CFE-DM

CENTER FOR EXCELLENCE
IN DISASTER MANAGEMENT & HUMANITARIAN ASSISTANCE
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INDIA (Assisting State)

Disaster Management Reference Handbook

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Front Cover

Ganga River, located in Varanasi, India. Photo by Srivatsan Balaji on Unsplash.
https://unsplash.com/photos/T5s48osIQTU

Disclaimer

This handbook has been prepared in good faith based on resources available at the time of publication. Information was gathered from the public domain, from local and government sources, as well as from subject matter experts. Where possible, a link to the original electronic source is provided in the endnote (reference) section at the end of the document. While making every attempt to ensure the information is relevant and accurate, the 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. Each handbook is a working document and will be updated periodically as new and significant information becomes available. We hope that you find these handbooks informative, relevant, reliable, and useful in understanding disaster management and response. We welcome and appreciate your feedback to improve this document and help fill any gaps to enhance its future utility. For feedback, comments, or to request a printed copy please email cfe.dmha.fct@pacom.mil. Please visit our website to download copies of this publication and other products (https://www.cfe-dmha.org). All parts of this publication may be reproduced, stored in retrieval systems, and transmitted by any means without the written permission of the publisher.

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Letter from the Director

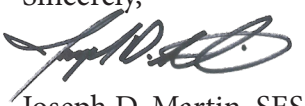
Given its exposure to natural and manmade hazards, India has gained significant experience and built a toolkit for responding to disasters at home and in the wider Indo-Pacific region. Indeed, India has delivered assistance to neighbors and partners and has begun hosting and leading disaster response training and exercises. Not only does India deploy its Armed Forces in response to a natural disaster or crisis, but it has developed a specialized national disaster response force that plays a key role in saving lives and reducing suffering.

As the world grapples with the complex interactions among great power competition, economic dislocation, and climate change, India sits at a key geographic, economic, and security location where it is both subject to intense pressure and capable of responding to challenges by utilizing its mammoth human and economic capacity. As a force for adaptation and cooperation, India has the potential to promote stability and security in the region and to help build the region's resilience to natural calamity. U.S. Indo-Pacific Command (USINDOPACOM) is a strong proponent of enhancing ties with India and counts it as a key partner in its strategic planning. On the issues of climate change adaptation, disaster risk reduction (DRR), and disaster management (DM) the U.S. and India have the opportunity to enhance their impacts by strengthening civilian and military partnerships.

This handbook is intended to serve as an initial source of information for those individuals preparing for DRR activities or immediate deployment for a crisis alongside partner responders from India. It highlights the important role India plays in preparing for, mitigating, responding to, and recovering from natural or man-made disasters in the Indo-Pacific region. It provides decision makers, planners, responders, and DM practitioners greater insight into India's DM capabilities, thereby enhancing regional civil-military response. First, the handbook discusses key areas such as India's organizational structure for domestic and foreign disaster management, international DM agreements, regional training programs, and exercise support. In addition, the book offers a summary of the national social, political, and economic context within which India confronts disasters at home as part of an exploration of what types of hazards India most frequently experiences and, therefore, has specialized knowledge that can be shared with others. This handbook focuses on strengthening partnerships and is not an assessment of India's capabilities.

This handbook is part of a series that provides overviews of country and regional-specific factors that influence DM. As the world confronts unpredictable geophysical hazards and less predictable hydro-meteorological hazards within the context of global political and economic competition, CFE-DM is committed to providing education, training, and research about DM and humanitarian assistance, particularly in international settings, which require coordination among military and civilian entities.

Sincerely,



Joseph D. Martin, SES
Director

About the Center for Excellence in Disaster Management & Humanitarian Assistance

Overview

The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) is a United States (U.S.) Department of Defense (DoD) organization comprised of nearly 30 subject matter experts that provide academic research, civil-military coordination training, and operational insights to support decision making before, during, and after crises. The Center is designed to bridge understanding between humanitarians, civilian, and military responders. CFE-DM partners with a diverse group of governmental and nongovernmental actors, as well as academic institutions to increase collaborations and capabilities in humanitarian assistance and disaster response. While maintaining a global mandate, the Indo-Pacific region is our priority of effort and collaboration is the cornerstone of our operational practice. The Center is a direct reporting unit to U.S. Indo-Pacific Command (USINDOPACOM) and is located on Ford Island, Joint Base Pearl Harbor-Hickam, Hawaii.

Vision

The Joint Force, allies, and partners are fully prepared to conduct and support foreign humanitarian assistance.

Mission

CFE-DM builds crisis response capacity in U.S. and partner militaries, enhances coordination and collaboration with civilian and foreign partners, and strengthens those relationships to save lives and alleviate human suffering before, during, and after humanitarian crises.

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EXECUTIVE SUMMARY

Over the last two decades, India has developed two complementary lines of effort in disaster management (DM). The first one significantly reorganized and improved its domestic capability. The second saw India grow as an emerging donor that increasingly provides disaster relief to other countries, particularly neighbors in its region.

India is one of the world's most disaster-prone countries, as it is exposed to many natural hazards including floods, cyclones, droughts, and earthquakes. India started reorganizing its domestic DM system after a succession of major disasters, including the 1999 Super Cyclone Odisha (formerly known as Orissa),[1] 2001 Gujarat earthquake, and 2004 Indian Ocean tsunami. The aftermath of these devastating disasters led India to enact the DM Act in 2005, adopt the National Policy on DM in 2009, and develop the National DM Plan in 2016. Throughout this process, India consciously developed DM as a holistic approach, not just reacting after a disaster but also integrating disaster preparedness, mitigation, and disaster risk reduction (DRR) into plans and policies. India has increasingly mitigated and responded to all types of disasters, including with the establishment of its National Disaster Reaction Force (NDRF), the world's largest rapid reaction force dedicated to disaster response.

India is also an emerging donor that has provided a substantial amount of foreign disaster relief, as well as foreign development assistance, to other countries. India's foreign humanitarian assistance has increasingly included its military assets, primarily deploying naval ships or aircraft to deliver relief. In line with its diplomatic policy of "Neighborhood First," many of the recipient countries have been in the region of South and Southeast Asia. In the last two decades, India has given foreign humanitarian assistance bilaterally to Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, and others.[2]

As part of its neighborhood development efforts, India also contributes to regional disaster preparedness and capacity building efforts. Within the context of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), India has hosted DM Exercises that allow NDRF to demonstrate for counterparts from partner states the techniques developed to respond to various disasters. Other NDRF and Indian Armed Forces exercises have brought India's first responders into contact with those from states in the South Asian Association for Regional Cooperation (SAARC) and the Shanghai Cooperation Organisation (SCO).

These efforts come as India, along with the rest of the world, is increasingly affected by climate change. Globally, disasters in the last two decades have predominantly been climate-related disasters, of which floods are the most frequently occurring type of disaster and storms are the second most deadly type of disaster (surpassed by earthquakes).[3] India frequently experiences both floods and storms. The country has adopted the Sendai Framework for DRR, the Sustainable Development Goals (2015-2030), and the Paris Agreement on Climate Change, all of which make clear the connections among DRR, climate change adaptation (CCA), and sustainable development. India participates in several multilateral organizations that address these and other issues that benefit from multinational coordination.

India approaches most of its international humanitarian assistance and disaster relief activities bilaterally. While it maintains membership in various regional organizations, it also works to develop and maintain bilateral relations with individual countries. The United States (U.S.) and India have deepened their relationship in the past several decades. India is a valued strategic partner for the U.S., and the two countries work together in ensuring a free and open Indo-Asia-Pacific region.

REGIONAL OVERVIEW

India's strategic geographic location has contributed to its emergence as a regional and global power. Located in Southern Asia, India has coastlines on the Arabian Sea and the Bay of Bengal, and it lies between Myanmar (Burma) and Bangladesh to the east and Pakistan to the west with China, Nepal, and Bhutan to the north, as shown in Figure 1.[4]

India has expressed support for the global humanitarian system and endorsed the United Nations (UN) as the desired agency to coordinate assistance; however, relief operations in South Asia are mainly bilateral.[5] India has been a leader in providing humanitarian assistance and disaster relief (HADR) in the surrounding region. Over the past two decades, India's relief strategy has gained prominence coinciding with the country's economic rise. The country has material capabilities, experience in responding to natural hazards and public health emergencies, and political influence. In addition, India has a distinct geographical advantage over other world powers such as China when it comes to reaching out during emergencies in South Asia simply due to proximity.[6] The region is the most exposed in the world to flooding and the second most exposed to cyclones, but most of its disaster fatalities are due to earthquakes. The number of disasters in the region has increased five-fold in the last 50 years with estimated direct losses amounting to US$80 billion.[7]



Figure 1: Map of India

India's external HADR has largely been directed towards countries within its own neighborhood. The 2015 Nepal earthquake resulted in international humanitarian response, and India was among the quickest to respond, deploying the Indian Army, the Air Force, and other specialized teams. India has carried out similar relief operations to assist its neighbors including after the 2004 Indian Ocean tsunami, the 2005 India-Pakistan earthquake, Cyclone Nargis in Myanmar in 2008, the Maldives water crisis in 2014, and Cyclone Mora in Bangladesh in 2017. The region is also affected by non-traditional disaster events, new types of emergencies such as pandemics, chemical and biological accidents, industrial failures, and terrorist attacks[8] - e.g., a major oil spill off the coast of Mauritius in 2020 or the 2019 Easter terrorist bombings in Sri Lanka after which India sent medical teams.[9]

Since the global outbreak of Coronavirus Disease-2019 (COVID-19), India has launched diplomatic offensives by offering massive assistance to countries and international organizations. While COVID-19 has caused many disruptions to humanitarian action, India managed to provide aid to over 150 countries and international organizations in 2020, with online technical support as one important avenue. This modality enables foreign humanitarian actors to connect to those in need without being physically present, and India excels at this type of outreach, thereby maintaining some level of parity with near-peer country initiatives. Within this context, it is important to mention China as an aid donor operating in South Asia. China continues parallel aid and development via the Belt and Road Initiative (BRI), which incorporates several Asian and African countries vulnerable to natural hazards and internal conflicts.[10] One aspect of India's relief strategy will be preventing other countries such as China from filling a regional void.[11]

International Framework

India describes its international approach, including to HADR, as a policy of "Neighbors First."[12] India's foreign humanitarian assistance has largely been directed toward neighbors in its immediate region. Its flagship aid initiative has been the Indian Technical and Economic Cooperation (ITEC), which has provided training and education to tens of thousands of scholars, leaders, and practitioners from developing countries.[13] India has gone from being the world's largest recipient of foreign assistance in the 1980s, to allocating approximately US$968 million to other countries in the form of foreign development assistance for the financial year 2021-2022. Most recipients are in India's region, including Afghanistan, Bhutan, Maldives, Mauritius, Mongolia, Myanmar, Nepal, Seychelles, and Sri Lanka, as well as some Eurasian and African countries.[14]

While many of the multilateral organizations in which India is active envision a regionally oriented identity of neighboring nations, India primarily engages in international humanitarian assistance on a bilateral basis. The government under Prime Minister (PM) Modi has also asserted a role for India as a "first responder" to regional crises. India was the first foreign country to fly relief goods into Nepal in response to the 2015 earthquake; Indian response teams and assets arrived within four hours of the quake. Although India usually prefers self-sufficiency instead of accepting foreign aid during natural disasters, the COVID-19 pandemic has raised numerous challenges to that policy, as it has for many countries.[15] India increasingly asserts its role as a regional leader while it continues to navigate a challenging international landscape.

Guiding Principles (Civil-Military)

In large-scale disasters that overwhelm local and national capabilities, a host nation's acceptance of foreign disaster assistance may also include accepting the presence of foreign military personnel and assets tasked with and intended for providing humanitarian relief during disaster response operations. In such cases, civil-military coordination is critical to ensure that the wide variety of response actors are working effectively toward the same goal. The UN Humanitarian Civil-Military Coordination (UN-CMCoord) concept provides guidelines and principles for such international crisis responses. UN-CMCoord is the essential dialogue and interaction between civilian and military actors in humanitarian emergencies that is necessary to protect and promote humanitarian principles, avoid competition, minimize inconsistency, and, when appropriate, pursue common goals.[16] UN-CMCoord officers and processes facilitate these civil-military dialogues and interactions, and regional groupings have formed both to provide input to UN-CMCoord and to rehearse it.

UN-CMCoord

UN-CMCoord is a framework for dialogue and interaction among civilian and military actors; it enhances understanding of humanitarian action and guides political and military actors on how best to support that action in order to protect humanitarian principles (humanity, impartiality, neutrality, and operational independence), avoid competition, minimize inconsistency, and promote common goals, the most important of which are to save human lives and reduce suffering.

The UN Office for the Coordination of Humanitarian Affairs (OCHA) Civil-Military Coordination Section (CMCS) is the designated focal point in the UN system for humanitarian civil-military coordination, supporting relevant field and headquarters level activities and operations. As custodian of UN-CMCoord guidelines, CMCS helps humanitarian actors to develop context-specific guidance and runs a training program to equip humanitarian and military actors with the skills and knowledge

necessary to effectively interact with each other. CMCS also prepares and deploys dedicated UN-CMCoord experts to the field. OCHA provides UN-CMCoord capacity in two forms: 1) deployment in response to sudden onset humanitarian emergencies or to complex emergencies and protracted crises; and 2) support to UN-CMCoord Officers or Focal Points in an OCHA office.

UN-CMCoord is particularly appropriate in complex international emergencies and high-risk environments to facilitate humanitarian access, protect civilians, and secure humanitarian aid workers. In large-scale disasters necessitating international response, UN-CMCoord often focuses on deconflicting incoming foreign military assets. For this reason, complementary practices deriving from UN-CMCoord guidelines were drafted in 2018: Recommended Practices for Effective Humanitarian Civil-Military Coordination of Foreign Military Assets (FMA) in Natural and Man-Made Disasters.[17] Complementary to the UN-CMCoord guidelines, the Asia-Pacific Regional Guidelines for the Use of FMA in Natural Disaster Response Operations were developed in a regional five-year process that grew out of Asia-Pacific Conferences on Military Assistance in Disaster Relief Operations.[18] Regional discussions continue in the Regional Consultative Group (RCG) on Humanitarian Civil-Military Coordination for Asia and the Pacific to develop relevant procedures, policies, and references.[19]

Partnerships, Agreements, and Memberships

Bilateral Partnerships

India has diplomatic ties with over 130 countries, with missions in:

Afghanistan, Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Botswana, Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Cambodia, Cameroon, Canada, Chile, China, Colombia, Congo [Democratic Republic of], Congo [Republic of], Côte d'Ivoire [Ivory Coast], Croatia, Cuba, Cyprus, Czechia, Denmark, Djibouti, Egypt, Equatorial Guinea, Eswatini, Ethiopia, Fiji, Finland, France, Germany, Ghana, Greece, Guatemala, Guinea, Guyana, Hungary, Iceland, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea [Democratic People's Republic of], Korea [Republic of], Kuwait, Kyrgyzstan, Laos, Lebanon, Libya, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Mauritius, Mexico, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Niger, Nigeria, Norway, Oman, Pakistan, Palestine, Panama, Papua New Guinea, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Rwanda, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Slovak Republic, Slovenia, South Africa, South Sudan, Spain, Sri Lanka, Sudan, Suriname, Sweden, Switzerland, Syria, Tajikistan, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States of America, Uzbekistan, Venezuela, Vietnam, Yemen, Zambia, and Zimbabwe.[20]

Details on how India's Ministry of External Affairs (MEA) manages these relationships can be found at: *https://www.mea.gov.in/*

Additional details regarding how India engages with significant partners and competitors are explained in the following section.

India and the U.S.

The U.S. and India have experienced a deepening partnership since the end of the Cold War. Per India, bilateral relations with the U.S. have developed into a global strategic partnership, based on shared democratic values and increasing convergence of interests on bilateral, regional, and global issues.[21] The U.S. supports India's emergence as a leading global power and partner in efforts to ensure that the Indo-Pacific is a region of peace, stability, and growing prosperity. India and the U.S. cooperate closely at several multilateral organizations,

including the UN, G-20, Association of Southeast Asian Nations (ASEAN) Regional Forum, International Monetary Fund, World Bank, and World Trade Organization. The U.S. welcomed India joining the UN Security Council in 2021 for a two-year term and supports a reformed UN Security Council that includes India as a permanent member.[22] Bilateral trade totals around US$149 billion, with a diverse array of U.S. businesses operating in India across energy, infrastructure, technology, and entertainment sectors.[23] In 2019, the U.S. joined India's Coalition for Disaster Resilient Infrastructure to expand cooperation on sustainable infrastructure in the Indo-Pacific region.

India and Russia

Development of India-Russia relations has been a pillar of India's foreign policy. Since the 2000 signing of the Declaration on the India-Russia Strategic Partnership, India-Russia bilateral cooperation has been enhanced across many areas. During the visit of the Russian President to India in 2010, the Strategic Partnership was elevated to the level of a Special and Privileged Strategic Partnership. In 2019, PM Modi was decorated with the Order of St Andrew the Apostle, Russia's highest state decoration, for exceptional services in promoting special and privileged strategic partnership.[24]

India and Afghanistan

India and Afghanistan have historically had a strong relationship with diplomatic and cultural links, which were strengthened by the 2011 signing of the Strategic Partnership Agreement between the two countries. This led to India providing a significant amount of foreign development assistance to Afghanistan to help rebuild infrastructure and institutions. In 2017, India and Afghanistan launched a New Development Partnership to manage the use of an announced US$1 billion in development assistance. Major humanitarian assistance by India to Afghanistan included 75,000 metric tons of wheat in 2020, 1.1 million tons of wheat for approximately 1.5 million school children, 2,000 tons of pulses in 2018, and setting up a Medical Diagnostic Centre in Kabul in 2015.[25]

India and Bangladesh

India and Bangladesh share excellent bilateral ties "based on sovereignty, equality, trust, and understanding that goes far beyond a strategic partnership," according to India. Shared historical bonds include India's supportive actions during Bangladesh's war of independence from Pakistan. Recent defense cooperation activities include the second edition of the India-Bangladesh Coordinated Patrol (CORPAT) 'Bongosagar' exercise in October 2020, Regional Commanders Meeting of Coast Guards in October 2020, and the third Annual Defense Dialogue in November 2020. The two are major partners in trade and development. India has extended three Lines of Credit to Bangladesh in the last eight years amounting to US$8 billion for infrastructure development.[26] Indian PM Modi's first trip to a foreign country after the onset of the COVID-19 pandemic was to visit Bangladesh in March 2021 to participate in the golden jubilee of its independence from Pakistan and the birth centenary of its Father of the Nation Bangabandhu. Bangladesh PM Hasina thanked PM Modi at the beginning of 2021 for donating over two million doses of AstraZeneca-Oxford University vaccine Covishield, which helped Bangladesh launch its nationwide COVID-19 vaccination drive.[27]

India and China

The India-China relationship has diversified in recent years, and they redefined their bilateral engagement in 2014 as a Closer Developmental Partnership. Trade between the two countries has grown dramatically in the last decade, showing double-digit growth in 2017-2018. In 2019, India was China's 12th largest trading partner.[28] Yet the two countries are also seen as competitors as both emerge as potential regional leaders. They have been locked in a decades-long dispute over their shared border, even coming to conflict over it in 1962[29] and engaging in skirmishes in 2020-2021.[30] A recent build-up of troops and military

stand-off along their shared border is a point of concern, with no progress made at border talks in January 2022.[31]

India and Nepal

India and Nepal are close neighbors that share ties of friendship and cooperation. This is uniquely characterized by an open border, with a long tradition of free movement of people across the shared 1,850-kilometer (km; 1,150-mile) border. They established the India-Nepal Treaty of Peace and Friendship in 1950 and continue to have regular high-level visits and exchanges. In defense cooperation, the two engage in bilateral military exercises, and India has been assisting Nepal in modernizing its military by supplying equipment and training. India was the first foreign state to arrive after the 2015 Nepal earthquake, deploying more military assets in its response than any other responding country. India's relief assistance to Nepal amounted to over US$67 million for the earthquake.[32] Nearly 8 million Nepalese citizens live and work in India.

India and Singapore

India and Singapore have close ties and share people-to-people connections based on the portion of Singapore's population who are ethnically Indian. The relationship became a strategic partnership in 2015, and PM Modi visited Singapore twice in 2018, resulting in numerous bilateral cooperative initiatives and agreements across defense cooperation, trade and investment, public administration and governance, urban planning and development, and science and technology innovation. The two countries signed an agreement in November 2020 to work together to provide HADR when natural disasters strike their countries. An Indian liaison officer works full-time on the staff of the Singapore military's Changi Regional HADR Coordination Centre (RHCC).[33] India and Singapore have long-standing defense ties with annual high-level dialogues and exercises.[34]

India and the United Kingdom

India and the United Kingdom (UK) have had a Strategic Partnership since 2004 with a relationship spanning trade, economy, health, science and technology, defense and security, people-to-people relations, and climate change. As a former British colony, India attained independence from the UK in 1947 and remained in the Commonwealth of nations. While some of their initial political relations were conducted through multilateral organizations, India and the UK deepened their bilateral relationship in the last few decades. The UK is the sixth largest investor in India, and trade between the two countries accounted for more than US$15 billion in 2019-2020.[35] In January 2022, they launched negotiations on an ambitious free trade agreement.[36]

Multilateral Partnerships, Agreements, and Memberships

The following multi-lateral organizations, agreements, and global commitments are presented in alphabetical order.

Asia-Europe Meeting (ASEM)

ASEM is an intergovernmental process established in 1996 to foster dialogue and cooperation between Asia and Europe. India is one of 53 ASEM partners, which are comprised of 30 European and 21 Asian countries, the European Union (EU), and the Association of South-East Asian Nations (ASEAN) Secretariat. ASEM collaboration is guided by three areas of common interest, referred to as the ASEM Three Pillars: political, economic, and socio-cultural and educational dimensions.[37]

Association of South-East Asian Nations (ASEAN) (Dialogue Partner)

ASEAN consists of Brunei, Cambodia, Indonesia, Lao People's Democratic Republic (PDR), Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. There has been continual development in the ASEAN-India partnership since India inaugurated its 'Look East' Policy in 1991. The 'Look East' Policy has developed into an action focused 'Act East' Policy. India became a full ASEAN

dialogue partner in 1996. India has held yearly summits with ASEAN alongside China, Japan, and the Republic of Korea (South Korea) since 2002. India's emphasis on reinforced and diverse relations with ASEAN is a product of the significant modifications in the world's political and economic situation since the early 1990s and India's own pursuit of economic freedom.

The ASEAN Regional Forum (ARF) was established in 1994. It comprises 27 members: the 10 ASEAN member states, the 10 ASEAN dialogue partners (Australia, Canada, China, the EU, India, Japan, New Zealand, Republic of Korea, Russia, and the U.S.), one ASEAN observer (Papua New Guinea) as well as the Democratic People's Republic of Korea (North Korea), Mongolia, Pakistan, Timor-Leste, Bangladesh, and Sri Lanka. The ARF is a key forum for security dialogue in Asia, complementing bilateral alliances and dialogues. 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. (https://asean.mission.gov.au/aesn/aseanregionalforum.html)

Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)

BIMSTEC is a regional organization of seven member states in the littoral and adjacent areas of the Bay of Bengal, constituting a contiguous regional unity. Five of the members are from South Asia – Bangladesh, Bhutan, India, Nepal, and Sri Lanka – and two are from Southeast Asia – Myanmar and Thailand. BIMSTEC was established in 1997 through the Bangkok Declaration with five initial members, including India; Nepal and Bhutan were admitted in 2004. BIMSTEC bills itself as a bridge between South and Southeast Asia and a platform for intra-regional cooperation between South Asian Association of Regional Cooperation (SAARC) and ASEAN members. BIMSTEC has seven sectors of cooperation: 1) Trade, Investment, and Development; 2) Environment and Climate Change; 3) Security; 4) Agriculture and Food Security; 5) People-to-People Contact; 6) Science, Technology, and Innovation; and 7) Connectivity.[38]

India hosts the BIMSTEC Centre for Weather and Climate (BCWC), which was authorized in 2014. The center functions from the National Centre for Medium Range Weather Forecasting (NCMRWF) in Noida, Uttar Pradesh.[39] Member states have recommended renaming the BCWC as the BIMSTEC disaster management and climate change center, though no official change has occurred. BIMSTEC has reportedly been looking toward the ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre) as a model to adopt.[40] India has also set up a link between BIMSTEC countries through the Tsunami Early Warning Centre and has been sharing data from the Centre since 2006.[41]

India hosted the first BIMSTEC Disaster Management Exercise (DMEx) in October 2017. It was comprised of a Tabletop Exercise (TTX), Field Training Exercises (FTX) on earthquake and flood, and an After Action Review (AAR). All seven member states participated in the four-day exercise.[42] India also hosted the 2nd BIMSTEC DMEx in February 2020 in Odisha State. It consisted of a TTX, an FTX on flood rescue management at Ramachandi Beach in Puri, and an AAR. Five member states – Bangladesh, India, Myanmar, Sri Lanka, and Nepal – sent 80 delegates to participate, and various international agencies sent observers.[43]

BRICS

The BRICS is a grouping of five emerging economies of the world – Brazil, Russia, India, China, and South Africa – with the term coined as an acronym of their initials. The first BRIC summit took place in 2009, with South Africa formally joining in 2010, making it BRICS.[44] India has hosted three summits, in 2012, 2016, and the most recent 13th Summit of BRICS on 9 September 2021. Discussion was around three pillars: 1) political and security; 2) economic and financial; and 3) cultural and people-to-people.[45]

Conference on Interaction and Confidence-Building Measures in Asia (CICA)

CICA is an intergovernmental forum that aims to enhance cooperation to promote peace and security in Asia. Established in 1992, CICA now has 27 members, including India.[46] India has been a co-coordinator of confidence-building measures in Transport and Energy, and in 2021, it hosted an online workshop on renewable energy for energy security.

East Asia Summit (EAS)

The EAS process was initiated in 2005 with 16 participating countries, i.e., the ASEAN Member States, Australia, China, India, Japan, New Zealand, and the Republic of Korea. The U.S. and Russia joined in 2011 to bring the number of participants to 18. The EAS is an annual meeting of heads of states/governments of participating countries. Six identified priority areas of cooperation are: 1) environment and energy; 2) education; 3) finance; 4) global health issues and pandemic diseases; 5) natural disaster management; and 6) ASEAN Connectivity. Plans of Actions have been developed to promote cooperation on these priority areas. EAS has also discussed cooperation in other emerging areas such as food security, trade and economics, maritime security and cooperation, and traditional and non-traditional security issues.[47]

G-20

The G-20 or Group of 20 is an intergovernmental forum of 19 countries – Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the UK, and the U.S. – and the EU. It was established in 1999 to involve middle-income countries in discussing policies to achieve international financial stability, particularly in the context of the global economic conditions caused by the global financial crisis in 1997-1999. It describes itself as a strategic multilateral platform connecting the world's major developed and emerging economies. It addresses major issues related to the global economy and altogether represents more than 80% of world Gross Domestic Product (GDP).[48]

Indian Ocean Rim Association (IORA)

IORA is an intergovernmental organization that was established on 7 March 1997. The idea came about during a visit by the late President Nelson Mandela of South Africa to India in 1995, where he said, "The natural urge of the facts of history and geography should broaden itself to include the concept of an Indian Ocean Rim for socioeconomic cooperation…" The apex body of IORA is the Council of Foreign Ministers, which meets annually. India served as Chair during 2011-2013, during which time IORA identified its six priority and two focus areas. The six priorities are: 1) disaster risk management; 2) maritime safety and security; 3) trade and investment facilitation; 4) fisheries management; 5) tourism and cultural exchanges; and 6) academic, science, and technology cooperation; and the two focus areas are: 1) the blue economy, and 2) women's economic empowerment.[49]

Mekong-Ganga Cooperation (MGC)

MGC is an initiative by six countries, India and five of the Mekong sub-region members of ASEAN – Cambodia, Laos, Myanmar, Thailand, and Vietnam. It was initiated in 2000. The MGC aims to facilitate closer contacts among the people inhabiting the two major river basins for which the initiative is named.[50] The four foundational areas of cooperation were tourism, culture, education, and transport and communication. This expanded to include health and traditional medicine, agriculture and allied sectors, small and medium enterprises, water resources management, science and technology, skill development, and capacity building. India hosted the 6th MGC Ministerial Meeting in 2012, following which there was a four-year gap until the next meeting. India then hosted the 8th meeting in 2017. In 2016 India announced 50 new Indian Technical and Economic Cooperation (ITEC) scholarships in addition to 900 scholarships given annually. Quick Impact Projects have been done in Laos, Myanmar, Cambodia, and Vietnam.[51]

The Quadrilateral Security Dialogue

The Quadrilateral Security Dialogue, known as the Quad, is a group of four countries: India, the U.S., Australia, and Japan. While not a formal alliance, the group has increased security and economic ties as tensions with China have risen. India has tended to emphasize the Quad's functional cooperation. The Quad has roots in disaster response, as it was formed in 2007 within the context of addressing damage from the 2004 Indian Ocean tsunami.[52] After waning, the relationship was reinvigorated in 2017, with stated uniting principles of democracy, a rules-based order, and a free, open, and inclusive Indo-Pacific. The agenda has broadened to cover a wide array of issues not limited to security and economics but including climate change and health issues such as COVID-19.[53] In November 2020, the four navies participated in their first quadrilateral exercise in more than a decade; Exercise Malabar took place in the Bay of Bengal and the Arabian Sea.[54]

Sendai Framework

The Sendai Framework is the successor instrument to the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters. It is the outcome of 2012 stakeholder consultations and 2014-2015 intergovernmental negotiations, which were supported by the UN International Strategy for Disaster Reduction (UNISDR - now the United Nations Office for Disaster Risk Reduction (UNDRR)) 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. It works hand-in-hand with the other 2030 Agenda agreements, including the Paris Agreement on Climate Change, the Addis Ababa Action Agenda on Financing for Development, the New Urban Agenda, and ultimately the Sustainable Development Goals. It is laid out in seven targets and four priorities for action.[55] These targets and priorities are included in Figure 2 along with the scope and purpose, expected outcome, and goals.[56]

Shanghai Cooperation Organisation (SCO)

The SCO is a regional intergovernmental organization to promote political and economic cooperation. It was established in 2001; India and Pakistan both joined in 2017, and in September 2021 the SCO endorsed the future membership of Iran.[57] The other members are China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan.[58]

South Asian Association of Regional Cooperation (SAARC)

SAARC was founded in 1985, and the secretariat was established in Kathmandu, Nepal, in 1987. The eight member states are Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. India is a founding member and hosted summits in 1986, 1995, and 2007. SAARC objectives are: to promote the welfare of the peoples of South Asia and to improve their quality of life; to accelerate economic growth, social progress, and cultural development in the region and to provide all individuals the opportunity to live in dignity and to realize their full potentials; to promote and strengthen collective self-reliance among the countries of South Asia; to contribute to mutual trust, understanding, and appreciation of one another's problems; to promote active collaboration and mutual assistance in the economic, social, cultural, technical, and scientific fields; to strengthen cooperation with other developing countries; to strengthen cooperation among themselves in international forums on matters of common interests; and to cooperate with international and regional organizations with similar aims and purposes.[59]

SAARC has several regional centers:

- SAARC Agriculture Centre, Bangladesh (est. 1989)
- SAARC Energy Centre, Pakistan (est. 2006)
- SAARC Cultural Centre, Sri Lanka (est. 2009)
- SAARC Tuberculosis and HIV/AIDS Centre, Nepal (est. 1992)
- SAARC Disaster Management Centre (SDMC), India (2016).

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

Scope and purpose

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

Expected outcome

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

Goal

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

Targets

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

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

The SDMC was initially established in 2006 in New Delhi but re-established in Gujarat in November 2016 for an expanded role by merging four former SAARC centers: 1) the former SDMC based in New Delhi; 2) SAARC Meteorological Research Centre formerly in Dhaka, Bangladesh; 3) SAARC Forestry Centre formerly in Thimphu, Bhutan; and 4) SAARC Coastal Zone Management Centre formerly in Male, Maldives. The expanded SDMC was re-established with the mandate to support member states in their DRR initiatives through science and technology applications, multidisciplinary knowledge, exchange of best practices, capacity development, collaborative research, and networking in line with global priorities, goals, and other frameworks adopted by member states.[60] In addition to the regional centers, SAARC established new institutions such as the SAARC Arbitration Council, South Asian University, SAARC Development Fund Secretariat, and SAARC Regional Standards Organization.

The SDMC developed the SAARC Agreement on Rapid Response to Natural Disasters (SARRND) in 2011, with the Natural Disaster Rapid Response Mechanism (NDRRM) inspired by the ASEAN Agreement on Disaster Management and Emergency Response (AADMER). However, there has been a failure of consensus to set up the envisioned disaster response rapid action force. In November 2015, months after Nepal suffered a devastating earthquake, India hosted SAARC's inaugural South Asian Disaster Management Exercise (SAADMEx). It aimed to "test inter-governmental coordination efforts, create synergy and synchronize efforts to institutionalize regional cooperation on disaster response among the member countries." One of the joint field exercises involved an earthquake scenario. It was envisioned as an annual event but has not been repeated.[61]

A key point of contention hindering SAARC consensus is the unfriendly India-Pakistan relationship. The 19th SAARC Summit, scheduled for Islamabad in November 2016, was cancelled after India and other SAARC countries boycotted following the Uri terror attack on 18 September 2016 that killed 19 Indian soldiers and wounded dozens more. The Summit has yet to be held,[62] and India and Pakistan have each accused the other of stalling the SAARC process.[63] In January 2022, Pakistan broached the idea of hosting the years-postponed 19th SAARC Summit with virtual attendance options, but India rejected this citing "no material change in the situation" since the previous cancellation. While SAARC does good technical work, the standstill reflects the current limitations of it acting as a regional cooperation mechanism for South Asia.[64]

Other Memberships and Participation

India also participates in, is a member of, or has a relationship with (as a government or via a non-government organization (NGO)) the following international organizations:

African Development Bank (ADB; nonregional member), Arab League (observer), Arctic Council (observer), Asian Development Bank (ADB), ASEAN Regional Forum (ARF), Association of Southeast Asian Nations (ASEAN; dialogue partner), Bank for International Settlements (BIS), Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), Colombo Plan, Commonwealth, Conference on Disarmament, Conference on Interaction and Confidence Building Measures in Asia (CICA), East Asia Summit (EAS), European Organization for Nuclear Research (CERN; observer), Financial Action Task Force (FATF), Food and Agriculture Organization of the United Nations (FAO), Group of 15 (G-15), Group of 77 (G-77), Group of Five (G5), Group of Twenty (G20), Institute of Catastrophe Risk Management (ICRM), Intergovernmental Group of Twenty-Four on International Monetary Affairs and Development (G-24), International Atomic Energy Agency (IAEA), International Bank for Reconstruction and Development (IBRD), International Chamber of Conference (ICC; national committees), International Civil

Aviation Organization (ICAO), International Criminal Police Organisation (INTERPOL), International Development Association, International Federation of Red Cross and Red Crescent Societies (IFRC), International Finance Corporation, International Fund for Agricultural Development, International Hydrographic Organization, International Labour Organization, International Maritime Organization, International Mobil Satellite Organization, International Monetary Fund (IMF), International Olympic Committee (IOC), International Organization for Migration (IOM), International Organization for Standardization, International Telecommunications Satellite Organization, International Telecommunications Union, International Trade Union Confederation (NGOs), Inter-Parliamentary Union, Multilateral Investment Guarantee Agency (MIGA), Non-Aligned Movement, Organisation for Economic Cooperation and Development (OECD), Organisation for the Prohibition of Chemical Weapons (OPCW), Organization of American States (OAS; observer), Pacific Alliance (observer), Pacific Islands Forum (PIF; partner), Permanent Court of Arbitration, Shanghai Cooperation Organisation (SCO; observer), South Asia Cooperative Environment Programme (SACEP), South Asian Association for Regional Cooperation (SAARC), United Nations (UN), United Nations Conference on Trade and Development (UNCTAD), United Nations Educational, Scientific, and Cultural Organization (UNESCO), United Nations High Commissioner for Refugees (UNHCR), United Nations Industrial Development Organization (UNIDO), United Nations Institute for Training and Research (UNITAR), Universal Postal Union, World Customs Organization, World Federation of Trade Unions (NGOs), World Health Organization (WHO), World Intellectual Property Organization, World Meteorological Organization, World Tourism Organization, World Trade Organization (WTO)

Government Departments Involved in Crisis Response

Many of the departments and agencies involved in disaster response were created out of the Disaster Management (DM) Act enacted on 26 December 2005.[65] The DM Act was part of a comprehensive DM plan, which the Indian government saw the need for following a succession of major disasters, including the 2004 Indian Ocean tsunami, 2001 Gujarat earthquake, and 1999 Super Cyclone Odisha (formerly known as Orissa).[66] The new approach was informed by the tenets that development cannot be sustainable unless disaster mitigation is built into the development process, that mitigation should be multi-disciplinary across all sectors of development, and that investments in mitigation are much more cost effective than expenditure on relief and rehabilitation.[67]

The DM Division falls under the Ministry of Home Affairs (MHA). The Division is responsible for response, relief, and preparedness for natural calamities and man-made disasters, except drought and epidemics. The Division is also responsible for legislation, policy, capacity building, prevention, mitigation, and long-term rehabilitation. Figure 3 shows the DM Division's organization structure.[68]

National Disaster Management Authority

The National Disaster Management Authority (NDMA) is the apex body for DM in India and operates almost exclusively on the domestic scene. The NDMA was established via the DM Act of 2005, which also enabled institutional mechanisms at state and district levels. NDMA is mandated to establish DM policies, plans, and guidelines. NDMA has five major divisions: Policy and Plans, Mitigation, Operations and Communication, Capacity Building, and Finance.[69] The NDMA is chaired by the PM.

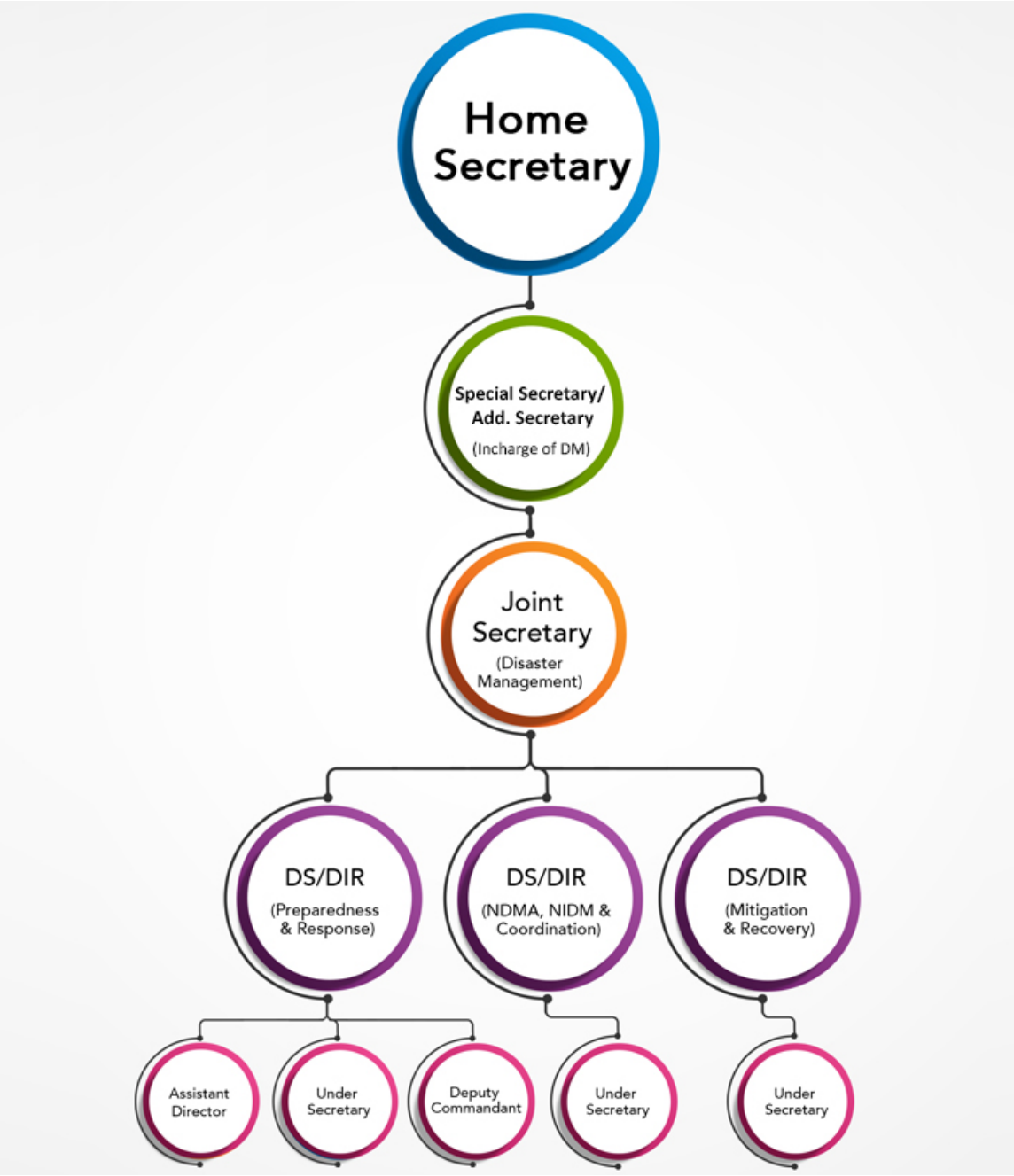


Figure 3: Organizational Structure of the Disaster Management Division

National Disaster Response Force

The National Disaster Response Force (NDRF) responds to both domestic and foreign disasters and was created out of the 2005 DM Act for the purpose of responding to natural and man-made disasters. The NDRF falls under MHA. Organized along paramilitary lines, it currently has 12 battalions, containing 1,149 personnel each, and describes itself as the world's single largest force dedicated to disaster response. This is an expansion over eight battalions at the Force's founding in 2006, when it was used for routine law and order duties. Figure 4 shows the location of NDRF battalions throughout India.[70]

In October 2007, the decision was made in a meeting of the NDMA with the PM to make the NDRF a dedicated force, and in February 2008 the NDRF became a dedicated force for disaster response related duties, under the unified command of the Director General of the NDRF.

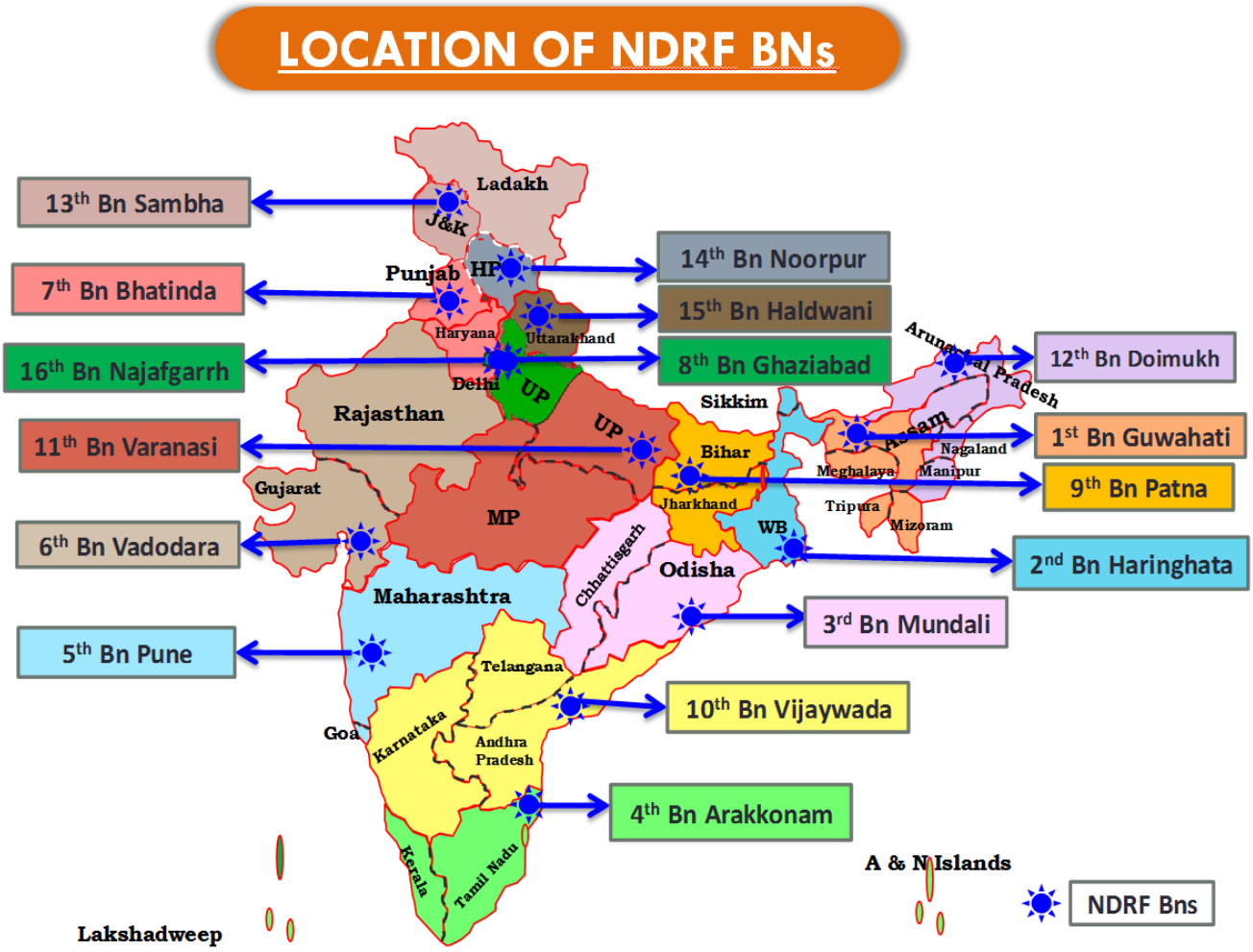


Figure 4: Location of National Disaster Response Force Battalions throughout India

International operations undertaken by NDRF include the 2011 Japan earthquake and tsunami response and the 2015 Nepal earthquake response. In their first overseas deployment, 46 members of NDRF engaged in search and rescue in Japan's Onagawa town, where 85% of the buildings were swept away by a 14.8-meter (m; 48.5-foot) tsunami and more than 800 people lost their lives.[71]

The bulk of NDRF's efforts are focused domestically. Shortly after being re-dedicated in 2008, the NDRF's first big test was in responding to Kosi floods in Bihar state. Since then, the NDRF has been deployed domestically to respond to numerous disasters or emergencies within India. Table 1 shows many of NDRF's domestic deployments, though the list is not exhaustive.[72]

Defense Apparatus and Armed Forces

Armed Forces

The Indian Armed Forces are called upon to assist the civil administration when a situation exceeds civilian coping capability. As stated in the National Policy on DM, the Armed Forces form an important part of the government's disaster response capacity and are immediate responders in all serious disaster situations.[73] According to Lieutenant General (Retired) V.K. Kapoor, the Indian Army "continues to be amongst the first responders in a disaster situation even before the civilian resources have been deployed mostly by virtue of its location in the entire country, especially in the far-flung border areas or even

2020
- Torrential Rains - Telangana, Andhra Pradesh, Karnataka, and Maharashtra States
- Building Collapse - Bhiwandi, Maharashtra State
- Plane Crash - Kozhikode, Kerala
- Landslide - Idukki, Kerala
- Building Collapse - Raigad, Maharashtra
- Rescue Ops of 2 Fire Fighters - Delhi
- Bore-Well Incident - Nagaur District, Rajasthan
- Bus Accident with vehicles falling into well - Nashik, Maharashtra State
- Rescued Cattle from Bore Well - Sipahijala District, Tripura State
- Chemical Gas Leak - Vishakhapatnam, Andhra Pradesh State
- Cyclone Nisarga - Maharashtra State
- Super Cyclone Amphan - West Bengal and Odisha States

2019
- Medical and Health Assistance at Kumbh Mela - Uttar Pradesh State
- Cyclone Maha - Gujarat State
- Cyclone Bulbul - Odisha and West Bengal States
- Cyclone Fani - Odisha, West Bengal, and Andhra Pradesh States
- Cyclone Vayu - Gujarat State
- Borewell Incident - Mathura, Uttar Pradesh
- Building Collapse - Dongri, Mumbai, Maharashtra State Capsized Boat - Ghaghara River, Snat Kabir Nagar, Uttar Pradesh
- Landslide - Kerala
- Collapse of Construction Building - Dharwad, Karnataka
- Floods - Maharashtra (July-August), Bihar (July-September), Gujarat (August), Assam (July), Andhra Pradesh (August), Karnataka (August), Madhya Pradesh (September), Punjab (August), Uttar Pradesh (August-September), Tripura (June)

2018
- Cyclone Titli - Odisha
- Massive Floods - Kerala State
- Collapse of Flyover – Majerhat, Kolkata, West Bengal
- Building Collapse - Shahberi, Greater Noida, Uttar Pradesh
- Rescue of Girl from Bore-Well - Munger, Bihar
- Capsized Boat - Andhra Pradesh
- Collapse of Construction Flyover Near Cant. Railway Station - Varanasi, Uttar Pradesh

2017
- Flooding
- Building Collapse - Kanpur, Uttar Pradesh
- Derailment of Hirakhand Express - Kuneru, Vizianagaram, Andhra Pradesh

2016
- Cyclone Vardah - Tamil Nadu, Andhra Pradesh, and Pudduchery
- Derailment of Patna-Indore Train - Pukhrayan, Kanpur, Uttar Pradesh
- Collapse of Under Construction Five Story Building - Bengaluru, Karnataka
- Floods - Uttar Pradesh and Madhya Pradesh
- Delivery of pregnant ladies in NDRF boat
- Savithri River Bridge Collapsed - Mahad, Raigad, Maharashtra
- Boiler Explosion in Chemical Factory - Dombivili, Thane, Maharashtra
- Simhastha Kumbh Mela – Ujjain, Madhya Pradesh
- Capsized Boat - West Bengal
- Building Collapse Near Llr Medical Collage - Merrut, Uttar Pradesh
- Uttarakhand Forest Fire
- Bridge Collapse - Kolkata

2015
- Chennai Flood
- Rescue Operation - Bilaspur Himachal Pradesh

2014
- Jammu & Kashmir Flood Rescue and Relief
- Hud Hud Cyclone
- Flood - Assam

2012
- Building Collapse
- Train Accident - Maligaon, Guwahati Distt. Kamrup, Assam
- Search and Rescue Operation - Isapur Nazafgarh, Delhi
- Search and Rescue Operation - Pavana Dam, Lonavala, Pune

2011
- Deployment During Cyclone Thane
- Sikkim Earthquake
- Flood Rescue Operations
- Bus Accident
- Train Accidents
- Fire Incident in Amri Hospital - Kolkata
- Ammonia Gas Leakage

2010
- Leh Cloud Burst
- Radiation Emergency Management - Mayapuri Scrap Market, New Delhi

Table 1: Deployments of the NDRF within India

remote areas where district administration is weak or non-existent."[74]

The military has historically played a major role in emergency support due to their speed of operational response, capabilities, and resources, which include communication, search and rescue operations, health and medical facilities, and transportation, especially in the immediate aftermath of a disaster. National DM policy notes that airlift and transporting assistance to neighboring countries primarily fall within the expertise and domain of the Armed Forces. The Armed Forces participate in providing relevant aspects of DM training, especially relating to chemical, biological, radiological, and nuclear (CBRN) responses, helicopter insertion, high-

altitude rescue, watermanship, and training of paramedics. At the national level, the Chief of the Integrated Defence Staff to the Chairman Chiefs of Staff Committee is included in the National Executive Committee. At the state and district levels, Armed Forces representatives may be included in executive committees to ensure closer coordination and cohesion.

Military Assets Used in Foreign Disaster Response

Foreign disasters and crises within the last two decades that India has responded to using military assets include:[75]

- 2019 Sri Lanka terrorist attack – 15-member medical team from Kerala State
- 2017 Myanmar cyclone – 1 naval ship
- 2017 Myanmar conflict and refugee crisis – 1 C-17 aircraft
- 2017 Bangladesh cyclone – 1 naval ship, search and rescue
- 2017 Bangladesh refugee crisis – 2 C-17 aircraft, 1 naval ship, 884 tons of relief material
- 2016 Sri Lanka floods – 1 C-17 aircraft, 2 naval ships, 50 tons of relief material
- 2015 Nepal earthquake – 13 military fixed-wing aircraft (C-17, IL-76, and C-130), 5 Advanced Light Helicopters, 18 medical teams, 5 Army Engineer Task Forces (ETF), 1,636 Indian Air Force sorties, 546 Army aviation sorties, 10 NDRF technical teams, 16 NDRF Urban Search and Rescue (USAR) teams comprised of more than 700 personnel and 18 dogs
- 2015 Myanmar cyclone – 2 aircraft (C-17 and C-130J)
- 2014 Maldives desalination plant fire – 2 Naval ships, 1 aircraft, bottled drinking water
- 2009 Sri Lanka conflict – 62-member field hospital, 7 demining teams
- 2009 Afghanistan conflict – 1 IL-76 aircraft, emergency evacuation and relief for bomb blast victims
- 2008 Myanmar cyclone – 2 Naval ships, 6 IL-76 aircraft, 2 AN-32 aircraft, 2 Medical teams, 47 personnel, 125.5 tons of relief material
- 2007-2008 Bangladesh floods and cyclone – 1 Naval ship, 2 landing ships (LST), in-kind assistance worth US$1.5 million
- 2005 Pakistan earthquake – 1 aircraft, 2 trains, 1,300 tons of relief material, assistance of US$25 million

Central Paramilitary Forces

"The Central Paramilitary Forces (CPMF), which are also the Armed Forces of the Union, play a key role at the time of immediate response to disasters," states the 2009 National Policy on DM. In addition to contributing to the NDRF, CPMFs maintain DM capabilities within their own forces and respond to disasters in areas where they are posted. The local representatives of the CPMFs may be invited into the state-level executive committee.

In 2011, the MHA issued a nomenclature change such that the term Central Armed Police Force (CAPF) will be used to refer to the five CPMFs: Border Security Force (BSF), Central Reserve Police Force (CRPF), Central Industrial Security Force (CISF), Indo Tibetan Border Police (ITBP), and Sashastra Seema Bal (SSB).[76] The change was intended to remove the impression – including at the international level – that those troops are part of India's military. The CAPF does not include the Assam Rifles or the National Security Guard.[77]

State Police Forces and Fire Services

The State Police Forces and the Fire Services are critical first responders to disasters. The national DM policy calls for state police forces to be trained and fire services upgraded to acquire multi-hazard rescue capabilities, a demand which has largely been met. Some Indian states have also produced standard operating procedures for police in disasters[78] or emergency response,[79] which include police in first-responder roles at the state level, including search and rescue and relief as resourced.

Civil Defence and Home Guards

The mandates of the Civil Defence and the Home Guards also include a role in disaster management and response. The civil defense

mission at the national level is "to save life and property from natural and manmade disasters."[80] Civil defense can be deployed for community protection, preparedness, and public awareness. A culture of voluntary reporting to duty stations in the event of any disaster is nationally promoted.

See the section on "Other Civil Defense Forces" for more information.

State Disaster Response Force

State Governments are required to raise their own State Disaster Response Force (SDRF) for quick response to disasters. States are encouraged to develop response capabilities with pre-existing resources. States should equip and train at least one battalion-equivalent force, which should also include women members to ensure the needs of women and children affected by disasters are met. NDRF battalions and their training institutions will assist the states in building their capacity. States are also encouraged to include DM training in their respective Police Training Colleges and basic and in-service courses.

At least 24 states or union territories (UT) have raised their SDRF, which are strategically placed at locations easily accessible from airports, rail heads, and roads for their immediate deployment to potential disaster sites. The SDRF are also to be used for community capacity building and raising public awareness within the state. During these activities, SDRF can familiarize themselves with terrain, critical buildings, and other existing infrastructure to facilitate prompt response during a time of disaster. SDRFs work with the community can include school children, village volunteers, and other stakeholders who learn what to do during disasters.[81]

Specified Coordination Centers

Emergency Operation Centers

India's 2019 National DM Plan outlines emergency operation centers at the national, state, and district levels. The National Emergency Response Centre (NERC) of the MHA DM Division acts as the communication and coordination hub, maintains contact with early warning agencies for updated inputs, and informs relevant State Emergency Operations Centres (SEOC) and District Emergency Operations Centres (DEOC) through all available communication channels and mechanisms. The DM Division of the MHA coordinates with designated early warning agencies, nodal ministries, and state governments. It mobilizes reinforcements from the NDRF, Armed Forces, and CAPF, and develops transportation plans for moving resources. The NDMA supports the overall coordination of response as the MHA needs, provides general guidance, and takes decisions for the deployment of the NDRF. The NDRF deploys as required depending on the request from the affected state-level governments. The NDRF keeps the force in operational readiness at all times.[82]

The central government assists states to set up emergency operations centers or control rooms at the state and district levels for which assistance was provided through a joint project between the Government of India and the UN Development Programme (UNDP).[83]

The vast majority of states and UTs have established emergency operations centers. The state- and territory-level emergency operations centers that continually operate 24 hours per day, in addition to the Ministry of Railways EOC, include:[84]

- Andaman & Nicobar Island
- Arunachal Pradesh
- Assam
- Bihar
- Chandigarh (UT)
- Delhi
- Goa
- Gujarat
- Haryana
- Himachal Pradesh
- Jammu & Kashmir
- Karnataka
- Kerala
- Ladakh (UT)
- Madhya Pradesh
- Maharashtra
- Manipur

- Meghalaya
- Mizoram
- Nagaland
- Odisha
- Puducherry
- Punjab
- Sikkim
- Tamil Nadu
- Tripura
- Uttarakhand
- Uttar Pradesh
- West Bengal

India Disaster Resource Network

India Disaster Resource Network (IDRN) is a web-based inventory of resources. Under the MHA, the National Institute of Disaster Management (NIDM) is responsible for the overall administration of the portal. The IDRN lists equipment and human resources, collated from districts, states, and national-level line departments and agencies. The platform enables decision-makers to quickly assess available resources in emergency situations by facilitating the management of equipment inventory, human resources, and critical supplies for disaster response.

IDRN is hosted in the National Informatics Centre in New Delhi. Only authorized government officers can access IDRN to upload data. District Collectors/Magistrates are the officials authorized to receive the latest information on DM resources available from line departments/ agencies and upload the information into the IDRN portal with the services of District Informatics Officers. Data is monitored and maintained at the central level by the NIDM. In 2021, a total of 89,771 new records were entered into IDRN. Figure 5 graphically depicts the information flows that populate the IDRN database.[85]

SAARC Disaster Management Centre

The SDMC was originally established in 2006 at India's NIDM in New Delhi. In November 2016, the SDMC was combined with three other centers:

- SAARC Meteorological Research Centre, Dhaka, Bangladesh
- SAARC Forestry Centre, Thimphu, Bhutan
- SAARC Coastal Zone Management Centre, Male, Maldives.

The SDMC was later relocated to the Gujarat Institute of Disaster Management campus, in Gandhinagar, Gujarat, India.[86]

The SDMC's stated mission is to "support

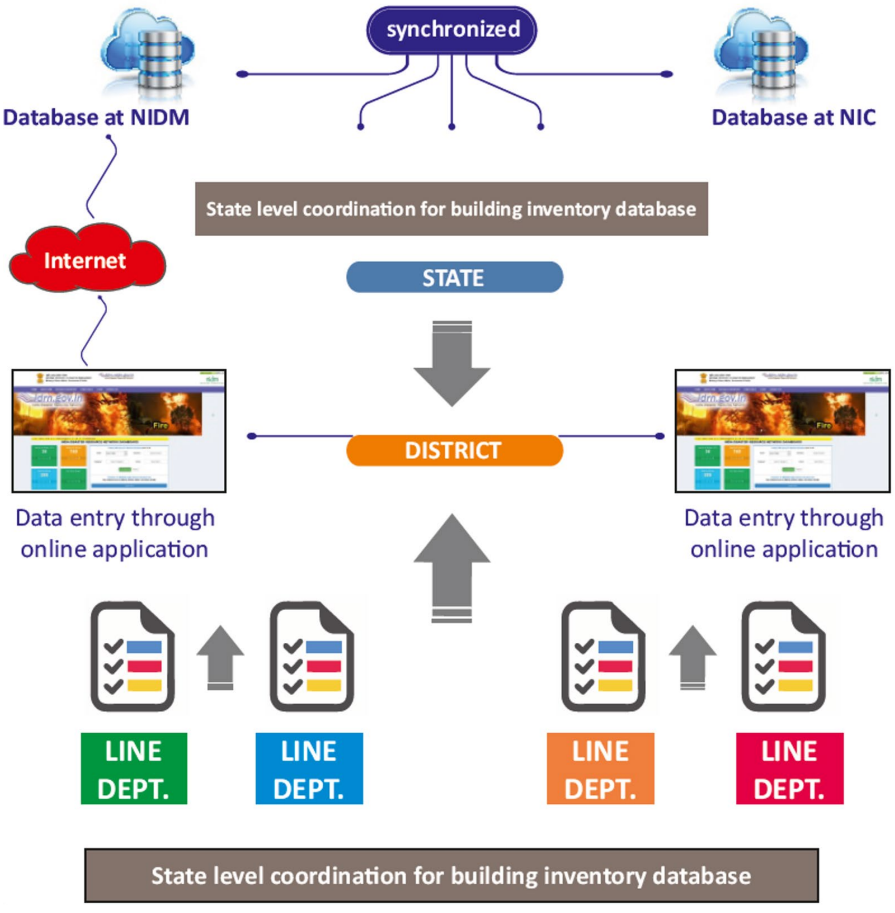


Figure 5: How IDRN Works - Information Flows in the Database

Member States in their DRR initiatives through application of Science & Technology, Knowledge from Multiple Disciplines, Exchange of Good Practices, Capacity Development, Collaborative Research and Networking in line with the Global Priorities and Goals and other relevant Frameworks adopted by Member States."

Its core functions, according to the SDMC, are to:

- Act as a Regional Knowledge Management Hub on all aspects of Disaster Risk Management
- Strengthen Regional Response Mechanisms to reduce loss of lives and injuries and to provide timely humanitarian assistance to people affected by disasters
- Foster Collaboration in the area of End-to-End Early Warning Systems, with a particular emphasis on Exchange of Good Practices on Last Mile Connectivity
- Help Countries Maintain Quality Controlled Databases and Information Systems required for Risk/Vulnerability Assessment, Mapping, and general support to the National/Regional Disaster Risk Reduction Strategies
- Provide a Capacity Building Platform that periodically brings together Disaster Response Teams for Joint Exercises and Simulations
- Support Collaborative Research on different aspects of Disaster Risk Management in the Region.[87]

Major SDMC initiatives include the SAARC Comprehensive Framework on Disaster Management, SAARC Road Maps on Risk Management in South Asia, and SAARC Framework for Care, Protection, and Participation of Children in Disasters.[88]

Centre of Excellence in Disaster Mitigation and Management

The Centre of Excellence in Disaster Mitigation and Management (CoEDMM) is India's first center of disaster mitigation and management and is housed in the Indian Institute of Technology, Roorkee. The multidisciplinary research and education center was established in 2006 with the aim of conducting an educational program, cutting edge research, and training on disasters, vulnerabilities, and mitigation. The CoEDMM's objectives are to:

- Build and strengthen national capacity to reduce the impacts of natural, technological, and environmental disasters through multi-disciplinary technological and scientific interventions
- Stimulate research and application, provide knowledge, convey experience, and build capabilities for reducing or preventing severe and recurrent impacts of hazards for most vulnerable communities
- Increase opportunities for multi-disciplinary collaborations to foster scientific, technical, and managerial contributions to the public decision-making process in matters of hazard, risk, and disaster prevention
- Develop comprehensive risk assessments, risk reduction strategies for the analysis and expression of the socio-economic impacts of disasters, and risk mitigation for disaster prevention by establishing nationally and professionally agreed standards or methodologies
- Build and strengthen national capacity to reduce the impacts of natural and human-made disasters through multidisciplinary approach
- Promote applied and intra-disciplinary research in the areas of science, technology, management, and social sciences for enhancing disaster resilience
- Identify the best-practice technologies and indigenous knowledge towards Disaster Risk Management and engage in risk communication for building capabilities to reduce or prevent severe and recurrent impacts of hazards on the most vulnerable communities
- Facilitate multi-disciplinary collaborations encompassing scientists, technical experts, and managers
- Apprise policymakers in matters of risk and disaster prevention and mitigation.

The CoEDMM launched a master's degree program in 2012 and facilitates other research initiatives that can lead to doctoral degrees.[89]

Other Civil Defense Forces

Directorate General, Fire Services, Civil Defence, and Home Guards

At the national level, the Directorate General, Fire Services, Civil Defence, and Home Guards falls under the MHA. Its mission is: "To save life and property from natural and manmade disasters." Its stated vision is "to frame policy, coordinate, supervise, and issue guidelines regarding raising, training, and equipping of Home Guards, Civil Defence, and Fire Services to build fire safety and disaster resilient societies."[90] It was first established by MHA in 1962 as Directorate General, Civil Defence. In 2003, it was declared an attached office of MHA under the DM Division. In 2004, it was designated as Director General, National Emergency Response Force and Civil Defence. In 2006, it was renamed Director General, National Disaster Response Force and Civil Defence. Then, in 2014 it gained its current office title. Figure 6 shows an organization chart for the Directorate General, Fire Services, Civil Defence, and Home Guards.[91]

The Directorate General, Fire Services, Civil Defence, and Home Guards has the following functions and responsibilities:

- Frame policy, coordinate, supervise, and issue guidelines concerning raising, training, and equipping of Civil Defence, Home Guards, and Fire Services on behalf of MHA
- To advise the state governments and central ministries in organizational matters of their respective Fire Services and to assist in arranging firefighting training on modern lines and in building up posts of trained officers in fire services
- Overall responsibility for civil defense, including policy planning, operational research, technical training, advising state governments, and coordinating civil defense nationwide
- Home Guard Organisation in India's various states and UTs, as well as policy and planning for strengthening and reimbursement of central expenditures to state governments.

Foreign Disaster Management Activities

Government Aid

India receives and gives foreign development assistance, and the amount India gives to other countries has increased significantly in recent

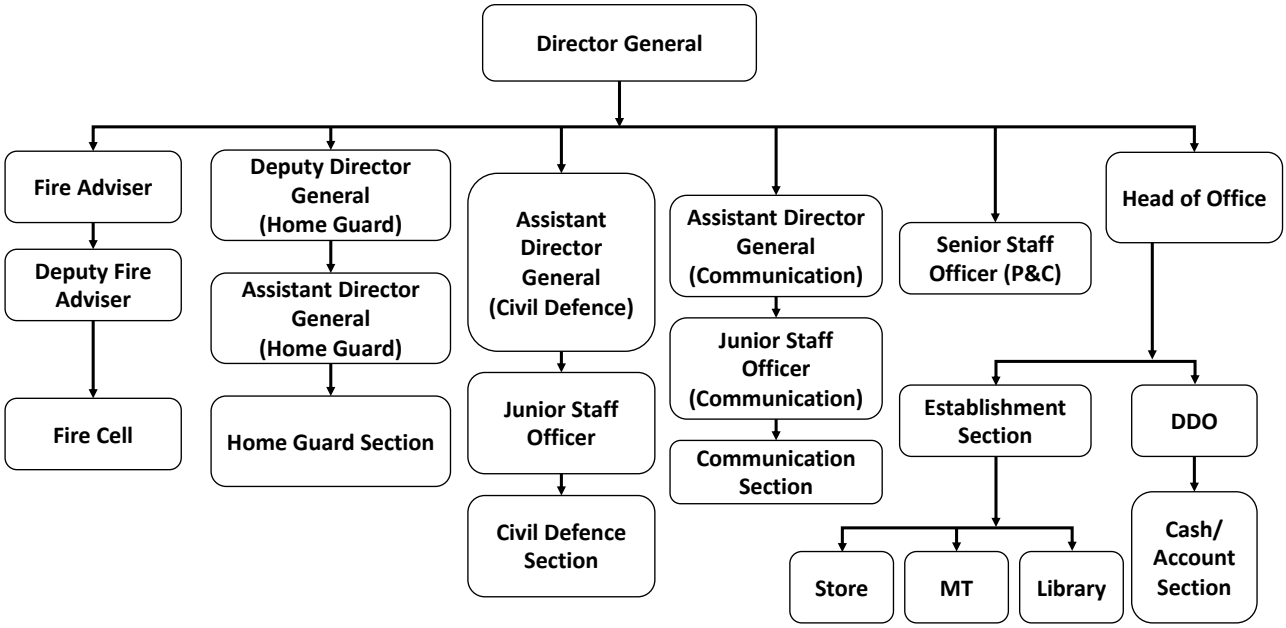


Figure 6: Organization Chart for Directorate General, Fire Services, Civil Defence, and Home Guards

years. The last decade has seen a trend of dramatic growth in allocation. The foreign aid budget increased from around US$500 million in 2010 to a peak of US$1.5 billion in 2015, following which foreign aid allocation slumped for three years then rose again. For India's 2019-2020 financial year, the government allocated US$1.32 billion (about 0.3% of the budget) to foreign aid.[92] Most of India's foreign aid that year went to countries in Asia, the Indian Ocean region, and Africa, including Myanmar (US$56 million), Bangladesh (US$24.5 million), Bhutan (US$392.7 million), Mauritius (US$161 million), Sri Lanka (US$35 million), and Maldives (US$81 million). Much of India's foreign aid goes to infrastructure, agriculture, and energy projects. Notably, India provided around US$300 million to Afghanistan to finish the Salma Dam to provide hydroelectric power and irrigate farmland. Upon completion it was renamed the Afghan-India Friendship Dam.[93]

India is also active in providing foreign HADR support and resources, much of which is directed at neighbors in the South Asia and Indian Ocean region. Most of India's foreign relief assistance is conducted bilaterally. Regional disaster response coordination efforts, such as the SAARC Agreement on Rapid Response to Natural Disasters, have not gained traction. According to one estimate, more than two-thirds of India's humanitarian assistance has been directed to South Asia.[94] Foreign disaster assistance operations India has carried out include the aftermath of the 2004 Indian Ocean tsunami (during which India also received assistance), the 2005 Pakistan earthquake, Cyclone Sidr in 2007 in Bangladesh, Cyclone Nargis in 2008 in Myanmar, the 2014 water crisis in Maldives, Cyclone Mora in 2017 in Myanmar, and assistance to Bangladesh and Myanmar from 2017-2019 for the Rohingya refugee crisis. During the COVID-19 pandemic, India both received and provided assistance, including donating food and distributing vaccines. India provided two million doses of the COVID-19 vaccine to Brazil, which faced a vaccine shortage.[95]

India was one of the first countries to respond to the 2015 earthquake in Nepal, a response that stands as India's largest foreign disaster relief operation. India launched Operation Maitri by deploying the Indian Army, Air Force, and other specialized teams. India dispatched its first flight with relief material within four hours of the quake, with nearly continuous sorties carrying 550 tons of relief material. The Indian Army operated 13 helicopters from Kathmandu and Pokhara, deployed 18 army engineering teams, and set up three field hospitals. The Indian Air Force deployed a rapid action team. India's NDRF deployed 16 teams comprising over 700 trained personnel. Figure 7 depicts the fact that India deployed the most military assets among countries responding to the earthquake in Nepal.[96] While India received some criticism for insensitive media reporting and some coordination difficulties, India also received thanks from Nepal and praise from various quarters, including a high-ranking UNDP official acknowledging India as a "first responder" in the crisis.[97] The total support from India's federal government, state governments, and Indian NGOs amounted to US$61 million.

Not all of India's foreign disaster response comes from the central government. India's sub-national governments have also played a role in helping foreign countries. The states of Uttar Pradesh and Bihar, which border Nepal, also offered assistance after the 2015 earthquake. In 2019, the Indian state of Kerala sent a 15-member medical team to help with relief operations in Sri Lanka following the Easter bombings.[98] Sometimes India's foreign disaster response has been routed indirectly through UN agencies or other international organizations. In 2010, India provided US$25 million to the World Food Programme for Pakistan flood relief; this proved a more politically acceptable way for Pakistan to receive aid from India.

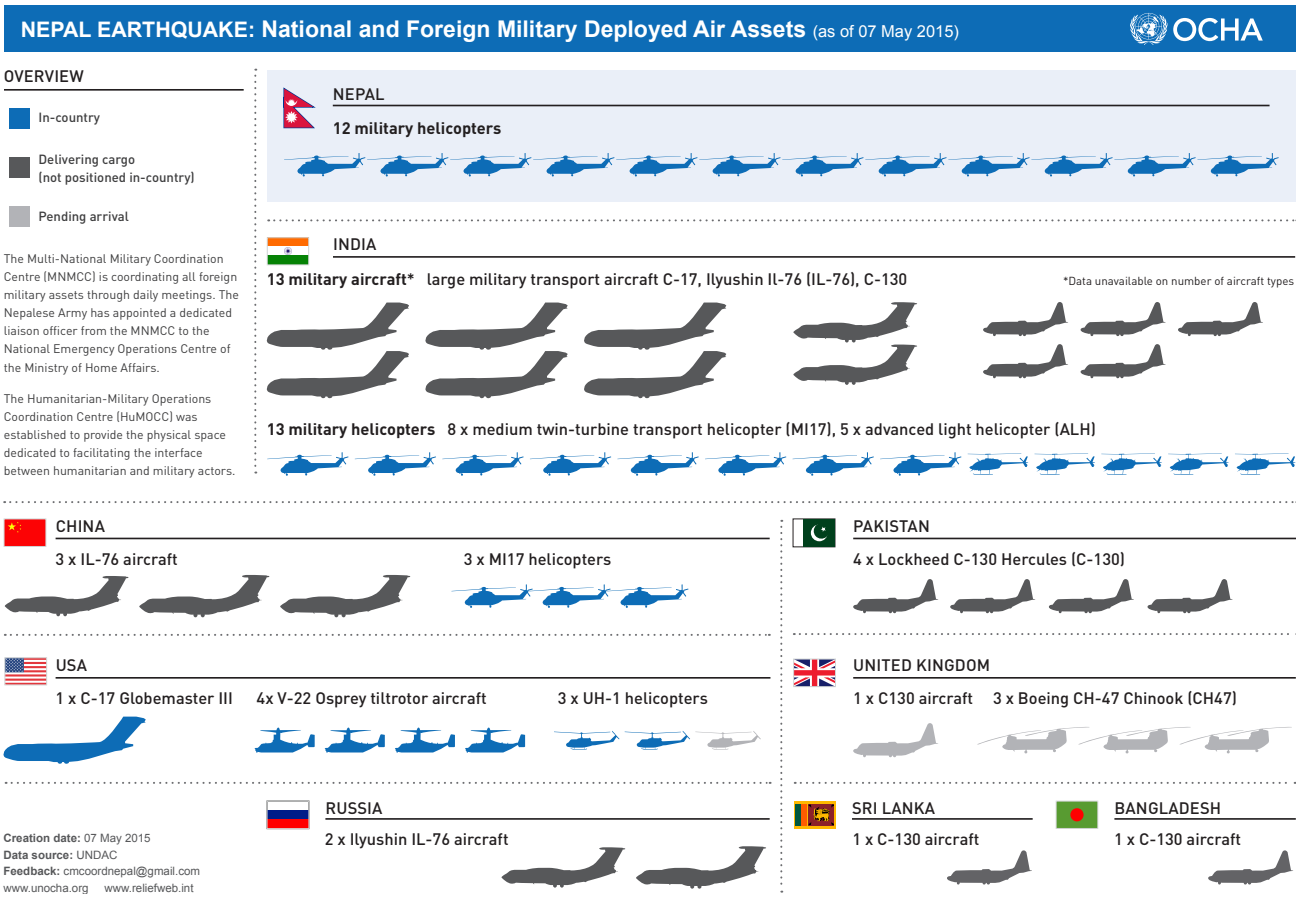


Figure 7: Military Assets Deployed in Response to the 2015 Nepal Earthquake

Procedures to Request Support for Humanitarian Assistance

Humanitarian Assistance Received by India

According to the 2016 National DM Plan, "As a matter of policy, the Government of India does not issue any appeal for foreign assistance in the wake of a disaster." However, it also states that if other governments voluntarily offer assistance in goodwill, India may accept. The MHA is required to coordinate with the Ministry of External Affairs (MEA), which is primarily responsible for reviewing and channeling foreign offers of assistance. The MHA at the federal level, in consultation with the relevant affected governments at the state level, will assess the response requirements with which foreign teams can assist.

India will accept an offer of assistance from UN agencies only if the government considers it necessary. If such assistance is accepted, the Government of India will issue directions to the respective Ministry or State Government to coordinate with the UN agency. If any financial assistance involves foreign exchange, the Department of Economic Affairs must approve it. UN agencies and international NGOs already operating in the country at the time of the disaster will be allowed to continue their humanitarian assistance to people in the affected area, in coordination with the relevant central ministries or departments and the state government.[99]

After Cyclone Amphan made landfall on 20 May 2020 near the India-Bangladesh border, 98 people were killed and more than one million homes were damaged or destroyed in India. The European Commission's Directorate-General for European Civil Protection and Humanitarian Aid Operations allocated US$1.63 million for humanitarian needs on 25 May. On 25 June, the UN announced that it had allocated US$5 million to support the response to Cyclone Amphan through its Central Emergency Response Fund (CERF).

Humanitarian Assistance Provided by India to Other Countries

The MEA receives requests from foreign countries for humanitarian assistance and manages the procedure of processing these requests. However, the only specific body within the Ministry for dealing with provision of foreign assistance is the Development Partnership Administration, established in 2012 to address developmental assistance, mostly on a bilateral basis. Decisions relating to provision of international assistance to disaster-affected countries are taken on a case-by-case basis depending on the Indian Ambassador in the disaster-affected country, MEA regional division heads, the MEA head, and PM, per Delhi Policy Group analysis.[100] Figure 8 shows the decision-making process in the MEA for providing humanitarian assistance to other countries.[101] The response to the 2015 Nepal earthquake provided a good example of internal coordination and decision-making, which seemed significantly influenced by PM Modi in that case.

Military Cooperation (Training and Exercise)

The Indian Armed Forces are first responders during disasters and bring capabilities like communications, airlift and other transport, and infrastructure repair as well as expertise in search and rescue. However, the national military also has a role in manning and training the NDRF, the rapid response force of the NDMA. As part of regular training, the Armed Forces components exercise aspects of DM. For example, in 2018, the Army, Army Aviation Corps, and Air Force participated in a joint Disaster Management Exercise, "Mountain Rescue," to practice evacuation of civilians from a disaster-affected area.[102]

Beyond routine domestic-only training, India's Armed Forces and NDRF train alongside military and civilian first responders from neighboring countries and partners further afield. Most recently, in December 2021, India hosted the Tri-services Humanitarian Aid and Disaster Relief Exercise, called PANEX-21, involving armed forces and disaster relief and search-and-rescue agencies from countries within the BIMSTEC grouping – Bangladesh, Bhutan, Myanmar, Nepal, Sri Lanka, and Thailand, in addition to India. The Indian Army's Southern Command hosted this third BIMSTEC HADR exercise and focused the events on assessing and evaluating the efficiency of plans and procedures to deal with a natural disaster within the context of a pandemic.[103] The 2021 multi-agency exercise and tabletop wargame marked a shift from the first two BIMSTEC Disaster Management Exercises (DMEx) that NDRF led as demonstration events in 2017 and 2020. Indeed, speaking at the 2021 event, India's Defence Minister noted that HADR exercises involving multiple nations, agencies, and stakeholders are important because in case of

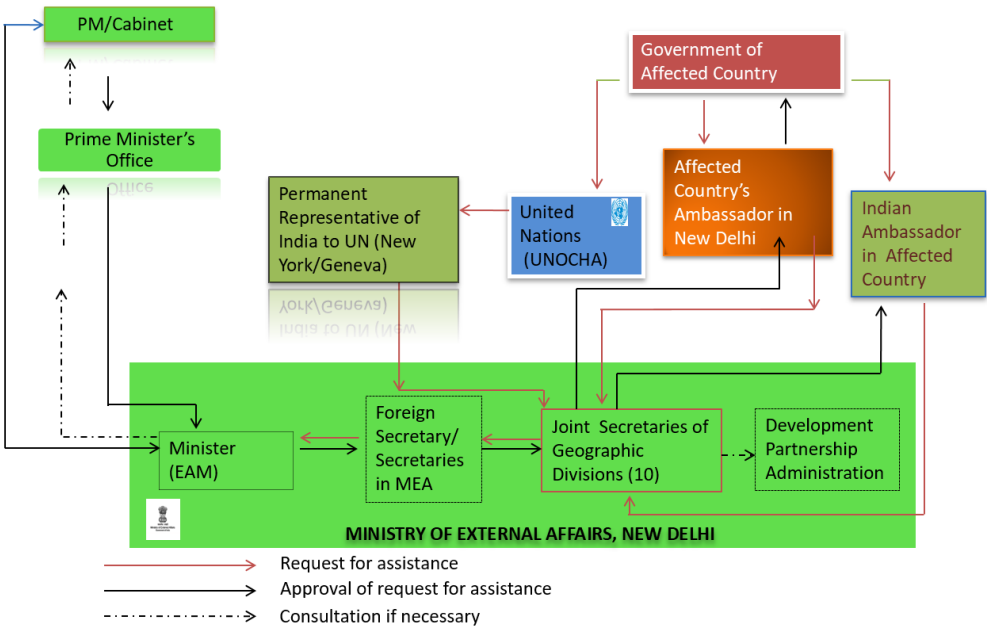


Figure 8: Indian Ministry of External Affairs Process to Provide Foreign Humanitarian Assistance

a major disaster, "a multilateral effort, involving partners in Bay of Bengal region, will act as a force multiplier in pooling in resources and orchestrating relief measures."[104]

While the armed forces have led some exercises, NDRF remains the choice agency to host multi-national exercises as a reflection both of NDRF's status as India's lead DM force and of lingering regional qualms regarding direct military-military cooperation. In 2015, India hosted other members of SAARC in New Delhi for a three-day South Asian Annual Disaster Management Exercise (SAADMEx).[105] In the wake of the 2015 Nepal earthquake, India's MEA recognized the importance of local, national, regional, and international cooperation and coordination, and India took the lead in organizing the exercise. The exercise included two phases: 1) Advance Coordination Conference, coordinated by NDRF, and where representatives from SAARC countries would take part in a TTX, an FTX, and an AAR; and 2) a one-day workshop on sharing best practices.[106] In this case, NDRF played the lead role rather than the Armed Forces in a reflection of the sensitivity of armed forces interaction among the SAARC member-states.

In addition to neighbors and partners in the subcontinent, India engages with the broader Asian region via the Shanghai Cooperation Organisation (SCO) of which it is a member, and in bilateral HADR training. In 2019, NDRF hosted the SCO Joint Exercise on Urban Earthquake Search and Rescue (SCOJtEx-2019), in which all SCO members participated; these included Russia, Tajikistan, China, Kyrgyzstan, Pakistan, Uzbekistan, and Kazakhstan, in addition to India. Representatives of the International Search and Rescue Advisory Group (INSARAG) and the AHA Centre attended as observers.[107] Indeed, the four-day simulation exercise was expected to be conducted per INSARAG methodologies and guidelines and to work through the roles and responsibilities of Urban Search and Rescue (USAR) at national and international levels. There were plans to involve use of the On-Site Operations Coordination Centre (OSOCC), establish an EOC/Integrated Command Post (ICP)/Response Cluster, engage with local authorities, and discuss CMCoord.[108] At the time of planning, SCO members sought to make SCOJtEx an annual event, but one has not been held again since 2019.

Meanwhile, in the wake of India's NDRF response to the massive 2011 earthquake and tsunami in Japan, Tokyo and New Delhi began to build their partnership in HADR. In 2012, India and Japan conducted their first ever joint maritime exercise to "gauge interoperability" in the HADR realm; subsequent iterations (2013, 2018, and 2021) have focused on other aspects of the bilateral partnership.[109] Then, in December 2018, the Japan Air Self Defense Force and Indian Air Force conducted their first bilateral air exercise, Shinyu Maitri-1 ("best friend"), focusing on joint mobility and HADR operations in in Uttar Pradesh. India dispatched Antonov AN-32 and C-16 Globemaster transport aircraft, while Japan sent Kawasaki C-2 military transport aircraft to participate. Japan's Defense Minister characterized the goal of the exercise as increasing the Japanese Self-Defense Forces' air transport capabilities and enhancing Japan-India trust.[110]

In direct military-to-military HADR training with U.S. forces, Indian Army, Navy, and Air Force personnel have participated in U.S.-led Southeast Asia Cooperation and Training (SEACAT) exercises and Rim of the Pacific (RIMPAC) Exercise, the latter running every second summer in waters around Hawaii and San Diego. Of import, the command post exercise portion of SEACAT 2021 at Singapore's Changi Naval Base allowed participants to practice sharing information to enhance understanding of the operational environment, build capacity for humanitarian support missions, and uphold international laws and norms.[111]

Bilateral U.S.-India HADR exercises and engagements include TIGER TRIUMPH (Tri-Services India U.S. Amphibious Exercise), the first iteration of which ran in November 2019 and was the first ever tri-services exercise to

bring both countries together on HADR. During the exercise, troops set up a joint command and control center and a joint relief and medical camp.[112] Previously, during a December 2018 visit to India, USS Anchorage (LPD 23) with the embarked 13th Marine Expeditionary Unit (MEU) held professional exchanges with Indian Navy counterparts on humanitarian assistance operations, cross-deck helicopter landings, and maritime security operations.[113]

Women, Peace, and Security

The UN Security Council adopted United Nations Security Council Resolution (UNSCR) 1325 on Women, Peace, and Security (WPS) in October 2000; it affirms the role women play in the prevention and resolution of conflicts, peace negotiations, peacebuilding, peacekeeping, humanitarian response, post-conflict reconstruction and maintenance, and promotion of peace and security in their countries and communities. Over the intervening two decades the Security Council has adopted nine additional resolutions addressing women and conflict, including the need to stop gender-based violence and to promote women's roles in conflict resolution, recovery, and peacebuilding. These 10 UNSCRs comprise the WPS agenda: 1325 (2000); 1820 (2009); 1888 (2009); 1889 (2010); 1960 (2011); 2106 (2013); 2122 (2013); 2242 (2015), 2467 (2019), and 2493 (2019). The WPS agenda has broadened to include applying a gendered perspective to DM and humanitarian aid for more equitable participation, which will not only address humanitarian needs but also benefit the whole of society.[114]

India has actively participated in the Security Council's open debates on WPS and repeatedly made strong institutional statements concerning the protection of women's human rights and prevention of violence against women. Moreover, under its WPS obligations, India deployed an all-female police unit to assist a peacekeeping mission in Liberia (2007-2015), an all-female police unit to South Sudan in 2019, and a female engagement team to the Democratic Republic of Congo in 2019, as India's then-Permanent Representative to the UN publicized via social media as shown in Figure 9.[115] However, the government has disassociated itself from WPS commitments domestically on the basis that "no armed conflicts" are occurring within its territory. Nonetheless, advocates point out that the WPS agenda can serve as a tool for improving the gender balance in India's political bodies and regional security forums. As of 2021, women comprise only 14.4% of the Federal Parliament's Lok Sabha (lower house) and just over 10% of the Rajya Sabha (upper house) although they account for about one-half of the population. Moreover, women are vastly underrepresented at security discussions. For example, during the formal peace negotiation between Assam's armed militant group and the government of India, there was only one female participant.[116]

The World Economic Forum's Global Gender Gap Index benchmarks the evolution of gender-based gaps among four dimensions (Economic



Figure 9: Permanent Representative to the UN Tweets Departure of India's Female Peacekeepers

Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment) and tracks progress towards closing these gaps over time. The 2021 report scored 156 countries on a scale of 0-1 on which the outcomes can be interpreted as distance to parity (i.e., the percentage of the gender gap that has been closed) with 0 being complete inequality and 1 being perfect equality. The highest ranked country, Iceland, scores 0.892 while the lowest-ranked country, Afghanistan, scored 0.444. India comes in as number 140 of 156 countries with a total score of 0.625. As shown in Figure 10, India's score is massively impacted by high equality in health and education access and achievement alongside inequality in economic and political spheres.[117]

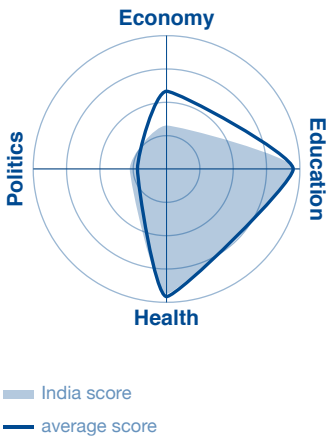


Figure 10: Graph of India's Global Gender Gap Index Score (2021)

Among the key indicators impacting India's score are similar rates of enrollment in education for males and females; 93% of girls and 91.6% of boys of primary school age are enrolled, and 62.4% of girls and 60.9% of boys of secondary school age are enrolled. Both rates drop to below 30% for tertiary education.[118] In addition, health outcomes are similar with men having a 68.7-year life expectancy and women having a 71.5-year life expectancy at birth.[119] It is in the upper echelons of work and government where women's participation falls short; only 15% of senior officials and managers are women while less than 30% of professional and technical workers are women. Moreover, less than 15% of seats in parliament are held by women, and less than 10% of government ministers are women.[120]

A separate measure for assessing a country's progress toward gender equity in society, the economy, and politics is the WPS Index. The Georgetown Institute for Women, Peace, and Security (GIWPS) along with the Peace Research Institute Oslo (PRIO) publishes the WPS Index, a comprehensive measure of women's well-being spanning three dimensions: inclusion (economic, social, and political); justice (formal laws and informal discrimination); and security (at the family, community, and societal levels).[121] In the third WPS Index report (2021), India ranked 148th of 170 countries with an index value of 0.597 on a scale of 0-1, where 0 represents the worst score and 1 the best. Of note, Norway, the world's top-ranked country comes in at an index value of 0.922 while Afghanistan, the lowest-ranked country, comes in at a 0.278 index value.

In the WPS Index, key indicators for India in 2021 include:

- Women's mean years of schooling: 5.4 (an increase over the 2017 index)
- Percent of women in employment: 21.5%
- Percent of women using a mobile phone: 57.9% (a decrease from 71% in 2017)
- Women's financial inclusion: 76.6% (an increase from 42.6% from 2017)
- Women's share of seats in Parliament (national): 13.4% (an increase from 11.6% in 2017)
- Discriminatory norms: 25%
- Son bias: 1.1%
- Absence of legal discrimination: 74.4% (an increase from 68.8% in 2017)
- Organized violence: 0.1 battle deaths per 100,000 people (a slight rise from 0.06/100,000 in 2017)
- Women's perception of community safety: 55.9% (a decrease from 65.5% in 2017)
- Current intimate partner violence: 18%

Across the board, these index values place India in the middle of the pack in South Asia, which includes Afghanistan, Bangladesh, Bhutan, India, Iran, Nepal, Maldives, Pakistan, and Sri Lanka.[122] However, on a national level, significant variation exists among India's states. The top-performing states are clustered in southern India while the worst performing states lie in a belt across the north and center. Kerala, at India's southern tip, is the top-ranked state on

the subnational WPS Index. It ranks second for women's education and first for mobile phone use among women, and it has relatively few deaths from organized violence, but this has not translated into women's employment. "Educated unemployment" has been attributed to enduring cultural norms favoring men and the unequal burden of women's domestic roles. Like Kerala, Manipur, in the far northeast, sees disparities within its own indicators; for example, schooling, employment rates, and participation in household decision-making are high relative to the rest of the country while major gaps persist on security. Manipur has the highest rates of intimate partner violence and son bias and the second highest number of recorded battle deaths (organized violence). The state has become known for protracted ethnic conflict, which has been associated with physical, emotional, and sexual violence against women, violence which has been used as a weapon of war amid heightened patriarchal norms and discrimination.[123]

Humanitarian crises do not impact everyone equally but exacerbate existing social inequalities, thus natural disasters and other crises disproportionately impact women. The COVID-19 pandemic is among those events that have demonstrated some of the ways that disasters or conflict can impact women differently due to inequalities or customs within society. Among its key findings, the Global Gender Gap Report for 2021 found that, globally, 5% of all employed women lost their jobs, compared with 3.9% of employed men. While some industries buck the trend, industries with higher participation of women (e.g., retail, non-profit, media, etc.) are among the worst hit. Additionally, data from January 2021 showed a longer "double-shift" of women doing both paid and unpaid work due to school closures and limited availability of care services.[124] For those women in informal jobs, the impacts may have been worse. In India, before the pandemic about 70% of urban women workers and nearly 60% of rural women workers were informally employed and without a written contract. In just the first month of the pandemic, UN Women estimates that informal women workers' income fell by 60%, and over the longer-term, women laid off from the formal sector will crowd the informal labor market, further reducing earnings. In addition, although India's government delivered cash to much of the country to soften the blow of lost wages, more than half of the country's 326 million poor women were excluded at the onset because they lacked bank accounts to receive the transfers.[125]

Beyond the impact of disasters on women and India's less structured way of implementing the WPS agenda formally at the central government level, the country has begun to build gendered perspectives into DM and humanitarian action planning and execution. By 2015, the National Cyclone Risk Mitigation Project (NCRMP) and the Tamil Nadu and Puducherry Coastal Disaster Risk Reduction Project (CDRRP) had ensured equal male-female representation among village DM volunteer networks and task forces and enrolled equal shares of males and females in community youth (18-35 years of age) task forces on search and rescue, first aid, shelter management, evacuation, and early warning.[126] On the disaster response stage, in 2021, the country's first all-female team of NDRF personnel deployed for contingency duties on the Ganges River in Uttar Pradesh. The 12 operational NDRF Battalions across the country each have just over 1,100 personnel, and each battalion is authorized to have just over 100 female personnel. In January 2021, the NDRF Director-General told reporters, "We can deploy both components of an all-woman NDRF team or a mix squad of male and female personnel for responding to a situation. We prefer the second because if there is [a] complement of women personnel it makes a great difference on the ground where women, children and old persons are being rescued."[127]

NATIONAL FRAMEWORK

India is home to more than 1.3 billion people. It has a massive, diverse economy, ranking third in the world in terms of real Gross Domestic Product (GDP). The country's territory covers more than 3.2 million square kilometers (km^2; 1.2 million square miles) and is made up of various geological and climatic zones. Nonetheless, the monsoon is the most significant influence on the country's climate, and the country is exposed to a range of natural hazards such as flooding, cyclones, droughts, extreme heat, wildfire, and earthquakes. Climate change has the potential to exacerbate hydro-meteorological hazards and compromise socio-economic priorities such as access to safe water and agricultural output. This means that the NDMA, the main organization coordinating and governing all disaster-related activities, will remain a key agency in the coming decades.

Country Overview

Home to more than 1.3 billion people,[128] India's population is young. More than one-half of the population is under age 30 and less than one-fourth is age 45 or older. India's population doubled between 1947 and the 1981 census, and by the 2001 census it had surpassed one billion. Although there has been a considerable drop in the birth rate in the new millennium, a much more rapid decline in the death rate has accounted for the rise in the country's rate of population growth.

India is a multiethnic country whose cultural complexity is partly linked to the country's geographic size and partly liked to millennia of migration and intermarriage. Some of the foundational elements were the Indus civilization (c. 2500-1700 BCE), Aryan civilization (c. 2000-1500 BCE), invasions by Persians, Scythians, Arabs, Mongols, Turks, and Afghans, and, more recently, European colonization.[129] The broad ethnic designations are Indo-Aryan (72% of the population) and Dravidian (25% of the population),[130] the latter of which links to the Indus civilization peoples. Despite this broad ethnic characterization, actual ethno-linguistic and cultural belonging is more fragmented. There are hundreds of languages spoken in India, and they broadly fall into four different language families: Indo-Iranian (a subfamily of Indo-European), Dravidian, Austroasiatic, and Tibeto-Burman (a subfamily of Sino-Tibetan).[131] Hindi is the single most common first language with more than 43% of the population being native speakers. This is followed by Bengali (8%), Marathi (6.9%), Telugu (6.7%), Tamil (5.7%), Gujarati (4.6%), Urdu (4.2%), Kannada (3.6%), Odia (3.1%), Malayalam (2.9%), Punjabi (2.7%), Assamese (1.3%), Maithili (1.1%), and others (5.6%). There are 23 officially recognized languages, and English enjoys the status of subsidiary official language.[132]

Religious diversity and caste also deeply mark India's history and modern society. Hinduism was founded in India,[133] and nearly 80% of the population adheres to Hinduism.[134] Despite the departure of an estimated 10 million Muslims to Pakistan at the time of independence and partition (1947), Muslims remain the largest single minority faith (14%). There are communities of Christians (2.3%), Sikhs (1.7%), Buddhists, and Jains, and there are very small communities of Baha'i, Zoroastrians (the Parsis), and Jews. India's tribal peoples practice various forms of animism. Finally, the caste system has been a dominating aspect of social organization for thousands of years. A caste, generally designated by the term jati ("birth"), refers to a strictly regulated social community into which one is born. In general, a person is expected to marry someone within the same jati, follow a particular set of rules for proper behavior (in such matters as kinship, occupation, and diet), and interact with other jati according to the group's position in the social hierarchy. People historically excluded from the formal castes, formerly known as the "Untouchables," are officially referred to as "Scheduled Castes," and they collectively account for roughly one-

sixth of India's total population. Similar to the "Scheduled Castes" are the "Scheduled Tribes" who are concentrated mainly in the northeast, and in the Lakshadweep and Dadra and Nagar Haveli UTs.[135]

India covers 3,287,263 km^2 (1,269,219 square miles) of territory, and it shares 13,888 km (8,630 miles) of land borders with Bangladesh (4,142 km; 2,573 miles), Bhutan (659 km; 409 miles), Myanmar (1,468 km; 912 miles), China (2,659 km; 1,652 miles), Nepal (1,770 km; 1,099 miles), and Pakistan (3,190 km; 1,982 miles). It also has 7,000 km (4,350 miles) of coastline on the Indian Ocean's Arabian Sea and Bay of Bengal.[136] The monsoon is the most significant influence on the country's weather. The wet and dry seasons and annual temperature fluctuations produce three general periods over much of the country: 1) southwest monsoon - hot wet weather from about mid-June to the end of September; 2) retreating monsoon - cool dry weather from early October to February; and 3) inter-monsoon - hot dry weather from about March to mid-June. The actual duration of these periods varies by several weeks from one part of India to another and from one year to the next. The southwest monsoon sees winds from the Indian Ocean carry moisture-laden air across the subcontinent, causing heavy rainfall and often considerable flooding. Usually about three-fourths of the country's total annual precipitation falls during the southwest monsoon. Fierce tropical cyclones originate in both the Bay of Bengal and the Arabian Sea, and they are notorious for causing intense rain and storm surges as they cross India's coasts.[137]

Although India's population is predominantly rural (65% rural, 35% urban), the country has three of the largest urban areas in the world – Mumbai (20.67 million people), Kolkata (14.97 million people), and Delhi (31.18 million people); these and other large Indian cities have some of the world's highest population densities.[138] In many cities dating from the precolonial period, such as Delhi and Agra, the urban core is a congested area within an old city wall. Moderately old, highly congested urban cores also characterize many cities that grew up in the wake of British occupation. Of those, Kolkata, Mumbai, and Chennai are the most notable, and in these cities, there are usually a few broad major thoroughfares, space reserved for parks, and a central business district. Much of India's rural population lives in unplanned villages. Within these villages, streets are typically narrow and unpaved. There are usually a few open spaces where people gather. The village school is usually on the edge of the village.[139]

India has a massive, diverse economy, ranking third in the world in terms of real GDP. Although agriculture contributes about 15% of GDP, it employs 47% of the labor force. Despite being one of the country's cultural touchstones and still an influential sector politically, agricultural has long been outpaced in terms of output. Services are the major source of economic growth and account for more than 60% of GDP; nonetheless, services employ only about 31% of the labor force and are concentrated in already large cities, reducing the opportunity for people from more remote areas to enter this sector. Because of these structural challenges, per capita income remains low, at about US$6,100, a number that ranks this third-largest world economy 163rd in terms of GDP per capita.[140] An obstacle to addressing inequalities and inefficiencies in some sectors is that an estimated 80% of India's 522 million laborers is employed outside the formal sector. Thus, the fraction employed in the formal sector generates a disproportionate share of GDP and supports most of the middle- and upper-class population.[141] It leaves wide swathes of the population vulnerable to external shocks.

A federal republic with a parliamentary form of government, India is led at the national level by a PM and Council of Ministers, a structure mirrored at the state level with a Chief Minister and Council of Ministers[142] in each of the 28 states and eight UTs.[143] States and territories are further subdivided into districts, which, in turn, are subdivided based on the state's or territory's characteristics.[144] The bicameral federal Parliament (Sansad) consists of the Council of States (Rajya Sabha; upper house) and the House

of the People (Lok Sabha; lower house); together there are nearly 800 Members of Parliament (MP). There is a federal President who is head of state and is indirectly elected by federal MPs;[145] while the office of the Presidency serves many ceremonial roles, the President can use his/her private influence to mediate intra-government disputes or advise government agents on what the President perceives is either in the public interest or reflects public opinion without the President fearing a political backlash.[146]

Disaster Overview

India is exposed to a range of natural hazards such as flooding, cyclones, droughts, extreme heat, wildfire, and earthquakes. Anthropogenic hazards from chemical, biological, and nuclear threats are a concern linked to the combination of high population densities and industrial development in some areas. Climate change has the potential to exacerbate hydro-meteorological hazards and compromise socio-economic priorities such as access to safe water and agricultural output. Efforts to move toward synergies between DRR and climate change adaptation (CCA) will be required to protect India's people and industries.

Hazards

As one of the most disaster-prone countries in the world, India faces the possibility of catastrophic-scale events like the 2004 Indian Ocean tsunami that wreaked havoc in some coastal areas. More frequent and smaller-scale events, however, cause massive social and economic damage. For example, Kerala state experienced floods and landslides in 2018; they affected over 5.4 million people and caused severe damages to housing, transport networks, power supplies, and other infrastructure, alongside lost crops and livestock. Another example came in the form of a drought in 2019 that saw reservoirs in the city of Chennai run dry, leaving the city without water for months.

Cyclone

An estimated 8% of India's landmass is exposed to cyclones, and approximately 40% of the country's population resides within 100 km (62 miles) of the coastline. On an average, over 370 million Indians are exposed to cyclones annually. Cyclone activity that threatens India clusters during the months of May-June and October-November. Often associated with high precipitation and storms, cyclones bring the threat of flooding in coastal urban areas as well as in smaller settlements located on delta plains or in the vicinity of rivers.[147] The entirety of India's more than 7,000-km (4,350-mile) coastline (mainland and islands) is affected by cyclones with varying frequency and intensity.[148] However, most cyclones that strike India form in the Bay of Bengal and, thus, strike India's eastern coast. On average, five or six cyclones form in this area every year, and of these, two or three could be severe storms when they make landfall in India. Cyclones forming in the Arabian Sea are less frequent by a ratio of about 4:1.[149] Thirteen coastal states and UTs are affected directly by tropical cyclones. The most vulnerable are Tamil Nadu, Andhra Pradesh, Odisha, West Bengal, Puducherry, and Gujarat. The India Meteorological Department (IMD) is the government agency that provides weather services related to cyclones.[150]

Disease

Exposure to diseases is a grave concern, especially given that the Aedes aegypti mosquito – acting as a host for dengue and chikungunya – has been adapting to urban environments. The annual number of new dengue cases varies from 7.5 to 32.5 million, the highest incidence rate in the world. More than 1 million chikungunya cases were also reported between 2005 and 2013. Additionally, almost all of India's population is exposed to malaria; those not exposed live in areas more than 1,700 m (5,577 feet) above sea level. There are suggestions that the true scope of these epidemics has historically been hidden because of the absence of a disease monitoring

system; thus, the prevalence would have been evaluated based on reported cases only.[151] In 2021, India's Ministry of Health and Family Welfare unveiled an upgraded version of its Integrated Health Information Platform (IHIP) to provide near-real time data to facilitate timely responses to disease outbreaks. IHIP enables the consolidation of data from public and private sector hospitals, laboratories, and research centers, and it collates data for 33 diseases.[152]

Drought

As much as 68% of cropped areas of India are vulnerable to drought; 33% of cropped land is classified as "chronically drought-prone," comprising desert and semiarid regions that receive less than 750 millimeters (mm; 29.5 inches) mean annual rainfall. An additional 35% of cropped territory receives 750-1125 mm (29.5-44.3 inches) of rainfall and is classified as "drought-prone" and includes the arid, semiarid, and sub-humid regions of peninsular and western India (Rajasthan, Gujarat, and Maharashtra). There were 26 major droughts during the period 1871–2015, and in these periods the All India Summer Monsoon Rainfall (AISMR) was found to be less than the mean rainfall for the country. There is an expectation of more frequent drought in the northeastern and western regions of the country in the coming decades. Broadly, the factors that make India susceptible to droughts are:

- Yearly, seasonal, and regional variations in rainfall
- Short (fewer than 100 days) southwest monsoon
- Loss of water due to surface runoff during heavy rains
- Over-exploitation of groundwater resources
- Poor conservation and storage mechanisms for surface water
- Rapid deforestation and urbanization
- Limited irrigation coverage
- Faulty cropping patterns and prevalence of water-hungry crops.[153]

Earthquake

Overall, some 60% of India's total landmass is prone to earthquakes. Risk varies by region with most of the very high-risk zones located in the northern regions impacted by the Himalayan uplift. The country is divided into four seismic zones from moderate to severe (II- low damage risk, III – moderate damage risk, IV – high damage risk, and V – very high damage risk). Broadly, the highest-risk zone (V) comprises all of northeastern India, parts of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, the Rann of Kutch (Gujarat), and North Bihar.[154] The Andaman and Nicobar Islands are also situated on an inter-plate boundary and frequently experience damaging earthquakes. On average, the northeastern region experiences an earthquake greater than magnitude 6.0 every year. India's increasing population and extensive construction, including multistory apartments, huge factories, and consumer spaces are driving an increase in the risk of death and damage from earthquakes.[155]

Flooding

India is highly vulnerable to floods. More than 12% of the country is exposed to flooding with the highest exposure regions being in the Ganges, Yamuna, Godavari, Krishna, Pennar, Cauvery, Mahanadi, Narmada, Tapi, Mahi, and Sabarmati River basins.[156] In an average year, 1,600 lives are lost, and 7.5 million hectares (29,000 square miles) of land are affected. The average annual flood damage from 1996 to 2005 was 47 billion Indian Rupees (Rs.) (US$632 million) whereas the annual average for the 50 preceding years was Rs. 18 billion (US$240 million) in a sign of increasing incidence of damaging floods. In part, the higher damages can be attributed to a steep increase in population, rapid urbanization, growing developmental and economic activities in flood plains, and climate change. However, floods have also occurred in areas that were earlier not considered flood prone. With 80% of precipitation falling in the monsoon months (June-September), high rivers bring sediments and, along with inadequate carrying capacity,

these rivers flood. Beyond monsoon season, cyclones and cloud bursts cause flash floods.[157]

There has been an increasing trend of urban flooding with notable events in Hyderabad in 2000 and 2020, Ahmedabad in 2001, Delhi in 2002, 2003, 2009, and 2010, Chennai in 2004, 2015, and 2019, Mumbai in 2005, Surat in 2006, Kolkata in 2007, Jamshedpur in 2008, Guwahati in 2010, and Bangalore in 2017. These floods are linked to rainfall, coastal storm surges, sudden release of water from or failure of upstream dams, and sea-level rise. Moreover, stormwater drainage systems in the past were designed for rainfall of 12–20 mm (0.5-0.8 inches), a capacity that has been swiftly overwhelmed both because of higher intensity rainfall and poor maintenance.[158]

Landslide

Often associated with high precipitation or seismic or volcanic activity, landslides are common in India. Their impacts range from short-term disruption of normal activities to large-scale destruction of property or lost lives, the latter more common in mountainous parts of the country. An estimated 12% of the country (covering portions of 19 states and UTs) is prone to landslides, affecting more than 65,000 villages. Landslide risks are highest in the northern and northeastern Himalayan regions and the Nilgiri Range of the Western Ghats in Tamil Nadu. Annually, the Sikkim and Garhwal regions in the Himalayas experience an average of two landslides per square kilometer (0.386 square miles), and the total estimated rate of land loss due to mass movement exceeds 120 m for every square kilometer (393 feet/square mile).[159]

Tsunami

India is infrequently impacted by tsunamis, but they are not impossible. The 2004 Indian Ocean tsunami affected many countries in Southeast Asia and beyond, including India. Beyond the heavy toll in human lives, the event caused an enormous environmental and geo-physical impact within the sub-sea and surface features of the region. As a consequence of the emergency, many affected countries set up tsunami early warning systems along with institutional mechanisms for handling disasters. India put in place an early warning system for mitigation of earthquake and tsunami disasters; it is under the control of the Indian National Centre for Ocean Information Services (INCOIS) in Hyderabad. A state-of-the-art early warning center was established with the necessary computational and communication infrastructure that enables reception of real-time data, analysis, and generation and dissemination of tsunami advisories. Moreover, the 2004 tsunami prompted NDMA to formulate Tsunami Risk Management Guidelines to outline inter-agency roles and responsibilities, tsunami risk preparedness, mitigation, and response.[160]

Climate Change

Extreme weather, rising average temperatures, sea level rise, and more erratic rainfall patterns are already noticeable across the Indian subcontinent with India's own statistics agencies remarking on worrisome trends that have emerged in the past 20 years.

A changing climate leads to changes in the frequency, intensity, physical expanse, duration, and timing of extreme weather events. Extreme weather or climate events can intensify a community's vulnerability to future extreme events by modifying resilience, coping capacity, and adaptive capacity. According to the UN's Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5, 2014), there is greater certainty that the buildup of Greenhouse Gases (GHG) in the atmosphere is changing the world's climate and creating increasingly extreme and unpredictable weather.

In the case of India, records extend back to at least 1920. Based on these records, scientists have observed a trend of increasing temperature on the order of 0.60 degrees Celsius (°C, 1.0 degrees Fahrenheit (°F)), an increase in heavy rainfall events, and a decrease in low and medium rainfall events over the past century. Projecting forward, in the worst-case scenario, a world with a 4°C (7.2°F) rise in temperature would be one of

unprecedented heat waves, severe drought, and major floods. Delta regions and coastal cities are particularly exposed, and India's National Action Plan on Climate Change (NAPCC) assesses that areas of Rajasthan, Gujarat, Madhya Pradesh, Maharashtra, Northern Karnataka, Northern Andhra Pradesh, and Bihar are likely to be more vulnerable in times of extreme events. Severe risks, such as flooding and drought, may increase significantly due to small incremental rises in annual average temperature. With extremes of rainfall and drought projected to increase with warming, these risks are expected to be much higher in a +4°C (+7.2°F) world as compared to a +2°C (+3.6°F) world. Even in a +2°C (+3.6°F) world, the river basins dominated by a monsoon regime, such as the Ganges, are particularly vulnerable to changes in runoff seasonality, which will, in turn, impact water availability.

Over a century of observations on atmospheric parameters (e.g., temperature and precipitation) and more recent observations on cyclones and sea level show significant climate anomalies over India and the wider region. These changes are expected to increase the frequency of extreme weather events and worsen hydro-meteorological hazards by intensifying anomalies in temperature, precipitation, storms, cyclones, and sea level. The annual mean surface air temperature rise is expected to range 1.7–2°C (2-3.6°F) with the higher end of this range becoming common by the 2030s. The variability of seasonal mean temperature may be more in winter months. Warming in night temperatures is expected to be greater over southern areas of the peninsula, whereas that of daytime warming is expected to be more over central and northern India. Over the past 50 years, warming has mainly been noticeable during the winter and post-monsoon seasons; this has seen daytime mean temperatures rise 0.80°C (1.4°F) and 0.82°C (1.5°F) respectively.[161]

Significant influence of El Niño Southern Oscillation (ENSO) events has been observed across India. The ENSO is an irregularly periodic variation in wind and sea surface temperatures over the tropical eastern Pacific Ocean, and El Niño events that warm the Pacific's surface affect the southwest (June to September) monsoon over India. El Niño events are generally associated with lower-than-normal monsoon rainfall, and research suggests El Niño events are increasing in terms of frequency and intensity. A 400-year seasonal record of El Niño created by Australian scientists has revealed that a new type of more intense El Niño has become more prevalent since 1990. The trend of El Niño during most of the last four centuries shows a simultaneous increase in Central Pacific events and a decrease in Eastern Pacific ones. The last 30 years have seen fewer but more intense Eastern Pacific El Niño events with notably strong events in 1997-1998 and 2015-2016.[162]

The subcontinent is expected to see a relatively larger rise in sea levels than will areas in higher latitudes. Sea level rise and storm surges can be expected to exacerbate saltwater intrusion in coastal areas where agriculture and groundwater and drinking water will be adversely affected. The mean sea level rise along India's coasts based on observations is estimated at 1.3 mm/year (0.5 inches/year). Global average sea level rise at the end of the 21st century (2090–2099) for differing climate scenarios is expected to be 0.18-0.59 m (7-23 inches). Coastal inundation due to sea level rise is a concern for several locations along the coast. India's east coast is more vulnerable than the west coast because the former is low-lying and more prone to the occurrence of cyclones than is the latter.

Summer monsoon rainfall events show a trend of increasing volume between 1901 and 2005, but the trend is much stronger after 1950. Widespread increases in heavy precipitation are concentrated in the high-elevation regions of the northwestern Himalaya as well as along the foothills of the Himalaya extending south into the Indo-Ganges basin. Storm frequency has decreased despite higher sea surface temperature in the past century. From 1961 onwards, cyclone frequency shows a significant decreasing trend for all seasons over the Indian region. Cyclone intensity, on the other hand, appears to be increasing. While cyclonic disturbances

over Arabian Sea may lessen, these systems are expected to be more intense.[163]

Under the Paris Agreement, India's first Nationally Determined Contributions (NDC) had three main elements:

- An economy-wide emissions intensity target of 33–35% below 2005 levels
- An electric power capacity target of 40% installed capacity from non-fossil-based energy resources by 2030, (conditional)
- A carbon sink expansion target of creating an additional (cumulative) carbon sink of 2.5–3 gigatons of carbon dioxide equivalent (GtCO2e) through additional forest and tree cover by 2030.

As of July 2021, India had 39% non-fossil fuel installed capacity based on data available from its Central Electricity Authority. At the 2021 26th UN Climate Change Conference of the Parties (COP26) in Glasgow, Scotland, PM Modi announced a 2070 net zero target although India had not submitted a long-term low carbon development strategy to the United Nations Framework Convention on Climate Change (UNFCCC).[164] Meanwhile, as announced in 2021, India's up-dated climate action targets included:

- Installing non-fossil fuel electricity capacity of 500 gigawatts (GW) by 2030
- Sourcing 50% of energy requirement from renewables by 2030
- Reducing 1 billion tons of projected emissions by 2030
- Achieving carbon intensity reduction of 45% over 2005 levels by 2030
- Achieving net zero by 2070.

India's total installed non-fossil fuel electricity generation capacity is projected to reach 817 GW, according to the Central Electricity Authority. This new target translates to almost two-thirds of the projected installed capacity in 2030, compared with the previous NDC target of 40%. It will require India to more than triple the 2021 non-fossil fuel capacity in less than a decade and will require additional policies as 500 GW is more than what is projected through cost minimization alone. More than half this 500 GW capacity may generate variable power (solar and wind). Thus, some of the needed policies are strengthening grid infrastructure, incorporating larger amounts of storage in the grid, better forecasting and scheduling, and improving financial health of power distribution companies.

The COP26 announcement of a "net zero by 2070" commitment was the first time India had expressed an absolute emissions reduction target. In 2016, India's total GHG emissions were 2.8 billion tons (excluding land use and forestry). A conservative interpretation of the new target is that 1 billion tons are to be reduced from India's cumulative emissions over the decade of the 2020s. This would mean reducing cumulative emissions by 2.5%. In terms of India's additional emissions during the 2020s, the new target would mean reducing emissions by 15%. If the new target were interpreted as a 1-billion-ton reduction in 2030 emissions, it would imply that India's emissions will grow by only 0.3 billion tons over the decade, instead of the projected growth of 1.3 billion tons, effectively peaking and flattening out in this decade.[165]

Country Risk Profile

The Index for Risk Management (INFORM) measures the risk of humanitarian crises across 191 countries. It provides a global, transparent tool for understanding the risk of humanitarian crises to support proactive crisis management frameworks. It aims to aid decision making in service of an objective allocation of resources for DM and coordinated actions focused on anticipating, mitigating, and preparing for humanitarian emergencies.

INFORM is based on risk concepts published in scientific literature and envisages three dimensions of risk: 1) Hazards & Exposure, 2) Vulnerability, and 3) Lack of Coping Capacity. The first dimension measures the natural and human hazards that pose the risk. The second and third dimensions cover population factors that can mitigate against or exacerbate the risk; the vulnerability dimension considers the

strength of individuals and households relative to a crisis, and the lack of coping capacity dimension considers factors of institutional strength.[166]

The 2022 INFORM ranking for India's risk is 38 out of 191 countries with countries ranked from highest risk (1) to lowest risk (191); the breakdown of this ranking is shown in Figure 11.[167] The overall INFORM risk score was 5.2, on a scale of 1 (low risk) to 10 (high risk). Thus, India falls in the "High" risk category. INFORM breaks down the overall risk score, each on the same scale of 1-10, by evaluating risk across three dimensions:

1. In the first dimension, Hazards & Exposure, India received a score of 6.8/10, indicating "High" risk. The indicators where India received the highest risk scores in this dimension were Earthquakes at 8.3/10 and Floods at 8.4/10.
2. In the second dimension, Vulnerability, India received a score of 4.8/10, indicating "Medium" risk. The indicators where India received the highest risk scores in this dimension were Development and Deprivation at 6.6/10 and Uprootedness at 6.1/10.
3. In the third dimension, Lack of Coping Capacity, India received a score of 4.4, indicating "Medium" risk. The indicator where India received the highest risk score in this dimension was Access to Health Care at 5.9/10.[168]

The Global Climate Risk Index for 2021 ranked India seventh among all countries for impacts suffered during 2019. The effects of climate-related events included 2,267 deaths and US$68 billion in losses. The year was marked by an extended monsoon that led to flooding that, alone, killed 1,800 people and displaced 1.8 million people. In addition, eight tropical cyclones struck, six of them classified as "very severe." In May 2019, Cyclone Fani, the worst of the storms, affected 28 million people. Outside of this one-year calculation, India ranks as the 20th most affected country for the period 2000-2019. It experienced an average of three climate-related event deaths and US$2 million in damages each year.[169] Going forward, climate change is likely to exacerbate the impacts of hydro-meteorological hazards by worsening flooding and heavy rainfall, increasing the impact of storms, and prolonging droughts. These impacts further compromise livelihoods of millions who

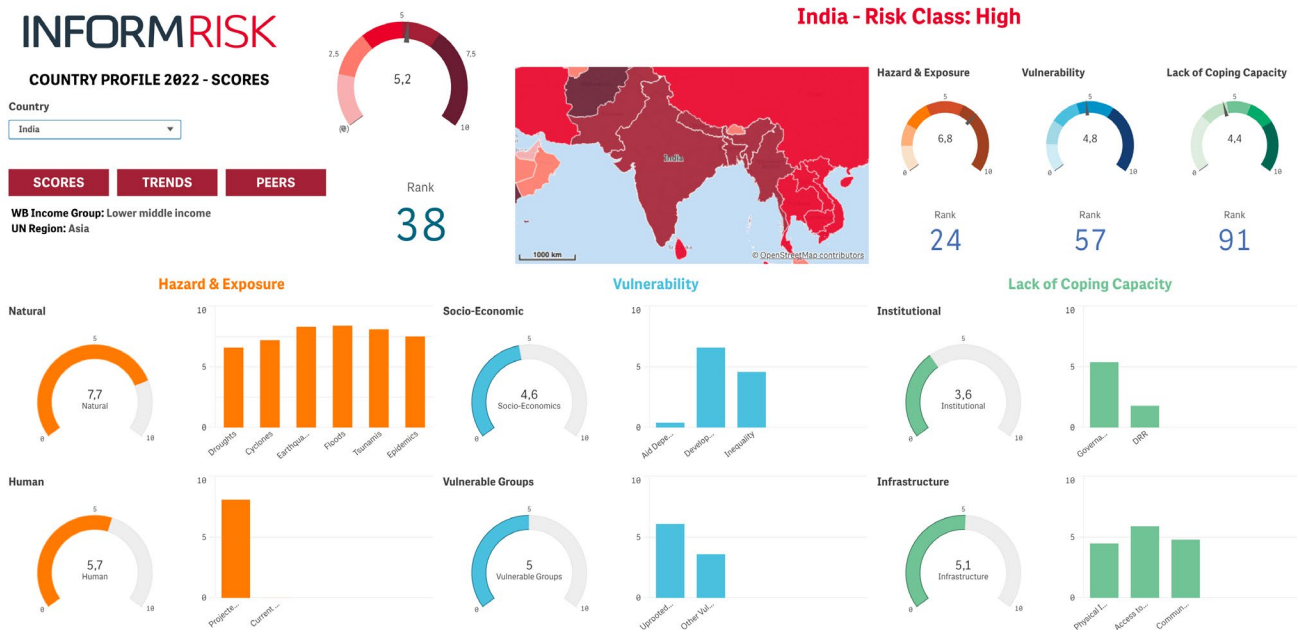


Figure 11: India's INFORM Risk Score (2022)

depend on subsistence agriculture, degrade the environment, and lessen the availability of safe water across the country.[170]

Coronavirus Disease 2019 (COVID-19)

From 3 January 2020 through 29 December 2021, India reported 34,808,886 confirmed cases of COVID-19 with 480,592 deaths to the World Health Organization (WHO). Figure 12 shows WHO data as reported to it by India regarding confirmed cases of COVID-19 and deaths linked to the disease as of 27 December 2021.[171]

India reported its first case of COVID-19 on 30 January 2020.[172] On 24 March, when the country had counted fewer than 600 confirmed cases, the PM announced, "The entire country shall go under complete lockdown. A total ban is being imposed [to prevent people] from stepping out of their homes for 21 days." The country was given less than four hours to prepare before lockdown came into effect. Although lockdown brought daily life to an immediate halt and devastated the country's economy, it also seemed extremely effective in limiting the spread of the virus that causes COVID-19.[173] Among the harshest impacts of the shutdown was the number of people stranded in cities where their employment disappeared and without the ability to return home. On 29 April 2020, the government permitted inter-state movement of stranded people, including migrant workers. Meanwhile, domestic air travel restarted on 25 May just after the PM had announced a relief package worth around 10% of GDP. On 29 July, the central government issued "Unlock 3.0" guidelines for a phased re-opening, and this was followed in late August by "Unlock 4.0" that would lift restrictions on metro rail in September and eventually allow for social, academic, sports, entertainment, and other events of up to 100 people. By late September, the "Unlock 5.0" guidelines were published; they allowed state and UT governments to decide on reopening schools and opening entertainment venues to 50% capacity after 15 October.[174]

It was in December 2020 that Indian scientists first detected the B.1.617.2 variant (now called Delta) of the virus that causes COVID-19.[175] The more transmissible variant was among the drivers of India's deadly second wave, which ran through the country in March-May 2021. During the second wave, most states announced additional lockdown measures. This response differed from the central government-led response to the first wave in that it hewed more closely to the constitutional order whereby health is a state responsibility. However, much of the scientific and technical expertise that had informed federal authorities during the first wave is housed within or located with central government agencies and, therefore, was less available to state authorities whose budgets, technical knowledge, and human resources fell

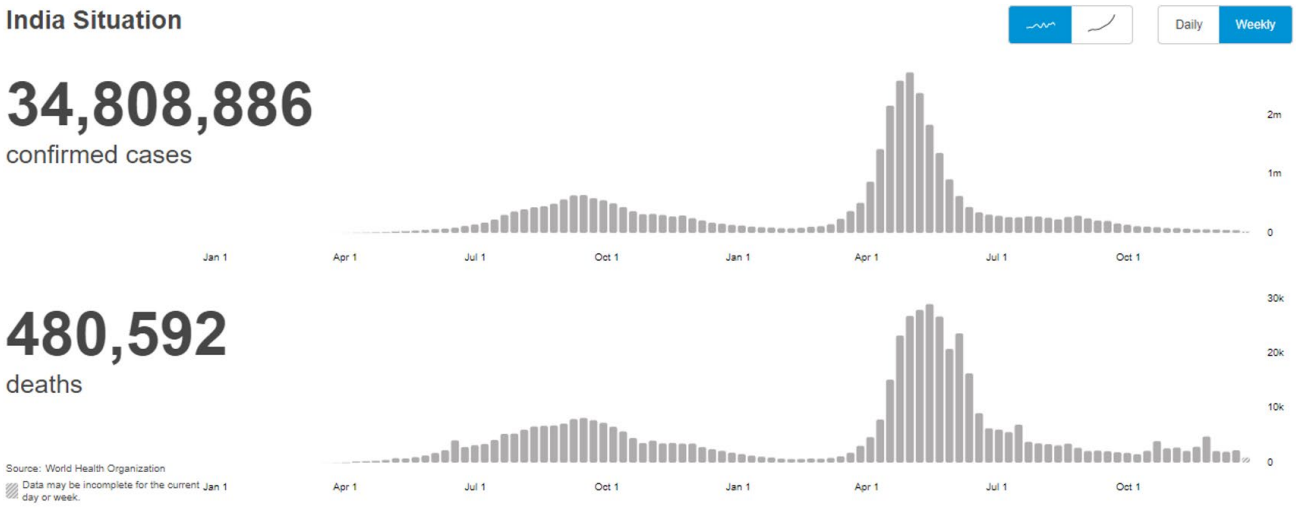


Figure 12: Trajectory of India's COVID-19 Experience (Cases and Deaths over Time)

short of what was required to effectively address rising caseloads.[176]

Another confounding issue was that India's second wave occurred within the context of the vaccine roll-out. On 3 January 2021, India's Central Drugs Standard Control Organisation (CDSCO) gave emergency use authorization to two domestically manufactured vaccines: AstraZeneca (as produced by the Serum Institute) and Covaxin (developed by Bharat Biotech). On 11 January 2021, the PM announced the start of the vaccination campaign and by 1 May, all persons over age 18 were eligible.[177] The vaccination drive kicked off on 16 January and involved nearly 250,000 COVID-19 Vaccination Centers to deliver the vaccine free to all citizens. Those citizens who were willing and able to pay to get swifter access were encouraged to get vaccinated at private hospitals, which also received supplies of the vaccines. By 21 October 2021, the country's vaccinators had administered more than 1 billion doses, and 294 million people had completed the two-dose schedule.[178] Figure 13 shows how India's vaccination campaign stacks up with other countries in terms of percent of population fully vaccinated as of 30 November 2021; India's line can be found fourth from the bottom.[179]

As early as April 2020, India's Ministry of Health set up the National Task Force for Focused Research on Corona Vaccine to encourage and facilitate domestic research and development of drugs, diagnostics, and vaccines. Then, in August 2020, they constituted a National Expert Group on Vaccine Administration for COVID-19 to plan out the roll-out of vaccines, to include prioritization of groups, procurement, inventory management, and vaccine selection, delivery, and tracking. The National Health Authority's Chief Executive then took leadership of the Empowered Group on Vaccine Administration for COVID-19 in January 2021 to ensure that the vaccine roll-out was transparent, inclusive, simple, and scalable. Throughout, the National Technical Advisory Group on Immunization provided technical advice.

Once vaccinations began, India's roll-out was the largest in the world. Operational guidelines were published in December 2020 to outline administrative responsibilities, required capacities, training needs, supply chain requirements, planning, and stakeholder roles. Training the necessary workforce to deliver vaccines was among the challenges with more than 7,600 trainers trained at the state level, 61,500 administrators trained at the district level, 200,000+ vaccinators trained at the local level, and 390,000 more vaccination team members trained at vaccination sites. The process relied on the network of government ministries, professional bodies, medical colleges, NGOs, civil society, media, the private sector, and youth- and women-led organizations. India was able to draw on two key experiences in organizing mass, national, public events: 1) previous vaccination drives; and 2) elections; thus, the vaccine roll-out was able to reach large numbers of people

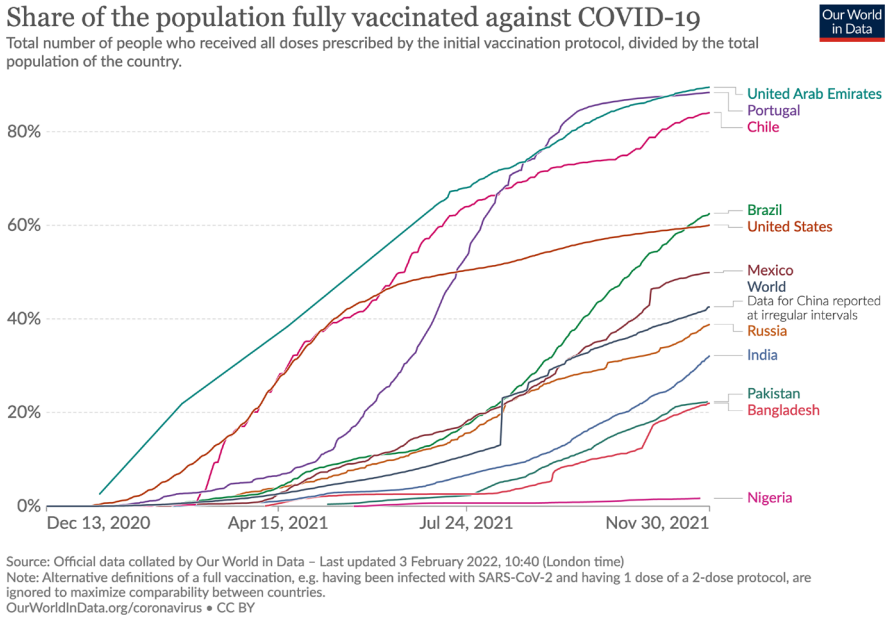


Figure 13: Share of the Population Fully Vaccinated against COVID-19 (Select Countries)

across varied geographies and to regularly review outcomes to drive changes as needed.[180]

In July 2021, the country activated its online vaccination portal, Co-WIN (the Covid Vaccine Intelligent Network). Co-WIN is an open-source, multilingual website that serves as the information backbone for India's vaccination drive. Users can book their vaccination appointment, keep track of the country's immunization drive, and download their vaccination certificates through the platform.[181] Beyond vaccine delivery, the Ministry of Health continues to monitor adverse effects via the Adverse Events Following Vaccination (AEFI) surveillance system that incorporates reports from all medical professionals and feeds up to AEFI committees that assess reports and adapt the contents of post-vaccination kits and training of vaccination teams to notice and address potential adverse reactions. Moreover, adverse effects of all kinds can be directly reported by individuals via the Co-WIN portal and app to ensure that the public feels heard if/when adverse effects occur.[182]

National Agencies, Frameworks, and Agreements

The NDMA, established by the DM Act of 2005, is the main organization coordinating and governing all disaster-related activities. NDMA is responsible for all national-level policy developments related to DM and for coordinating implementation and enforcement. NDMA coordinates with State Disaster Management Authorities (SDMA), which are responsible for regional activities to include coordinating and monitoring the implementation of National Policy and National Plan alongside the State Plan, supported by District DM Authorities operating under them.

National Disaster Management Agency

The MHA is responsible for overall coordination of disaster management. Top-level decision-making rests with the Cabinet Committee on Security (CCS) and the National Crisis Management Committee (NCMC), and the NDMA is the agency responsible for the approval, facilitation, and implementation of the National DM Plan (NDMP).[183]

In 2005, the Government of India enacted the DM Act, which mandated the creation of NDMA, headed by the PM, and SDMAs headed by respective Chief Ministers, to spearhead and implement DM in India. The structure of NDMA's relationship with other ministries and agencies is displayed in Figure 14.[184] The driving vision is to inculcate commitments to prevention, mitigation, and preparedness with relation to the damage and destruction caused by natural and man-made disasters. NDMA is mandated to establish DM policies, plans, and guidelines to ensure timely and effective response. NDMA has the following responsibilities:

- Establish policies on DM
- Approve the National DM Plan
- Approve plans prepared by the Ministries or Departments of the Government of India in accordance with the National Plan
- Establish guidelines for State Authorities drawing up State Plans
- Establish guidelines to be followed by the different Ministries or Departments of the Government of India for integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects
- Coordinate enforcement and implementation of the policy and plans for DM
- Recommend provision of funds for the purpose of mitigation
- Provide support to other countries affected by major disasters as determined by the Central Government
- Take other measures for prevention, mitigation, or preparedness and capacity building for dealing with threatening disaster situations or disasters as necessary
- Establish broad policies and guidelines for the National Institute of Disaster Management (NIDM).[185]

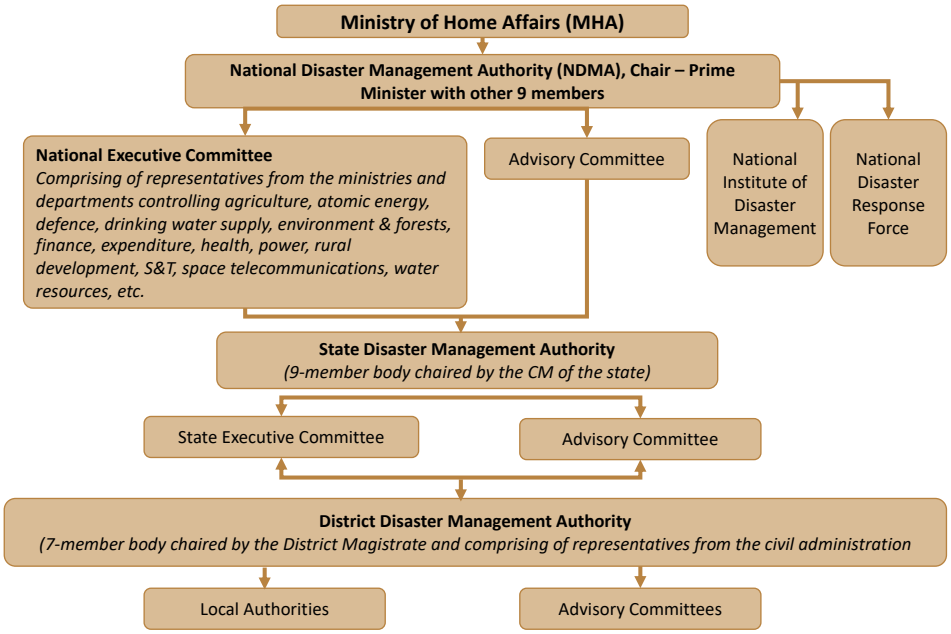


Figure 14: Disaster Management Structure in India

NDMA is divided into five divisions (i.e., policy and plans, mitigation, operations and communication, capacity building, and finance). The Operations division ensures situational awareness at NDMA and a continuous flow of information to enable NDMA to be prepared to advise the Government on disaster situations. The Operations Division's responsibilities are:

- Monitor disasters at national and international levels on a near real-time basis
- Coordinate with Early Warning agencies - e.g., India Meteorological Department (IMD), Central Water Commission (CWC), Indian National Centre for Ocean Information Services (INCOIS), and the Defence Geoinformatics Research Establishment (DGRE) – for disaster specific information
- Facilitate deployment of NDRF and other Central Government Resources to the states and union territories during disasters
- Work in close coordination with the National Executive Committee (NEC), NDRF, and State Governments
- Assist in movement of relief material by multiple agencies during response phase
- Coordinate support to other countries affected by major disasters as may be determined by the Central Government.[186]

The DM Act led to the 2006 constitution of NDRF to conduct specialized response to natural and man-made disasters. Initial formation included eight battalions, but NDRF has since expanded to 15 battalions. The 2008 NDRF Rules further qualified NDRF availability and service to only disaster response related duties, under the unified command of the Director-General of NDRF. NDRF falls under MHA, and its Director-General reports directly to NDMA Vice-Chairs. The Force has responded to floods, cyclones, and building collapses at home and has deployed to Japan as part of the global response to the 2011 Tohoku earthquake and tsunami and to Nepal after the 2015 earthquake.[187]

Disaster Management Laws, Plans, and Policies

While many of the essential functions related to disaster risk governance are rooted in the DM Act of 2005, the scope of legislative provisions was expanded by the National Policy on Disaster Management, 2009, a policy intended to enforce an enabling environment in recognition of the importance of State and District level authorities, the former of which have the primary responsibility over DM. In 2016, the NDMP was released to further align the institutional frameworks and mechanisms with the Sendai Framework. The NDMP was updated in 2019 to further coherence with the post-2015 development agenda by integrating not only the Sendai Framework but also the Sustainable Development Goals and Paris Agreement into the country's DRR and CCA frameworks.[188]

Disaster Management Act, 2005

The DM Act deals with natural and man-made disasters, establishes NDMA at the Central Level, and replicates the model at the State and District levels. It defines DM as a continuous and integrated process of planning, organizing, coordinating, and implementing measures necessary for:

- Prevention of danger or threat of any disaster
- Mitigation or reduction of risk of any disaster or its severity or consequences
- Capacity-building
- Preparedness to deal with any disaster
- Prompt response to any threatening disaster situation or disaster
- Assessing the severity or magnitude of effects of any disaster
- Evacuation, rescue, and relief
- Rehabilitation and reconstruction.

The Act mandated formation of the NDRF to provide specialized response during disasters. The Central Government appoints personnel from the CPMF - i.e., Central Reserve Police Force, Border Security Force, Central Industrial Security Force, and Indo-Tibetan Border Police Force - to the NDRF for management of disasters because of their specific skills and technical qualifications.[189] For undertaking disaster research, the DM Act of 2005 mandated the formation of NIDM, which is responsible for training programs, study courses, research, and publication of journals, papers, and books.[190]

National Policy on Disaster Management, 2009

The Policy is a framework for expanding the scope of DM activities to build a safe and disaster-resilient India through a proactive and holistic multi-hazard strategy, in consideration of cooperation, partnerships, and technological interventions. It foresees development of a culture of prevention, mitigation, and preparedness to generate a prompt and efficient response. While central government ministries and states are involved in the consultative process of evolving policies and guidelines, the process is intended to focus on the community and incorporate stakeholders such as NGOs. The themes that underpin this policy are:

- Community-based disaster management, including last mile integration of the policy, plans, and execution
- Capacity development in all related areas
- Consolidation of past initiatives and best practices
- Cooperation with agencies at the national, regional, and international levels
- Compliance and coordination to generate a multi-sectoral synergy.[191]

National Disaster Management Plan, 2019

The NDMP is both a framework and a set of directions for all government agencies to mainstream responsibilities and intervention strategies for all phases of the DM cycle. It is founded on the DM Act and National Policy on Disaster Management and integrates mandates from the Sendai Framework, Sustainable Development Goals, and Paris Agreement.[192] The first NDMP was prepared in 2016; it was revised in 2019 to include new hazards (i.e., thunderstorm, lightning, squall, dust storm, strong wind, cloudburst, hailstorm, Glacial Lake Outburst Flood (GLOF), heatwave, Biological and Public Health Emergencies (BPHE), and forest fire), and new chapters, including: Coherence and Mutual Reinforcement for DRR of the Post-2015 Global Frameworks, Social Inclusion, and Mainstreaming DRR. It also includes Climate Change Risk Management as a new thematic area. The NDMP delineates time bound actions for all concerned Ministries, Departments, Agencies, and other stakeholders to match timelines within the Sendai Framework.[193]

National Action Plan on Climate Change, 2008

In June 2008, the then PM released India's first NAPCC, outlining existing and future policies and programs addressing climate mitigation and adaptation. The plan identifies eight core "national missions" and directed ministries to submit detailed implementation plans to the PM's Council on Climate Change. Given the

country's need to balance economic growth, sustainable development, and climate disruption, the plan identified measures that promote development objectives while also addressing climate change effectively. It stipulated that national measures would be more successful with assistance from developed countries and pledged that India's per capita GHG emissions would not exceed that of developed countries. The plan can be visited on the website of Ministry of Environment, Forest, and Climate Change (https://moef.gov.in/en/division/environment-divisions/climate-changecc-2/national-action-plan-on-climate-change/). The NAPCC laid out eight missions: solar, sustainable habitat, energy efficiency, sustaining the Himalaya ecosystem, water, a "green" India, sustainable agriculture, and strategic knowledge on climate change.[194]

Prime Minister's Ten Point Agenda on DRR

The PM's Agenda enshrines social inclusion as a cross-cutting principle for all activities and mainstreams DRR as a cornerstone of development.

1. All development sectors must imbibe the principles of disaster risk management (DRM)
2. Risk coverage must include all, starting from poor households to small and medium enterprises to multi-national corporations to nation states
3. Women's leadership and greater involvement should be central to DRM
4. Invest in risk mapping globally to improve global understanding of nature and disaster risks
5. Leverage technology to enhance the efficiency of DRM efforts
6. Develop a network of universities to work on disaster-related issues
7. Utilize the opportunities provided by social media and mobile technologies for DRR
8. Build on local capacity and local initiatives to enhance DRR
9. Make use of every opportunity to learn from disasters and conduct studies on the lessons after every disaster
10. Bring about greater cohesion in international response to disasters.[195]

Protection in Humanitarian Action Framework

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

- Inter-Agency Standing Committee (IASC) Transformative Agenda Protocols
- Code of Conduct for the International Red Cross and Red Crescent (RCRC) Movement and NGOs in Disaster Relief
- Sphere Humanitarian Charter and Minimum Standards in Humanitarian Response (Sphere Handbook)
- 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 Defence Assets in Disaster Relief
- Guidelines on the Use of Foreign Military and Civil Defence Assets to Support United Nations Humanitarian Activities in Complex Emergencies ("MCDA Guidelines")
- ICRC Council of Delegates 2005: Resolution 7: Guidance on relations between the components of the Movement and military bodies
- Recommended Practices for Effective Humanitarian Civil-Military Coordination of Foreign Military Assets (FMA) in Natural and Man-Made Disasters
- Asia-Pacific Regional Guidelines for the Use of FMA in Natural Disaster Response Operations
- Environmental Emergencies Guidelines
- IASC Gender Handbook in Humanitarian Action
- IASC Guidelines for Gender-Based Violence

Interventions in Humanitarian Settings
- IASC Guidance on Strengthening Participation, Representation, and Leadership of Local and National Actors in IASC Humanitarian Coordination Mechanisms

The IASC Transformative Agenda Protocols are intended to strengthen humanitarian action through greater predictability, accountability, responsibility, and partnership. One of the major adaptations of the Humanitarian Reform process was the adoption of the Cluster Approach to humanitarian coordination. The IASC Guidance Note on "Using the Cluster Approach to strengthen humanitarian response" (2006) spells out the responsibilities of global and country-level sector/cluster leads, provides guidance on application of the Cluster Approach in new emergencies, and reinforces partnerships and complementarity. Additional protocols under the Transformative Agenda address leadership (2014), activation of the humanitarian system (2012), coordination of clusters at a country level (2015), and additional guidance on accountability, preparedness, and assessment.

The 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 establishes 10 principles that signatory agencies commit to follow in their disaster response work and describes the relationships that agencies should seek with affected communities, donors, host governments, and the UN system.

The Sphere Humanitarian Charter and Minimum Standards in Humanitarian Response (Sphere Handbook) is a set of common principles and universal minimum standards for the delivery of humanitarian assistance. It improves both the quality of assistance provided to people affected by disasters and the accountability of humanitarian actors to affected people, donors, and partners. Sphere standards guide humanitarian action across four primary areas: water supply, sanitation, and hygiene promotion; food security and nutrition; shelter, settlement, and non-food items; and health action. Recent editions of Sphere have increasingly emphasized cross-cutting issues, including humanitarian protection. There is also a series of Sphere companion standards that include: education in emergencies, child protection, livestock, and other economic issues. The current edition of the Sphere Handbook is dated 2018. For more information: https://spherestandards.org/

The IASC Operational Guidelines on the Protection of Persons in Situations of Natural Disasters promote and facilitate a rights-based approach to disaster relief. The Operational Guidelines, published in 2011, are based on existing human rights law and humanitarian accountability standards.

The Guiding Principles on Internal Displacement, established by the UN in 1998, identify the rights and guarantees of the forcibly displaced, including their protection and assistance during displacement, as well as during return or resettlement and reintegration.

The "Oslo Guidelines" on the Use of Foreign Military and Civil Defence Assets (MCDA) in Disaster Relief establish the basic framework for improving the effectiveness and efficiency in the use of foreign MCDA in international disaster relief operations. Foreign MCDA should be requested only where there is no comparable civilian alternative and only when foreign MCDA meets a critical humanitarian need. If foreign MCDA are required, the Oslo Guidelines outline the procedures for requesting and coordinating foreign MCDA. The Guidelines were released in 1994 and revised in 2007.[196]

The "MCDA Guidelines" of March 2003 (revised in January 2006) are a complimentary guide to the Oslo Guidelines in that they examine the use of foreign military assets in less than permissive operating environments. The Guidelines focus on when international military and civil defense personnel, equipment, supplies, and services can be used, how they should be used, and how UN agencies should interface, organize, and coordinate with MCDA in complex or other large-scale emergencies.[197]

The ICRC Council of Delegates' guidance on relations between the components of the Movement and military bodies lays out ways for Movement components to ensure they "promote

effective assistance and protection of victims of conflict and vulnerable people, and that they respect the Fundamental Principles" when establishing relationships with governments or military forces. It underscores the importance of clearly delineating Movement actions from those carried out by military agents and preserving independence in decision-making and action while maintaining dialogue with military participants in HADR. The guidance underscores the importance of National Societies differentiating themselves from their respective national military forces when both are responding to emergencies outside their own home countries. Finally, it cautions that the use of military assets by a component of the Movement – particularly in countries affected by armed conflict – should be a last resort, justified only by the serious and urgent need for life-saving humanitarian action and when there is no alternative means of taking that action. Components of the Movement may not resort to armed protection such as military escorts.[198]

The Recommended Practices for Effective Humanitarian Civil-Military Coordination of Foreign Military Assets (FMA) in Natural and Man-Made Disasters, published in September 2018, supplements existing UN-CMCoord guidelines. It captures the maturation of civil-military coordination and the relationship between civilian and military actors during HADR. The intent is to enumerate and encourage principled humanitarian action through effective civil-military interaction and improve the deployment, employment, and transition of foreign military support.[199]

The Asia-Pacific Regional Guidelines for the Use of FMA in Natural Disaster Response Operations reinforce the principles of the Oslo Guidelines and tailor them to the unique civil-military coordination context of Asia and the Pacific. They were established in 2011 and are the outcome of the Asia-Pacific Conferences on Military Assistance to Disaster Relief Operations (APC-MADRO). Sixteen countries from across the Asia-Pacific region participated in their drafting.

Environmental Emergencies Guidelines focus on the roles and responsibilities of regional and international institutions and frameworks when responding to the environmental impacts of large scale, sudden-onset disasters, complex emergencies, and industrial accidents. They were jointly developed by United Nations Environment and OCHA and originally issued in 2009, revised in 2017.

The IASC Gender Handbook in Humanitarian Action (2006) establishes standards for the integration of gender issues from the outset of an emergency so that humanitarian services reach their target audience and have maximum impact. The IASC Guidelines for Gender-Based Violence in Humanitarian Settings (2005) enable governments, humanitarian organizations, and communities to establish and coordinate a set of minimum multi-sectoral interventions to prevent and respond to gender-based violence during the early phase of an emergency.[200]

The IASC Guidance on Strengthening Local and National Actors' (L/NA) input into humanitarian coordination focuses on integrating – including in leadership positions – L/NA within humanitarian coordination structures. It provides guidance for Humanitarian Coordinators, Humanitarian Country Teams (HCT), Cluster and Inter-Cluster Coordination Groups, and other related Task Forces and Working Groups. L/NA provide understanding of local challenges and potential solutions, are able to mobilize local networks, and offer greater access to affected populations for a more effective, efficient, and sustainable humanitarian response with enhanced accountability. Among other Best Practices, the Guidance stresses the importance of informing L/NA about coordination structures and soliciting their input as to where they may best fit. Moreover, the Guidance suggests an increasing move for more humanitarian action to occur in local languages.[201]

Aid Policy

Historically, India's MEA has shown a marked preference for working with other countries on a bilateral basis rather than through multilateral channels. The upshot has been a

certain isolation of India from the mainstream of international disaster response and coordination developments.

The focal point of multilateral international disaster response and preparedness is UN OCHA. The UN Disaster Assessment and Coordination (UNDAC) system, INSARAG, the Civil Military Coordination Section of OCHA, and the Virtual On-Site Operations Coordination Centre (VOSOCC) are all practitioner-driven disaster response networks and tools that have been in the forefront of developing common professional standards for emergency responders around the world. India is a partner of UNDAC and has been occasionally engaged with INSARAG. For example, India has a number of professionals qualified to be part of an UNDAC team. However, the country has proven unable to deploy these experts as part of UN international emergency response teams when requested by UN OCHA because the Indian Government has not been able to finalize procedures that allow for their deployment abroad within the period that OCHA requires.[202] Meanwhile, India's NDRF has been working for INSARAG External Classification (IEC) so that, rather than responding in a bilateral manner as NDRF did in Japan in 2011 or Nepal in 2015, NDRF will be part of an international community of search and rescue teams with known qualifications and capabilities. It had not attained IEC as of latter 2021.[203]

Beyond MEA and India's diplomatic and political relationships with the global humanitarian response community, a further challenge can be noted within India's MHA. MHA's DM Division tends to be staffed by generalists rather than experts in international disaster response. Indeed, in the case of the BIMSTEC 2017 disaster response exercise, which India volunteered to conduct for the seven BIMSTEC countries (Bangladesh, India Myanmar, Sri Lanka, Thailand, Bhutan, and Nepal), MEA requested that MHA conduct the exercise. MHA delegated the task to NDRF, which planned a demonstration of skills that involved a boat rescue and collapsed building scenario but did not include India's Armed Forces or incorporate any political or coordination issues involved in international disaster response.[204] In 2020, NDRF was again the focal point as India hosted the second BIMSTEC Disaster Management Exercise. As in 2017, it was largely a technical exercise alongside an exchange of expertise rather than a rehearsal of how member-states might coordinate among themselves or with other international players in case of a major emergency.[205] Nonetheless, this character reflects some of the elements of BIMSTEC itself, which, unlike other regional groupings such as ASEAN, are less practiced in group action or collective reliance.

After its successful military HADR interventions during the 2004 Indian Ocean tsunami, India was proactive in following up on the experience gained during that operation and hosted jointly with UN OCHA a regional lessons learned meeting in New Delhi in 2005. This meeting led to the establishment of the regional process to formulate Standard Operating Procedures for responding international militaries under the APC-MADRO process, which over a period of five years developed the Asia Pacific Regional Guidelines for the Use of FMA in Disaster Relief Operations. Unfortunately, India's Ministry of Defence dropped out of this process before it was complete. As a result, the Indian Armed Forces fell out of date on thinking on military HADR and was not part of formative regional groupings such as the UN OCHA Civil Military Coordination Section-supported Regional Coordination Group (RCG) for Humanitarian Civil Military Coordination in Asia and the Pacific. For many years, India also lacked insight into the thinking in institutions such as the Singapore-based Changi RHCC or the U.S. Indo-Pacific Command's CFE-DM.[206] However, in November 2020, India and Singapore signed an agreement to work together to provide HADR, and an Indian liaison officer now works full-time on the staff of Changi RHCC.[207]

In the highly connected world of the 21st century, any disaster affected country is

challenged with making very rapid decisions on acceptance of international assistance. Recent events have seen sudden influxes of international teams, NGOs, and "in-kind" contributions that have the potential to overwhelm a disaster-affected country's local and national authorities if that country does not have a specific policy to address need, appropriateness, or duplication, among other factors. Such a policy involves clearly articulating who will be allowed into the country and the process for such entry. An example wherein such a policy was not explicit was during the 2015 Nepal earthquake. After this event, the first seven international search and rescue teams from India's NDRF were in Kathmandu within hours of the earthquake. In less than one week, there were 68 international USAR teams from 28 countries with 118 dogs and 2,080 personnel in Kathmandu.[208] Such an influx can be a destabilizing strain for local authorities already overwhelmed by the disaster.

Thus, while India's strong bilateral partnerships and significant resources allow it to respond to many regional disasters, it has less buy-in to international or regional coordination mechanisms that may mean that Indian government players who are participating in HADR outside India are not as well versed in the coordination mechanisms being used.

Government Agencies

Table 2 is a list of Indian Central Government ministries and agencies involved in disaster response; it is arranged alphabetically rather than in any order or importance or precedence.[209]

Agency	Resource
Central Water Commission (CWC) 3rd Floor (South), Sewa Bhawan, R.K. Puram, Sector-1, New Delhi – 110066	CWC, under the Ministry of Jal Shakti, is tasked with monitoring flood situations during designated flood periods by observing water levels/discharges along major rivers and issuing flood forecasts to local administrations, project authorities, State Governments, and Central Ministries such as MHA and NDMA. CWC's Flood Forecasting Network covers 325 stations in 197 low-lying areas and 128 reservoirs on 20 river systems. The flood forecasting and advance warning system helps agencies decide upon mitigating measures like evacuation. The forecasts are disseminated via fax, telephone, SMS, email, electronic media, print media, social media, website, etc.
India Meteorological Department (IMD) Mausam Bhawan, Lodhi Road New Delhi – 110003	IMD is the principal government agency in all matters relating to meteorology and related subjects. Its mandate is: 1) to take meteorological observations, provide forecasts, and provide meteorological information for agriculture, irrigation, shipping, aviation, offshore oil explorations, and other sectors; 2) to warn against severe weather phenomena like tropical cyclones, dust storms, heavy rains and snow, cold and heat waves, and other instances that may cause destruction of life and property; 3) to provide meteorological statistics required for agriculture, water resource management, industries, oil exploration, and other nation-building activities; and 4) to conduct and promote research in meteorology and allied disciplines.
Mahalanobis National Crop Forecast Centre (MNCFC) Near Krishi Vistar Sadan, Pusa Campus, New Delhi – 110012	MNCFC operates under the Ministry of Agriculture and Farmers' Welfare to apply space and geospatial technology in agriculture. MNCFC projects include: pre-harvest multiple crop production forecasting; district and sub-district level drought indicator assessments using satellite data and national-state-district level crop production estimates, use of satellite data for crop insurance, including crop loss assessment, area discrepancy and yield dispute resolution, risk zoning, and seasonality mapping.
Ministry of Agriculture and Farmers Welfare Krishi Bhavan, Dr. Rajendra Prasad Road, New Delhi – 110001	The apex body that formulates policies and institutional structures, including for drought management at the national and state levels. Within the Ministry, the Department of Agriculture and Farmers Welfare (DA&FW) is mandated to coordinate relief measures necessitated by drought, hailstorm, pests, and cold wave or frost. DA&FW reviews and updates the Crisis Management Plan for drought every year. The Plan defines roles and responsibilities of various agencies involved in crisis management during drought.

Table 2: Government Ministries in India

Agency	Resource
Ministry of Defence (MOD) Room No 234 - South Block, Ministry of Defence, New Delhi	Although responsibility for national defense rests with the Central Cabinet, policy and execution are undertaken by MOD whose principal task is to communicate Central Government policy direction to the Armed Forces and the country's defense production, research, and development organizations. The MOD has five departments, of which, the Department of Defence deals with the Integrated Defence Staff and three Services. It is responsible for cooperation with foreign countries and coordination of all defense related activities.
Ministry of Environment, Forest, and Climate Change (MOEFCC) Indira Paryavaran Bhawan, Jorbagh Road, New Delhi – 110 003	MOEFCC is the Central Government nodal agency for planning, promotion, coordination, and oversight of India's environmental and forestry policies and programs. It is the nodal agency for the United Nations Environment Programme (UNEP), South Asia Co-operative Environment Programme (SACEP), International Centre for Integrated Mountain Development (ICIMOD), and the follow-up of the United Nations Conference on Environment and Development (UNCED). It engages with multilateral bodies such as the Commission on Sustainable Development, Global Environment Facility, the Economic and Social Council for Asia and Pacific (ESCAP), and SAARC on matters pertaining to the environment. Its broad objectives are conservation and survey, prevention and control of pollution, afforestation and regeneration of degraded areas, protection of the environment, and animal welfare.
Ministry of External Affairs (MEA) 74B South Block, New Delhi	MEA is responsible for all of India's international relations, including delivery or receipt of international humanitarian assistance. This activity includes technical and financial assistance for countries during emergencies.
Ministry of Health and Family Welfare (MOHFW) Nirman Bhawan, New Delhi - 110011	MOHFW's Department of Health and Family Welfare is responsible for policy and oversight of all public health institutions, projects, programs, and information. Under the National Centre for Disease Control, the Integrated Disease Surveillance Programme (IDSP) is a decentralized State-based surveillance system for epidemic diseases to detect the early warning signals, so that timely and effective public health actions can be initiated in response to health challenges at the District, State, and National level.
Ministry of Home Affairs (MHA) North Block, New Delhi - 110001	MHA is responsible for internal security, border management, Central Police Forces, DM, and other internal central-state relations. The DM Division is responsible for response, relief, and preparedness for natural calamities and man-made disasters (except drought and epidemics). The Division is also responsible for legislation, policy, capacity building, prevention, mitigation, and long-term rehabilitation.
Ministry of Jal Shakti (Water Resources) C Wing, 4th Floor, Pandit Deendayal Antyodaya Bhawan, CGO Complex Lodhi Road, New Delhi - 110003	The Ministry is responsible for policy and programs for the development and regulation of the country's water resources. This includes monitoring flood control projects and operation of the central network for flood forecasting and warning on inter-state rivers.
National Disaster Management Authority (NDMA) NDMA Bhawan, A-1, Safdarjung Enclave, New Delhi - 110029	NDMA is the apex body for DM and creates an enabling environment for institutional mechanisms at the State and District levels.
National Remote Sensing Centre (NRSC) Dept. of Space, Hyderabad - 500 037	NRSC, in Hyderabad, is responsible for remote sensing satellite data acquisition and processing, data dissemination, aerial remote sensing, and decision support for DM. NRSC Ground Station – Shadnagar acquires data from Indian remote-sensing satellites as well as foreign satellites.

Table 2: Government Ministries in India (cont.)

Civil Society and Non-Government Organizations

There are an estimated 3.1 million active NGOs in India, the vast majority of which are national or local civil society organizations. Most of these NGOs rely on governments, multilateral agencies, and international NGOs to finance their field operations and administration. Only a few have the capacity to raise resources through direct fundraising. Table 3 lists major humanitarian actors operating in India. It is not an exhaustive list.[210]

Organization	Resource
CASA Rachna Building,4th floor, 2 Rajendra Place, Pusa Road, New Delhi - 110 008 Tel: +91-11-25730611 Web: https://casa-india.org/	CASA's primary objective is to strengthen poor communities and promote marginalized groups' efforts towards sustainable development. It has 31 sector offices in 22 states with operations in 5,000 villages. It helps deliver food, clean drinking water, temporary shelters, and utilities after disasters. It also conducts DM and training exercises for volunteers and communities to help reduce risks during disasters.
Goonj J-93, Sarita Vihar, New Delhi-110076 Tel: 011-26972351 or 41401216 Web: https://goonj.org/	Goonj has a network of communities in urban to village spaces. It channels materials among these communities to address gaps in rural infrastructure, water, environment, livelihood, education, health, and disaster relief and rehabilitation.
Habitat for Humanity India 3rd Floor, AFL House, Lok Bharti Complex, Marol Maroshi Road, Andheri (East), Mumbai, Maharashtra - 400059 Tel: +91 22 67846836 Web: https://habitatindia.org/	Habitat for Humanity (HfH) India is an affiliate of the global HfH organization. In India since the 1980s, HfH India is active not only in building houses, but also in sanitation programs and DRR. In disasters, HfH rapid response teams do immediate analyses of housing needs and provide humanitarian aid kits to affected families. Once recovery begins, it constructs transitional shelters and then works with the government and corporate partners to build new permanent disaster-resilient homes for affected families.
Humanitarian Aid International (HAI) 2nd Floor Building No. H-753-A, Ansal's Palam Vihar, Near Metro Hospital, Gurugram, Haryana – 122017 Web: https://hai-india.org/	HAI is an Indian civil society organization, founded by a team of Indian humanitarian and development professionals. HAI's non-advocacy activities are confined to India, where it tries to strengthen localized humanitarian and development models. It is involved in humanitarian response, CCA, and DRR.
Indo-Global Social Services Society (IGSSS) 28, Institutional Area, Lodhi Road, New Delhi-110003 Tel: 011-45705000 Web: https://igsss.org/	IGSSS is a non-profit working for a humane social order based on truth, justice, freedom, and equity. It works in 110 districts across 21 states in India. On the issue of DRR and DM, it provides cash assistance to the most affected families, facilitates psychosocial counseling and awareness of health and hygiene, provides clean drinking water through raised hand pumps, tube wells, and tanks, supports communities with specific inputs for restoring their livelihood, builds community-based disaster preparedness through village contingency planning and training, and builds disaster resilient infrastructure and models through Public Private Partnerships.
PLAN India 1, Community Centre, Zamrudpur, Kailash Colony Extension, New Delhi – 110048 Tel: +91 11-46558484 Web: https://www.planindia.org/	Plan India is a member of the Plan International Federation, an independent development and humanitarian organization that strives for a just world that advances children's rights and equality for girls. Plan India is a nationally registered non-profit. As part of its DRM campaigns, Plan India invests in risk reduction by monitoring communities and ensuring accountability to the affected and at-risk populations. It has delivered immediate relief, performed projects that re-enroll children in schools and support schools for smooth functioning, and produced gender-responsive messaging on public health issues before, during, and after disasters.

Table 3: Domestically-Focused Organizations in India

Organization	Resource
OXFAM India Unit. No. 411 & 412, NSIC New MDBP Building, 4th Floor, Okhla Industrial Estate, New Delhi-110020 Tel: +91 (0) 11 4653 8000 Web: https://www.oxfamindia.org/	OXFAM India is an independent affiliate of OXFAM. In addition to on-going campaigns against discrimination, it has responded to disasters in Assam, Bihar, Uttar Pradesh, Kerala, Kashmir, Manipur, Gujarat, Tamil Nadu, West Bengal, and Odisha states. It provides assistance to communities at risk in times of natural disasters and conflict with particular focus on reaching women, adolescent girls, children, persons with disability, and elderly people. In non-disaster scenarios, it works on DRR enhancing the preparedness of partners on the ground, networks of humanitarian support providers, and of the communities themselves.
Rapid Response #10, Vysial Street, Heritage Town, Pondicherry – 605001 Tel: 6381115610 Web: https://www.rapidresponse.org.in/	Rapid Response is a registered non-profit committed to providing emergency assistance and long-term solutions to victims of disasters. In crisis times, it delivers food, bedding, education kits, medical camps, and hygiene kits. In non-crisis situations, the group engages with vulnerable communities and train them to cope with emergencies via its programs in Community-Based DRR, school safety, and information and communications technology for disaster preparedness.
SEEDS India 15-A, Institutional Area, R.K. Puram Sector-4 New Delhi -110022 Tel: +91-11-26174272 Web: https://www.seedsindia.org/	SEEDS (Sustainable Environment and Ecological Development Society) aims to protect lives and livelihoods by partnering with communities to build resilience to disasters and climate change impacts. They focus on safe housing, schools and community infrastructure, water and sanitation, environment, and health. In the immediate aftermath of a disaster, they help with temporary shelter and temporary schools. During reconstruction, they work with communities to ensure the rebuilt environment is more resilient. Finally, SEEDS has programs to guide communities in assessing their risk, planning to address those risks, and training for response.
Sphere India Secretariat B-94, Sector 44, Noida, Uttar Pradesh-201303 Tel: + 91 120- 4268157 Ext :402 Web: https://www.sphereindia.org.in	Sphere India is a national coalition of humanitarian organizations initially brought together as a country pilot of the Sphere Project in 2003. Sphere India gradually evolved into a collaborative process to promote rights and needs-based approach with focus on promotion of humanitarian principles, minimum standards, global frameworks for DRR, CCA, and sustainable development towards achieving accountability to affected and at-risk populations. It has built collaboration with similar humanitarian networks across South Asia.

Table 3: Domestically-Focused Organizations in India (cont.)

Domestic Disaster Management Activities

There is no official policy document outlining the Government's position with respect to receiving international assistance in the case of a major domestic disaster. A summary of the informal policy is that India "does not ask for international assistance but may welcome appropriate assistance on a case-by-case basis if offered voluntarily." During the 2004 Indian Ocean tsunami, India refused to accept international assistance but did provide it to Indonesia, Sri Lanka, and Maldives. India has accepted international humanitarian assistance in times of disaster – e.g., during the Orissa Cyclone of October 1999 and the Bhuj earthquake of January 2001 India accepted UNDAC teams and other international assistance.

The Government of India has fallen somewhat behind in conceptualizing its response to international assistance after a major disaster within the country. For 20 years, the government of India has recognized that "closer interface with and better understanding of the international system for disaster response and putting in place systems for dealing with international assistance once it comes in" were necessary both for India responding to partners' emergencies and for domestic disaster responses. The lack of a Central Government internal system to deploy a coordination center to a disaster affected location is a lingering issue. It is unrealistic to expect a District affected by a disaster or a State to have the knowledge and experience to coordinate a large influx of outsiders.[211]

Present in India is a UN Disaster Management Team (UNDMT) comprising various UN agencies such as the Food and Agriculture Organization (FAO), the International Labour Organisation (ILO), UNDP, the UN Educational, Scientific, and Cultural Organization (UNESCO), UN Children's Fund (UNICEF), World Food Programme (WFP), and the WHO, among others. The UNDMT works with diverse stakeholders, particularly government departments, to integrate the objectives of DRR and CCA into broader development plans and programs, including those related to agriculture and natural resources, urban and rural habitats, infrastructure, and service delivery.[212] However, any emergency disaster assistance from UN agencies is accepted only if the government considers it necessary. The Central Government supports States for reconstruction and rehabilitation in the aftermath of major disasters, often through aid from the World Bank and other multilateral financial institutions or aid agencies. India also allows international NGOs already operating in the country at the time of the disaster to continue their humanitarian assistance to the affected population.[213]

The IASC Grand Bargain, launched in May 2016, is a commitment by some major donors and humanitarian organizations to get more resources into the hands of people in need and to improve the effectiveness and efficiency of the humanitarian action. Although India is not a signatory,[214] almost all UN agencies and several international NGOs operating in India are Grand Bargain signatories, committing to channel at least 25% of international funding to "local and national actors." Most NGOs rely on governments, multilateral agencies, and international NGOs for financing for their field operations and administration. Only a few have the capacity to raise resources through direct fundraising. Thus, meaningful implementation of Grand Bargain localization will greatly impact India's humanitarian architecture.[215]

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

India has dedicated institutions and mechanisms under MHA, such as the CCS, the NCMC, NDMA, SDMAs, NIDM, and NDRF. The states are primarily responsible for disaster response and for that they receive yearly allocations under State Disaster Response Fund, which can be backfilled by the National Disaster Response Fund if a disaster overwhelms response capacity of a State. In addition, India has a PM's National Relief Fund (PMNRF), which accepts voluntary contribution from individuals, organizations, companies, and institutions.[216]

In most cases, State Governments will carry out DM with the Central Government playing a supporting role on the request from the State Government. As the first line of response, the District DM Authority has the power to direct release of resources, control access into/out of the affected zone, remove debris, conduct search and rescue, provide relief and essential services, establish emergency communications, arrange for disposal of unclaimed bodies, and construct temporary structures as necessary. Moreover, the district authority has the following legal responsibilities before, during, and after a disaster event.

- Prepare a DM plan including district response plan
- Coordinate and monitor implementation of the National Policy, State Policy, National Plan, State Plan, and District Plan
- Identify districts vulnerable to disasters
- Take steps for prevention and mitigation of disasters
- Ensure that the guidelines laid down by NDMA and SDMA are followed by all departments of government at district level and the local authorities in the district
- Give directions to different authorities at district level and local authorities to take measures for prevention or mitigation of disasters

- Lay down guidelines for DM plans by government departments at the district level and local authorities in the district
- Monitor implementation of DM plans prepared by government departments at the district level
- Review the state of capabilities for responding to disasters
- Review preparedness measures to respond effectively to any disaster or threatening disaster situation
- Organize specialized training programs for officers, employees, and voluntary rescue workers in the district
- Organize community training and awareness programs
- Set up, maintain, review, and upgrade mechanisms for early warning and dissemination of information to the public
- Prepare, review, and update district level response plan
- Coordinate response to any threatening disaster situation
- Ensure government departments at district levels and local authorities prepare their response plans
- Examine construction in the district and ensure it meets the necessary standards
- Identify buildings and places that can be used as relief centers
- Establish stockpiles of relief and rescue material
- Provide information to SDMA relating to different aspects of DM
- Encourage involvement of NGOs and voluntary social welfare institutions in district for DM.[217]

As part of its capacity-building program for state and district leaders, NDMA oversaw the development of the Incident Response System (IRS) and has been providing training and leadership to state and district practitioners. IRS is intended to reduce ad hoc measures and promote the establishment of a composite team to attend to all the possible response requirements. IRS designates officers to perform various duties and lays out a means to acquire training for DM roles. Broadly, Figure 15 shows the IRS organizational structure.[218] Responsible Officers (RO) have been designated at the State and District level as in overall charge of the incident response management. The RO may delegate responsibilities to the Incident Commander (IC), who in turn will manage the incident through Incident Response Teams (IRT).

The IRT comprises all positions of IRS organization headed by the IC. The Operations Section helps prepare and execute tactical operations. The Planning Section helps obtain information and prepare plans. The Logistics Section assesses the availability and requirement of resources and obtains them. IRTs function at

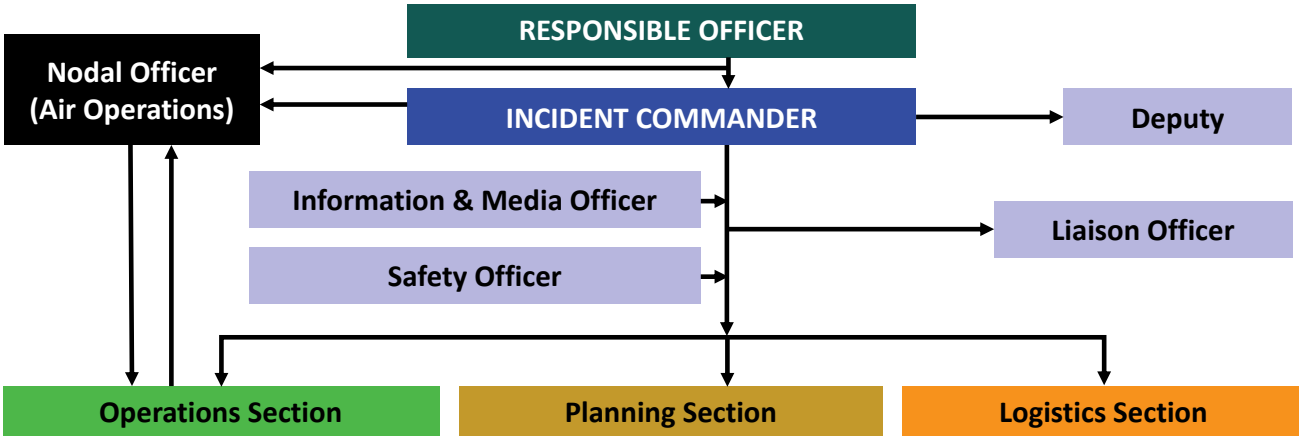


Figure 15: Generic Incident Response System Organizational Structure

State, District, Sub-Division, and lower levels. IRTs are pre-designated, and, on receipt of an early warning, the corresponding RO will activate them. In case a disaster occurs without any warning, the local IRT will respond and contact the RO for further support, if required. Figure 16 show the nominal composition of an IRT.[219]

The IRS organization is flexible, and only those sections needed may be activated for a given disaster, and the organizational elements that are no longer required can be deactivated to ensure appropriate use of resources.[220]

NDRF is tasked with conducting specialized response to natural and man-made disasters. It falls under MHA and operates under the unified command of the Director-General of NDRF. Each of the current 15 NDRF battalions consists of 1,149 personnel drawn from the Border Security Force, Central Industrial Security Force, Central Reserve Police Force, Indo-Tibetan Border Police Force, Sashastra Seema Bal, and Assam Rifles. Each battalion has 18 self-contained specialist search and rescue teams of 45 personnel each including engineers, technicians, electricians, dog squads, and medical/paramedics. All 15 battalions have been equipped and trained to respond to natural as well as man-made disasters, including response during CBRN emergencies.[221]

Different agencies have responsibility for operating various Early Warning Systems (EWS). In general, state and UT DM and development plans are expected to lead to the establishment of EWS.[222] However, specialized information will come from scientific and professional agencies. Cyclone hazard warnings are the responsibility of IMD, the Regional Specialized Meteorological Centre, and the Tropical Cyclone Warning Centres for various regions. For earthquakes, IMD maintains the seismological monitoring network. Central Drought Relief Commissioners report on droughts. Landslides are reported by the Geological Survey of India, and tsunamis by INCOIS. Each agency provides inputs to MHA, which issues alerts and warnings through its communication channels, including dissemination across administrative levels and divisions, as well as through developed mobile applications such as MAUSAM (weather) and Damini Lightning App, which enable prompt access to accurate and timely risk information for the public.[223]

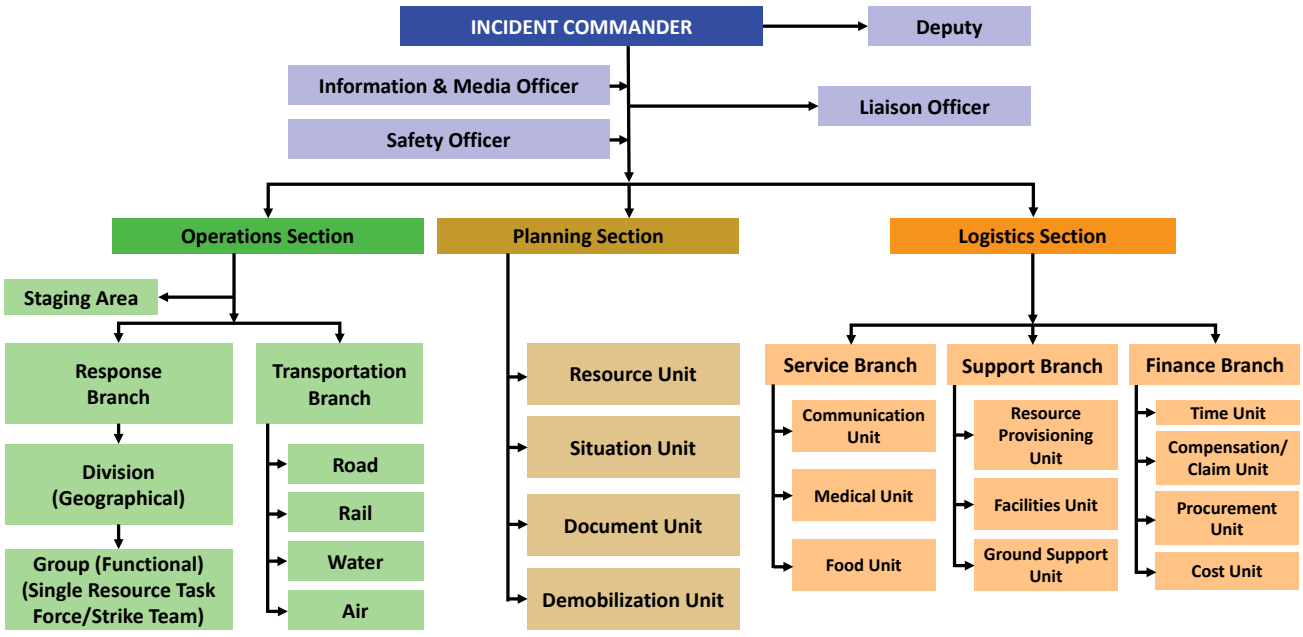


Figure 16: Generic Organizational Chart for an Incident Response Team

U.S. DOD DMHA RECENT ENGAGEMENTS WITH INDIA (2016-2021)

The list below describes the engagements that the U.S. has had with India in the last five years and that touch upon HADR.

Southeast Asia Cooperation and Training – August 2021

The 20th annual Southeast Asia Cooperation and Training (SEACAT) exercise concluded on 20 August, following 10 days of in-person and at-sea engagements that enhanced collaboration among Indo-Pacific partners and focused on shared maritime security challenges. SEACAT brought together 21 partner nations, agencies, and international and non-government organizations. It is designed to provide mutual support and a common goal to address crises, contingencies, and illegal activities in the maritime domain using standardized tactics, techniques, and procedures. Ashore, the exercise involved a Command Post Exercise at Singapore's Changi Naval Base that served as a centralized hub for information sharing in the tracking of contracted merchant vessels simulating suspicious vessels of interests in seas throughout Southeast Asia. By aggregating information through maritime domain awareness tools, cueing was provided to participant countries' operations centers and maritime patrol and reconnaissance aircraft or surface assets. These assets made use of that information across the region to track, find, and simulate boarding of the vessels of interest, with the goal of practicing and advancing a collective ability to enforce international rules, laws, and norms. The exercise scenarios were designed to encourage countries to share information to enhance understanding of the operational environment, build capacity for humanitarian support missions, and uphold international laws and norms. As INDOPACOM's executive agent for counter-narcotics, Joint Interagency Task Force West provided support to participating countries. The largest iteration to date, SEACAT 21 included 21 nations, including Australia, Bangladesh, Brunei, Canada, France, Germany, India, Indonesia, Japan, Malaysia, Maldives, New Zealand, Philippines, South Korea, Singapore, Sri Lanka, Thailand, Timor-Leste, UK, U.S., and Vietnam.[224]

COVID-19 Assistance – May 2021

As part of a whole-of-government effort to slow and eventually end the COVID-19 pandemic, the U.S. sent medical supplies and equipment to India as that country battled its second wave of the disease. A C-5M Super Galaxy aircraft loaded with oxygen cylinders and regulators, N95 masks, and COVID-19 rapid diagnostic kits left Travis Air Force Base, California, bound for India. It was quickly followed by a C-17 Globemaster III that departed Travis for India carrying additional oxygen cylinders and diagnostic kits. In all, the U.S. delivered more than US$100 million in medical supplies. The medical supplies were donated to India by the U.S. government though the U.S. Agency for International Development (USAID). Personnel from the 60th Air Mobility Wing were responsible for delivering the supplies. "India is a major defense partner to the United States and providing assistance is just something partners do," said the Pentagon Press Secretary.[225]

Joint Multi-Domain Operations – March 2021

The Theodore Roosevelt Carrier Strike Group conducted simultaneous joint multi-domain operations with the Indian Navy and Air Force in the Indian Ocean 28-29 March. The exercise focused on complex operations such

as anti-submarine warfare, joint air operations, and command and control integration. It demonstrated the capacity of the two nations to operate together to advance a common vision of Indo-Pacific, ensuring peace and stability. U.S. and Indian forces exercised together seamlessly across all domains, demonstrating the compatibility of platforms and operations. The Carrier Strike Group was on a scheduled deployment to the U.S. 7th Fleet to help ensure freedom of the seas, build partnerships that foster maritime security, and to conduct a wide range of operations that support humanitarian efforts and act as deterrence to potential malign actions.[226]

Exercise TIGER TRIUMPH – November 2019

The first-ever TIGER TRIUMPH (Tri-Services India U.S. Amphibious Exercise) ran 13-21 November near Visakhapatnam and Kakinada. It kicked off with the arrival of USS Germantown (LSD 42) and concluded off the Kakinada coast with a grand closing ceremony onboard the ship. This was the first tri-services exercise to bring both countries together on HADR. During the exercise, Indian and U.S. forces jointly transited from Visakhapatnam to the simulated HADR location at Kakinada. In Kakinada, the troops were transferred ashore and set up a joint command and control center and a joint relief and medical camp. Apart from Indian Navy ship INS Jalashwa and USS Germantown, more than 500 U.S. Marines and sailors and 1,200 Indian soldiers and officers participated in the exercise. Apart from HADR, the exercise included live fire drills, ship maneuverers, and landings by Indian helicopters on the Germantown's flight deck.[227] During the drill, U.S. military medical professionals received a tour of the casualty receiving and triage area on INS Sandhayak Hospital Ship (J 18), shown in Photo 1.[228] Photo 2 shows Indian Army soldiers carrying a casualty during the casualty evacuation drill at Kakinada Beach during TIGER TRIUMPH.[229]

U.S. Pacific Fleet Commander Visits India – October 2019

The commander of the U.S. Pacific Fleet visited India from 26 to 31 October to expand the maritime partnership between the two



Photo 1: Indian Sailors Show U.S. Partners Key Areas of Hospital Ship



Photo 2: Indian Army Soldiers Participate in TIGER TRIUMPH Evacuation Drill

countries and emphasize the importance of a free and open Indo-Pacific. During a stop in New Delhi, Admiral John C. Aquilino met with India's Chief of Naval Staff Admiral Karambir Singh, Defence Secretary Ajay Kumar, and National Security Military Advisor Lieutenant General Khandare (retired) along with other senior Indian Navy and government leadership to discuss the importance of increased interoperability and information sharing. While in India Aquilino toured the Information Fusion Centre, Indian Ocean Region (IFC-IOR), an organization responsible for building a common situation picture for information-sharing. IFC-IOR supports maritime domain awareness and strengthening maritime security throughout the region and beyond. It also plays a critical role in preventing and combating maritime terrorism, piracy, human and contraband trafficking, illegal and unregulated fishing, arms running, and poaching. Aquilino also spoke with students at the India National Defence College, which teaches national security and strategic studies to foster better understanding and cooperation in international security to future decision-makers. This visit was one in a series of U.S.-India engagements in 2019, including the inaugural India-U.S. tri-services HADR exercise TIGER TRIUMPH.[230]

India Executive Steering Group – May 2019

Indian Air Force (IAF) leaders visited Headquarters Pacific Air Forces for the annual India Executive Steering Group (ESG) at Joint Base Pearl Harbor-Hickam, 30 April-3 May. U.S. Air Force Lieutenant General Kevin B. Schneider, 5th Air Force Commander, hosted IAF leaders for the 22nd iteration of the ESG. The steering group, held alternately in the U.S. or India, allows senior leaders from both air forces to determine future engagements. The group discussed various topics including exercises, humanitarian aid, and subject matter expert exchanges.[231]

USS Anchorage Deployment with INS Rajput – December 2018

Amphibious transport dock ship USS Anchorage (LPD 23) with the embarked 13th Marine Expeditionary Unit (MEU) concluded a cooperative deployment with Indian Navy destroyer INS Rajput (D51), on 26 December. The at sea training followed a 22-26 December port visit to Visakhapatnam, India. During the port visit, the Anchorage and 13th MEU team held professional exchanges with their Indian naval counterparts on humanitarian assistance operations, cross deck helicopter landings, and maritime security operations. The cooperative deployment featured the first use of the Helicopter Operations from Ships other Than Aircraft Carriers agreement to facilitate a helicopter cross-deck landing between the two navies when an Indian Navy helicopter landed on Anchorage. Additional events included embarking Indian landing craft on Anchorage, a maritime security demonstration and ship-rider exchanges underway.[232]

Exercise Rim of the Pacific – 2018

The world's largest international maritime exercise began on 27 June and concluded on 2 August following training events conducted in and around the Hawaiian Islands and Southern California. Twenty-five nations, 46 surface ships, five submarines, 17 land forces, and more than 200 aircraft and 25,000 personnel participated in Rim of the Pacific (RIMPAC) 2018. This iteration marked the 26th in the series that began in 1971 and is now held every two years. Hosted by U.S. Pacific Fleet, RIMPAC 2018 was led by U.S. Vice Admiral John D. Alexander, commander of the U.S. 3rd Fleet, who served as the combined task force (CTF) commander. Royal Canadian Navy Rear Admiral Bob Auchterlonie served as deputy commander, and Japan Maritime Self-Defense Force Rear Admiral Hideyuki Oban was the vice commander. Fleet Marine Force was led by U.S. Marine Corps Brigadier General Mark Hashimoto. Other key leaders of the multinational force included Commodore Pablo Niemann of Armada de Chile and Air Commodore Craig Heap of the Royal Australian Air Force. The 2018 exercise included forces from Australia, Brunei, Canada, Chile, Colombia, France, Germany, India, Indonesia, Israel, Japan, Malaysia, Mexico, Netherlands, New

Zealand, Peru, Republic of Korea, Republic of the Philippines, Singapore, Sri Lanka, Thailand, Tonga, UK, U.S., and Vietnam. For the first time since RIMPAC 2002, U.S. 3rd Fleet's Command Center relocated from San Diego to Pearl Harbor to support command and control of all 3rd Fleet forces in 3rd Fleet's area of responsibility, to include forces operating forward in the Western Pacific. Participating nations and forces exercised a wide range of capabilities and demonstrated the flexibility of maritime forces. These capabilities ranged from disaster relief and maritime security operations to sea control and complex warfighting. The relevant, realistic training program included amphibious operations, gunnery, missile, anti-submarine, and air defense exercises, as well as counter-piracy operations, mine clearance operations, explosive ordnance disposal, and diving and salvage operations.[233]

Medical Subject-Matter Expert Exchange – June 2018

U.S. Air Force Airmen traveled to the Institute of Aviation Medicine in Bengaluru, India, in late June for a subject-matter expert exchange (SMEE) with the IAF. The four-day inaugural, bilateral exchange was designed to facilitate an understanding of the medical capabilities each service brings to the table. Members from India's air force, navy, and army, along with aerospace medicine students, nurses, and pilots, were divided into teams and given different scenarios to work together and solve challenges. During one scenario, they were asked to imagine they were in the back of an Antonov An-32, an IAF aircraft, with patients hooked up to medical equipment, when fluid began to leak in the back of the aircraft upon final approach, giving the crew less than 30 seconds to decide what needed to be done.[234]

Exercise Rim of the Pacific – July 2016

The world's largest international maritime exercise ran from 30 June to 4 August and included training events conducted in and around the Hawaiian Islands and Southern California. Twenty-six nations, more than 40 ships and submarines, more than 200 aircraft, and 25,000 personnel participated in RIMPAC 2016, more countries and personnel than in any previous year. RIMPAC 2016 marked the 25th in the series. Hosted by U.S. Pacific Fleet, RIMPAC 2016 was led by U.S. Vice Admiral Nora Tyson, commander of the U.S. 3rd Fleet, who served as the CTF commander. Royal Canadian Navy Rear Admiral Scott Bishop served as deputy commander of the CTF, and Japan Maritime Self-Defense Force Rear Admiral Koji Manabe was the vice commander. Other key leaders of the multinational force included Commodore Malcolm Wise of the Royal Australian Navy, who commanded the maritime component; Brig. Gen. Blaise Frawley of the Royal Canadian Air Force, who commanded the air component; and Royal New Zealand Navy Commodore James Gilmour, who led the amphibious task force. The 2016 exercise participants were Australia, Brunei, Canada, Chile, Colombia, Denmark, France, Germany, India, Indonesia, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, People's Republic of China, Peru, the Republic of Korea, the Republic of the Philippines, Singapore, Thailand, Tonga, UK, and U.S. Each nation displayed capabilities ranging from disaster relief and maritime security operations to sea control and complex warfighting exercises, including a mass casualty drill, replenishments at sea, submarine search and rescue, aircraft refueling, and multi-day diving operations.[235]

CONCLUSION

Since the trauma of the 2004 Indian Ocean tsunami, India's Central and State Governments have sought to develop stronger DM capacities. Given its geographic and climatic diversity, India is exposed to a variety of hazards that have forced its governments and communities to address risk, adapt to threats, and improve resiliency. In 2005, India enacted a DM Act to formalize and guide the development of disaster preparedness and response. This law led to the establishment of a national system of DM agencies headed by the NDMA. Nonetheless, no amount of policy and preparation will end threats, and the country will continue to confront natural and manmade emergencies. Indeed, increasing population, rising urbanization, development in high-risk zones, industrialization, environmental degradation, and climate change will heighten India's vulnerabilities.

Given its domestic experiences of disaster, India has a wealth of knowledge and resources that allow it to offer assistance to its neighbors and to countries further afield that are affected by disasters. However, historically, India's MEA has shown a marked preference for working with other countries on a bilateral basis rather than through multilateral channels. For example, India's NDRF deployed to Japan and Nepal after earthquakes in 2011 and 2015 respectively, but these missions were agreed to and conducted on a bilateral basis rather than via international coordination groups like UN OCHA, the UNDAC system, or INSARAG. More recently, NDRF has been working for INSARAG External Classification so that, rather than responding in a bilateral manner, it will be part of an international community of search and rescue teams with known qualifications and capabilities.

In recognition of the fact that India cannot operate unilaterally in the world and must establish membership, partnership, and even leadership in global bodies, the country has, in recent years, taken up more active roles. Among this engagement, India is a stakeholder in the Sendai Framework for Disaster Risk Reduction, the Sustainable Development Goals (2015-2030), and the Paris Agreement on Climate Change. Moreover, New Delhi announced more significant commitments to addressing climate change in 2021. Similarly, India hosted disaster response exercises for BIMSTEC in 2017 and 2020, and it nominally hosts the SAARC Disaster Management Centre (SDMC) in Gujarat. The BIMSTEC and SAARC initiatives remain rudimentary but do provide India venues to deepen regional cooperation and coordination that New Delhi has missed out on by not taking up roles in bodies like the RCG for Humanitarian Civil Military Coordination in Asia and the Pacific.

Beyond multi-lateral coordination mechanisms, India continues to develop its military-military partnerships, including with the U.S., that provide opportunities via regular exercises and exchanges to build military disaster response capacity. In HADR training with U.S. forces, Indian Army, Navy, and Air Force personnel have participated in U.S.-led Southeast Asia Cooperation and Training (SEACAT) exercises and Rim of the Pacific (RIMPAC) Exercise, and the first ever TIGER TRIUMPH in November 2019; that exercise saw the U.S. and India set up a joint command and control center and joint relief and medical camp.

Finally, there are upwards of three million NGOs operating in the country. While most are local with circumscribed remits, some are national and local affiliates of international NGOs and, therefore, offer India a network of expertise in times of emergency at home or abroad. These networks offer another realm for capacity building for India's people, first responders, and government as the country expands its contributions to regional and global DRR and DM frameworks.

APPENDICES

Information Sharing

Understanding how to overcome the information challenges that civilian and military agencies experience during a typical disaster response mission is important. Knowing what HADR resources are available will better assist Joint Task Force leaders and staff during mission planning.[236] Sharing information is critical since no single responding entity, NGO, International Governmental Organization, assisting country government, or the host government can be the source of all the required information.[237]

Collaboration, information sharing, and networking have been the backbone of successful disaster response and preparation. Disseminating information not only to those in-country and threatened by disaster, but also to those responding to assist in the emergency has been crucial to timely, efficient, and effective disaster response. Recent technology has advanced to aid predicting and alerting of disasters around the world which has resulted in early warning and evacuation measures as well as opportunities to react and prepare for incoming threats to countries. The following are some of the ways in which information regarding disaster risk management and response are shared. Managing information is central to the overall mechanisms within disaster preparedness and response. There are many resources, stakeholders, and components to consider with information sharing before, during, and after a natural disaster. This section will discuss country-specific, humanitarian, regional, government, and DoD information sources.

India Information Sources

India Meteorological Department (IMD)

IMD is India's principal meteorology agency. It provides current weather and forecast information with a specific duty to warn against severe weather phenomena that may cause destruction of life and property. On its home page, IMD publishes all condition reports, forecasts, and warnings that are active in the country.
Web: *https://mausam.imd.gov.in*
Twitter: *@Indiametdept*
Facebook: *@India.Meteorological.Department*

Central Water Commission (CWC)

CWC is responsible for monitoring flood conditions across hundreds of low-lying areas and reservoirs. It disseminates warnings and forecasts via telephone, fax, SMS, email, print and broadcast media, social media, and its website.
Web: *http://www.cwc.gov.in/*
Twitter: *@CWCOfficial_GoI*
Facebook: *@CWCOfficial.GoI*

Indian Red Cross Society (IRCS)

IRCS is the National Society of the International Red Cross and Red Crescent Movement. It has a network of over 1,100 branches throughout the country, provides relief in times of disaster, and promotes health and care of vulnerable people. IRCS is integrated into the Indian government's HADR planning, coordination, and execution.
Web: *https://indianredcross.org/ircs/newsviews*
Facebook: *@ircsofficial*
Twitter: *@IndianRedCrsoss*
YouTube: ircs gallery
Instagram: *@indianredcross1*

Humanitarian Information Sources

United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Regional Office for Asia and the Pacific (ROAP)

UN OCHA's ROAP seeks to optimize the speed, volume, and quality of humanitarian assistance and coordinates emergency preparedness and response in the world's most disaster-prone region in support of national governments. ROAP covers 41 countries,

partnering with them for coordinated and effective international responses to emergency situations.
Website: *https://www.unocha.org/roap*
For OCHA situation reports, click on "Subscribe" button on bottom of page.

ReliefWeb

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

PreventionWeb

PreventionWeb is provided by the UN Office for Disaster Risk Reduction (UNDRR) to consolidate DRR information into an online, easy to understand platform.
Website: *https://www.preventionweb.net*

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

IFRC is the world's largest humanitarian organization, comprised of its 192-member National Societies including the Indian Red Cross Society, a secretariat in Geneva, Switzerland, five regional offices, 50 country/cluster support offices, and three representative offices within other international organizations, i.e., the UN, the African Union, and the European Union.[238] The IFRC carries out relief operations to assist victims of disasters and combines this with long-term development work to strengthen the capacities of its member National Societies. IFRC's work focuses on building healthy and safe communities, reducing vulnerability, improving resilience, and promoting peace.[239]
Website: *https://www.ifrc.org/*

IFRC Asia Pacific Regional Office (APRO)

IFRC's APRO, located in Kuala Lumpur, Malaysia, works in support of 38 National Societies, including IRCS. Through Country Cluster Support Teams and Country Offices, it provides coordination, financial and technical support for disaster operations, and longer-term development programs. Via the IFRC "Go Platform," the organization publishes a dashboard regarding regional operations.
"Go Platform": *https://go.ifrc.org/regions/2#operations*
Twitter: *@IFRCAsiaPacific*

International Committee of the Red Cross (ICRC)

ICRC is an impartial, neutral, and independent organization whose mission is to protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance. It also works to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles.[240] ICRC, together with IFRC and the 192 Red Cross Red Crescent Societies, make up the Red Cross Red Crescent Movement.[241]
Website: *https://www.icrc.org/en/contact#media-contacts*

Humanitarian Response

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

Global Disaster Alert and Coordination System (GDACS)

GDACS is a cooperation framework between the UN, the European Commission, and disaster managers worldwide to improve alerts, information exchange, and coordination in the first phase after major sudden-onset disasters.
Website: *https://www.gdacs.org/alerts/*

Virtual OSOCC

The Virtual OSOCC is a real-time online coordination tool for disaster response professionals from USAR teams, national authorities, and regional and international organizations.
Website: *https://vosocc.unocha.org/*

The latest alerts can be found here: *http://www.gdacs.org/Alerts/default.aspx*
To subscribe: *http://www.gdacs.org/About/contactus.aspx*

ThinkHazard!

ThinkHazard! is a website that provides detailed information on a country. Hazard information is provided on risk, planning needs, technical specifications, and contact information for each country, including India and her neighbors.
Website: *http://thinkhazard.org*

Humanitarian Country Teams (HCT)

HCT is a strategic and operational decision-making and oversight forum established and led by the Humanitarian Coordinator in each country. It is generally comprised of representatives from UN agencies including the IOM, international NGOs, and the IFRC as well as the respective Red Cross/Crescent National Society in the country. During a disaster response, HCTs often produce a Situation Report (SitRep), usually in conjunction with OCHA.

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

Humanitarian Data Exchange (HDX)

HDX is an open platform for sharing data across crises and organizations launched in 2014 with the goal of centralizing humanitarian data for easy access and analysis. HDX is managed by OCHA's Center for Humanitarian Data in The Hague.
Website: *https://data.humdata.org/*

U.S. Government Sources

U.S. Agency for International Development (USAID)

USAID is committed to responding to crises around the world to help people and places most in need. They aim to:

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

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

More information and updates from USAID are available via their blog, IMPACT, at *https://blog.usaid.gov/* and on: Facebook: *facebook.com/USAID*
Twitter: *@USAID*
YouTube: USAID Video
Web: *https://www.usaid.gov/*

USAID Bureau for Humanitarian Assistance (BHA)

The Bureau for Humanitarian Assistance (BHA) is USAID's office responsible for leading and coordinating the U.S. Government response to disasters overseas. BHA responds to an average of 75 disasters in 70 countries every year. BHA fulfils its mandate of saving lives, alleviating human suffering, and the reduction of the social and economic impact of disasters worldwide in partnership with USAID functional and regional bureaus and other U.S. government agencies. BHA works with the international population to assist countries prepare for, respond to, and recover from humanitarian crises.[242]

USAID/BHA products include situation reports and maps, which are available via email mailing lists as well as Reliefweb.org. Information products (HA Updates/Fact Sheets, etc.) are also available on USAID.gov (*https://www.usaid.gov/humanitarian-assistance*)

For BHA updates on a disaster response, ask the BHA representative for the respective DoD Geographic Combatant Command to add you to the email list, if you have a U.S. government email address:

- *BHA.INDOPACOM@usaid.gov*
- *BHA.SOUTHCOM@usaid.gov*
- *BHA.NORTHCOM@usaid.gov*
- *BHA.AFRICOM@usaid.gov*
- *BHA.SOCOM@usaid.gov*

- *BHA.CENTCOM@usaid.gov*
- *BHA.EUCOM@usaid.gov*

Pacific Disaster Center Global

Pacific Disaster Center (PDC) Global has trademarked an early warning and decision support system called DisasterAWARE®. DisasterAWARE® is primarily for disaster management practitioners and senior decision makers. It supports DRR and best practices throughout all phases of DM from early warning to multi-hazard monitoring. It has a collection of scientifically verified, geospatial, data and modeling tools to assess hazard risks and impacts. A restricted version of DisasterAWARE® is the EMOPS (Emergency Operations) system, which is specifically for the disaster management community, including government agencies and humanitarian assistance organizations serving at local, state, federal, and regional levels.[243]

PDC also provides a public version, Disaster Alert, which offers open access to a world map documenting 18 hazard types.[244] Disaster Alert also has a free, early-warning app to receive customizable maps-based visual alerts of active hazards. The app offers a global notification system covering natural and man-made hazards. It is available on both iPhone and Android.[245]
Website: *https://www.pdc.org/ and https://www.pdc.org/disasteraware*
Emergency Operations (EMOPS) system (request account): *https://emops.pdc.org/emops/*

All Partners Access Network (APAN)

APAN is the Unclassified Information Sharing Service for the U.S. DoD. APAN provides the DoD and mission partners community space and collaboration tools to leverage information to effectively plan, train, and respond to meet their business requirements and mission objectives. APAN's technology team has been supporting HADR operations for over 15 years.[246] APAN has played an integral role in the success of disaster responses, such as the 2015 California Wildfire Response and the 2013 Typhoon Haiyan Response in which they provided organizations and militaries a centralized location to share information, increase situational awareness, and decrease response time and duplicated efforts for best practices in HADR services.[247]
Website: *https://www.apan.org/*

Joint Typhoon Warning Center

JTWC provides advanced warning for U.S. Government agencies and organizations in relevant areas.
https://www.metoc.navy.mil/jtwc/jtwc.html

Daniel K. Inouye Asia-Pacific Center for Security Studies (DKI-APCSS)

DKI-APCSS is a U.S. DoD institute that addresses regional and global security issues, inviting military and civilian representatives of the U.S. and Asia-Pacific nations to its program of executive education and workshops.
Website: *https://apcss.org/*

The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM)

CFE-DM is a U.S. DoD organization that was established by U.S. Congress in 1994 and is a direct reporting unit to USINDOPACOM. CFE-DM provides training and education to help U.S. and foreign military personnel navigate complex issues in disaster management and humanitarian assistance. They produce country focused disaster management reference handbooks, after action reports, best practices, and lessons learned for advancement in response coordination. CFE-DM also works to improve cross-coordination and reduce duplication of efforts and promote U.S. involvement in civ-mil consultations and dialogues with relevant HADR parties such as the AHA Center, OCHA, and Changi RHCC. CFE-DM provides resources and updates at its website, as well as via their Facebook and Twitter accounts (*@cfedmha*).
Web: *https://www.cfe-dmha.org/*

Disaster Management Reference Handbooks are available for download at: *https://www.cfe-dmha.org/Publications/Disaster-Management-Reference-Handbooks*

CFE-DM Disaster Information Reports are available for download at: *https://www.cfe-dmha.org/Publications/Reports-Studies*

Civil-Military Coordination in Foreign Disaster Relief Missions: Best Practices for Information Sharing is available here: *https://www.cfe-dmha.org/Publications*

COVID-19 Information Sources

Johns Hopkins Coronavirus Resource Center
https://coronavirus.jhu.edu/

Cases Database
https://github.com/CSSEGISandData/COVID-19

INFORM's COVID-19 Risk Index
https://data.humdata.org/dataset/inform-covid-19-risk-index-version-0-1-4

Country Profile

The information in the Country Profile section is sourced directly from the CIA World Factbook.[248]

Geography

Location
Southern Asia, bordering the Arabian Sea and the Bay of Bengal, between Burma and Pakistan

Geographic coordinates
20 00 N, 77 00 E

Area
total: 3,287,263 km^2
land: 2,973,193 km^2
water: 314,070 km^2
country comparison to the world: 8

Area - comparative
slightly more than one-third the size of the US

Land boundaries
total: 13,888 km
border countries (6): Bangladesh 4142 km, Bhutan 659 km, Burma 1468 km, China 2659 km, Nepal 1770 km, Pakistan 3190 km

Coastline
7,000 km

Maritime claims
territorial sea: 12 nautical miles (nm)
contiguous zone: 24 nm
exclusive economic zone: 200 nm
continental shelf: 200 nm or to the edge of the continental margin

Climate
varies from tropical monsoon in south to temperate in north

Terrain
upland plain (Deccan Plateau) in south, flat to rolling plain along the Ganges, deserts in west, Himalayas in north

Elevation
highest point: Kanchenjunga 8,586 m
lowest point: Indian Ocean 0 m
mean elevation: 160 m

Natural resources
coal (fourth-largest reserves in the world), antimony, iron ore, lead, manganese, mica, bauxite, rare earth elements, titanium ore, chromite, natural gas, diamonds, petroleum, limestone, arable land

Land use
agricultural land: 60.5% (2018 est.)
arable land: 52.8% (2018 est.)
permanent crops: 4.2% (2018 est.)
permanent pasture: 3.5% (2018 est.)
forest: 23.1% (2018 est.)
other: 16.4% (2018 est.)

Irrigated land
667,000 km^2 (2012)

Major watersheds (area sq km)
Indian Ocean drainage: Brahmaputra (651,335 km^2), Ganges (1,016,124 km^2), Indus (1,081,718 km^2), Irrawaddy (413,710 km^2)

Major aquifers
Indus-Ganges-Brahmaputra Basin

Major lakes (area sq km)
Saltwater lake(s): Chilika Lake - 1,170 km^2

Major rivers (by length in km)
Brahmaputra (shared with China, Nepal, Bangladesh, and Bhutan) - 3,969 km; Indus (shared with Pakistan and China) - 3,610 km; Ganges (shared with Bangladesh and Nepal) - 2,704 km; Godavari - 1,465 km; Sutlej (shared with Pakistan) - 1,372 km; Yamuna - 1,370 km; Narmada - 1,289 km; Chenab (shared with Pakistan) - 1,086 km; Ghaghara (shared with Nepal) - 1,080 km

Population distribution
with the notable exception of the deserts in the northwest, including the Thar Desert, and the mountain fringe in the north, a very high population density exists throughout most of the country; the core of the population is in the north along the banks of the Ganges, with other river valleys and southern coastal areas also having large population concentrations

Natural hazards
droughts; flash floods and monsoon-driven floods; thunderstorms; earthquakes; volcanism at Barren Island (354 m)

People and Society

Population
1,339,330,514 (July 2021 est.)
country comparison to the world: 2

Nationality
noun: Indian(s)
adjective: Indian

Ethnic groups
Indo-Aryan 72%, Dravidian 25%, Mongoloid and other 3% (2000)

Languages
Hindi 43.6%, Bengali 8%, Marathi 6.9%, Telugu 6.7%, Tamil 5.7%, Gujarati 4.6%, Urdu 4.2%, Kannada 3.6%, Odia 3.1%, Malayalam 2.9%, Punjabi 2.7%, Assamese 1.3%, Maithili 1.1%, other 5.6%; note - English enjoys the status of subsidiary official language but is the most important language for national, political, and commercial communication; there are 22 other officially recognized languages: Assamese, Bengali, Bodo, Dogri, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Maithili, Malayalam, Manipuri, Nepali, Odia, Punjabi, Sanskrit, Santali, Sindhi, Tamil, Telugu, Urdu; Hindustani is a popular variant of Hindi/Urdu spoken widely throughout northern India but is not an official language (2011 est.)

Religions
Hindu 79.8%, Muslim 14.2%, Christian 2.3%, Sikh 1.7%, other and unspecified 2% (2011 est.)

Age structure
0-14 years: 26.31% (male 185,017,089/female 163,844,572)
15-24 years: 17.51% (male 123,423,531/female 108,739,780)
25-54 years: 41.56% (male 285,275,667/female 265,842,319)
55-64 years: 7.91% (male 52,444,817/female 52,447,038)
65 years and over: 6.72% (male 42,054,459/female 47,003,975) (2020 est.)
Figure 17 is the population pyramid for India.

Dependency ratios
total dependency ratio: 48.7
youth dependency ratio: 38.9
elderly dependency ratio: 9.8
potential support ratio: 10.2 (2020 est.)

Median age
total: 28.7 years
male: 28 years
female: 29.5 years (2020 est.)
country comparison to the world: 141

Population growth rate
1.04% (2021 est.)
country comparison to the world: 94

Birth rate
17.53 births/1,000 population (2021 est.)
country comparison to the world: 90

Death rate
7.1 deaths/1,000 population (2021 est.)
country comparison to the world: 116

Net migration rate
-0.04 migrant(s)/1,000 population (2021 est.)
country comparison to the world: 95

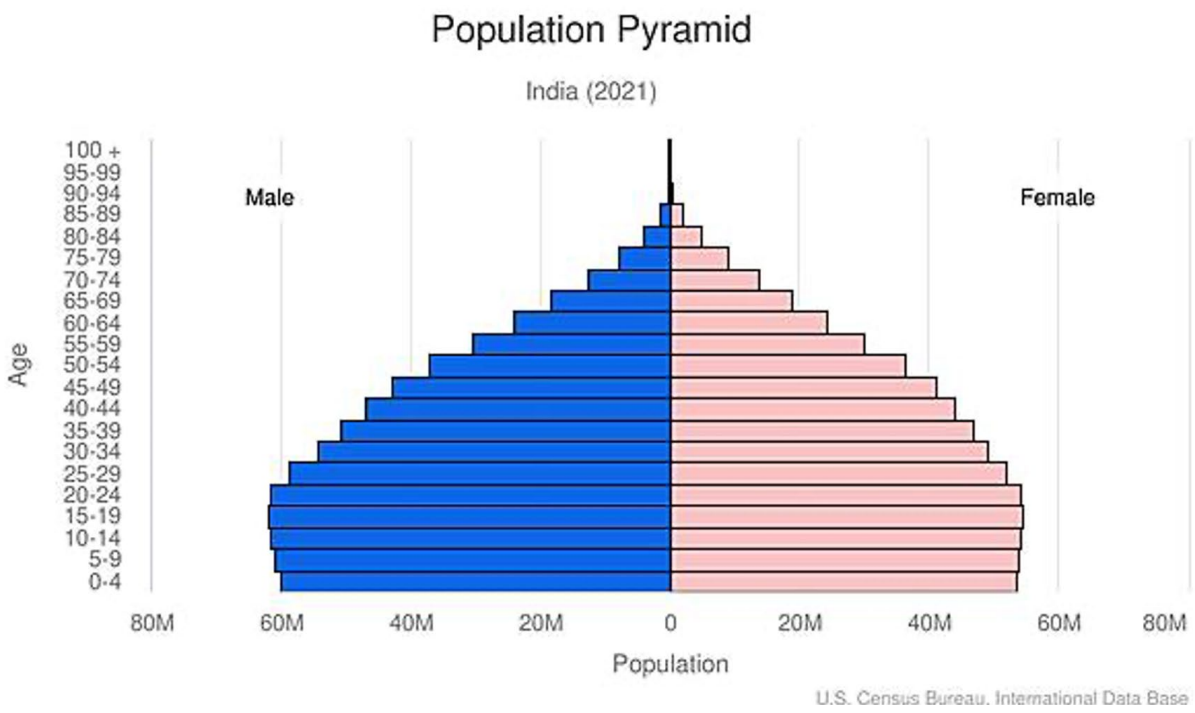


Figure 17: Population Pyramid for India (2021)

Population distribution
with the notable exception of the deserts in the northwest, including the Thar Desert, and the mountain fringe in the north, a very high population density exists throughout most of the country; the core of the population is in the north along the banks of the Ganges, with other river valleys and southern coastal areas also having large population concentrations

Urbanization
urban population: 35.4% of total population (2021)
rate of urbanization: 2.33% annual rate of change (2020-25 est.)
total population growth rate v. urban population growth rate, 2000-2030

Major urban areas - population
31.181 million NEW DELHI (capital), 20.668 million Mumbai, 14.974 million Kolkata, 12.765 million Bangalore, 11.235 million Chennai, 10.269 million Hyderabad (2021)

Sex ratio
at birth: 1.11 male(s)/female
0-14 years: 1.13 male(s)/female
15-24 years: 1.14 male(s)/female
25-54 years: 1.07 male(s)/female
55-64 years: 1 male(s)/female
65 years and over: 0.89 male(s)/female
total population: 1.08 male(s)/female (2020 est.)

Mother's mean age at first birth
21 years (2015/16)
note: median age a first birth among women 25-49

Maternal mortality ratio
145 deaths/100,000 live births (2017 est.)
country comparison to the world: 57

Infant mortality rate
total: 39.55 deaths/1,000 live births
male: 39.47 deaths/1,000 live births
female: 39.63 deaths/1,000 live births (2021 est.)
country comparison to the world: 40

Life expectancy at birth
total population: 70.03 years
male: 68.71 years
female: 71.49 years (2021 est.)
country comparison to the world: 170

Total fertility rate
2.28 children born/woman (2021 est.)
country comparison to the world: 81

Contraceptive prevalence rate
53.5% (2015/16)

Drinking water source
improved: urban: 96% of population
rural: 91% of population
total: 92.7% of population
unimproved: urban: 4% of population
rural: 9% of population
total: 7.2% of population (2017 est.)

Current Health Expenditure
3.5% (2018)

Physicians density
0.86 physicians/1,000 population (2018)

Hospital bed density
0.5 beds/1,000 population (2017)

Sanitation facility access
improved: urban: 93.7% of population
rural: 61.1% of population
total: 72% of population
unimproved: urban: 6.3% of population
rural: 38.9% of population
total: 28% of population (2017 est.)

HIV/AIDS - adult prevalence rate
0.2% (2017 est.)
country comparison to the world: 101

HIV/AIDS - people living with HIV/AIDS
2.3 million (2020 est.)
country comparison to the world: 2

HIV/AIDS - deaths
69,000 (2017 est.)
country comparison to the world: 2

Major infectious diseases
degree of risk: very high (2020)
food or waterborne diseases: bacterial diarrhea, hepatitis A and E, and typhoid fever
vectorborne diseases: dengue fever, Crimean-Congo hemorrhagic fever, Japanese encephalitis, and malaria
water contact diseases: leptospirosis
animal contact diseases: rabies

Obesity - adult prevalence rate
3.9% (2016)
country comparison to the world: 189

Children under the age of 5 years underweight
33.4% (2016/18)
country comparison to the world: 3

Education expenditures
3.5% of GDP (2016)
country comparison to the world: 125

Literacy
definition: age 15 and over can read and write
total population: 74.4%
male: 82.4%
female: 65.8% (2018)

School life expectancy (primary to tertiary education)
total: 12 years
male: 11 years
female: 12 years (2019)

Unemployment, youth ages 15-24
total: 22.3%
male: 21.9%
female: 23.8% (2019 est.)
country comparison to the world: 60

Environment

Environment - current issues
deforestation; soil erosion; overgrazing; desertification; air pollution from industrial effluents and vehicle emissions; water pollution from raw sewage and runoff of agricultural pesticides; tap water is not potable throughout the country; huge and growing population is overstraining natural resources; preservation and quality of forests; biodiversity loss

Environment - international agreements
party to: Antarctic-Environmental Protection, Antarctic-Marine Living Resources, Antarctic Treaty, Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Climate Change-Paris Agreement, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Nuclear Test Ban, Ozone Layer Protection, Ship Pollution, Tropical Timber 2006, Wetlands, Whaling

Air pollutants
particulate matter emissions: 65.2 micrograms per cubic meter (2016 est.)
carbon dioxide emissions: 2,407.67 megatons (2016 est.)
methane emissions: 559.11 megatons (2020 est.)

Climate
varies from tropical monsoon in south to temperate in north

Land use
agricultural land: 60.5% (2018 est.)
arable land: 52.8% (2018 est.)
permanent crops: 4.2% (2018 est.)
permanent pasture: 3.5% (2018 est.)
forest: 23.1% (2018 est.)
other: 16.4% (2018 est.)

Urbanization
urban population: 35.4% of total population (2021)
rate of urbanization: 2.33% annual rate of change (2020-25 est.)
total population growth rate v. urban population growth rate, 2000-2030

Revenue from forest resources
forest revenues: 0.14% of GDP (2018 est.)
country comparison to the world: 103

Revenue from coal
coal revenues: 1.15% of GDP (2018 est.)
country comparison to the world: 4

Major infectious diseases
degree of risk: very high (2020)
food or waterborne diseases: bacterial diarrhea, hepatitis A and E, and typhoid fever
vectorborne diseases: dengue fever, Crimean-Congo hemorrhagic fever, Japanese encephalitis, and malaria
water contact diseases: leptospirosis
animal contact diseases: rabies

Waste and recycling
municipal solid waste generated annually: 168,403,240 tons (2001 est.)
municipal solid waste recycled annually: 8,420,162 tons (2013 est.)
percent of municipal solid waste recycled: 5% (2013 est.)

Major lakes (area sq km)
Saltwater lake(s): Chilika Lake - 1,170 km^2

Major rivers (by length in km)
Brahmaputra (shared with China, Nepal, Bangladesh, and Bhutan) - 3,969 km; Indus (shared with Pakistan and China) - 3,610 km; Ganges (shared with Bangladesh and Nepal) - 2,704 km; Godavari - 1,465 km; Sutlej (shared with Pakistan) - 1,372 km; Yamuna - 1,370 km; Narmada - 1,289 km; Chenab (shared with Pakistan) - 1,086 km; Ghaghara (shared with Nepal) - 1,080 km

Major watersheds (area sq km)
Indian Ocean drainage: Brahmaputra (651,335 km^2), Ganges (1,016,124 km^2), Indus (1,081,718 km^2), Irrawaddy (413,710 km^2)

Major aquifers
Indus-Ganges-Brahmaputra Basin

Total water withdrawal
municipal: 56 billion cubic meters (2017 est.)
industrial: 17 billion cubic meters (2017 est.)
agricultural: 688 billion cubic meters (2017 est.)

Total renewable water resources
1,910,900,000,000 cubic meters (2017 est.)

Government

Country name
conventional long form: Republic of India
conventional short form: India
local long form: Republic of India/Bharatiya Ganarajya
local short form: India/Bharat
etymology: the English name derives from the Indus River; the Indian name "Bharat" may derive from the "Bharatas" tribe mentioned in the Vedas of the second millennium B.C.; the name is also associated with Emperor Bharata, the legendary conqueror of all of India

Government type
federal parliamentary republic

Capital
name: New Delhi
geographic coordinates: 28 36 N, 77 12 E
time difference: UTC+5.5 (10.5 hours ahead of Washington, DC, during Standard Time)
etymology: the city's name is associated with various myths and legends; the original name for the city may have been Dhilli or Dhillika; alternatively, the name could be a corruption of the Hindustani words "dehleez" or "dehali" - both terms meaning "threshold" or "gateway" - and indicative of the city as a gateway to the Gangetic Plain; after the British decided to move the capital of their Indian Empire from Calcutta to Delhi in 1911, they created a new governmental district south of the latter designated as New Delhi; the new capital was not formally inaugurated until 1931

Administrative divisions
28 states and 8 union territories*; Andaman and Nicobar Islands*, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chandigarh*, Chhattisgarh, Dadra and Nagar Haveli and Daman and Diu*, Delhi*, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir*, Jharkhand, Karnataka, Kerala, Ladakh*, Lakshadweep*, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Puducherry*, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttar Pradesh, Uttarakhand, West Bengal; note: although its status is that of a union territory, the official name of Delhi is National Capital Territory of Delhi

Independence
15 August 1947 (from the UK)

National holiday
Republic Day, 26 January (1950)

Constitution
history: previous 1935 (pre-independence); latest draft completed 4 November 1949, adopted 26 November 1949, effective 26 January 1950
amendments: proposed by either the Council of States or the House of the People; passage requires majority participation of the total membership in each house and at least two-thirds majority of voting members of each house, followed by assent of the president of India; proposed amendments to the constitutional amendment procedures also must be ratified by at least one half of the India state legislatures before presidential assent; amended many times, last in 2020

Legal system
common law system based on the English model; separate personal law codes apply to Muslims, Christians, and Hindus; judicial review of legislative acts; note - in late 2019 the Government of India began discussions to overhaul its penal code, which dates to the British colonial period

International law organization participation
accepts compulsory ICJ jurisdiction with reservations; non-party state to the ICCt

Citizenship
citizenship by birth: no
citizenship by descent only: at least one parent must be a citizen of India
dual citizenship recognized: no
residency requirement for naturalization: 5 years

Suffrage
18 years of age; universal

Executive branch
chief of state: President Ram Nath KOVIND (since 25 July 2017); Vice President M. Venkaiah NAIDU (since 11 August 2017)
head of government: Prime Minister Narendra MODI (since 26 May 2014)
cabinet: Union Council of Ministers recommended by the prime minister, appointed by the president

elections/appointments: president indirectly elected by an electoral college consisting of elected members of both houses of Parliament for a 5-year term (no term limits); election last held on 17 July 2017 (next to be held in July 2022); vice president indirectly elected by an electoral college consisting of elected members of both houses of Parliament for a 5-year term (no term limits); election last held on 5 August 2017 (next to be held in August 2022); following legislative elections, the prime minister is elected by Lok Sabha members of the majority party
election results: Ram Nath KOVIND elected president; percent of electoral college vote - Ram Nath KOVIND (BJP) 65.7% Meira KUMAR (INC) 34.3%; M. Venkaiah NAIDU elected vice president; electoral college vote - M. Venkaiah NAIDU (BJP) 516, Gopalkrishna GANDHI (independent) 244

Legislative branch
description: bicameral Parliament or Sansad consists of:
Council of States or Rajya Sabha (245 seats; 233 members indirectly elected by state and territorial assemblies by proportional representation vote and 12 members appointed by the president; members serve 6-year terms)
House of the People or Lok Sabha (545 seats; 543 members directly elected in single-seat constituencies by simple majority vote and 2 appointed by the president; members serve 5-year terms)

elections: Council of States - last held by state and territorial assemblies at various dates in 2019 (next originally scheduled for March, June, and November 2020 but were postponed due to the COVID-19 pandemic and rescheduled throughout 2021 to fill expiry seats)
House of the People - last held April-May 2019 in 7 phases (next to be held in 2024)
election results: Council of States - percent of vote by party - NA; seats by party - BJP 83, INC 46, AITC 13, DMK 11, SP, other 77, independent 6; composition - men 220, women 25, percent of women 10.2%

House of the People - percent of vote by party - BJP 55.8%, INC 9.6%, AITC 4.4%, YSRC 4.4%, DMK 4.2%, SS 3.3%, JDU 2.9%, BJD 2.2%, BSP 1.8%, TRS 1.7%, LJP 1.1%, NCP 0.9%, SP 0.9%, other 6.4%, independent 0.7%; seats by party - BJP 303, INC 52, DMK 24, AITC 22, YSRC 22, SS 18, JDU 16, BJD 12, BSP 10, TRS 9, LJP 6, NCP 5, SP 5, other 35, independent 4, vacant 2; composition - men 465, women 78, percent of women 14.3%; note - total Parliament percent of women 11.3%

Judicial branch
highest courts: Supreme Court (consists of 28 judges, including the chief justice)
judge selection and term of office: justices appointed by the president to serve until age 65
subordinate courts: High Courts; District Courts; Labour Court

note: in mid-2011, India's Cabinet approved the "National Mission for Justice Delivery and Legal Reform" to eliminate judicial corruption and reduce the backlog of cases

Political parties and leaders
Aam Aadmi Party or AAP [Arvind KEJRIWAL]
All India Anna Dravida Munnetra Kazhagam or AIADMK [Edappadi PALANISWAMY, Occhaathevar PANNEERSELVAM]
All India Trinamool Congress or AITC [Mamata BANERJEE]
Bahujan Samaj Party or BSP [MAYAWATI]
Bharatiya Janata Party or BJP [Amit SHAH]
Biju Janata Dal or BJD [Naveen PATNAIK]
Communist Party of India-Marxist or CPI(M) [Sitaram YECHURY]
Indian National Congress or INC
Lok Janshakti Party (LJP) [Ram Vilas PASWAN]
Nationalist Congress Party or NCP [Sharad PAWAR]
Rashtriya Janata Dal or RJD [Lalu Prasad YADAV]
Samajwadi Party or SP [Akhilesh YADAV]
Shiromani Akali Dal or SAD [Sukhbir Singh BADAL]
Shiv Sena or SS [Uddhav THACKERAY]
Telegana Rashtra Samithi or TRS [K. Chandrashekar RAO]
Telugu Desam Party or TDP [Chandrababu NAIDU]
YSR Congress or YSRC [Jagan Mohan REDDY]

International organization participation
ADB, AfDB (nonregional member), Arctic Council (observer), ARF, ASEAN (dialogue partner), BIMSTEC, BIS, BRICS, C, CD, CERN (observer), CICA, CP, EAS, FAO, FATF, G-15, G-20, G-24, G-5, G-77, IAEA, IBRD, ICAO, ICC (national committees), ICRM, IDA, IFAD, IFC, IFRCS, IHO, ILO, IMF, IMO, IMSO, Interpol, IOC, IOM, IPU, ISO, ITSO, ITU, ITUC (NGOs), LAS (observer), MIGA, MINURSO, MONUSCO, NAM, OAS (observer), OECD, OPCW, Pacific Alliance (observer), PCA, PIF (partner), SAARC, SACEP, SCO (observer), UN, UNCTAD, UNDOF, UNESCO, UNHCR, UNIDO, UNIFIL, UNISFA, UNITAR, UNMISS, UNOCI, UNWTO, UPU, WCO, WFTU (NGOs), WHO, WIPO, WMO, WTO

Diplomatic representation in the US
chief of mission: Ambassador Taranjit Singh SANDHU (since 6 February 2020)
chancery: 2107 Massachusetts Avenue NW, Washington, DC 20008; Consular Wing located at 2536 Massachusetts Avenue NW, Washington, DC 20008
telephone: [1] (202) 939-7000
FAX: [1] (202) 265-4351
email address and website:
minca@washington@mea.gov.in (community affairs)
https://www.indianembassyusa.gov.in/
consulate(s) general: Atlanta, Chicago, Houston, New York, San Francisco

Diplomatic representation from the US
chief of mission: ambassador (vacant); Charge d'Affaires Patricia A. LACINA (since 9 September 2021)
embassy: Shantipath, Chanakyapuri, New Delhi - 110021
mailing address: 9000 New Delhi Place, Washington DC 20521-9000
telephone: [91] (11) 2419-8000
FAX: [91] (11) 2419-0017
email address and website:
acsnd@state.gov
https://in.usembassy.gov/
consulate(s) general: Chennai (Madras), Hyderabad, Kolkata (Calcutta), Mumbai (Bombay)

Flag description
three equal horizontal bands of saffron (subdued orange) (top), white, and green, with a blue chakra (24-spoked wheel) centered in the white band; saffron represents courage, sacrifice, and the spirit of renunciation; white signifies purity and truth; green stands for faith and fertility; the blue chakra symbolizes the wheel of life in movement and death in stagnation

National symbol(s)
the Lion Capital of Ashoka, which depicts four Asiatic lions standing back-to-back mounted on a circular abacus, is the official emblem; Bengal tiger; lotus flower; national colors: saffron, white, green

National anthem
name: "Jana-Gana-Mana" (Thou Art the Ruler of the Minds of All People)
lyrics/music: Rabindranath TAGORE

Economy

Economic overview
India's diverse economy encompasses traditional village farming, modern agriculture, handicrafts, a wide range of modern industries, and a multitude of services. Slightly less than half of the workforce is in agriculture, but services are the major source of economic growth, accounting for nearly two-thirds of India's output but employing less than one-third of its labor force. India has capitalized on its large educated English-speaking population to become a major exporter of information technology services, business outsourcing services, and software workers. Nevertheless, per capita income remains below the world average. India is developing into an open market economy yet traces of its past autarkic policies remain. Economic liberalization measures, including industrial deregulation, privatization of state-owned enterprises, and reduced controls on foreign trade and investment, began in the early 1990s and served to accelerate the country's growth, which averaged nearly 7% per year from 1997 to 2017.

India's economic growth slowed in 2011 because of a decline in investment caused by high interest rates, rising inflation, and investor pessimism about the government's commitment to further economic reforms and about slow world growth. Investors' perceptions of India improved in early 2014, due to a reduction of the current account deficit and expectations of post-election economic reform, resulting in a surge of inbound capital flows and stabilization of the rupee. Growth rebounded in 2014 through 2016. Despite a high growth rate compared to the rest of the world, India's government-owned banks faced mounting bad debt, resulting in low credit growth. Rising macroeconomic imbalances in India and improving economic conditions in Western countries led investors to shift capital away from India, prompting a sharp depreciation of the rupee through 2016.

The economy slowed again in 2017, due to shocks of "demonetization" in 2016 and introduction of GST in 2017. Since the election, the government has passed an important goods and services tax bill and raised foreign direct investment caps in some sectors, but most economic reforms have focused on administrative and governance changes, largely because the ruling party remains a minority in India's upper house of Parliament, which must approve most bills.
India has a young population and corresponding low dependency ratio, healthy savings and investment rates, and is increasing integration into the global economy. However, long-term challenges remain significant, including: India's discrimination against women and girls, an inefficient power generation and distribution system, ineffective enforcement of intellectual property rights, decades-long civil litigation dockets, inadequate transport and agricultural infrastructure, limited non-agricultural employment opportunities, high spending and poorly targeted subsidies, inadequate availability of quality basic and higher education, and accommodating rural-to-urban migration.

Real GDP (purchasing power parity; in 2017 US$)
$8,443,360,000,000 (2020 est.)
$9,174,040,000,000 (2019 est.)
$8,817,670,000,000 (2018 est.)
country comparison to the world: 3

Real GDP growth rate
4.86% (2019 est.)
6.78% (2018 est.)
6.55% (2017 est.)
country comparison to the world: 52

Real GDP per capita (in 2017 US$)
$6,100 (2020 est.)
$6,700 (2019 est.)
$6,500 (2018 est.)
country comparison to the world: 163

GDP (official exchange rate)
$2,835,927,000,000 (2019 est.)

Inflation rate (consumer prices)
3.7% (2019 est.)
3.9% (2018 est.)
3.3% (2017 est.)
country comparison to the world: 160

Credit ratings
Fitch rating: BBB- (2006)
Moody's rating: Baa3 (2020)
Standard & Poor's rating: BBB- (2007)

GDP - composition, by sector of origin
agriculture: 15.4% (2016 est.)
industry: 23% (2016 est.)
services: 61.5% (2016 est.)

GDP - composition, by end use
household consumption: 59.1% (2017 est.)
government consumption: 11.5% (2017 est.)
investment in fixed capital: 28.5% (2017 est.)
investment in inventories: 3.9% (2017 est.)
exports of goods and services: 19.1% (2017 est.)
imports of goods and services: -22% (2017 est.)

Agricultural products
sugar cane, rice, wheat, buffalo milk, milk, potatoes, vegetables, bananas, maize, mangoes/guavas

Industries
textiles, chemicals, food processing, steel, transportation equipment, cement, mining, petroleum, machinery, software, pharmaceuticals

Industrial production growth rate
5.5% (2017 est.)
country comparison to the world: 49

Labor force
521.9 million (2017 est.)
country comparison to the world: 2

Labor force - by occupation
agriculture: 47%
industry: 22%
services: 31% (FY 2014 est.)

Unemployment rate
8.5% (2017 est.)
8.5% (2016 est.)
country comparison to the world: 131

Population below poverty line
21.9% (2011 est.)

Gini Index coefficient - distribution of family income
35.7 (2011 est.)
37.8 (1997)
country comparison to the world: 98

Household income or consumption by percentage share
lowest 10%: 3.6%
highest 10%: 29.8% (2011)

Budget
revenues: 238.2 billion (2017 est.)
expenditures: 329 billion (2017 est.)

Budget surplus (+) or deficit (-)
-3.5% (of GDP) (2017 est.)
country comparison to the world: 146

Public debt
71.2% of GDP (2017 est.)
69.5% of GDP (2016 est.)
country comparison to the world: 48

Taxes and other revenues
9.2% (of GDP) (2017 est.)
country comparison to the world: 215

Fiscal year
1 April - 31 March

Current account balance
-$29.748 billion (2019 est.)
-$65.939 billion (2018 est.)
country comparison to the world: 199

Exports (in current year US$)
$484.95 billion (2020 est.)
$546.03 billion (2019 est.)
$537.04 billion (2018 est.)
country comparison to the world: 13

Exports - partners
United States 17%, United Arab Emirates 9%, China 5% (2019)

Exports - commodities
refined petroleum, diamonds, packaged medicines, jewelry, cars (2019)

Imports (in current year US$)
$493.18 billion (2020 est.)
$619.48 billion (2019 est.)
$642.96 billion (2018 est.)
country comparison to the world: 11

Imports - partners
China 15%, United States 7%, United Arab Emirates 6%, Saudi Arabia 5% (2019)

Imports - commodities
crude petroleum, gold, coal, diamonds, natural gas (2019)

Reserves of foreign exchange and gold
$409.8 billion (31 December 2017 est.)
$359.7 billion (31 December 2016 est.)
country comparison to the world: 8

Debt - external
$555.388 billion (2019 est.)
$518.34 billion (2018 est.)
country comparison to the world: 23

Exchange rates
Indian rupees (INR) per US dollar -
73.565 (2020 est.)
71.05 (2019 est.)
70.7675 (2018 est.)
64.152 (2014 est.)
61.03 (2013 est.)

Energy

Electricity access
electrification - total population: 99% (2019)
electrification - urban areas: 99% (2019)
electrification - rural areas: 99% (2019)

Electricity - production
1.386 trillion kilowatt hours (kWh) (2016 est.)
country comparison to the world: 3

Electricity - consumption
1.137 trillion kWh (2016 est.)
country comparison to the world: 3

Electricity - exports
5.15 billion kWh (2015 est.)
country comparison to the world: 36

Electricity - imports
5.617 billion kWh (2016 est.)
country comparison to the world: 35

Electricity - installed generating capacity
367.8 million kW (2016 est.)
country comparison to the world: 3

Electricity - from fossil fuels
71% of total installed capacity (2016 est.)
country comparison to the world: 104

Electricity - from nuclear fuels
2% of total installed capacity (2017 est.)
country comparison to the world: 26

Electricity - from hydroelectric plants
12% of total installed capacity (2017 est.)
country comparison to the world: 111

Electricity - from other renewable sources
16% of total installed capacity (2017 est.)
country comparison to the world: 52

Crude oil - production
709,000 barrels per day (bbl/day) (2018 est.)
country comparison to the world: 25

Crude oil - exports
0 bbl/day (2015 est.)
country comparison to the world: 140

Crude oil - imports
4.057 million bbl/day (2015 est.)
country comparison to the world: 3

Crude oil - proved reserves
4.495 billion bbl (1 January 2018 est.)
country comparison to the world: 23

Refined petroleum products - production
4.897 million bbl/day (2015 est.)
country comparison to the world: 4

Refined petroleum products - consumption
4.521 million bbl/day (2016 est.)
country comparison to the world: 3

Refined petroleum products - exports
1.305 million bbl/day (2015 est.)
country comparison to the world: 7

Refined petroleum products - imports
653,300 bbl/day (2015 est.)
country comparison to the world: 11

Natural gas - production
31.54 billion cubic m (2017 est.)
country comparison to the world: 25

Natural gas - consumption
55.43 billion cubic m (2017 est.)
country comparison to the world: 14

Natural gas - exports
76.45 million cubic m (2017 est.)
country comparison to the world: 50

Natural gas - imports
23.96 billion cubic m (2017 est.)
country comparison to the world: 14

Natural gas - proved reserves
1.29 trillion cubic m (1 January 2018 est.)
country comparison to the world: 22

Communications

Telephones - fixed lines
total subscriptions: 21,004,534
subscriptions per 100 inhabitants: 1.6 (2019 est.)
country comparison to the world: 12

Telephones - mobile cellular
total subscriptions: 1,151,480,361
subscriptions per 100 inhabitants: 87.82 (2019 est.)
country comparison to the world: 2

Telecommunication systems
general assessment: supported by deregulation, India is one of the fastest-growing telecom markets in the world; implementation of 4G/LTE; fixed-line/broadband underdeveloped; government investment in national infrastructure; project aims to connect 250,000 villages to broadband networks; expansive foreign investment with reliance of operators on Chinese vendors; imports of integrated circuits

and broadcast equipment from China; steps taken towards a 5G auction and tests; submarine cable linking mainland to the Andaman and Nicobar Islands; smart cities mission to promote 100 model cities in providing core infrastructure, sustainable environment, and quality of life through economic growth and competition, including focus on social, economic, and institutional pillars (2021) (2020)
domestic: fixed-line subscriptions stands at 2 per 100 and mobile-cellular at 84 per 100; mobile cellular service introduced in 1994 and organized nationwide into four metropolitan areas and 19 telecom circles, each with multiple private service providers and one or more state-owned service providers; in recent years significant trunk capacity added in the form of fiber-optic cable and one of the world's largest domestic satellite systems, the Indian National Satellite system (INSAT), with 6 satellites supporting 33,000 (very small aperture terminals) VSAT (2019)
international: country code - 91; a number of major international submarine cable systems, including SEA-ME-WE-3 & 4, AAE-1, BBG, EIG, FALCON, FEA, GBICS, MENA, IMEWE, SEACOM/ Tata TGN-Eurasia, SAFE, WARF, Bharat Lanka Cable System, IOX, Chennai-Andaman & Nicobar Island Cable, SAEx2, Tata TGN-Tata Indicom and i2icn that provide connectivity to Europe, Africa, Asia, the Middle East, South East Asia, numerous Indian Ocean islands including Australia; satellite earth stations - 8 Intelsat (Indian Ocean) and 1 Inmarsat (Indian Ocean region (2019)

Broadcast media
Doordarshan, India's public TV network, has a monopoly on terrestrial broadcasting and operates about 20 national, regional, and local services; a large and increasing number of privately owned TV stations are distributed by cable and satellite service providers; in 2015, more than 230 million homes had access to cable and satellite TV offering more than 700 TV channels; government controls AM radio with All India Radio operating domestic and external networks; news broadcasts via radio are limited to the All India Radio Network; since 2000, privately owned FM stations have been permitted and their numbers have increased rapidly

Internet country code
.in

Internet users
total: 446,759,327
percent of population: 34.45% (July 2018 est.)
country comparison to the world: 2

Broadband - fixed subscriptions
total: 19,156,559
subscriptions per 100 inhabitants: 1.46 (2019 est.)
country comparison to the world: 11

Transportation

National air transport system
number of registered air carriers: 14 (2020)
inventory of registered aircraft operated by air carriers: 485
annual passenger traffic on registered air carriers: 164,035,637 (2018)
annual freight traffic on registered air carriers: 2,703,960,000 mt-km (2018)

Civil aircraft registration country code prefix
VT

Airports
total: 346 (2013)
country comparison to the world: 21

Airports - with paved runways
total: 253
over 3,047 m: 22
2,438 to 3,047 m: 59
1,524 to 2,437 m: 76
914 to 1,523 m: 82
under 914 m: 14 (2017)

Airports - with unpaved runways
total: 93
over 3,047 m: 1
2,438 to 3,047 m: 3
1,524 to 2,437 m: 6
914 to 1,523 m: 38
under 914 m: 45 (2013)

Heliports
45 (2013)

Pipelines
9 km condensate/gas, 13581 km gas, 2054 km liquid petroleum gas, 8943 km oil, 20 km oil/gas/water, 11069 km refined products (2013)

Railways
total: 68,525 km (2014)
narrow gauge: 9,499 km 1.000-m gauge (2014)
broad gauge: 58,404 km 1.676-m gauge (23,654 electrified) (2014)
622 0.762-m gauge
country comparison to the world: 5

Roadways
total: 4,699,024 km (2015)
note: includes 96,214 km of national highways and expressways, 147,800 km of state highways, and 4,455,010 km of other roads
country comparison to the world: 3

Waterways
14,500 km (5,200 km on major rivers and 485 km on canals suitable for mechanized vessels) (2012)
country comparison to the world: 9

Merchant marine
total: 1,768
by type: bulk carrier 63, container ship 23, general cargo 579, oil tanker 141, other 962 (2020)
country comparison to the world: 16

Ports and terminals
major seaport(s): Chennai, Jawaharlal Nehru Port, Kandla, Kolkata (Calcutta), Mumbai (Bombay), Sikka, Vishakhapatnam
container port(s) (TEUs): Jawaharlal Nehru Port (5,100,891), Mundra (4,732,699) (2019)
LNG terminal(s) (import): Dabhol, Dahej, Hazira

Military and Security

Military and security forces
Indian Armed Forces: Army, Navy, Air Force, Coast Guard; Defense Security Corps (provides security for Ministry of Defense sites); Ministry of Home Affairs paramilitary forces: Central Armed Police Forces (includes Assam Rifles, Border Security Force, Central Industrial Security Force, Central Reserve Police Force, Indo-Tibetan Border Police, National Security Guards, Sashastra Seema Bal) (2021); the Assam Rifles are under the administrative control of the Ministry of Home Affairs, while operational control falls under the Ministry of Defense (Indian Army)

Military expenditures
2.6% of GDP (2020 est.)
2.4% of GDP (2019)
2.4% of GDP (2018)
2.5% of GDP (2017)
2.5% of GDP (2016)
country comparison to the world: 35

Military and security service personnel strengths
information on the size of the Indian Armed Forces varies; approximately 1.45 million active personnel (est. 1.25 million Army; 65,000 Navy; 140,000 Air Force; 12,000 Coast Guard) (2020)

Military equipment inventories and acquisitions
the inventory of the Indian Armed Forces consists mostly of Russian-origin equipment, along with a smaller mix of Western and domestically produced arms; since 2010, Russia is the leading supplier of arms to India; other major suppliers include France, Israel, the UK, and the US; India's defense industry is capable of producing a range of air, land, missile, and naval weapons systems for both indigenous use and export (2020)

Military deployments
1,850 Democratic Republic of the Congo (MONUSCO); 200 Golan Heights (UNDOF); 850 Lebanon (UNIFIL); 2,350 South Sudan (UNMISS) (Sep 2021)

Military service age and obligation
16-18 years of age for voluntary military service (Army 17 1/2, Air Force 17, Navy 16 1/2); no conscription; women may join as officers, currently serve in combat roles as Air Force pilots, and under consideration for Army and Navy combat roles (currently can fly naval reconnaissance aircraft) (2020)

Military - note
as of 2021, the Indian Armed Forces were chiefly focused on China and Pakistan; the short 1962 Sino-India War left in place one of the world's longest disputed international borders, resulting in occasional standoffs between Indian and Chinese security forces, including lethal clashes in 1975 and 2020; meanwhile, India and Pakistan have fought several conflicts since 1947, including the Indo-Pakistan War of 1965 and the Indo-Pakistan and Bangladesh War of Independence of 1971, as well as two clashes over the disputed region of Kashmir (the First Kashmir War of 1947 and the 1999 Kargil Conflict); a fragile cease-fire in Kashmir was reached in 2003 and revised in 2018, although the border, known as the Line of Control, remained contested as of 2021, and India has accused Pakistan of backing armed separatists and terrorist organizations in Jammu and Kashmir where Indian forces have conducted counterinsurgency operations since the 1980s; in addition, India and Pakistan have battled over the Siachen Glacier of Kashmir, which was seized by India in 1984 with Pakistan attempting to retake the area at least three times between 1985 and 1995; a cease-fire went into effect in 2003, but as of 2021, both sides continued to maintain a permanent military presence there with outposts at altitudes above 20,000 feet (over 6,000 meters) where most casualties were due to extreme weather and the hazards of operating in the high mountain terrain of the world's highest conflict, including avalanches, exposure, and altitude sickness

Terrorism

Terrorist group(s)
Harakat ul-Mujahidin; Harakat ul-Jihad-i-Islami; Hizbul Mujahideen; Indian Mujahedeen; Islamic State of Iraq and ash-Sham – India; Jaish-e-Mohammed; Lashkar-e Tayyiba; al-Qa'ida; al-Qa'ida in the Indian Subcontinent; IRGC/Qods Force

Transnational Issues

Disputes - international
since China and India launched a security and foreign policy dialogue in 2005, consolidated discussions related to the dispute over most of their rugged, militarized boundary, regional nuclear proliferation, Indian claims that China transferred missiles to Pakistan, and other matters continue; Kashmir remains the site of the world's largest and most militarized territorial dispute with portions under the de facto administration of China (Aksai Chin), India (Jammu and Kashmir), and Pakistan (Azad Kashmir and Northern Areas); India and Pakistan resumed bilateral dialogue in February 2011 after a two-year hiatus, have maintained the 2003 cease-fire in Kashmir, and continue to have disputes over water sharing of the Indus River and its tributaries; UN Military Observer Group in India and Pakistan has maintained a small group of peacekeepers since 1949; India does not recognize Pakistan's ceding historic Kashmir lands to China in 1964; to defuse tensions and prepare for discussions on a maritime boundary, India and Pakistan seek technical resolution of the disputed boundary in Sir Creek estuary at the mouth of the Rann of Kutch in the Arabian Sea; Pakistani maps continue to show its Junagadh claim in Indian Gujarat State; Prime Minister Singh's September 2011 visit to Bangladesh resulted in the signing of a Protocol to the 1974 Land Boundary Agreement between

India and Bangladesh, which had called for the settlement of longstanding boundary disputes over undemarcated areas and the exchange of territorial enclaves, but which had never been implemented; Bangladesh referred its maritime boundary claims with Burma and India to the International Tribunal on the Law of the Sea; Joint Border Committee with Nepal continues to examine contested boundary sections, including the 400 sq km dispute over the source of the Kalapani River; India maintains a strict border regime to keep out Maoist insurgents and control illegal cross-border activities from Nepal

Refugees and internally displaced persons
refugees (country of origin): 93,259 (Sri Lanka), 73,407 (Tibet/China), 19,398 (Burma), 8,275 (Afghanistan) (2020)
IDPs: 473,000 (armed conflict and intercommunal violence) (2020)
stateless persons: 18,174 (2020)

Illicit drugs
source and transit point for illicit narcotics and precursor chemicals bound for Europe, Africa, Southeast Asia, and North America; in 2020 India exported over $19 billion of illegal pharmaceutical drugs; illegal opium poppy growing in the Northeast; traffickers retool commercial chemical factories to produce large volumes of ephedrine, methamphetamine, and other drugs illicitly

Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
$	Dollar (U.S.)
€	Euro (currency)
AADMER	ASEAN Agreement on Disaster Management and Emergency Response
AAR	After Action Review
ADB	African Development Bank OR Asian Development Bank
AEFI	Adverse Events Following Vaccination
AHA Centre	ASEAN Coordinating Centre for Humanitarian Assistance on disaster management
AISMR	All India Summer Monsoon Rainfall
APAN	All Partners Access Network
APC-MADRO	Asia-Pacific Conferences on Military Assistance to Disaster Relief Operations
ARF	ASEAN Regional Forum
ASEAN	Association of Southeast Asian Nations
ASEM	Asia-Europe Meeting
bbl/day	barrels per day
BCE	Before Common Era
BCWC	BIMSTEC Centre for Weather and Climate
BHA	Bureau for Humanitarian Assistance
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BIS	Bank for International Settlements
BPHE	Biological and Public Health Emergencies
BRI	Belt and Road Initiative (China)
BRICS	Brazil, Russia, India, China, and South Africa
BSF	Border Security Force
CBRN	chemical, biological, radiological, and nuclear emergencies
CAPF	Central Armed Police Force
CCA	climate change adaptation
CCS	Cabinet Committee on Security
CDRRP	Coastal Disaster Risk Reduction Project
CDSCO	Central Drugs Standard Control Organization
CERF	Central Emergency Response Fund
CERN	European Organization for Nuclear Research
CFE-DM	Center for Excellence in Disaster Management & Humanitarian Assistance
CICA	Conference on Interaction and Confidence-Building Measures in Asia
CISF	Central Industrial Security Force
CMCS	Civil Military Coordination Section (of OCHA)
CoEDMM	Centre of Excellence in Disaster Mitigation and Management (of India)

COP26	2021 UN Climate Change Conference
CORPAT	Coordinated Patrol
COVID-19	Coronavirus Disease 2019
CPMF	Central Para Military Forces
CRPF	Central Reserve Police Force
CTF	combined task force
CWC	Central Water Commission
DA&FW	Department of Agriculture and Farmers Welfare
DEOC	District Emergency Operations Centre
DGRE	Defence Geoinformatics Research Establishment
DKI-APCSS	Daniel K. Inouye Asia-Pacific Center for Security Studies
DM	Disaster Management
DMEx	Disaster Management Exercises
DMHA	Disaster Management and Humanitarian Assistance
DoD	Department of Defense (U.S.)
DRM	Disaster Risk Management
DRR	disaster risk reduction
EAS	East Asia Summit
EMOPS	Emergency Operations
ENSO	El Niño Southern Oscillation
EOC	Emergency Operation Center
ESCAP	Economic and Social Council for Asia and Pacific
ESG	Executive Steering Group
ETF	Engineer Task Forces
EU	European Union
EWS	Early Warning Systems
FATF	Financial Action Task Force
FAO	Food and Agriculture Organization (of the UN)
FMA	Foreign Military Assets
FTX	Field Training Exercise
G-20	Group of 20
GDACS	Global Disaster Alert and Coordination System
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GIWPS	Georgetown Institute for Women, Peace, and Security
GLOF	Glacial Lake Outburst Flood
GtCO2e	gigatons of carbon dioxide equivalent
GW	gigawatt(s)
HADR	Humanitarian Assistance and Disaster Relief
HAI	Humanitarian Aid International

HCT	Humanitarian Country Teams
HDX	Humanitarian Data Exchange
HfH	Habitat for Humanity
IAEA	International Atomic Energy Agency
IAF	Indian Air Force
IASC	Inter-Agency Standing Committee
IBRD	International Bank for Reconstruction and Development
IC	Incident Commander
ICAO	International Civil Aviation Organization
ICC	International Chamber of Conference
ICIMOD	International Centre for Integrated Mountain Development
ICP	Integrated Command Post
ICRC	International Committee of the Red Cross
ICRM	Institute of Catastrophe Risk Management
IDRN	India Disaster Resource Network
IDSP	Integrated Disease Surveillance Programme
IEC	INSARAG External Classification
IFC-IOR	Information Fusion Centre, Indian Ocean Region
IFRC	International Federation of Red Cross and Red Crescent Societies
IGSSS	Indo-Global Social Services Society
IHIP	Integrated Health Information Platform
ILO	International Labour Organisation
INTERPOL	International Criminal Police Organisation
IMD	India Meteorological Department
IMF	International Monetary Fund
INCOIS	Indian National Center for Ocean Information Services
INFORM	Index for Risk Management
INSARAG	International Search and Rescue Advisory Group
IOC	International Olympic Committee
IOM	International Organization for Migration
IORA	Indian Ocean Rim Association
IPCC	Intergovernmental Panel on Climate Change
IRS	Incident Response System
IRT	Incident Response Teams
ITBP	Indo Tibetan Border Police
ITEC	Indian Technical and Economic Cooperation
JTWC	Joint Typhoon Warning Center
L/NA	Local and National Actor(s)
km	kilometer(s)
km^2	square kilometer(s)

kWh	kilowatt hour(s)
MCDA	Military and Civil Defence Assets
MEA	Ministry of External Affairs
MEU	Marine Expeditionary Unit
MGC	Mekong-Ganga Cooperation
m	meter(s)
MHA	Ministry of Home Affairs
MIGA	Multilateral Investment Guarantee Agency
mm	millimeter(s)
MNCFC	Mahalanobis National Crop Forecast Centre
MOD	Ministry of Defence (of India)
MOEFCC	Ministry of Environment, Forest, and Climate Change
MOHFW	Ministry of Health and Family Welfare
MP	Member of Parliament
NAPCC	National Action Plan on Climate Change
NCMC	National Crisis Management Committee
NCMRWF	National Centre for Medium Range Weather Forecasting
NCRMP	National Cyclone Risk Mitigation Project
NDC	Nationally Determined Contributions
NDMA	National Disaster Management Authority
NDMP	National Disaster Management Plan
NDRF	National Disaster Response Force
NDRRM	Natural Disaster Rapid Response Mechanism (of SAARC)
NEC	National Executive Committee
NERC	National Emergency Response Centre
NGO	Non-government organization
NIDM	National Institute of Disaster Management
nm	nautical mile(s)
NRSC	National Remote Sensing Centre
OAS	Organization of American States
OCHA	Office for the Coordination of Humanitarian Affairs (of the UN)
OECD	Organisation for Economic Cooperation and Development
OPCW	Organisation for the Prohibition of Chemical Weapons
OSOCC	On-Site Operations Coordination Centre
PDC	Pacific Disaster Center Global
PDR	People's Democratic Republic (Laos)
PIF	Pacific Islands Forum
PM	Prime Minister
PMNRF	Prime Minister's National Relief Fund
PRIO	Peace Research Institute Oslo

RCG	Regional Coordination Group for Humanitarian Civil Military Coordination in Asia and the Pacific
RCRC	Red Cross/Red Crescent Movement
RHCC	Changi Regional Humanitarian Assistance and Disaster Relief Coordination Centre
RIMPAC	Exercise Rim of the Pacific
RO	Responsible Officer
ROAP	Regional Office for Asia and the Pacific (of UN OCHA)
Rs.	Indian Rupees
SAADMEx	South Asian Annual Disaster Management Exercise
SAARC	South Asian Association for Regional Cooperation
SACEP	South Asia Co-operative Environment Programme
SARRND	SAARC Agreement on Rapid Response to Natural Disasters
SCO	Shanghai Cooperation Organisation
SCOJtEx	SCO Joint Exercise on Urban Earthquake Search & Rescue
SDG	Sustainable Development Goals
SDMA	State Disaster Management Authorities
SDMC	SAARC Disaster Management Centre
SDRF	State Disaster Response Force
SEACAT	Southeast Asia Cooperation and Training
SEEDS	Sustainable Environment and Ecological Development Society
SEOC	State Emergency Operations Centre
SFDRR	Sendai Framework for Disaster Risk Reduction
SMEE	subject-matter expert exchange
SSB	Sashastra Seema Bal
TTX	Tabletop Exercise
UK	United Kingdom
UN	United Nations
UN OCHA	United Nations Office for the Coordination of Humanitarian Affairs
UN-CMCoord	United Nations Humanitarian Civil-Military Coordination
UNCED	United Nations Conference on Environment and Development
UNCTAD	United Nations Conference on Trade and Development
UNDAC	UN Disaster Assessment and Coordination
UNDMT	United Nations Disaster Management Team
UNDP	UN Development Programme
UNDRR	UN Office for Disaster Risk Reduction
UNEP	United Nations Environment Programme
UNESCO	UN Educational, Scientific, and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees
UNICEF	UN Children's Fund

UNIDO	United Nations Industrial Development Organization
UNISDR	United Nations International Strategy for Disaster Reduction (now the United Nations Office for Disaster Risk Reduction (UNDRR))
UNITAR	United Nations Institute for Training and Research
UNSCR	United Nations Security Council Resolution
US$	U.S. Dollar
U.S.	United States
USAID	U.S. Agency for International Development
USAR	Urban Search and Rescue
USINDOPACOM	U.S. Indo-Pacific Command (of the DoD)
UT	Union Territory
VOSOCC	Virtual On-Site Operations Coordination Centre
WFP	World Food Programme
WHO	World Health Organization
WPS	Women, Peace, and Security
WTO	World Trade Organization

Endnotes

1 The Times of India. Orissa's new name is Odisha. 24 March 2011. https://timesofindia.indiatimes.com/india/Orissas-new-name-is-Odisha/articleshow/7780712.cms

2 Chakradeo, Saneet. Policy Brief: Neighbourhood First Responder: India's Humanitarian Assistance and Disaster Relief. Brookings India and Sambandh Regional Connectivity Initiative. August 2020. https://www.brookings.edu/wp-content/uploads/2020/08/HADR-Policy-Brief.pdf

3 UN Office for Disaster Risk Reduction; Centre for Research on the Epidemiology of Disasters. Economic Losses, Poverty & Disasters 1998-2017. October 2018. https://www.unisdr.org/files/61119_credeconomiclosses.pdf

4 CIA World Factbook. India. Accessed 3 January 2022. https://www.cia.gov/the-world-factbook/countries/india/

5 Chakradeo, Saneet. Policy Brief: Neighbourhood First Responder: India's Humanitarian Assistance and Disaster Relief. Brookings India and Sambandh Regional Connectivity Initiative. August 2020. https://www.brookings.edu/wp-content/uploads/2020/08/HADR-Policy-Brief.pdf

6 Chakradeo, Saneet. Upgrading India's regional disaster relief strategy. East Asia Forum. 25 February 2021. https://www.eastasiaforum.org/2021/02/25/upgrading-indias-regional-disaster-relief-strategy/

7 Chakradeo, Saneet. Policy Brief: Neighbourhood First Responder: India's Humanitarian Assistance and Disaster Relief. Brookings India and Sambandh Regional Connectivity Initiative. August 2020. https://www.brookings.edu/wp-content/uploads/2020/08/HADR-Policy-Brief.pdf

8 Chakradeo, Saneet. Policy Brief: Neighbourhood First Responder: India's Humanitarian Assistance and Disaster Relief. Brookings India and Sambandh Regional Connectivity Initiative. August 2020. https://www.brookings.edu/wp-content/uploads/2020/08/HADR-Policy-Brief.pdf

9 Chakradeo, Saneet. Upgrading India's regional disaster relief strategy. East Asia Forum. 25 February 2021. https://www.eastasiaforum.org/2021/02/25/upgrading-indias-regional-disaster-relief-strategy/

10 Gong, Lina. The rise of China and India's remote humanitarian aid. East Asia Forum. 29 July 2021. https://www.eastasiaforum.org/2021/07/29/the-rise-of-china-and-indias-remote-humanitarian-aid/

11 Chakradeo, Saneet. Policy Brief: Neighbourhood First Responder: India's Humanitarian Assistance and Disaster Relief. Brookings India and Sambandh Regional Connectivity Initiative. August 2020. https://www.brookings.edu/wp-content/uploads/2020/08/HADR-Policy-Brief.pdf

12 Haran, Amb (Retd) V.P. Challenges in India's Neighbourhood Policy. Speech at Central University of Tamil Nadu. 14 July 2017. https://www.mea.gov.in/distinguished-lectures-detail.htm?674

13 Ramachandran, Vijaya. India Emerges as an Aid Donor. Center for Global Development. 5 October 2010. https://www.cgdev.org/blog/india-emerges-aid-donor

14 ANI. Budget 2021: Over ₹ 18,000 Crore Allocated To External Affairs Ministry. 1 February 2021. https://www.ndtv.com/india-news/budget-2021-over-rs-18-000-crore-allocated-for-external-affairs-ministry-rs-7-149-crore-for-foreign-aid-2361507

15 Das, Anupreeta. India's Strict Rules on Foreign Aid Snarl Covid Donations. New York Times. 12 May 2021. https://www.nytimes.com/2021/05/12/business/india-covid-donations.html

16 UN OCHA. UN-CMCoord Field Handbook Version 2.0. 2018. https://www.unocha.org/sites/unocha/files/%5BE-Version%5D%20UNCMCoord%20Field%20Handbook%202.0%20%282018%29.pdf

17 UN OCHA. Recommended Practices for Effective Humanitarian Civil-Military Coordination of Foreign Military Assets (FMA) in Natural and Man-Made Disasters. Version 1.0. 18 September 2018. https://www.unocha.org/sites/unocha/files/180918%20Recommended%20Practices%20in%20Humanitarian%20Civil-Military%20Coordination%20v1.0.pdf

18 The Asia-Pacific Conferences on Military Assistance to Disaster Relief Operations (APC-MADRO) & OCHA. Asia-Pacific Regional Guidelines For The Use Of Foreign Military Assets In Natural Disaster Response Operations. https://reliefweb.int/sites/reliefweb.int/files/resources/Guidelines_FMA_Final.pdf

19 Humanitarian Response. Civil-Military Coordination Working Group: Regional Consultative Group (RCG) on Humanitarian Civil-Military Coordination for Asia and the Pacific. https://www.humanitarianresponse.info/en/operations/asia/civil-military-coordination-working-group

20 Ministry of External Affairs. Indian Missions Abroad. Accessed 9 January 2022. https://www.mea.gov.in/indian-missions-abroad-new.htm

21 Ministry of External Affairs. India-US brief. June 2017. https://www.mea.gov.in/Portal/ForeignRelation/India_US_brief.pdf

22 U.S. Department of State. U.S. Relations With India. 20 January 2021. https://www.state.gov/u-s-relations-with-india/

23 Schulz, Malcolm. India's Foreign Aid Explained. The Borgen Project. 8 April 2021. https://borgenproject.org/indias-foreign-aid-explained/

24 Ministry of External Affairs. India-Russia Relations. June 2020. https://mea.gov.in/Portal/ForeignRelation/India_Russia_Jun_2020.pdf

25 Ministry of External Affairs. India-Afghanistan Bilateral Brief. 2020. https://mea.gov.in/Portal/ForeignRelation/Kabul_2020.pdf

26 Ministry of External Affairs. India-Bangladesh Bilateral Relations. March 2021. https://mea.gov.in/Portal/ForeignRelation/India_Bangladesh_MAR2021.pdf

27 Economic Times. India-Bangladesh bonhomie scaled new heights as 2021 marked 50 years of ties. 30 December 2021. https://economictimes.indiatimes.com/news/india/india-bangladesh-bonhomie-scaled-new-heights-as-2021-marked-50-years-of-ties/articleshow/88583653.cms

28 Ministry of External Affairs. India-China Bilateral Relations. December 2020. https://mea.gov.in/Portal/ForeignRelation/ind-china-new.pdf

29 Ayres, Alyssa. China-India Border Dispute. Council on Foreign Relations. 18 Jun 2020. https://www.cfr.org/in-brief/china-india-border-dispute-what-know

30 Al-Jazeera. India ramps up Himalayan border security after clashes with China. 3 November 2021. https://www.aljazeera.com/news/2021/11/3/india-china-himalayan-border-security-deadly-clashes

31 Sharma, Ashok. India, China talks on border standoff end in stalemate. The Star. 13 January 2022. https://www.thestar.com/news/world/asia/2022/01/13/india-china-talks-on-border-standoff-end-in-stalemate.html

32 Ministry of External Affairs. India-Nepal Bilateral Relations. February 2020. https://mea.gov.in/Portal/ForeignRelation/India-Nepal_Bilateral_Brief_Feb_2020.pdf

33 Abke, Tom. India, Singapore working to curb effects of natural disasters. Indo-Pacific Defense Forum. 23 November 2020. https://ipdefenseforum.com/2020/11/india-singapore-working-to-curb-effects-of-natural-disasters/

34 Ministry of External Affairs. India-Singapore Bilateral Relations. 7 February 2020. https://mea.gov.in/Portal/ForeignRelation/Singapore__Brief_feb_07_2020.pdf

35 Ministry of External Affairs. India-UK Bilateral Relations. 29 April 2021. https://mea.gov.in/Portal/ForeignRelation/induknw.pdf

36 MENAFM. UK - India launches negotiations on a 5-star year of trade. 13 January 2022. https://menafn.com/1103535446/UK-India-launches-negotiations-on-a-5-star-year-of-trade

37 Asia-Europe Meeting. About ASEM and ASEM Education. Accessed 9 January 2022. https://asem-education.org/about/#:~:text=The%20Asia-Europe%20Meeting%20%28ASEM%29%20is%20an%20intergovernmental%20process,countries%2C%20the%20European%20Union%20and%20the%20ASEAN%20Secretariat

38 Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation. About BIMSTEC. Accessed 9 January 2022. https://bimstec.org/?page_id=189

39 BIMSTEC. Environment and Climate Change. Accessed 9 January 2022. https://bimstec.org/?page_id=5541

40 Peri, Dinakar. BIMSTEC to Boost Connectivity. The Hindu. 18 November 2018. https://www.thehindu.com/news/national/bimstec-to-boost-connectivity/article25532597.ece

41 Ministry of External Affairs. India-BIMSTEC. 19 June 2020. https://mea.gov.in/Portal/ForeignRelation/BIMSTEC_June_2020.pdf

42 Cook, Alistair and Christopher Chen. Disaster Governance in The Asia-Pacific: Future Pathways for South and Southeast Asia. RSIS. August 2021. https://www.rsis.edu.sg/wp-content/uploads/2021/08/PR210816_Disaster-Governance-in-the-Asia-Pacific_Future-Pathways-for-South-and-Southeast-Asia.pdf

43 NDRF, MHA. 2nd BIMSTEC Disaster Management Exercise 2020 Concludes at Puri. 13 February 2020. http://ndrf.gov.in/pressrelease/2nd-bimstec-disaster-management-exercise-2020-concludes-puri

44 Chen, James. Brazil, Russia, India, China and South Africa (BRICS). Investopedia. 29 May 2021. https://www.investopedia.com/terms/b/brics.asp

45 BRICS India 2021. About BRICS. Accessed 9 January 2022. https://www.brics2021.gov.in/index

46 Conference on Interaction and Confidence Building Measures in Asia. About CICA: Member States. Accessed 9 January 2022. https://www.s-cica.org/index.php?view=page&t=member_states

47 East Asia Summit. Introduction, Objectives and Principles. Accessed 9 January 2022. https://eastasiasummit.asean.org/about-east-asia-summit

48 G-20. About the G-20. Accessed 9 January 2022. https://g20.org/about-the-g20/#about

49 The Indian Ocean Rim Association. About IORA. Accessed 9 January 2022. https://www.iora.int/en/about/about-iora

50 Ministry of External Affairs. Mekong-Ganga Cooperation (MGC). March 2017. https://www.mea.gov.in/Portal/ForeignRelation/Brief_MGC_March_2017.pdf

51 MEA. About Mekong-Ganga Cooperation (MGC). March 2017. https://mea.gov.in/aseanindia/about-mgc.htm#:~:text=The%20Mekong-Ganga%20Cooperation%20%28MGC%29%20is%20an%20initiative%20by,%20launched%20in%202000%20at%20Vientiane%2C%20Lao%20PDR

52 Kutty, Sumitha Narayanan and Rajesh Basrur. The Quad: What It Is – And What It Is Not. The Diplomat. 24 March 2021. https://thediplomat.com/2021/03/the-quad-what-it-is-and-what-it-is-not/

53 Smith, Sheila. The Quad in the Indo-Pacific: What to Know. Council on Foreign Relations. 27 May 2021. https://www.cfr.org/in-brief/quad-indo-pacific-what-know

54 Australian Government Department of Defence. Australia joins Exercise MALABAR 2020. 3 November 2020. https://www.minister.defence.gov.au/minister/lreynolds/media-releases/australia-joins-exercise-malabar-2020

55 UN Office for Disaster Risk Reduction (UNDRR). What is the Sendai Framework for Disaster Risk Reduction? Accessed 6 July 2021. https://www.undrr.org/implementing-sendai-framework/what-sendai-framework

56 UN Office for Disaster Risk Reduction (UNDRR). Sendai Framework for Disaster Risk Reduction 2015-2030. 2015 https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf

57 AFP. Iran looks east after China-led bloc OKs entry. 18 September 2021. https://www.msn.com/en-us/news/world/iran-looks-east-after-china-led-bloc-oks-entry/ar-AAOzVmI?ocid=msedgntp

58 The Shanghai Cooperation Organisation. About SCO. Accessed 9 January 2022. http://eng.sectsco.org/about_sco/

59 South Asian Association for Regional Cooperation. About SAARC. 12 July 2020. https://www.saarc-sec.org/index.php/about-saarc/about-saarc

60 SAARC. SAARC Regional Centres. 16 July 2020. https://www.saarc-sec.org/index.php/regional-centres

61 Cook, Alistair and Christopher Chen. Disaster Governance in The Asia-Pacific: Future Pathways for South and Southeast Asia. RSIS. August 2021. Page 6. https://www.rsis.edu.sg/wp-content/uploads/2021/08/PR210816_Disaster-Governance-in-the-Asia-Pacific_Future-Pathways-for-South-and-Southeast-Asia.pdf

62 Indian Express. No consensus on holding of SAARC summit: India. 7 January 2022. https://indianexpress.com/article/india/india-pakistan-saarc-summit-7710481/

63 PTI. Pak blames India for hampering SAARC process. 7 January 2022. https://www.onmanorama.com/news/world/2022/01/07/pakistan-blames-india-for-saarc-failure.html

64 Marjani, Niranjan. Is Regional Integration Still Relevant for India in South Asia? The Diplomat. 11 January 2022. https://thediplomat.com/2022/01/is-regional-integration-still-relevant-for-india-in-south-asia/

65 NDRF, MHA. About Us. Accessed 7 January 2022. http://ndrf.gov.in/about-us

66 The Times of India. Orissa's new name is Odisha. 24 March 2011. https://timesofindia.indiatimes.com/india/Orissas-new-name-is-Odisha/articleshow/7780712.cms

67 Ministry of Home Affairs. Disaster Management in India. 2005. https://www.unisdr.org/2005/mdgs-drr/national-reports/India-report.pdf

68 Disaster Management Division, MHA. Accessed 7 January 2022. https://ndmindia.mha.gov.in/organizational-structure#

69 NDMA. NDMA – About us – Divisions. Accessed 7 January 2022. http://ndma.gov.in/

70 NDRF, MHA. About Us: Location of NDRF BNs. Accessed 7 January 2022. http://ndrf.gov.in/sites/default/files/ndrflocationmap.png

71 Suzuki, Satoshi. Since the tsunami: India and Japan are strengthening ties in disaster risk reduction and building resilient infrastructure. The Times of India. 10 March 2021. https://timesofindia.indiatimes.com/blogs/toi-edit-page/since-the-tsunami-india-and-japan-are-strengthening-ties-in-disaster-risk-reduction-and-building-resilient-infrastructure/

72 NDRF. Inland Operations. Accessed 7 January 2022. http://ndrf.gov.in/inland-operations?page=3

73 NDMA. National Policy on Disaster Management 2009. https://www.ndma.gov.in/sites/default/files/PDF/national-dm-policy2009.pdf

74 Kapoor, Lt General (Retd) V.K. Indian Army in Disaster Management. SP's Land Forces. October-November 2012. https://www.spslandforces.com/story/?id=227

75 Chakradeo, Saneet. Neighbourhood first responder: India's humanitarian aid and relief. Brookings Institution India Centre (now the Centre for Social and Economic Progress, August 2020, Policy Brief 082020-01. https://csep.org/policy-brief/neighbourhood-first-responder-indias-humanitarian-assistance-and-disaster-relief/

76 Ministry of Home Affairs. Office Memorandum: Adoption of new nomenclature of Central Armed Police Forces (CAPFs). No.I-45020/2/2011-Pers-II. 18 March 2011. https://www.mha.gov.in/sites/default/files/OM2-020513.pdf

77 Dholabhai, Nishit. For the paramilitary, all's in a new name. The Telegraph. 26 March 2011. https://www.telegraphindia.com/india/for-the-paramilitary-all-s-in-a-new-name/cid/415027; National Portal of India, India at a Glance: Paramilitary Forces. Accessed 7 January 2022. https://www.india.gov.in/content/defence-paramilitary-personnel?qt-india_at_a_glance_tabs=2

78 Bihar Institute of Public Administration and Rural Development, Government of Bihar State. SOP for Police during Natural Disaster. http://bipard.bihar.gov.in/ebooks/Research/SOP.pdf

79 Meghalaya Police, Government of Meghalaya State. Standard Operating Procedures for Emergency Response. 18 August 2017. https://megpolice.gov.in/standard-operating-procedures-emergency-response

80 Directorate General, Fire Services, Civil Defence & Home Guards, Ministry of Home Affairs. About Us. Accessed 7 January 2022. https://dgfscdhg.gov.in/aboutus

81 Disaster Management Division, MHA. State Disaster Response Force. Accessed 7 January 2022. https://ndmindia.mha.gov.in/state-response-force#

82 National Disaster Management Authority. National Disaster Management Plan. November 2019. https://ndmindia.mha.gov.in/images/ndmp-2019.pdf

83 Himachal Pradesh State Disaster Management Authority. Role of EOC on occurrence of disaster. 25 September 2018. https://hpsdma.nic.in/index1.aspx?lsid=92&lev=2&lid=90&langid=1

84 NDMA. Emergency Operations Centres. Accessed 7 January 2022. http://ndma.gov.in/Response/Emergency-Operations-Center

85 India Disaster Resource Network. IDRN Overview. Accessed 10 January 2022. https://idrn.nidm.gov.in/

86 SAARC Disaster Management Centre. http://saarc-sdmc.org/

87 Nisargkumar, Dave. "Regional cooperation for addressing disaster risks in CSNs" in Session 5: Regional cooperation for disaster-risk reduction and resilience – including support to countries with special needs. Training Workshop on Addressing Disaster Risks Specific to South and South-West Asia, UNESCAP, 30-31 October 2017 in Kathmandu, Nepal. https://www.unescap.org/sites/default/files/Session_5_Nisargkumar_Dave_SAARC_Disaster_Management_Centre.pdf; https://unescap.org/events/training-workshop-addressing-disaster-risks-specific-south-and-south-west-asia#; https://www.unescap.org/sites/default/files/20171030_31_Programme_Training_Workshop_on_Addressing_DR_Specific_to_SSWA.pdf

88 CFE-DM. A Resource Guide to Humanitarian Assistance and Disaster Relief (HADR) Centers in the Indo-Pacific, November 2021, page 105. https://www.cfe-dmha.org/LinkClick.aspx?fileticket=GC38dswrgn8%3d&portalid=0

89 Centre of Excellence in Disaster Mitigation and Management (CoEDMM), Indian Institute of Technology Roorkee. 2020. https://www.iitr.ac.in/centers/COEDMM/uploads/files/2020/CoEDMM%20Brouchure%202020.pdf#:~:text=The%20Centre%20of%20Excellence%20in%20Disaster%20Mitigation%20and,and%20training%20on%20disasters%2C%20vulnerability%20and%20their%20mitigation.

90 Directorate General, Fire Services, Civil Defence & Home Guards, Ministry of Home Affairs. About Us. Accessed 10 January 2022. https://dgfscdhg.gov.in/aboutus

91 Directorate General, Fire Services, Civil Defence & Home Guards, MHA. Organisation Chart. Accessed 10 January 2022. https://dgfscdhg.gov.in/organisation-chart

92 Mullen, Rani. Indian Development Cooperation Regains Momentum: 7 Main Take-Aways from India's 2019-20 Union Budget. 10 July 2019. https://cprindia.org/sites/default/files/IDCR_7%20Main%20Take-Aways%20from%20India%E2%80%99s%202019-20%20Union%20Budget_30%20July.pdf

93 Schulz, Malcolm. India's Foreign Aid Explained. The Borgen Project. 8 April 2021. https://borgenproject.org/indias-foreign-aid-explained/

94 Horváth, András. "India as a Humanitarian Donor in the 21st Century: The Seeds of a More Ambitious Role," (Berlin; GPPI, April 3-5, 2013), p. 6, https://www.gppi.net/media/Horvath_2013_BASAS_india.pdf

95 Chakradeo, Saneet. Neighbourhood first responder: India's humanitarian aid and relief. Brookings Institution India Centre (now the Centre for Social and Economic Progress, August 2020, Policy Brief 082020-01. https://csep.org/policy-brief/neighbourhood-first-responder-indias-humanitarian-assistance-and-disaster-relief/

96 OCHA. Nepal Earthquake: National and Foreign Military Deployed Assets, 7 May 2015. https://reliefweb.int/sites/reliefweb.int/files/resources/Nepal_FMDA_070515.pdf

97 Economic Times. Nepal Earthquake: UN lauds India's relief operations in the country. 27 May 2015. https://economictimes.indiatimes.com/news/politics-and-nation/nepal-earthquake-un-lauds-indias-relief-operations-in-the-country/articleshow/47439670.cms

98 ANI. Kerala govt constitutes medical team to assist relief work in Sri Lanka. 22 April 2019. https://www.aninews.in/news/national/general-news/kerala-govt-constitutes-medical-team-to-assist-relief-work-in-sri-lanka20190422142731/

99 NDMA. National Disaster Management Plan, 2016. May 2016. Page 145. https://www.mha.gov.in/sites/default/files/National%20Disaster%20Management%20Plan%20May%202016.pdf

100 Katoch, Arjun. A Review of Indian Participation in International Disaster Response. Delhi Policy Group. DPG Policy Note, Vol. II, Issue 8, 14 November 2017. https://www.delhipolicygroup.org/uploads_dpg/publication_file/dpg-policy-note-vol-ii-issue-8-a-review-of-indian-participation-in-international-disaster-response-1070.pdf

101 Katoch, Arjun. A Review of Indian Participation in International Disaster Response. Delhi Policy Group. DPG Policy Note, Vol. II, Issue 8, 14 November 2017. https://www.delhipolicygroup.org/uploads_dpg/publication_file/dpg-policy-note-vol-ii-issue-8-a-review-of-indian-participation-in-international-disaster-response-1070.pdf

102 PTI. Indian Army conducts disaster management drill 'Mountain Rescue'. 13 July 2018. https://economictimes.indiatimes.com/news/defence/indian-army-conducts-disaster-management-drill-mountain-rescue/articleshow/50136542.cms?from=mdr

103 Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Tri-services Humanitarian Aid and Disaster Relief Exercise: PANEX-21 for BIMSTEC Member States held in Pune. 22 December 2021. https://bimstec.org/?event=tri-services-humanitarian-aid-and-disaster-relief-exercise-panex-21-for-bimstec-member-states-held-in-pune

104 Pandit, Shiladitya. Multi-agency exercises crucial during disasters: Rajnath Singh. Times of India. 22 December 2021. https://timesofindia.indiatimes.com/city/pune/multi-agency-exercises-crucial-during-disasters-rajnath-singh/articleshow/88427762.cms

105 Ministry of Home Affairs. International Cooperation on Disaster Management. 18 December 2018. https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1556471

106 Ministry of External Affairs. SAARC Member Countries assemble to discuss preparations for the First South Asian Annual Disaster Management Exercise (SAADMEx) to be held in November 2015. 3 September 2015. https://mea.gov.in/outoging-visit-detail.htm?25788/SAARC+Member+Countries+assemble+to+discuss+preparations+for+the+First+South+Asian+Annual+Disaster+Management+Exercise+SAADMEx+to+be+held+in+November+2015

107 GK Today. SCOJtEx-2019: Shanghai Cooperation Organization Joint Exercise. 3 November 2019. https://www.gktoday.in/current-affairs/scojtex-2019-shanghai-cooperation-organization-joint-exercise/

108 Ministry of Home Affairs. Union Minister of Home Affairs Shri Amit Shah to inaugurate SCO Joint Urban Earthquake Search & Rescue Exercise (SCOJTEX)-2019. 2 November 2019. https://pib.gov.in/Pressreleaseshare.aspx?PRID=1590096

109 Panneerselvam, Prakash. Improving India–Japan disaster response after Typhoon Hagibis. East Asia Forum. 23 November 2019. https://www.eastasiaforum.org/2019/11/23/improving-india-japan-disaster-response-after-typhoon-hagibis/

110 Gady, Franz-Stefan. India, Japan Air Forces Hold First Joint Military Exercise. The Diplomat. 6 December 2018. https://thediplomat.com/2018/12/india-japan-air-forces-hold-first-joint-military-exercise/

111 Chatmas, Lt. Lauren. 20th SEACAT Concludes, Puts Cooperative Maritime Security First. U.S. Navy Destroyer Squadron SEVEN Public Affairs. 20 August 2021. https://www.pacom.mil/Media/News/News-Article-View/Article/2741214/20th-seacat-concludes-puts-cooperative-maritime-security-first/

112 The Hindu. 'Tiger Triumph' concludes. 21 November 2019. https://www.thehindu.com/news/national/andhra-pradesh/tiger-triumph-concludes/article30039399.ece

113 Breeden. MC3 Ryan M. USS Anchorage, 13th MEU Conclude Cooperative Deployment with Indian Navy. 28 December 2018. https://www.pacom.mil/Media/News/News-Article-View/Article/1722368/uss-anchorage-13th-meu-conclude-cooperative-deployment-with-indian-navy/

114 United States Institute for Peace (USIP). What is UNSCR 1325? Accessed 29 November 2021. https://www.usip.org/gender_peacebuilding/about_UNSCR_1325

115 Twitter. @AkbaruddinIndia. 20 June 2019

116 Khullar, Akanksha. India Should Apply the Women, Peace, and Security Agenda Internally. South Asian Voices. 12 May 2021. https://southasianvoices.org/india-should-apply-the-women-peace-security-agenda-internally/

117 World Economic Forum. Global Gender Gap Report: 2021. March 2021. https://www3.weforum.org/docs/WEF_GGGR_2021.pdf

118 World Economic Forum. Global Gender Gap Report: 2021. March 2021. https://www3.weforum.org/docs/WEF_GGGR_2021.pdf

119 CIA World Factbook. India: People and Society. Accessed 29 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#people-and-society

120 World Economic Forum. Global Gender Gap Report: 2021. March 2021. https://www3.weforum.org/docs/WEF_GGGR_2021.pdf

121 Georgetown Institute for Women, Peace, and Security. Women, Peace, and Security Index: The Dimensions. Accessed 29 November 2021. https://giwps.georgetown.edu/index-dimensions/

122 Georgetown Institute for Women, Peace, and Security. India's Performance on the Women, Peace, and Security Index. Accessed 29 November 2021. https://giwps.georgetown.edu/country/india/

123 Georgetown Institute for Women, Peace, and Security. Southern India has best states for women. Accessed 29 November 2021. https://giwps.georgetown.edu/index-story/southern-india-has-best-states-for-women/

124 World Economic Forum. Global Gender Gap Report: 2021. March 2021. https://www3.weforum.org/docs/WEF_GGGR_2021.pdf

125 Georgetown Institute for Women, Peace, and Security. Women, Peace, and Security Index 2021/22. November 2021. https://giwps.georgetown.edu/wp-content/uploads/2021/11/WPS-Index-2021.pdf

126 Global Facility for Disaster Risk Reduction (GFDRR). Increasing Women's Role in Disaster Risk Management Across India. 11 November 2016. https://www.gfdrr.org/sites/default/files/India%20Women%20SOI.pdf

127 Press Trust of India (PTI). India gets its first women's team in disaster combat. 5 January 2021. https://www.thehindu.com/news/national/india-gets-its-first-womens-team-in-disaster-combat/article33500975.ece

128 CIA World Factbook. India: People and Society. Accessed 29 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#people-and-society

129 Encyclopedia Britannica. India: People. Accessed 29 November 2021. https://www.britannica.com/place/India/People

130 CIA World Factbook. India: People and Society. Accessed 29 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#people-and-society

131 Encyclopedia Britannica. India: People. Accessed 29 November 2021. https://www.britannica.com/place/India/People

132 CIA World Factbook. India: People and Society. Accessed 29 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#people-and-society

133 Encyclopedia Britannica. India: People. Accessed 29 November 2021. https://www.britannica.com/place/India/People

134 CIA World Factbook. India: People and Society. Accessed 29 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#people-and-society

135 Encyclopedia Britannica. India: People. Accessed 29 November 2021. https://www.britannica.com/place/India/People

136 CIA World Factbook. India: Geography. Accessed 29 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#geography

137 Encyclopedia Britannica. India: Climate. Accessed 29 November 2021. https://www.britannica.com/place/India/Black-soils#ref46382

138 CIA World Factbook. India: People and Society. Accessed 29 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#people-and-society

139 Encyclopedia Britannica. India: People. Accessed 29 November 2021. https://www.britannica.com/place/India/People

140 CIA World Factbook. India: Economy. Accessed 29 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#economy

141 Encyclopedia Britannica. India: Economy. Accessed 29 November 2021. https://www.britannica.com/place/India/Demographic-trends#ref46410

142 National Portal of India. Governance & Administration. Accessed 30 November 2021. https://www.india.gov.in/topics/governance-administration

143 CIA World Factbook. India: Government. Accessed 30 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#government

144 National Portal of India. Governance & Administration. Accessed 30 November 2021. https://www.india.gov.in/topics/governance-administration

145 CIA World Factbook. India: Government. Accessed 30 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#government

146 Biswas, Soutik. What is India's president actually for? BBC. 2 August 2017. https://www.bbc.com/news/world-asia-india-40772945

147 Asian Disaster Preparedness Center (ADPC) and United Nations Office for Disaster Risk Reduction (UNDRR). Disaster Risk Reduction in India: Status Report 2020. https://www.preventionweb.net/publication/disaster-risk-reduction-india-status-report-2020-0

148 Mandal, G.S. and Mohapatra, M. Cyclone Hazard Prone Districts of India: A Report. National Disaster Management Authority and India Meteorological Department. 2009. http://ndma.gov.in/sites/default/files/PDF/cyclone/cyclonepronedistrict.pdf

149 National Disaster Management Authority. Cyclone. Accessed 30 November 2021. https://ndma.gov.in/Natural-Hazards/Cyclone

150 Mandal, G.S. and Mohapatra, M. Cyclone Hazard Prone Districts of India: A Report. National Disaster Management Authority and India Meteorological Department. 2009. http://ndma.gov.in/sites/default/files/PDF/cyclone/cyclonepronedistrict.pdf

151 Asian Disaster Preparedness Center (ADPC) and United Nations Office for Disaster Risk Reduction (UNDRR). Disaster Risk Reduction in India: Status Report 2020. https://www.preventionweb.net/publication/disaster-risk-reduction-india-status-report-2020-0

152 Gunasegaran, Thiru. India upgrades disease surveillance platform. Health Care IT News. 16 April 2021. https://www.healthcareitnews.com/news/asia/india-upgrades-disease-surveillance-platform

153 Khambete, Aarti Kelkar. Dealing with droughts. India WaterPortal. 22 June 2021. https://www.indiawaterportal.org/faqs/droughts

154 Asian Disaster Preparedness Center (ADPC) and United Nations Office for Disaster Risk Reduction (UNDRR). Disaster Risk Reduction in India: Status Report 2020. https://www.preventionweb.net/publication/disaster-risk-reduction-india-status-report-2020-0

155 National Disaster Management Authority. Earthquake. Accessed 30 November 2021. https://ndma.gov.in/Natural-Hazards/Earthquakes

156 Asian Disaster Preparedness Center (ADPC) and United Nations Office for Disaster Risk Reduction (UNDRR). Disaster Risk Reduction in India: Status Report 2020. https://www.preventionweb.net/publication/disaster-risk-reduction-india-status-report-2020-0

157 National Disaster Management Authority. Floods. Accessed 30 November 2021. https://ndma.gov.in/Natural-Hazards/Floods

158 National Disaster Management Authority. Urban Floods. Accessed 30 November 2021. https://ndma.gov.in/Natural-Hazards/Urban-Floods

159 Asian Disaster Preparedness Center (ADPC) and United Nations Office for Disaster Risk Reduction (UNDRR). Disaster Risk Reduction in India: Status Report 2020. https://www.preventionweb.net/publication/disaster-risk-reduction-india-status-report-2020-0

160 National Disaster Management Authority. Tsunami. Accessed 30 November 2021. https://ndma.gov.in/Natural-Hazards/Tsunami

161 National Disaster Management Authority. National Disaster Management Plan. November 2019. https://ndmindia.mha.gov.in/images/ndmp-2019.pdf

162 Climanosco. El Nino-Southern Oscillation and its Impacts over India. 2 March 2020. https://www.climanosco.org/student-voice/el-nino-southern-oscillation-and-its-impacts-over-india/

163 National Disaster Management Authority. National Disaster Management Plan. November 2019. https://ndmindia.mha.gov.in/images/ndmp-2019.pdf

164 Climate Action Tracker. India: Targets. 15 September 2021. https://climateactiontracker.org/countries/india/targets/

165 Mitra, Apurba; Gajjar, Chirag and Kelkar, Ulka. COP26: Unpacking India's Major New Climate Targets. WRI India. 2 November 2021. https://wri-india.org/blog/cop26-unpacking-india%E2%80%99s-major-new-climate-targets

166 European Commission Disaster Risk Management Knowledge Centre (DKRMC). INFORM Global Risk Index. Methodology. European Commission. Accessed 28 July 2021. https://drmkc.jrc.ec.europa.eu/inform-index/InDepth/Methodology

167 European Commission Disaster Risk Management Knowledge Centre (DKRMC). INFORM Risk Country Profile 2022: India. Accessed 30 November 2021. https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk/Country-Profile

168 European Commission Disaster Risk Management Knowledge Centre (DKRMC). INFORM Risk Country Profile 2022: India. Accessed 30 November 2021. https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk/Country-Profile

169 Eckstein, David, Kunzel, Vera, and Schafer, Laura. Briefing Paper: Global Climate Risk Index 2021. Germanwatch. January 2021. https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_2.pdf

170 Asian Disaster Preparedness Center (ADPC) and United Nations Office for Disaster Risk Reduction (UNDRR). Disaster Risk Reduction in India: Status Report 2020. https://www.preventionweb.net/publication/disaster-risk-reduction-india-status-report-2020-0

171 World Health Organization. COVID-19 Data: India. Accessed 2 January 2022. https://covid19.who.int/region/searo/country/in

172 Ministry of Health and Family Welfare. The World's Largest Vaccination Drive. 14 September 2021. https://www.mohfw.gov.in/TheWorld'sLargestVaccinationDriveBooklet/#page/1

173 Chandra, Shekhar. Why India's Second COVID Surge Is So Much Worse Than the First. Scientific American. 9 June 2021. https://www.scientificamerican.com/article/why-indias-second-covid-surge-is-so-much-worse-than-the-first/

174 Ministry of Health and Family Welfare. The World's Largest Vaccination Drive. 14 September 2021. https://www.mohfw.gov.in/TheWorld'sLargestVaccinationDriveBooklet/#page/1

175 Chandra, Shekhar. Why India's Second COVID Surge Is So Much Worse Than the First. Scientific American. 9 June 2021. https://www.scientificamerican.com/article/why-indias-second-covid-surge-is-so-much-worse-than-the-first/

176 Kar, Sujita Kumar, Ransing, Ramdas, Arafat, S.M. Yasir, and Menon, Vikas. Second wave of COVID-19 pandemic in India: Barriers to effective governmental response. The Lancet, Volume 36, 100915. 29 May 2021. https://doi.org/10.1016/j.eclinm.2021.100915

177 International Monetary Fund. Policy Responses to COVID-19. 2 July 2021. https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#top

178 Ministry of Health and Family Welfare. The World's Largest Vaccination Drive. 14 September 2021. https://www.mohfw.gov.in/TheWorld'sLargestVaccinationDriveBooklet/#page/1

179 OurWorldinData. Share of the population fully vaccinated against COVID-19. Accessed 1 December 2021. https://ourworldindata.org/grapher/share-people-fully-vaccinated-covid

180 Ministry of Health and Family Welfare. The World's Largest Vaccination Drive. 14 September 2021. https://www.mohfw.gov.in/TheWorld'sLargestVaccinationDriveBooklet/#page/1

181 Ang, Adam. India opens vaccination platform to the world. Health Care IT News. 6 July 2021. https://www.healthcareitnews.com/news/asia/india-opens-vaccination-platform-world

182 Ministry of Health and Family Welfare. The World's Largest Vaccination Drive. 14 September 2021. https://www.mohfw.gov.in/TheWorld'sLargestVaccinationDriveBooklet/#page/1

183 National Disaster Management Authority. National Disaster Management Plan. November 2019. https://ndmindia.mha.gov.in/images/ndmp-2019.pdf

184 Ministry of Home Affairs. Disaster Management in India. 2011. https://ndmindia.mha.gov.in/NDMINDIA-CMS/viewWhatsNewPdf-P9

185 National Disaster Management Authority. Introduction. Accessed 2 December 2021. https://ndma.gov.in/index.php/about-us/introduction

186 National Disaster Management Authority. Operations and Communication Division. Accessed 2 December 2021. https://ndma.gov.in/about-us/division/Ops-Commn

187 National Disaster Response Force. About Use. Accessed 2 December 2021. http://www.ndrf.gov.in/about-us

188 Asian Disaster Preparedness Center (ADPC) and United Nations Office for Disaster Risk Reduction (UNDRR). Disaster Risk Reduction in India: Status Report 2020. https://www.preventionweb.net/publication/disaster-risk-reduction-india-status-report-2020-0

189 National Disaster Management Authority. Compendium of Laws on Disaster Management. 2015. https://ndma.gov.in/sites/default/files/PDF/COMPENDIUM-OF-LAWS-ON-DISASTER-MANAGEMENT.pdf

190 Asian Disaster Preparedness Center (ADPC) and United Nations Office for Disaster Risk Reduction (UNDRR). Disaster Risk Reduction in India: Status Report 2020. https://www.preventionweb.net/publication/disaster-risk-reduction-india-status-report-2020-0

191 National Disaster Management Authority. Introduction. Accessed 2 December 2021. https://ndma.gov.in/index.php/about-us/introduction

192 National Disaster Management Authority. Prime Minister's Ten Point Agenda on DRR. Accessed 2 December 2021. https://ndma.gov.in/Governance/PM-10-Agenda

193 National Disaster Management Authority. Annual Report: 2019-2020. https://ndma.gov.in/sites/default/files/PDF/Reports/Annual-Report-English-2019-20.pdf

194 Ministry of Home Affairs. Disaster Management in India. 2011 https://www.undp.org/content/dam/india/docs/disaster_management_in_india.pdf

195 National Disaster Management Authority. Prime Minister's Ten Point Agenda on DRR. Accessed 2 December 2021. https://ndma.gov.in/Governance/PM-10-Agenda

196 UN OCHA, Regional Office for Asia and the Pacific. Disaster Response in Asia and the Pacific: A Guide to International Tools and Services. 2015. http://reliefweb.int/sites/reliefweb.int/files/resources/Disaster%20Response%20in%20Asia%20Pacific_A%20Guide%20to%20Intl%20Tools%20Services.pdf

197 UN OCHA. Guidelines on the Use of Military and Civil Defence Assets to Support United Nations Humanitarian Activities in Complex Emergencies: Revision 1. January 2006. https://www.unocha.org/sites/unocha/files/01.%20MCDA%20Guidelines%20March%2003%20Rev1%20Jan06.pdf

198 ICRC. Council of Delegates 2005: Resolution 7. 18 November 2005. https://www.icrc.org/en/doc/resources/documents/resolution/council-delegates-resolution-7-2005.htm

199 UNHCR. Recommended Practices for Effective Humanitarian Civil-Military Coordination of Foreign Military Assets (FMA) in Natural and Man-Made Disasters: Version 1.0. 18 September 2018. https://cms.emergency.unhcr.org/documents/11982/48574/Recommended+Practices+for+Effective+Humanitarian+Civil-Military+Coordination+of+Foreign+Military+Assets+in+Natural+and+Man-Made+Disasters/b6c934f0-1dec-42ea-9396-5313e3e2f2d3

200 UN OCHA, Regional Office for Asia and the Pacific. Disaster Response in Asia and the Pacific: A Guide to International Tools and Services. 2015. http://reliefweb.int/sites/reliefweb.int/files/resources/Disaster%20Response%20in%20Asia%20Pacific_A%20Guide%20to%20Intl%20Tools%20Services.pdf

201 Inter-Agency Standing Committee (IASC). Guidance on Strengthening Participation, Representation and Leadership of Local and National Actors in IASC Humanitarian Coordination Mechanisms. July 2021. https://interagencystandingcommittee.org/system/files/2021-07/IASC%20Guidance%20on%20Strengthening%20Participation%2C%20Representation%20and%20Leadership%20of%20Local%20and%20National%20Actors%20in%20IASC%20-Humanitarian%20Coordination%20Mechanisms_2.pdf

202 Katoch, Arjun. A Review of Indian Participation in International Disaster Response. Delhi Policy Group Policy Note, Volume II, Issue 8. 14 November 2017. https://www.delhipolicygroup.org/uploads_dpg/publication_file/dpg-policy-note-vol-ii-issue-8-a-review-of-indian-participation-in-international-disaster-response-1070.pdf

203 Press Trust of India. India's Disaster Response Force To Get UN Tag. 10 January 2021. https://www.ndtv.com/india-news/indias-disaster-response-force-to-get-un-tag-2350365

204 Katoch, Arjun. A Review of Indian Participation in International Disaster Response. Delhi Policy Group Policy Note, Volume II, Issue 8. 14 November 2017. https://www.delhipolicygroup.org/uploads_dpg/publication_file/dpg-policy-note-vol-ii-issue-8-a-review-of-indian-participation-in-international-disaster-response-1070.pdf

205 Sohini Bose. BIMSTEC and Disaster Management: Future Prospects for Regional Cooperation. ORF Issue Brief No. 383, July 2020, Observer Research Foundation. https://www.orfonline.org/research/bimstec-and-disaster-management/

206 Katoch, Arjun. A Review of Indian Participation in International Disaster Response. Delhi Policy Group Policy Note, Volume II, Issue 8. 14 November 2017. https://www.delhipolicygroup.org/uploads_dpg/publication_file/dpg-policy-note-vol-ii-issue-8-a-review-of-indian-participation-in-international-disaster-response-1070.pdf

207 Tom Abke. India, Singapore working to curb effects of natural disasters. Indo-Pacific Defense Forum. 23 November 2020. https://ipdefenseforum.com/2020/11/india-singapore-working-to-curb-effects-of-natural-disasters/

208 Katoch, Arjun. A Review of Indian Participation in International Disaster Response. Delhi Policy Group Policy Note, Volume II, Issue 8. 14 November 2017. https://www.delhipolicygroup.org/uploads_dpg/publication_file/dpg-policy-note-vol-ii-issue-8-a-review-of-indian-participation-in-international-disaster-response-1070.pdf

209 Ministry of Home Affairs. Divisions of MHA. Accessed 23 December 2021. https://mha.gov.in/about-us/about-the-ministry; Ministry of External Affairs. Accessed 23 December 2021. http://www.mea.gov.in/; Integrated Disease Surveillance Programme. Mission. Accessed 23 December 2021. https://www.idsp.nic.in/index1.php?lang=1&level=1&sublinkid=5778&lid=3707; Ministry of Jalshakti. Mission/Vision/Functions. Accessed 23 December 2021. http://jalshakti-dowr.gov.in/about-us/functions; Khambete, Aarti Kelkar. Dealing with droughts. India WaterPortal. 22 June 2021. https://www.indiawaterportal.org/faqs/droughts; Ministry of Earth Sciences. India Meteorological Department: About IMD. Accessed 2 January 2022. https://mausam.imd.gov.in/imd_latest/contents/mandate.php; Indian Space Research Organisation. National Remote Sensing Centre (NRSC). Accessed 2 January 2022. https://www.isro.gov.in/about-isro/national-remote-sensing-centre-nrsc; Mahalanobis National Crop Forecast Centre. About MNCFC. Accessed 2 January 2022. https://www.ncfc.gov.in/; Central Water Commission. Flood Forecasting. Accessed 2 January 2022. http://www.cwc.gov.in/flood-forecasting-hydrological-observation; Ministry of Environment, Forest and Climate Change. Introduction. Accessed 2 January 2022. https://moef.gov.in/en/about-the-ministry/introduction-8/; Ministry of Defence. About the Ministry. Accessed 2 January 2022. https://www.mod.gov.in/about--ministry

210 Humanitarian Aid International. Towards a Localised Humanitarian Response in India. 6 August 2019. https://reliefweb.int/report/india/towards-localised-humanitarian-response-india

211 Katoch, Arjun. A Review of Indian Participation in International Disaster Response. Delhi Policy Group Policy Note, Volume II, Issue 8. 14 November 2017. https://www.delhipolicygroup.org/uploads_dpg/publication_file/dpg-policy-note-vol-ii-issue-8-a-review-of-indian-participation-in-international-disaster-response-1070.pdf

212 United Nations in India. Disaster Management. Accessed 31 January 2022. https://in.one.un.org/page/disaster-management/

213 Humanitarian Aid International. Towards a Localised Humanitarian Response in India. 6 August 2019. https://reliefweb.int/report/india/towards-localised-humanitarian-response-india

214 Inter-Agency Standing Committee. About the Grand Bargain. Accessed 8 December 2021. https://interagencystandingcommittee.org/about-the-grand-bargain

215 Humanitarian Aid International. Towards a Localised Humanitarian Response in India. 6 August 2019. https://reliefweb.int/report/india/towards-localised-humanitarian-response-india

216 Humanitarian Aid International. Towards a Localised Humanitarian Response in India. 6 August 2019. https://reliefweb.int/report/india/towards-localised-humanitarian-response-india

217 National Disaster Management Authority. Compendium of Laws on Disaster Management. 2015. https://ndma.gov.in/sites/default/files/PDF/COMPENDIUM-OF-LAWS-ON-DISASTER-MANAGEMENT.pdf

218 National Disaster Management Authority. Incident Response System. Accessed 23 December 2021. https://ndma.gov.in/Capacity_Building/Ops_Comm/IRS

219 National Disaster Management Authority. Incident Response System. Accessed 23 December 2021. https://ndma.gov.in/Capacity_Building/Ops_Comm/IRS

220 National Disaster Management Authority. Incident Response System. Accessed 23 December 2021. https://ndma.gov.in/Capacity_Building/Ops_Comm/IRS

221 National Disaster Response Force. About Use. Accessed 2 December 2021. http://www.ndrf.gov.in/about-us

222 National Disaster Management Authority. National Disaster Management Plan. November 2019. https://ndmindia.mha.gov.in/images/ndmp-2019.pdf

223 Asian Disaster Preparedness Center (ADPC) and United Nations Office for Disaster Risk Reduction (UNDRR). Disaster Risk Reduction in India: Status Report 2020. https://www.preventionweb.net/publication/disaster-risk-reduction-india-status-report-2020-0

224 Chatmas, Lt. Lauren. 20th SEACAT Concludes, Puts Cooperative Maritime Security First. U.S. Navy Destroyer Squadron SEVEN Public Affairs. 20 August 2021. https://www.pacom.mil/Media/News/News-Article-View/Article/2741214/20th-seacat-concludes-puts-cooperative-maritime-security-first/

225 Lopez, C. Todd. U.S. Sends Medical Supplies to India to Help in COVID-19 Fight. DOD News. 3 May 2021. https://www.pacom.mil/Media/News/News-Article-View/Article/2593927/us-sends-medical-supplies-to-india-to-help-in-covid-19-fight/

226 USS Theodore Roosevelt Public Affairs. Theodore Roosevelt Carrier Strike Group Conducts Joint Force Maritime Exercise with India. 29 March 2021. https://www.pacom.mil/Media/News/News-Article-View/Article/2554498/theodore-roosevelt-carrier-strike-group-conducts-joint-force-maritime-exercise/

227 The Hindu. 'Tiger Triumph' concludes. 21 November 2019. https://www.thehindu.com/news/national/andhrapradesh/tiger-triumph-concludes/article30039399.ece

228 Hancock, Lance Cpl. Jacob. Tiger TRIUMPH: India-U.S. Medical SMEE [Image 2 of 5]. 3rd Marine Logistics Group, DVIDS. 16 November 2019. https://www.dvidshub.net/image/5918504/tiger-triumph-india-us-medical-smee

229 Elizalde, Lance Cpl. Armando. Tiger TRIUMPH: India-U.S. practice HADR [Image 1 of 6]. 3rd Marine Logistics Group, DVIDS. 20 November 2019. https://www.dvidshub.net/image/5933558/tiger-triumph-india-us-practice-hadr

230 U.S. Pacific Fleet Public Affairs. Pacific Fleet Commander Visits India to Expand Partnerships. 4 November 2019. https://www.pacom.mil/Media/News/News-Article-View/Article/2007904/pacific-fleet-commander-visits-india-to-expand-partnerships/

231 Pacific Air Forces Public Affairs. India, U.S. Air Force Leaders Participate in Executive Steering Group. 10 May 2019. https://www.pacom.mil/Media/News/News-Article-View/Article/1844545/india-us-air-force-leaders-participate-in-executive-steering-group/

232 Breeden. MC3 Ryan M. USS Anchorage, 13th MEU Conclude Cooperative Deployment with Indian Navy. 28 December 2018. https://www.pacom.mil/Media/News/News-Article-View/Article/1722368/uss-anchorage-13th-meu-conclude-cooperative-deployment-with-indian-navy/

233 RIMPAC Public Affairs. Exercise Rim of the Pacific 2018 Concludes. 3 August 2018. https://www.pacom.mil/Media/News/News-Article-View/Article/1593407/exercise-rim-of-the-pacific-2018-concludes/

234 Haux, Staff Sgt. Hailey R. Medical Exchange Enhances U.S., India Partnership. Pacific Air Forces Public Affairs. 24 July 2018. https://www.pacom.mil/Media/News/News-Article-View/Article/1583236/medical-exchange-enhances-us-india-partnership/

235 Williams, LT Miranda. Exercise Rim of the Pacific 2016 Concludes. RIMPAC Public Affairs. 4 August 2016. https://www.pacom.mil/Media/News/News-Article-View/Article/905369/exercise-rim-of-the-pacific-2016-concludes/

236 Center for Excellence in Disaster Management & Humanitarian Assistance. Humanitarian Assistance Response Training (HART) Module: HA/DR Information. September 2018.

237 Joint Publication 3-29. Foreign Humanitarian Assistance. 14 May 2019. https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_29.pdf?ver=2019-05-21-150525-607

238 IFRC. Where are we based. Accessed 12 January 2022. https://www.ifrc.org/people-and-structures

239 IFRC. About the IFRC. Accessed 12 January 2022. https://www.ifrc.org/about-ifrc

240 ICRC. Mandate and Mission. Accessed 12 January 2022. https://www.icrc.org/en/mandate-and-mission

241 ICRC. Who we are: Movement. Accessed 12 January 2022. https://www.icrc.org/en/who-we-are/movement

242 U.S. Agency for International Development (USAID). Humanitarian Assistance. Accessed 23 March 2021. https://www.usaid.gov/humanitarian-assistance

243 Pacific Disaster Center. About DisasterAWARE. Accessed 23 March 2021. https://www.pdc.org/apps/disasteraware/about-disasteraware/

244 Pacific Disaster Center. Disaster Alert. Accessed 23 March 2021. https://disasteralert.pdc.org/disasteralert/; Pacific Disaster Center (PDC Global). DisasterAWARE Quick Start User Guide, 2019, Version 6.5. https://disasteraware.pdc.org/help/Quick-Start-Guide-DisasterAWARE-screen.pdf

245 Pacific Disaster Center. DisasterAlert™. Accessed 23 March 2021. https://www.pdc.org/apps/disaster-alert/

246 All Partners Access Network (APAN). About Us. Accessed 23 March 2021. https://www.apan.org/pages/about

247 All Partners Access Network (APAN). Solutions. Accessed 23 March 2021. https://www.apan.org/pages/solutions-hadr

248 CIA World Factbook. India. Accessed 16 November 2021. https://www.cia.gov/the-world-factbook/countries/india/#transnational-issues



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