fiscal year:**

1 April - 31 March

**Inflation rate (consumer prices):**

-0.8 percent (2016 est.)

-0.5 percent (2015 est.)

Country comparison to the world: 9

**Central bank discount rate:**

0.25 percent (2014)

0.07 percent (2013)

Country comparison to the world: 136

**Commercial bank prime lending rate:**

5.4 percent (31 December 2016 est.)

5.35 percent (31 December 2015 est.)

Country comparison to the world: 134

Stock of narrow money:

\$115.1 billion (31 December 2016 est.)

\$113.5 billion (31 December 2015 est.)

Country comparison to the world: 33

Stock of broad money:

\$413.7 billion (31 December 2014 est.)

\$405.1 billion (31 December 2013 est.)

Country comparison to the world: 26

**Stock of domestic credit:**

\$353.7 billion (31 December 2016 est.)

\$344.6 billion (31 December 2015 est.)

Country comparison to the world: 33

**Market value of publicly traded shares:**

\$640 billion (31 December 2015 est.)

\$752.8 billion (31 December 2014 est.)

\$744.4 billion (31 December 2013 est.)

Country comparison to the world: 18



**Current account balance:**

\$57.26 billion (2016 est.)

\$57.92 billion (2015 est.)

Country comparison to the world: 9

**Exports:**

\$353.3 billion (2016 est.)

\$377.1 billion (2015 est.)

Country comparison to the world: 14

**Exports - commodities:**

Machinery and equipment (including electronics and telecommunications), pharmaceuticals and other chemicals, refined petroleum products, foodstuffs and beverages

**Exports - partners:**

China 13.7 percent, Hong Kong 11.5 percent, Malaysia 10.8 percent, Indonesia 8.2 percent, US 6.9 percent, Japan 4.4 percent, South Korea 4.1 percent (2015)

**Imports:**

\$271.3 billion (2016 est.)

\$294.5 billion (2015 est.)

Country comparison to the world: 16

**Imports - commodities:**

Machinery and equipment, mineral fuels, chemicals, foodstuffs, consumer goods

**Imports - partners:**

China 14.2 percent, U.S. 11.2 percent, Malaysia 11.2 percent, Japan 6.3 percent, South Korea 6.1 percent, Indonesia 4.8 percent (2015)

**Reserves of foreign exchange and gold:**

\$249.7 billion (31 December 2016 est.)

\$247.7 billion (31 December 2015 est.)

Country comparison to the world: 12

**Debt - external:**

\$467.4 billion (31 December 2016 est.)

\$465.5 billion (31 December 2015 est.)

Country comparison to the world: 27

**Stock of direct foreign investment - at home:**

\$1.041 trillion (31 December 2016 est.)

\$978.4 billion (31 December 2015 est.)

Country comparison to the world: 11

**Stock of direct foreign investment - abroad:**

\$673 billion (31 December 2016 est.)

\$625.3 billion (31 December 2015 est.)

Country comparison to the world: 15

**Exchange rates:**

Singapore dollars (SGD) per U.S. dollar - 1.379 (2016 est.)

1.3748 (2015 est.)

1.3748 (2014 est.)

1.2671 (2013 est.)

1.25 (2012 est.)

**Energy****Electricity - production:**

49.31 billion kWh (2014 est.)

Country comparison to the world: 54

**Electricity - consumption:**

47.18 billion kWh (2014 est.)

Country comparison to the world: 51

**Electricity - exports:**

0 kWh (2014 est.)

Country comparison to the world: 120

**Electricity - imports:**

0 kWh (2014 est.)

Country comparison to the world: 134

**Electricity - installed generating capacity:**

13 million kW (2014 est.)

Country comparison to the world: 55

**Electricity - from fossil fuels:**

95.3 percent of total installed capacity (2014 est.)

Country comparison to the world: 68

**Electricity - from nuclear fuels:**

0 percent of total installed capacity (2014 est.)

Country comparison to the world: 67

**Electricity - from hydroelectric plants:**

0% of total installed capacity (2014 est.)

Country comparison to the world: 166

**Electricity - from other renewable sources:**

3.9 percent of total installed capacity (2014 est.)

Country comparison to the world: 63

**Crude oil - production:**

0 bbl/day (2015 est.)

Country comparison to the world: 193

**Crude oil - exports:**

11,100 bbl/day (2013 est.)

Country comparison to the world: 66

**Crude oil - imports:**

895,400 bbl/day (2013 est.)

Country comparison to the world: 14

**Crude oil - proved reserves:**

0 bbl (1 January 2016 es)

Country comparison to the world: 125

**Refined petroleum products - production:**

1.02 million bbl/day (2013 est.)

Country comparison to the world: 22

**Refined petroleum products - consumption:**

1.292 million bbl/day (2014 est.)

Country comparison to the world: 17

**Refined petroleum products - exports:**

1.697 million bbl/day (2013 est.)

Country comparison to the world: 5

**Refined petroleum products - imports:**

2.035 million bbl/day (2013 est.)

Country comparison to the world: 2

**Natural gas - production:**

0 cu m (2013 est.)

Country comparison to the world: 124

**Natural gas - consumption:**

10.9 billion cu m (2014 est.)

Country comparison to the world: 48

**Natural gas - exports:**

0 cu m (2013 est.)

Country comparison to the world: 89

**Natural gas - imports:**

10.9 billion cu m (2014 est.)

Country comparison to the world: 26

**Natural gas - proved reserves:**

0 cu m (1 January 2014 es)

Country comparison to the world: 125

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

216 million Mt (2013 est.)

Country comparison to the world: 27

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

Total subscriptions: 2,021,500

Subscriptions per 100 inhabitants: 36 (July 2015 est.)

Country comparison to the world: 58

**Telephones: mobile cellular:**

Total: 8.211 million

Subscriptions per 100 inhabitants: 145 (July 2015 est.)

Country comparison to the world: 92

**Telephone system:**

General assessment: excellent service

Domestic: excellent domestic facilities; combined fixed-line and mobile-cellular teledensity more than 180 telephones per 100 persons; multiple providers of high-speed Internet connectivity

International: country code - 65; numerous submarine cables provide links throughout Asia, Australia, the Middle East, Europe, and US; satellite earth stations - 4; supplemented by VSAT coverage (2015)

**Broadcast media:**

State controls broadcast media; 8 domestic TV stations operated by MediaCorp which is wholly owned by a state investment company; broadcasts from Malaysian and Indonesian stations available; satellite dishes banned; multi-channel cable TV service available

**Internet country code:**

.sg

**Internet users:**

Total: 4.659 million

Percent of population: 82.1 percent (July 2015 est.)

Country comparison to the world: 73

**Transportation:****National air transport system:**

Number of registered air carriers: 5

Inventory of registered aircraft operated by air carriers: 197

Annual passenger traffic on registered air carriers: 33,290,544

Annual freight traffic on registered air carriers: 6,154,365,275 mt-km (2015)

Civil aircraft registration country code prefix: 9V (2016)

**Airports:**

9 (2013)

Country comparison to the world: 158



## Airports - with paved runways:

Total: 9

Over 3,047 m: 2  
 2,438 to 3,047 m: 2  
 1,524 to 2,437 m: 3  
 914 to 1,523 m: 1  
 Under 914 m: 1 (2013)

Pipelines:

Gas 122 km; refined products 8 km (2013)

Roadways:

Total: 3,425 km

Paved: 3,425 km (includes 161 km of expressways) (2012)

Country comparison to the world: 163

Merchant marine:

Total: 1,599

By type: bulk carrier 247, cargo 109, carrier 6, chemical tanker 256, container 339, liquefied gas 131, petroleum tanker 436, refrigerated cargo 13, roll on/roll off 5, vehicle carrier 57

Foreign-owned: 966 (Australia 12, Bangladesh 1, Belgium 1, Bermuda 25, Brazil 9, Chile 6, China 29, Cyprus 6, Denmark 149, France 3, Germany 32, Greece 22, Hong Kong 46, India 21, Indonesia 60, Italy 5, Japan 164, Malaysia 27, Netherlands 1, Norway 153, and Russia 2.

Registered in other countries: 344 (Australia 2, Bahamas 7, Bangladesh 7, Belize 4, Cambodia 3, Cyprus 1, France 3, Honduras 11, Hong Kong 13, Indonesia 46, Italy 1, Kiribati 9, Liberia 22, Malaysia 13, Maldives 4, Malta 4, Marshall Islands 30, Mongolia 3, North Korea 1, Panama 92, (2010)

Country comparison to the world: 6

## Ports and terminals:

Major seaport(s): Singapore

Container port(s) (TEUs): Singapore (31,649,400)

LNG terminal(s) (import): Singapore

The International Maritime Bureau reports the territorial and offshore waters in the South China Sea as high risk for piracy and armed robbery against ships; numerous commercial vessels have been attacked and hijacked both at anchor and while underway; hijacked vessels are often disguised and cargo diverted to ports in East Asia; crews have been murdered or cast adrift; in 2014, 8 commercial vessels were attacked in the Singapore Straits

## Military and Security:

Singapore Armed Forces: Army, Navy, Air Force (includes Air Defense) (2013)

Military service age and obligation: 18-21 years of age for male compulsory military service; 16 1/2 years of age for volunteers; 2-year conscript service obligation, with a reserve obligation to age 40 (enlisted) or age 50 (officers) (2012)

**Military expenditures:** 3.52 percent of GDP (2012)

Country comparison to the world: 15

## Disputes - international:

Disputes persist with Malaysia over deliveries of fresh water to Singapore, Singapore's extensive land reclamation works, bridge construction, and maritime boundaries in the Johor and Singapore Straits; in 2008, ICJ awarded sovereignty of Pedra Branca (Pulau Batu Puteh/Horsburgh Island) to Singapore, and Middle Rocks to Malaysia, but did not rule on maritime regimes, boundaries, or disposition of South Ledge; Indonesia and Singapore continue to work on finalization of their 1973 maritime boundary agreement by defining unresolved areas north of Indonesia's Batam Island; piracy remains a problem in the Malacca Strait.

## Illicit drugs:

Drug abuse limited because of aggressive law enforcement efforts, including carrying out death sentences. As a transportation and financial services hub, Singapore is vulnerable, despite strict laws and enforcement, as a venue for money laundering.

## Acronyms and Abbreviations

Acronym	Definition
AADMER	ASEAN Agreement on Disaster Management and Emergency Response
ACDM	ASEAN Committee on Disaster Management
ADB	Asian Development Bank
ADInet	ASEAN Disaster Information Network
ADRC	Asian Disaster Reduction Centre
AFP	Armed Forces of the Philippines
AHA Center	ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management
ANMC 21	Asian Network of Major Cities 21
AOSIS	Alliance of Small Island States
APEC	Asia Pacific Economic Cooperation
APG	AADMER Partnership Group
APHP	Asia-Pacific Humanitarian Programme
ARF	ASEAN Regional Forum
ARRND	Agreement on Rapid Response for Natural Disaster
ASEAN	Association of Southeast Asian Nations
AVPN	Asian Venture Philanthropy Network
AWSS	Army War-game Simulation System
BA	Bilateral Agreement
BBK	Batam, Bintan, and Karimun
BIS	Bank for International Settlements
BRTC	Basic Rescue Training Centre
CALFX	Combined Arms Live Fire Exercise
CARAT	Cooperation Afloat Readiness and Training
CBRE	Chemical, Biological, Radiological and Explosives
CC2C	Changi Command and Control Centre
CCIS	OPERA Command and Control Information System
CDA	Civil Defence Academy
CDD	Civil Defense Divisions
CEO	Chief Executive Officer
CFE-DM	Center for Excellence in Disaster Management and Humanitarian Assistance
CIA	Central Intelligence Agency
CIS	Computer Information System
CMCS	Civil-Military Coordination Section
CPR	Cardio-Pulmonary Resuscitation
CSC	Civil Service College
CSP	Comprehensive Strategic Partnership
DART	Disaster Assistance & Rescue Team
DCA	Defense Cooperation Agreement
DM	Disaster Management

<b>Acronym</b>	<b>Definition</b>
DMHA	Disaster Management and Humanitarian Assistance
DMRS	Disaster Monitoring and Response System
DOD	Department of Defense
DOS	U.S. Department of State
DRR	Disaster Risk Reduction
EAS	East Asia Summit
EP	Emergency Preparedness
Ex COORES	Exercise Coordinated Response
FAO	Food and Agriculture Organization
FATF	Financial Action Task Force
FDA	Fire & Disaster Asia
FTX	Field Training Exercises
GoA	Gulf of Aden
HADR	Humanitarian Assistance Disaster Relief
HAP	Humanitarian Accountability Project
HCEG	Home Front Crisis Executive Group
HCMC	Home Front Crisis Ministerial Committee
HCMS	Home Front Crisis Management System
HFA	Hyogo Framework for Action
HSR	High Speed Rail
IAEA	International Atomic Energy Association
IASC	Inter-Agency Emergency Situation
IATA	International Air Transport Association
IBRD	International Bank of Reconstruction and Development
ICAO	International Civil Aviation Organization
ICC	International Chamber of Commerce
ICCTT	International Council on Clean Transportation
ICRM	Institute of Catastrophe Risk Management
IDA	INFOCOMM Development Authority of Singapore
IFRC	International Federation of Red Cross and Red Crescent Societies
IHO	International Hydrographic Organization
ILO	International Labor Organization
IM	Incident Management
IMF	International Monetary Fund
IMO	International Maritime Organization
IMSO	International Mobile Satellite Organization
INSARAG	International Search and Rescue Advisory Group
IOC	Interpol, International Olympic Committee
IORA	Indian Ocean Rim Association
IPU	Inter-Parliamentary Union
ISAF	International Security Assistance Force
ISO	International Organization for Standardization
ITDI	IATA Training and Development Institute



<b>Acronym</b>	<b>Definition</b>
ITSO	International Telecommunications Satellite Organization
ITUC	International Trade Union Confederation
JCATS	Joint Conflict and Tactical Simulation
JICA	Japan International Cooperation Agency
JMC	Joint Ministerial Committee
JPS	Joint Planning Staff
L-V-C	Live-Virtual-Constructive
MAS	Monetary Authority of Singapore
MCDA	Global Military and Civil Defence Assets
MCI	Ministry of Communications and Infomation
MCYY	Ministry of Culture, Community and Youth
MEWR	Ministry of the Environment and Water Resources
MFA	Ministry of Foreign Affairs
MHA	Ministry of Home Affairs
MIGA	Multilateral Investment Guarantee Agency
MINDEF	Ministry of Defence
MINLAW	Ministry of Law
MNCC	Multinational Coordination center
MND	Ministry of National Development
MOE	Ministry of Education
MOF	Ministry of Finance
MOH	Ministry of Health
MOM	Ministry of Manpower
MOT	Ministry of Transportation
MOU	Memorandum of Understanding
MSF	Ministry of Social and Family Development
MTI	Ministry of Trade and Industry
NDMOs	National Disaster Management Organization
NEA	National Environment Agency
NFP	National Focal Point
NGO	Non-Governmental Organization
NSTI	National Training Service Institute
OCHA	UN Office for the Coordination of Humanitarian Affairs
OPCW	Organization for the Prohibition of Chemical Weapons
Ops CE	Operations Civil Emergency
ORNS	Operationally Ready National Service
PICs	Pacific Island Countries
PMO	Prime Minister's Office
RAs	Related Agencies
RCRC	International Red Cross and Red Crescent Movement
RHCC	Changi Regional HADR Coordination Centre
RHQs	Regional Headquarters
RIMPAC	Rim of the Pacific Exercise

<b>Acronym</b>	<b>Definition</b>
RSAF	Republic of Singapore Air Force
SAARC	South Asian Association for Regional Cooperation
SAF	Singapore Armed Forces
SAR	Search and Rescue
SASOP	Standard Operating Procedure for Regional Standby Arrangements and Coordination of Joint Disaster Relief and Emergency Response Operations
SC	Save the Children
SCDF	Singapore Civil Defence Force
SCP	Singapore Cooperation Programme
SCP	Singapore Cooperation Programme
SCR	Singapore Red Cross
SEZ	Special Economic Zones
SFA	Strategic Framework Agreement
SFPs	Satellite Fire Post
SMARTs	Special Malaysia Disaster Assistance and Rescue Teams
U.S.	United States
UN	United Nations
UN-CMCoord	United Nations Humanitarian Civil-Military Coordination
UNCTAD	United Nations Conference on Trade and Development
UNDAC	United Nations Disaster Assistance and Coordination
UNDP	United Nations Development Program
UNDRO	United Nations Disaster Reduction Organization
UNESCO	United Nations Education, Scientific, Cultural Organization
UNHCR	United Nations High Commissioner for Refugees
UNIFEM	United Nations Development Fund for Women
UNIKOM	UN Iraq Kuwait Observer Mission
UNISDR	The United Nations Office for Disaster Risk Reduction
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
NDMOs	National Disaster Management Organization
NEA	National Environment Agency
NFP	National Focal Point
NGO	Non-Governmental Organization
NSTI	National Training Service Institute
OCHA	UN Office for the Coordination of Humanitarian Affairs
UNSCR	United Nations Security Council
UNTAC	UN Transitional Authority in Cambodia
UNTAG	UN Transition Assistance Group
UPU	United Postal Union
USAR	Urban Search and Rescue
VBS2	Virtual Battlespace Simulator 2
WCO	World Customs Organization
WEF	World Economic Forum
WHO	World Health Organization
WILPF	Women's International League for Peace and Freedom

<b>Acronym</b>	<b>Definition</b>
WIPO	World Intellectual Property Organization
WMO	World Meteorological Organization
WOG-IRM	Whole of Government Integrated Risk Management
WPS	Women Peace and Security
WTO	World Trade Organization
WVI	World Vision International
WWF	Worldwide Fund for Nature



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