

# **FINAL PRESENTATION**

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# Asian Disaster Reduction Center Visiting Researcher Program FY 2022



## Study on Community Based Disaster Preparedness and Prevention in Japan

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# Introduction Research Plan

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# Objective of the Study

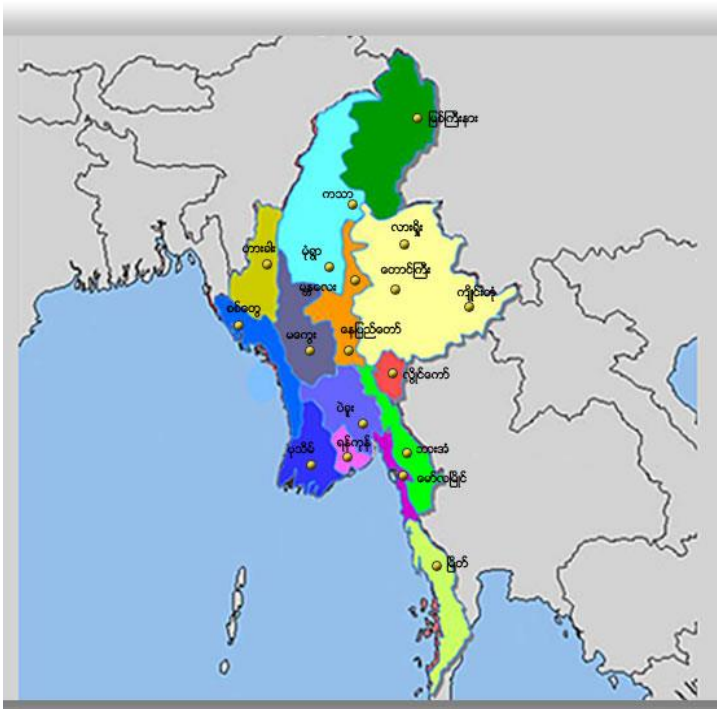
The objective of this study are;

- (a) To explore the disaster events of Myanmar and their impact of affected areas
- (b) To study the preparatory and preventive measures for Disaster Risk Reduction in Japan
- (c) To enhance the capacity of community for DRM in Myanmar.

# Country Profile of Myanmar

- Situated Southeast Asia between latitudes 09° 32' N and 28° 31' N and longitudes 92° 10' E and 101° 11' E.
- 2,61,228 square miles (6,77,000 Km<sup>2</sup>).
- Population is 51.92 million (2014 Census)

## **An Agriculture based country**



### **Ethnic Composition in Burma \* Estimates**

ethnic group or race	percent
Bamar	68%
Shan	9%
Kayin	7%
Other groups	2.5%
Rakhine	3.5%
Han-Chinese	2.5%
Mon	2%
Kachin	1.5%
Indians	1.25%
Kayah	0.75%

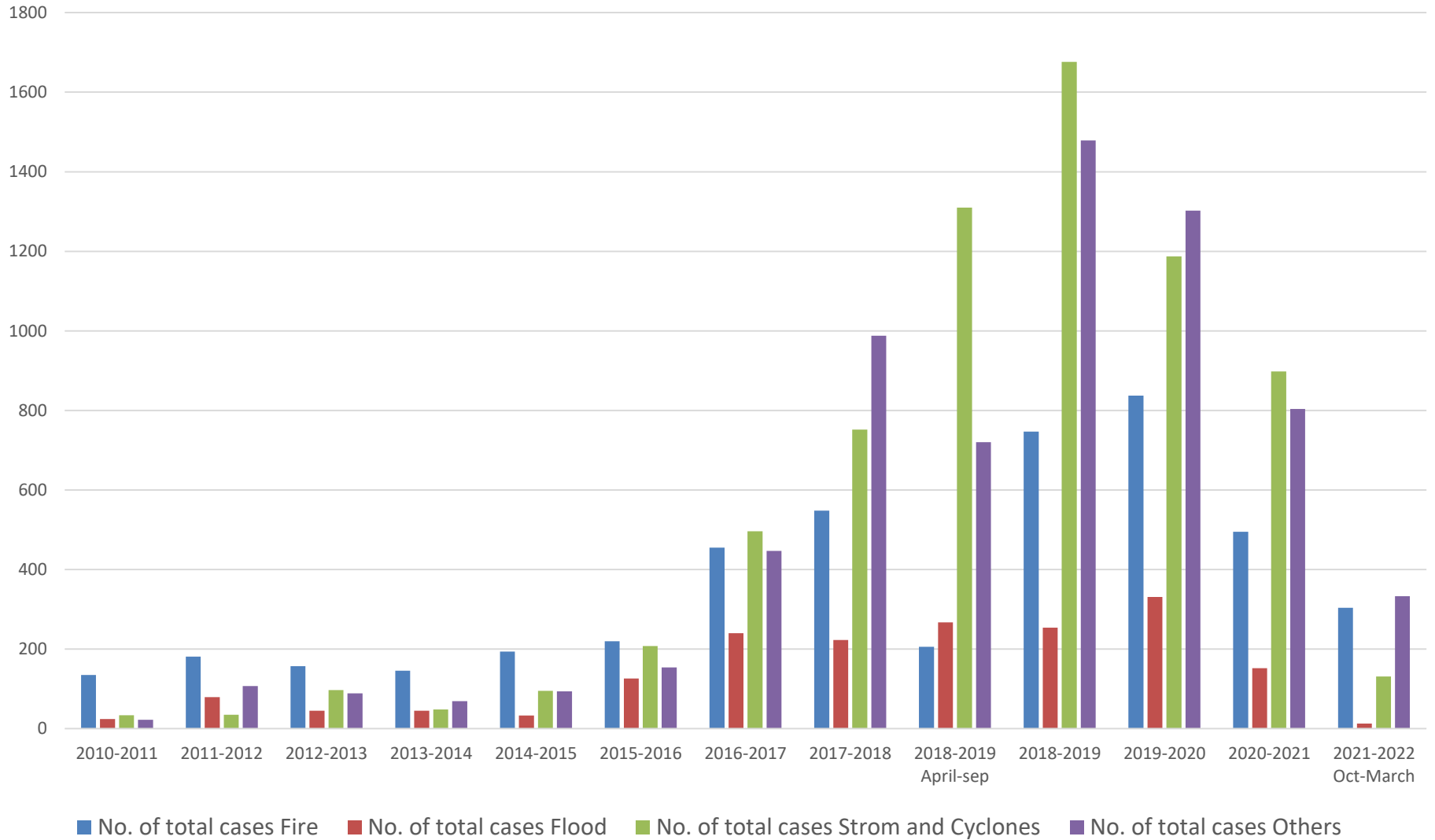
## Brief Hazard Profile of Myanmar

Hazard	Profile
<b>Earthquake and Tsunami</b>	Two main sources: Sagaing fault, and the Sunda subduction mega thrust zone. Four areas are designated as the Destructive Zone: 1) Bago-Phyu, 2) Mandalay-Sagaing-Tagaung, 3) Putao-Tanaing, and Kale-Homalin. Although the latter two have major earthquake hazards, their risk-level is low because they are sparsely populated. In coastal areas of Myanmar: Rakhine Coast falls in the Strong Zone with MMI 8, the Ayeyawady Delta and Taninthayi coasts fall in the Moderate Zone with MMI 7. <sup>14</sup>
<b>Fire/Forest fire</b>	Most frequent hazards occurring in Myanmar. In the last ten years (2007-2016), 12,000 cases were recorded and Yangon, Mandalay, Ayeyarwaddy, Sagaing and Bago are the most affected States and Regions.
<b>Drought</b>	Approximately 51 townships spread across Magway, Mandalay and Sagaing (lower) regions are prone to drought.
<b>Landslide</b>	The mountainous regions, especially in the western ranges and some localities in the eastern highland are prone to landslides. The western ranges have experienced different types of landslides and earth movements such as rock falls, rockslides, soil avalanches and mud flows.
<b>Floods</b>	Flood is one of the most frequent hazards in Myanmar. The threat of flooding usually occurs three times per year, in June, July-August late, September and October with the biggest threat in August, as monsoon rains peak around that time. Most of the areas of Myanmar are prone to floods and the central part of Ayeyarwaddy Region is the most affected one.
<b>Cyclone/Storm Surge</b>	Myanmar is highly vulnerable to these hazards, particularly, during the months of April and May, and also during October to November. Cyclones often occur in the middle of the monsoon season, but they usually don't reach their maximum strength. However, in 2015 Cyclone Komen had disruptive effects, causing heavy rain, landslides and flood. In coastal areas, cyclone can cause storm surges. Climate change is likely to worsen the risk of existing cyclone/storm surge.
<b>Industrial/ Technological Hazards</b>	Myanmar has 51 industrial parks (limited information), primarily located in Yangon and Mandalay regions. Most of the companies are small to medium enterprises, and lack disaster risk management and business continuity plans. There is a need for profiling of industrial/technological hazards. <sup>15</sup>



Number of Reported Disasters

# Disasters in Regions and States from 2010-2011FY to 2021-2011 FY



# Global Climate Risk Index



## Global Climate Risk Index

[www.germanwatch.org/en/cri](http://www.germanwatch.org/en/cri)

CRI 2000-2019 (1999-2018)	Country	CRI score	Fatalities	Fatalities per 100 000 inhabitants	Losses in million US\$ PPP	Losses per unit GDP in %	Number of events (2000-2019)
1 (1)	Puerto Rico	7.17	149.85	4.12	4 149.98	3.66	24
2 (2)	Myanmar	10.00	7 056.45	14.35	1 512.11	0.80	57
3 (3)	Haiti	13.67	274.05	2.78	392.54	2.30	80
4 (4)	Philippines	18.17	859.35	0.93	3 179.12	0.54	317
5 (14)	Mozambique	25.83	125.40	0.52	303.03	1.33	57
6 (20)	The Bahamas	27.67	5.35	1.56	426.88	3.81	13
7 (7)	Bangladesh	28.33	572.50	0.38	1 860.04	0.41	185
8 (5)	Pakistan	29.00	502.45	0.30	3 771.91	0.52	173
9 (8)	Thailand	29.83	137.75	0.21	7 719.15	0.82	146
10 (9)	Nepal	31.33	217.15	0.82	233.06	0.39	191

**The 10 countries most affected from 2000 to 2019 (annual averages)**

*Myanmar ranks second out of 184 countries most affected by climate change in the 2021 Global Climate Risk Index. This is serious threat to Myanmar's sustainable development.*

*Disaster Management System in  
Myanmar*

# *Disaster Management Law*



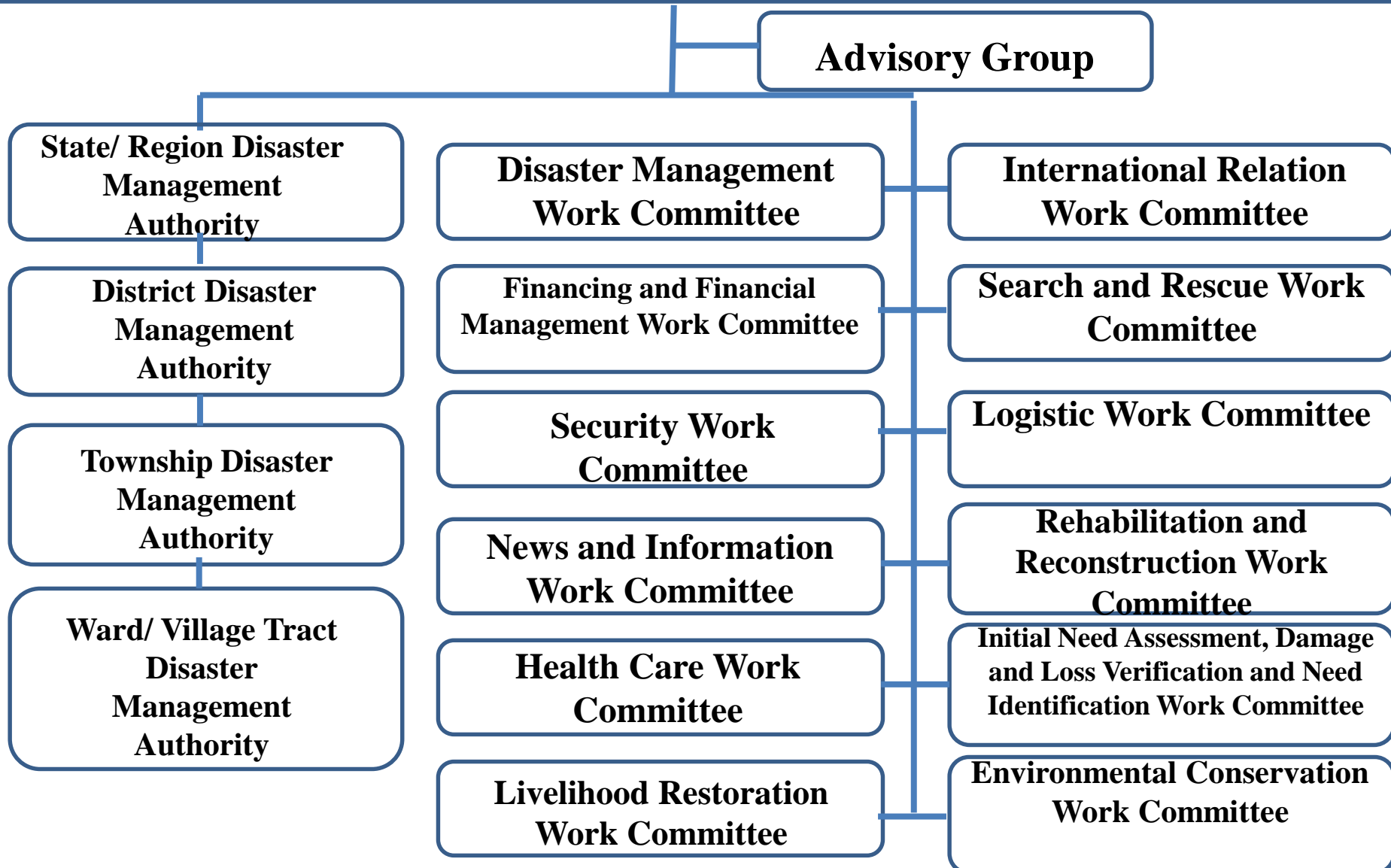
- *The DM law was ratified by National government on 31<sup>st</sup> July, 2013 and DM Rules were prescribed by MSWRR on 7<sup>th</sup> April, 2015.*

## **Objectives**

- **To implement natural disaster management programmes systematically and expeditiously in order to reduce disaster risks**
- **To form the National Committee and local bodies in order to implement natural disaster management programmes systematically and expeditiously**
- **To coordinate with national and international government departments and organizations or international organizations and regional organizations in carrying out natural disaster management activities**
- **To conserve and restore the environment affected by natural disaster**
- **To provide health, education, social and livelihood programmes in order to bring about better living conditions for victims**

# National Disaster Management Committee's Organogram

## National Disaster Management Committee (NDMC)



# MAPDRR (2017)

## Vision:

*Protect lives, economy, heritage and environment, through an inclusive approach towards sustainable development in Myanmar*

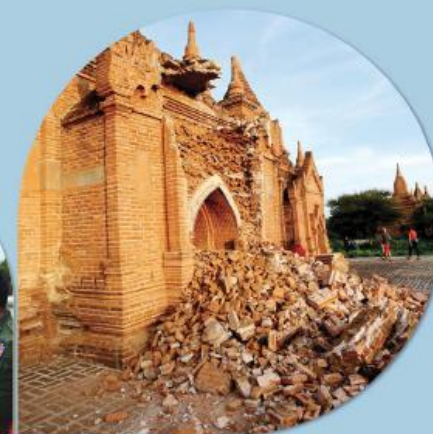
**It has 4 Pillars and they are linked with Sendai Framework.**

**Pillar 1:** Assessing disaster risk including extreme weather events and creating public awareness on DRR in Myanmar

**Pillar 2:** Strengthening disaster risk governance to reduce and manage risk

**Pillar 3:** Mainstreaming disaster risk reduction for resilient development

**Pillar 4:** Enhancing disaster preparedness for effective response and resilient rehabilitation and reconstruction



**MYANMAR ACTION PLAN ON  
DISASTER RISK REDUCTION, 2017**

*Fostering resilient development through integrated action plan*

**MAP  
DRR  
2017**



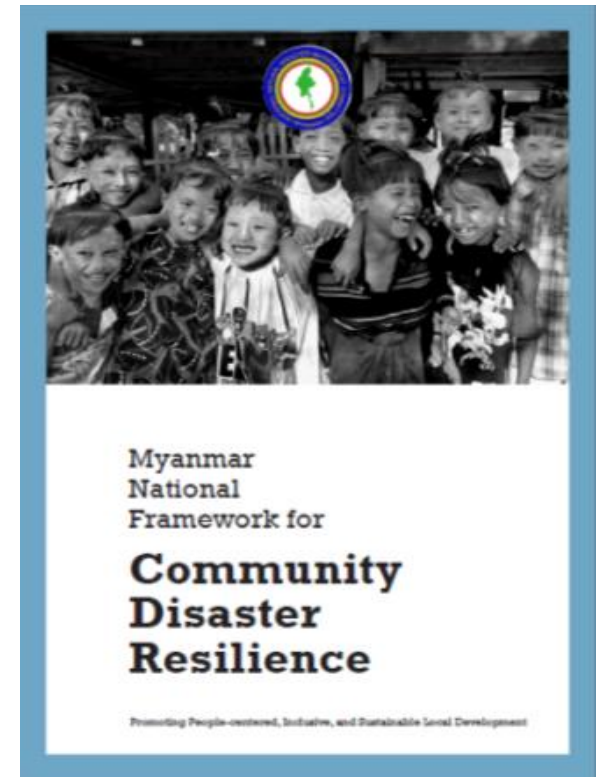
Myanmar National Framework for

# **Community Disaster Resilience**

Promoting People-centered, Inclusive, and Sustainable Local Development

# *Introducing the National Framework for Community Disaster Resilience*

- Based on **Government's Reforms** aimed at **“Promoting People-centered, Inclusive, and Sustainable Development”**
- Supports Myanmar commitments to **international frameworks** –
  - Sustainable Development Goals,
  - Sendai Framework for Disaster Risk Reduction,
  - Paris Agreement on Climate Change,
  - AADMER Work Programme (2016-2020)





# Issues

- Communities in Myanmar, especially poor and most vulnerable face a high disaster risk – **extreme events and ‘everyday disasters’**
- Disaster risk is influenced by **inadequate development** practices and existing **socioeconomic vulnerabilities**
- **Climate change** will further increase disaster risk in Myanmar
- Projects to strengthen community disaster resilience are usually:
  - designed in **isolation** from community/local development projects,
  - lack in scale (**‘pilots’**),
  - fail to tackle **underlying causes of disaster risk**



# Early Warning System in Myanmar

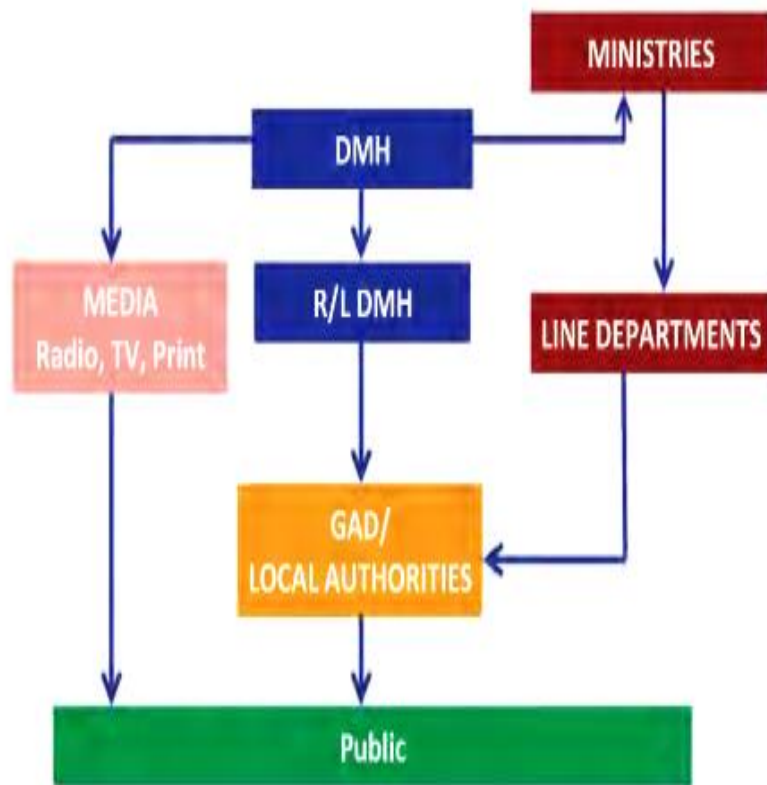
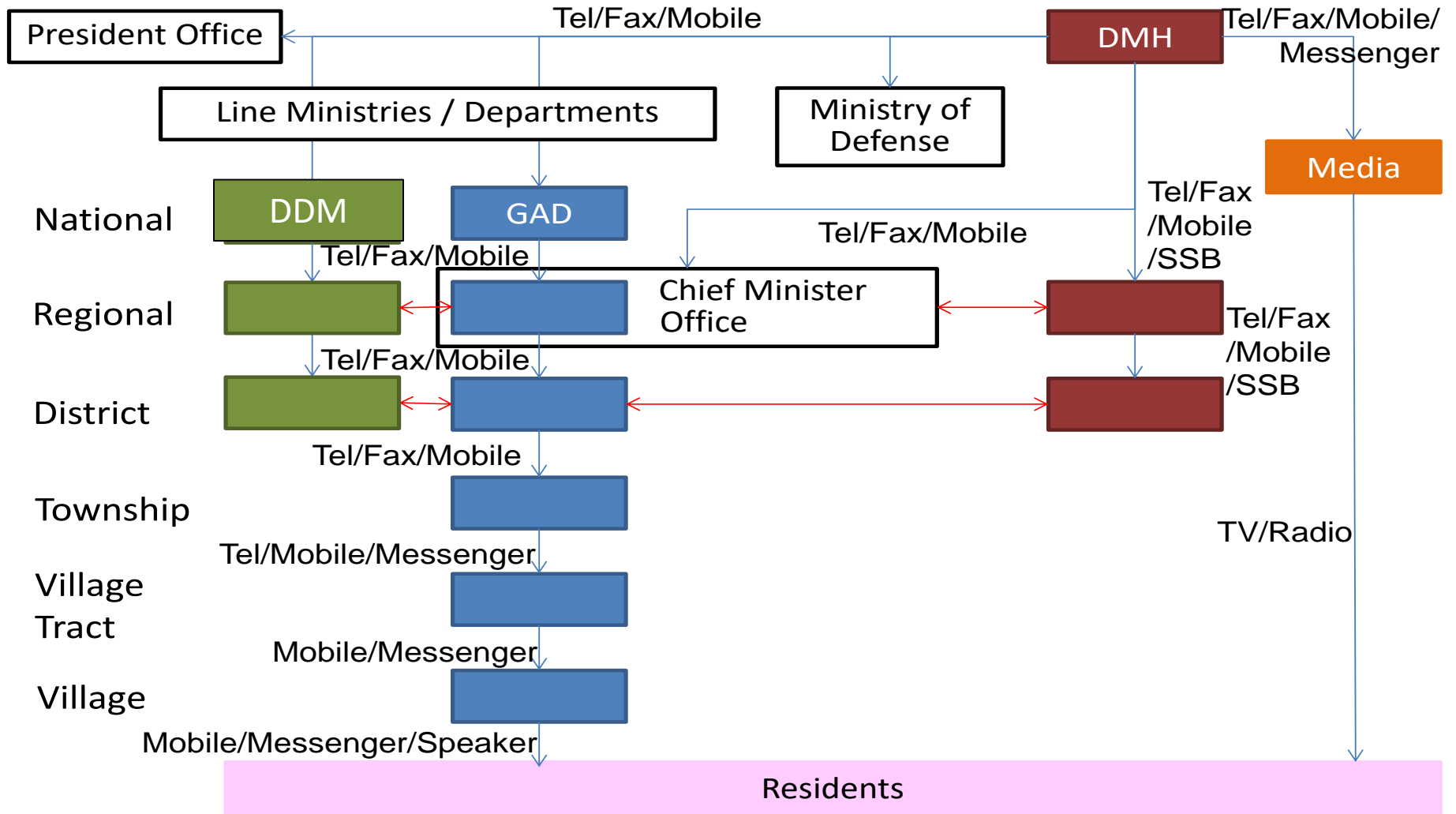


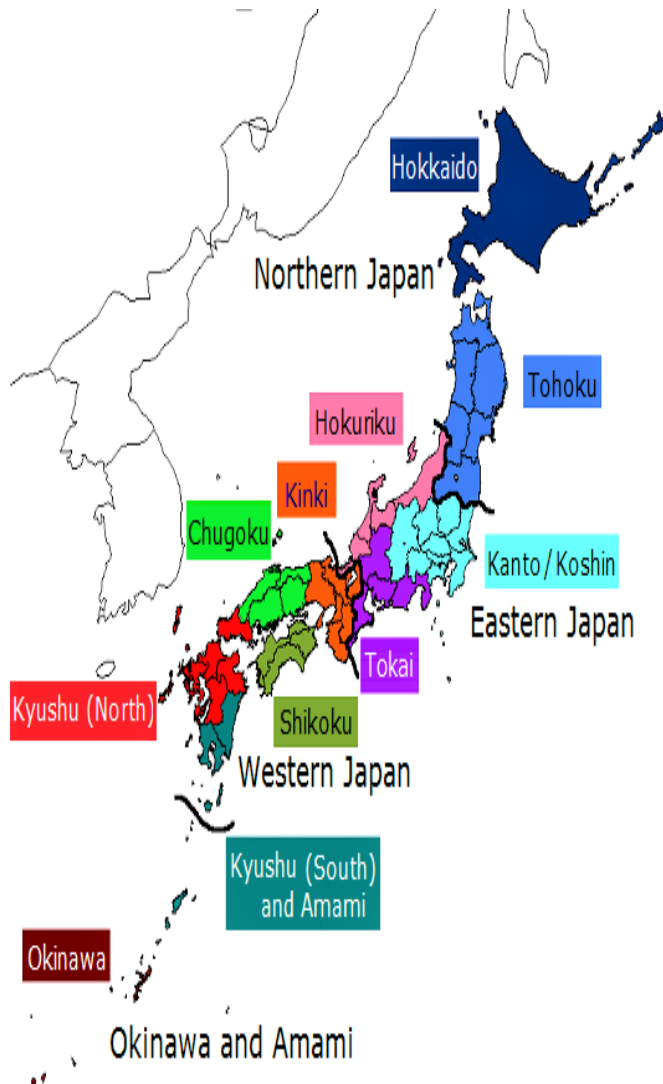
Figure 25. DMH's dissemination process for information of various timescales.

- *DMH* is the noble agency responsible to issue timely warning to public on Cyclone, Flood, Tsunami.
- Department of Disaster Management *DDM*, Department of Meteorology and Hydrology *DMH* and General Administration Department *GAD* are *main organizations* in charge of Early Warning on DRM in Myanmar.

# *Information transmission route*



## *Brief Profile of Japan*



Japan is an island country located in the western Pacific Ocean. Total land area is about 378,000 square kilometers. More than 70 percent of land surface is mountainous. As it is situated along the circum-Pacific volcanic belt, Japan has several volcanic regions and frequently affected by earthquakes and Tsunami.

The capital is Tokyo. Total population is about 127.77 million. Japan is divided into 47 administrative prefectures and eight traditional regions.

## *Recent Major Disasters in Japan*

- *Great Hanshin –Swaji Earthquake 1995*
- *Mid Niigata prefecture Earthquake 2004*
- *The Great East Japan Earthquake*
- *Northern Kyushu Torrential Rain (July 2017)*
- *Typhoon 21 (October 2017)*
- *West Japan Torrential Rain (July 2018)*
- *Typhoon Hagibis 2019*

# Disaster Management System of Japan

## Outline of the Disaster Management System





# The Basic Disaster Management Plan

## 防災基本計画の策定・修正経緯 History of Basic Disaster Management Plan

年 Year	内容 Contents
昭和38年 1963	作成 Initial plan drawn up
昭和46年 1971	地震対策、石油コンビナート対策等に係る修正 Revision of Earthquake Disaster Countermeasures and Petroleum Industrial Complexes Disaster Countermeasures
平成7年 1995	自然災害対策編の全面的な修正 Overall Revision of Natural Disaster Countermeasures
平成9年 1997	事故災害対策編の追加 Addition of Accident Disaster Countermeasures
平成12年 2000	原子力災害対策編の全面的な修正 Overall Revision of Nuclear Disaster Countermeasures
	省庁再編に伴う修正 Revision along with a series of reforms of the central government system
平成14年 2002	風水害対策編、原子力災害対策編の修正 Revision of Storm and Flood Countermeasures and Nuclear Disaster Countermeasures
平成16年 2004	震災対策編の修正 Revision of Earthquake Disaster Countermeasures
平成17年 2005	自然災害対策に係る各編の修正 Revision of Natural Disaster Countermeasures

- *The Basic Disaster Management Plan* is a basic plan for disaster reduction in Japan prepared by the National Disaster Management Council in accordance with *Article 34, Paragraph 1 of the Basic Act on Disaster Management*
- and is subject to consideration "every year the results of scientific research on disasters and disaster prevention, the situation of disasters that have occurred, and the effects of emergency disaster response measures taken in response to such disasters, and it is revised if necessary."
- Based on the Basic Disaster Management Plan, local governments must prepare local disaster management plans, and designated administrative organizations and designated public corporations need to prepare and revise disaster reduction operation plans.



## *Community Disaster Management Plan” (CDMP),*

- ✓ In the aftermath of the Great East Japan Earthquake, the limitations of the government’s activities, and the importance of “mutual-help” in collaboration with local municipalities became apparent.
- ✓ Consequently, the Cabinet Office amended the Disaster Countermeasures Basic Law in June 2013, and created the “Community Disaster Management Plan” (CDMP), a plan for disaster management activities by businesses and residents of local communities.
- ✓ From the perspective of social capital, disaster management activities based on the CDMP will lead to local community participation in town planning, even during the preliminary reconstruction phase.

# *Study on community-based disaster preparedness and prevention activities in Tamba City Japan*



- *ADRC VRS visited to study about Torrential Rain Disaster in Tamba City on 3 March, 2023.*
- *met Mr. Yohei SHIBAHARA, Life Safety Section, Living Environment Division, Tamba City.*
- *discussed about geography and disaster profile of Tamba city and how to response to and recovery efforts from 2014 Torrential Rain Disaster.*

## *Location /Geographical feature*

- ❖ *Area 493.21 Km<sup>2</sup> (75% is forest), Population (66300 persons), Households ( 25444 )*
- ❖ *located at the eastern end of the Chugoku Mountain, the Geographically belongs to the hilly and mountainous area formed by mountains with steep slopes. The lowest central watershed in Japan, located at 95m above sea level.*

## *Damage and loss data of disaster-Stricken in Tamba city*

<b>Items</b>	<b>Tamba city</b>
<b>Date of Disaster occurrence</b>	August 16 to 17,2014
<b>Human suffering (death toll)</b>	1
<b>Damage of residential houses</b>	18 totally destroyed,51 half destroyed, 954 partially-damaged (including inundation below floor level) Total 1023 houses
<b>Amount of drained soil</b>	Approx. 500 thousand m <sup>3</sup>
<b>Precipitation</b>	Approx. 100 mm per hour Approx. 300 mm per hours
<b>Forest land collapse</b>	256 sites
<b>Number if volunteer</b>	Approx. 18000 persons
<b>Donation</b>	Approx. 0.22 billion yen

Source: Lecture by Mr. Yohei SHIBAHARA,Life Safety Section, Living Environment Division, Tamba City

# lessons learnt from the past disaster and then preparedness for future disasters

The local Government and community are lessons learnt from the past disaster and then preparedness for future disasters is as follow;

1. The local government has provided the Radio to each household (about 25 thousand household) free of charge. Local government issue evacuation advisory through disaster management radio system.
2. Each local residents' association prepared self-made hazard map.
3. Frequently mixing well with the neighbors (mutual-help System)

*'The Tamba City Disaster Prevention Association was awarded the Hyogo Prefecture Kusunoki Award''*

In the event of a disaster, the mutual help of local residents, known as "mutual aid," is essential. The city is also promoting the establishment of a "voluntary disaster prevention organization". August 16 was designated as Tamba City's Heart-to-heart Disaster Prevention Day.

Source: <https://www.city.tamba.lg.jp/soshiki/bousai/bousaimapzentai.html>

# Conclusion

This paper presents community-based Disaster Risk Management in Myanmar and Japan. Especially , This paper focuses on community based Disaster preparedness and prevention .

## *Myanmar*

- ✓ Myanmar has Disaster Management Plans at all levels which need to update/develop the old ones according to the time and circumstances of the country's situations.
- ✓ CBDRM needs to be implemented across the country.
- ✓ Myanmar National Framework for Community Disaster Resilience aimed at “Promoting People-centered, Inclusive, and Sustainable Development”.
- ✓ Strengthening community disaster resilience also requires a coherent approach that includes Community Engagement Disaster Risk Information, Disaster Risk Governance.(NFCDR)

## *Japan*

- ✓ Japan, one of the most disaster-prone countries in the world, has developed a sophisticated and comprehensive disaster management system.
- ✓ Local communities play a key role in preparing for disastrous events, such as the Great East Japan Earthquake (GEJE), as the first responders to take action.
- ✓ The local government and community are understood to promote self-help initiatives to protect one's own life, mutual assistance initiatives to help and support each other in the community, and efforts to build a safe and secure society.
- ✓ Japan has the Museums in which the person who are interested on DRR can touch the image of past disasters and can suffer the messages they want to hand over to their generations.
- ✓ The maintenance of the records (photos, documentation, and some samples of broken physical features) about the past disasters is very systematic.
- ✓ These museums remind all visitors of the importance of disasters preparedness and prevention.



*Thank You  
For your attention*

