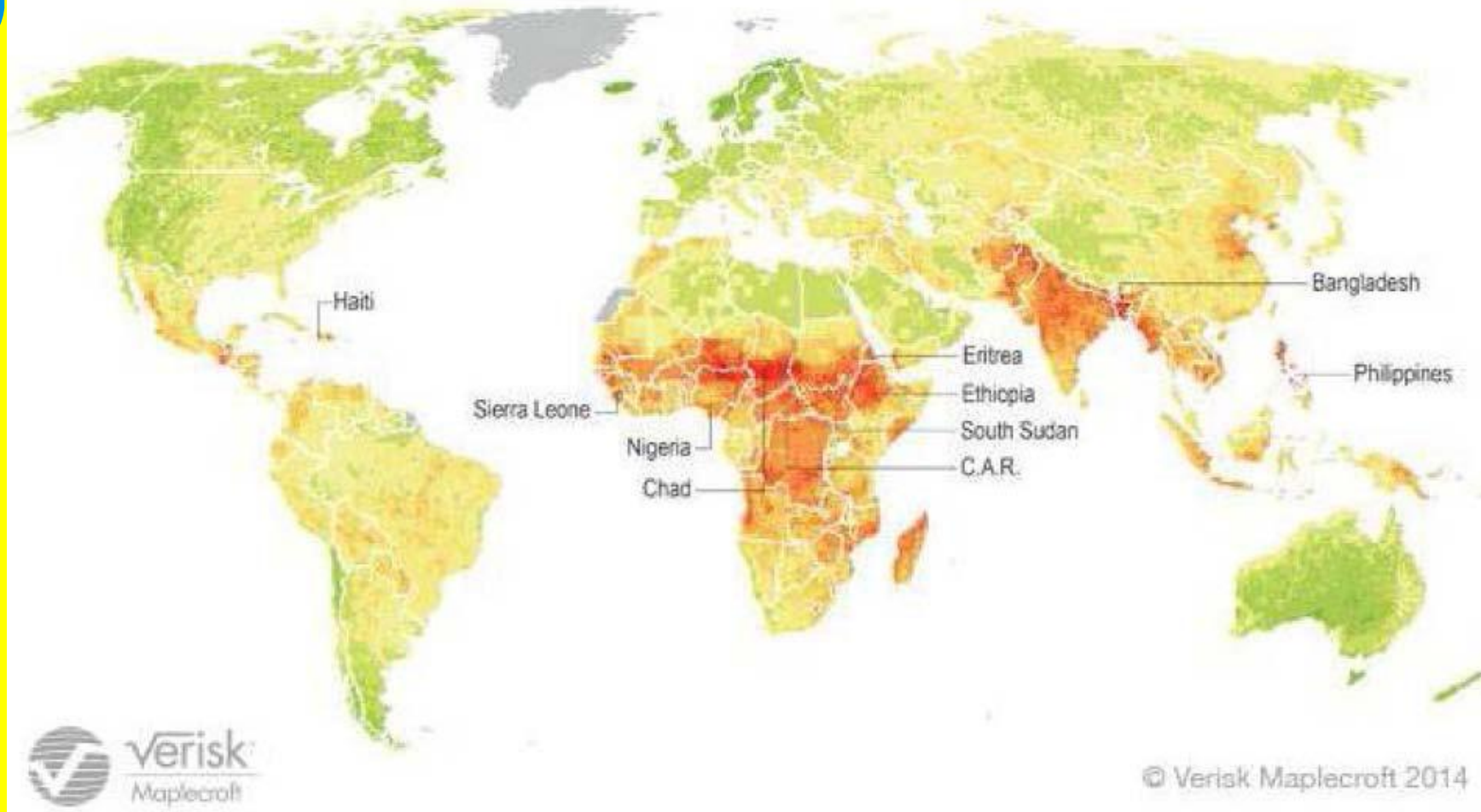
Water Resource Management
&
Disaster Risk Reduction

Ministry of Social Welfare,
Relief and Resettlement

Table 1: The Long-Term Climate Risk Index (CRI): the 10 countries most affected from 1994 to 2013 (annual averages)

CRI 1994–2013 (1993–2012)	**Country**	**CRI score**	Death toll	Deaths per 100,000 inhabitants	Total losses in million US$ PPP	Losses per unit GDP in %	Number of Events (total 1994–2013)
1 (1)	Honduras	10.33	309.70	4.60	813.56	3.30	69
2 (2)	Myanmar	14.00	7137.40	14.80	1256.20	0.87	41
3 (3)	Haiti	16.17	307.80	3.41	261.41	1.86	61
4 (4)	Nicaragua	16.67	160.15	2.98	301.75	1.71	49
5 (7)	Philippines	19.50	933.85	1.13	2786.28	0.74	328
6 (5)	Bangladesh	20.83	749.10	0.54	3128.80	1.20	228
7 (6)	Vietnam	23.50	391.70	0.48	2918.12	1.01	216
8 (8)	Dominican Republic	31.00	210.45	2.38	274.06	0.37	54
9 (10)	Guatemala	31.17	83.20	0.68	477.79	0.62	80
10 (12)	Pakistan	31.50	456.95	0.31	3988.92	0.77	141

Reference: Kreft S. et al, **Global Climatic Risk Index 2015.**
Available at www.germanwatch.org



Myanmar is ranked as **19**, among most vulnerable to climate change

Reference: Verisk Maplecroft, Climate Change& Environmental Risk Atlas 2015, Available at http://maplecroft.com/...

Situation of Disaster Risk

WorldRiskIndex overview

Rank	Country	WorldRiskIndex	Exposition	Vulnerability	Susceptibility	Lack of coping capacities	Lack of adaptive capacities
1.	Vanuatu	36.50 %	63.66 %	57.34 %	36.40 %	81.16 %	54.45 %
2.	Philippines	28.25 %	52.46 %	53.85 %	33.35 %	80.03 %	48.17 %
3.	Tonga	28.23 %	55.27 %	51.08 %	29.15 %	81.80 %	42.28 %
4.	Guatemala	20.68 %	36.30 %	56.98 %	37.92 %	80.84 %	52.19 %
5.	Bangladesh	19.37 %	31.70 %	61.10 %	40.28 %	86.05 %	56.96 %
6.	Solomon Islands	19.18 %	29.98 %	63.98 %	45.37 %	85.44 %	61.12 %
7.	Costa Rica	17.33 %	42.61 %	40.68 %	22.98 %	64.61 %	34.46 %
8.	El Salvador	17.12 %	32.60 %	52.52 %	32.10 %	75.35 %	50.13 %
9.	Cambodia	17.12 %	27.65 %	61.90 %	41.99 %	86.96 %	56.74 %
10.	Papua New Guinea	16.74 %	24.94 %	67.15 %	56.06 %	84.22 %	61.16 %
40.	Afghanistan	9.71 %	13.17 %	73.73 %	55.93 %	93.37 %	71.89 %
41.	Burkina Faso	9.62 %	14.32 %	67.17 %	55.39 %	84.06 %	62.05 %
42.	Cote d'Ivoire	9.29 %	13.67 %	67.95 %	48.44 %	87.56 %	67.84 %
43.	Myanmar	9.14 %	14.87 %	61.48 %	37.32 %	87.21 %	59.92 %
44.	Mozambique	9.03 %	12.73 %	70.89 %	65.89 %	84.15 %	62.64 %
45.	Mali	8.85 %	12.55 %	70.52 %	55.21 %	85.15 %	71.21 %
46.	Ghana	8.77 %	14.48 %	60.56 %	45.17 %	77.63 %	58.88 %
47.	Uzbekistan	8.67 %	16.18 %	53.61 %	30.79 %	78.42 %	51.62 %
48.	Guinea	8.53 %	12.03 %	70.94 %	54.04 %	89.29 %	69.51 %
49.	Suriname	8.42 %	18.12 %	46.48 %	28.21 %	70.96 %	40.27 %

Reference: United Nations University& Alliance Development Works, World Risk Report 2014. Available at www.worldriskreport.org

- **According to the World Disaster Report (WDR, 2003) the most common natural disasters are classified into two categories:**

(i) **Hydro meteorological disasters-**landslides/avalanches; droughts/famines; extreme temperatures and heat waves; floods; hurricanes; forest fires; wind storms; insect infestation and storm surges.

(ii) **Geophysical disasters -** earthquakes; volcanoes and tsunamis.

Water-related hazards

- Water-related hazards form a subset of natural hazards; the most significant ones include floods, mudslides, storms and related ocean storm surge, heat waves, cold spells, droughts and waterborne diseases.
- As climate change increases the frequency and intensity of extreme weather, the number of water-related disasters is expected to rise.
- Water-related hazards account for 90% of all natural hazards, and their frequency and intensity is generally rising.

- Water-related risks arise from too much water, too little water, or polluted water.
- Climate change is disrupting the global water cycle and will increase the frequency and severity of disasters.
- Water-related disasters pose both direct impacts (e.g. damage to buildings, crops and infrastructure, and loss of life and property) and indirect impacts (e.g. losses in productivity and livelihoods, increased investment risk, indebtedness and human health impacts).

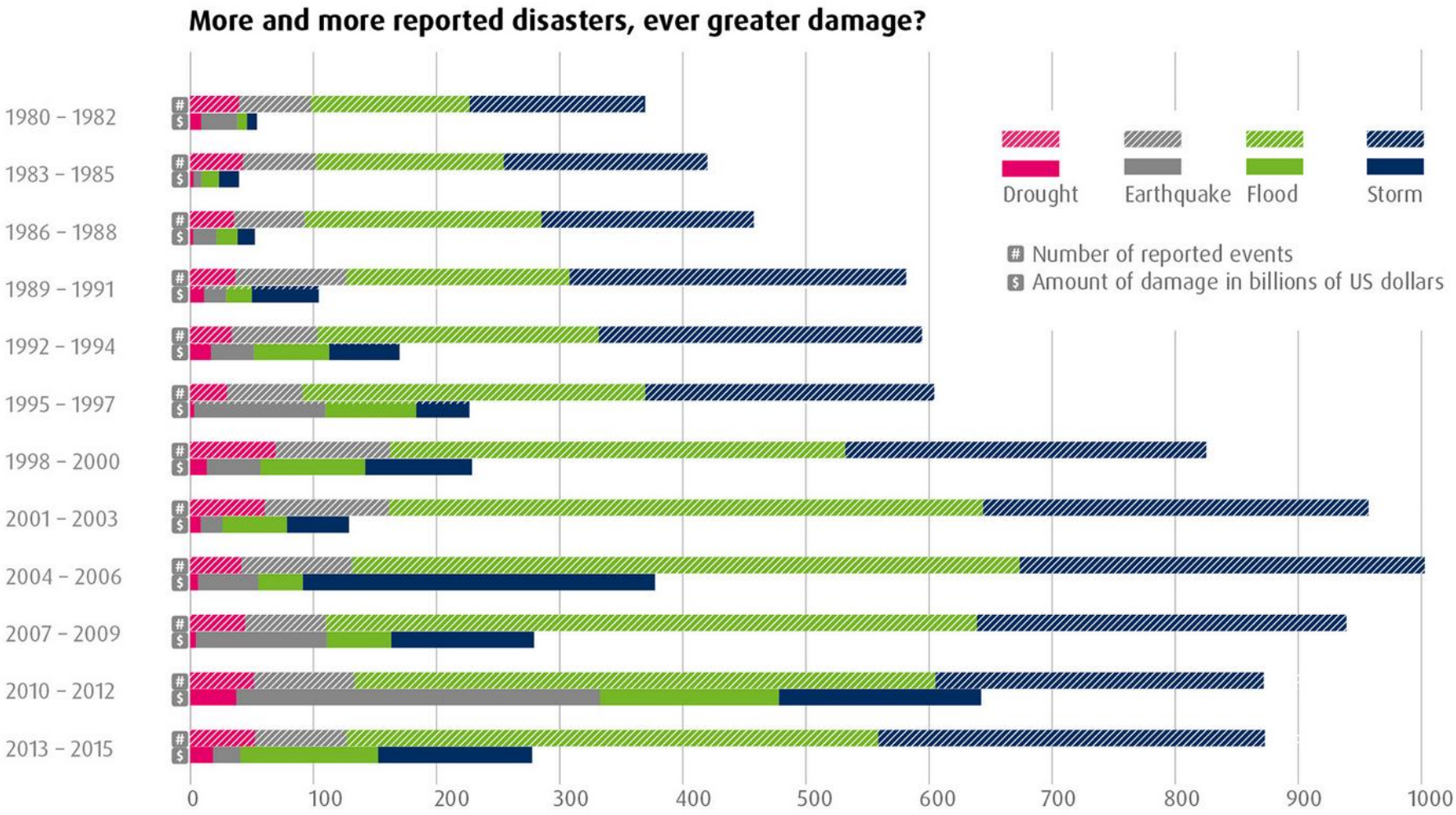


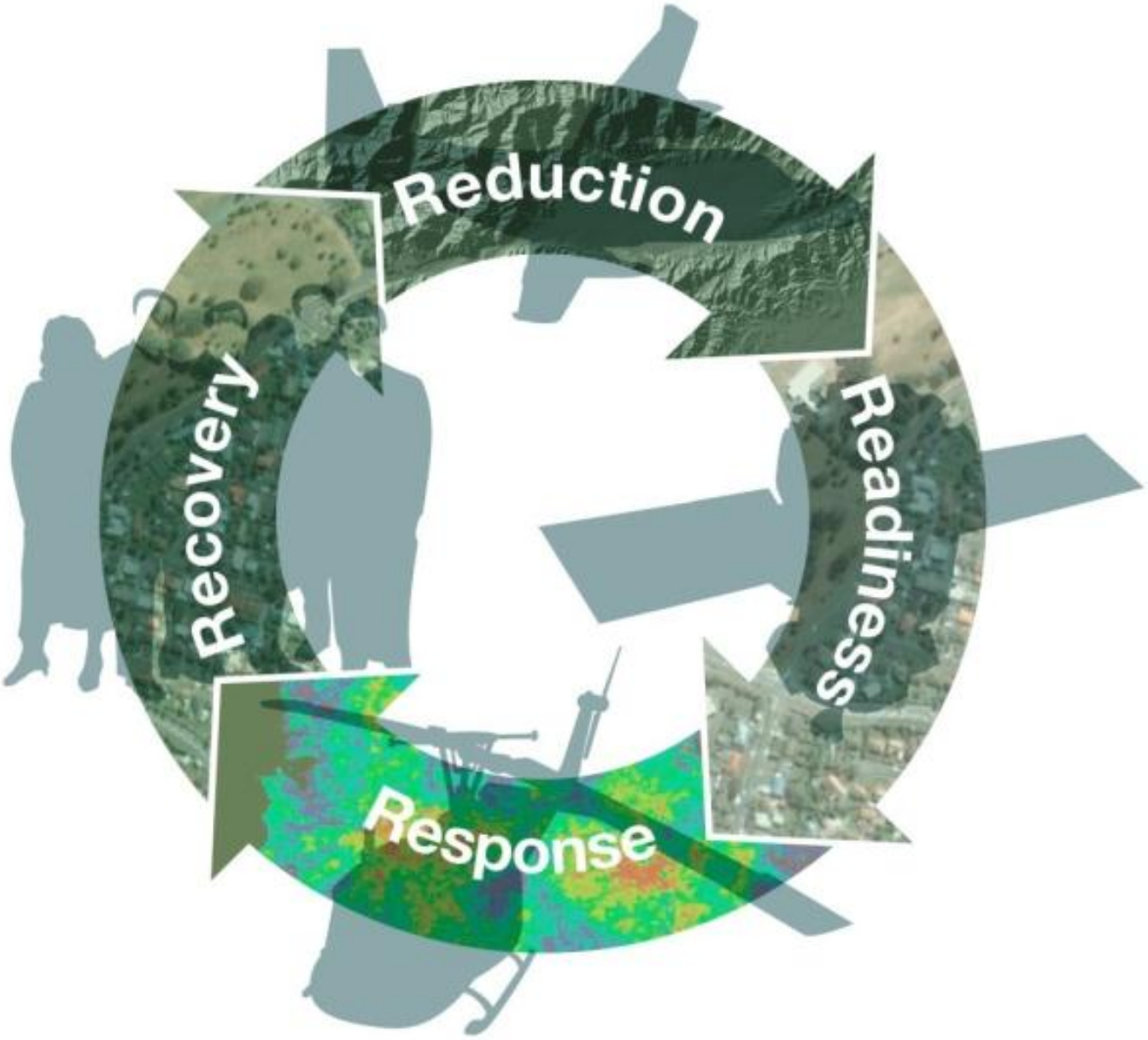
Figure 1: Number of reported disasters and the amount of damages
(Sources: EM-DAT, The OFDA/CRED International Disaster Database)

- Improving individual and institutional capacity will be key in reducing water-related disaster risks and vulnerabilities and adapting to climate change impacts
- Integrated Water Resources Management is an effective way to strengthen resilience for disaster risk reduction and climate change adaptation.
- Encouraging other sectors to consider water in their policies and planning is the only way to ensure water-related disaster risk reduction.
- Water management is key in disaster risk reduction and building resilience.
- Reduce the risk of droughts and floods through more effective water resources management.
- DRR aims to minimize disaster losses in the short-term and put in place possible measures for disaster prevention in the longer-term.

Disaster Management System in Myanmar

Four Goals of Disaster Management

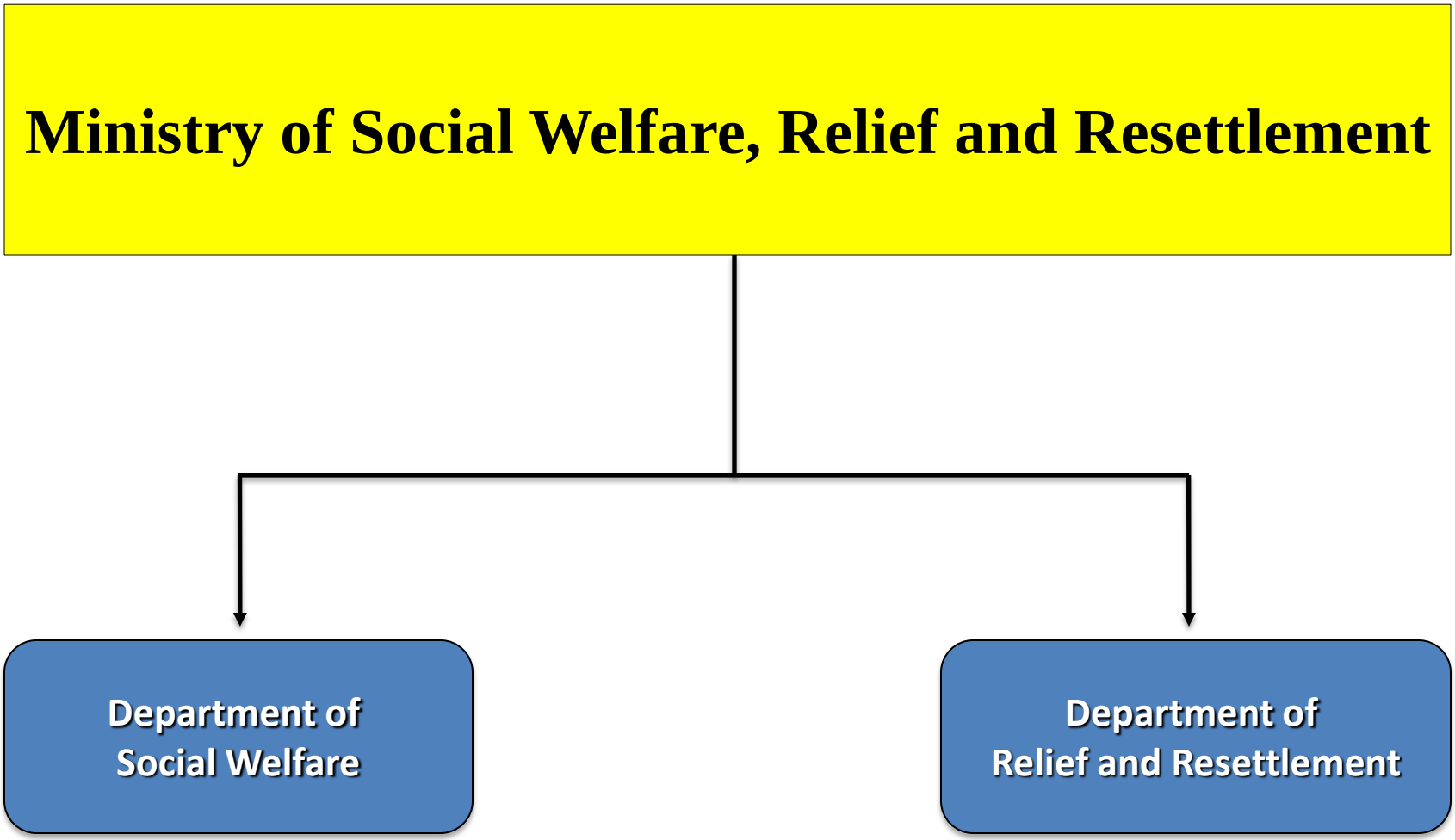
- Save Lives
- Prevent Injuries
- Protect Property
- Protect the Environment


Reduction
Readiness
Response
Recovery

National Disaster Management Committee

Chaired by Vice-President

- National Disaster Management Working Committee
- International Relations Working Committee
- Information Working Committee
- Transportation and Communication Working committee
- Health Care Management Working Committee
- Recovery and Reconstruction Working Committee
- Search and Rescue Working Committee
- Security Working Committee
- Livelihood Restoration Working Committee
- Environmental Conservation Working Committee
- Initial Need Assessment, Damage and Loss Confirmation Working Committee
- Financial Management Working Committee
- Disaster Management Advisory Group


Ministry of Social Welfare, Relief and Resettlement
Department of Social Welfare
Department of Relief and Resettlement

Coordination, Cooperation and Communication System For Disaster Management

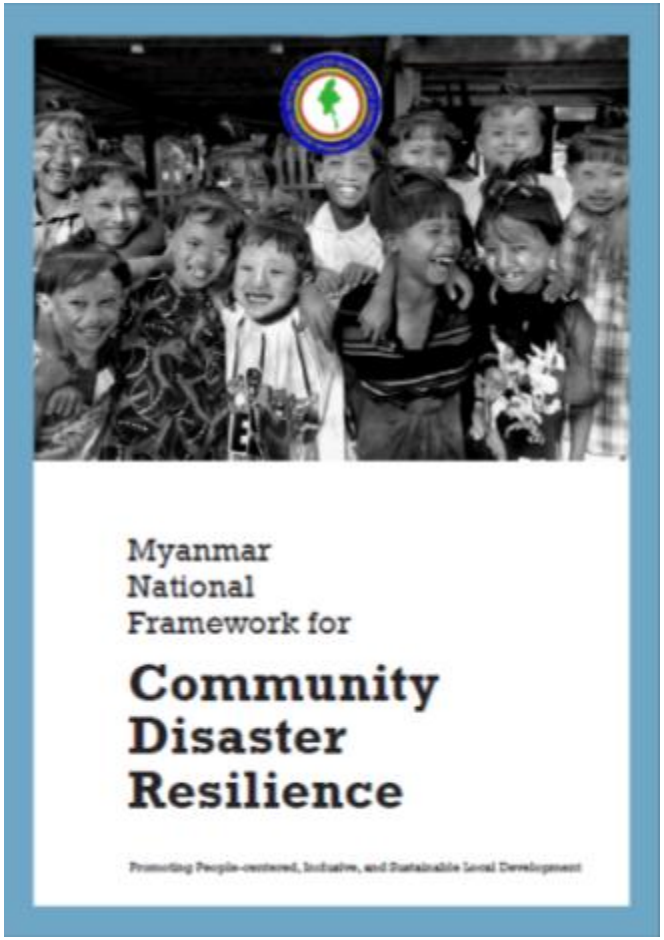
Myanmar Action Plan on Disaster Risk Reduction

- Stock take of MAPDRR, 2012 implementation started in March 2016
- Lessons learnt workshop to draw lessons for new MAPDRR (April 2016)
- Workshop ‘Towards a Safe and Resilient Myanmar-Translating the Global and Regional DRR and Resilience Frameworks into National Actions through a New MAPDRR’ (15 June 2016 in NPT)
- First Task Force Meeting (27 October 2016)
- First Technical Working Group Meeting (30 November 2016)

Myanmar 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,
  - ASEAN Agreement on Disaster Management and Emergency Response- AADMER

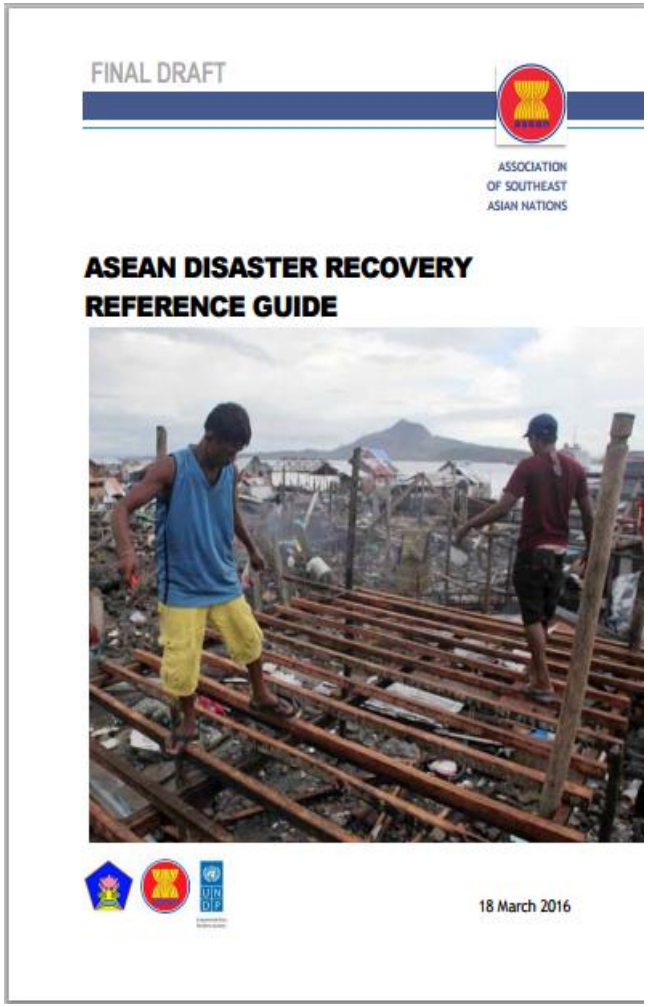


Myanmar National Framework for Community Disaster Resilience

- **Key Sectors and Themes for Strengthening Community Disaster Resilience, selected based on opportunities for community engagement**
  1. Rural Development
  2. Agriculture
  3. Urban Development
  4. Environmental Conservation and Forestry
  5. Financial Inclusion
  6. Social Protection
  7. Disaster Preparedness
- Sectors and Themes that provide opportunities to reduce risk and/or manage residual disaster risk

ASEAN Disaster Recovery Reference Guide

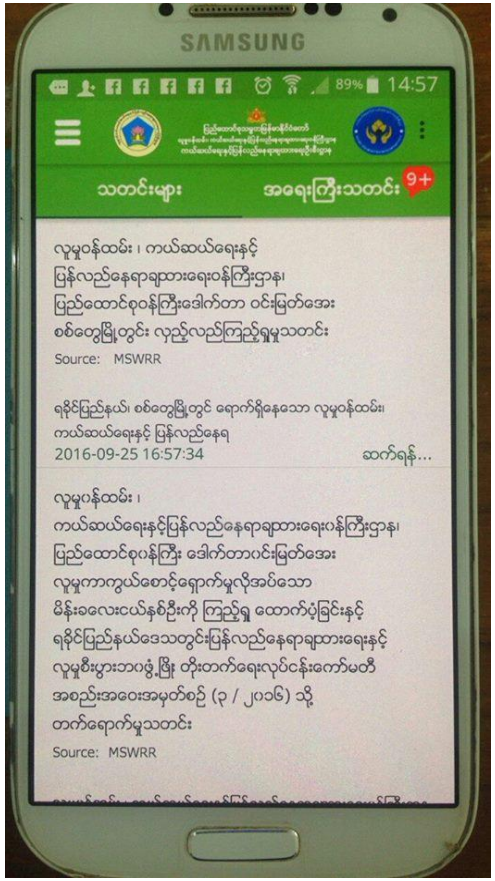
- Aims to assist ASEAN Member States to prepare for more effective and resilient recovery by proactive planning and capacity building.
- AMS have adequate experience in disaster response and recovery; and the guide derives from extensive experiences and lessons of the countries which have encountered the major disaster events such as the Indian Ocean Tsunami (2004), Cyclone Nargis (2008), Thailand Floods (2011) and Typhoon Haiyan (2013).
- Builds on these experiences to standardize procedures and arrangements for management of recovery.



Disaster Management Training Center

- Situated at Hintada township, Ayeyarwaddy Region
- Functioning since December 2015.
- Objective- To enhance capacity of individuals and institutions participating in disaster management , To develop standardization in disaster management in accordance with international practice, To improve research and development in disaster management

User friendly mobile application- Disaster Alert Notification



News

- News and Early Warning Notifications
- Timely provide disaster related information, weather news and other updates on disaster risk reduction activities in Myanmar.
- Sends notifications about the early warning information on potential disaster situation to the users.

2015 Floods and Landslides- Impact on Myanmar Communities

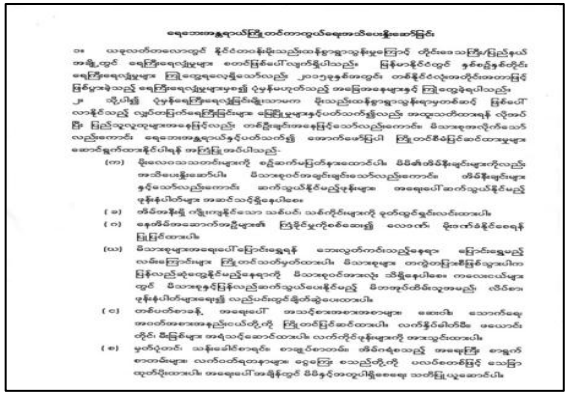
- Floods and landslides affected **12 out of 14 states** in Myanmar , caused **132 fatalities** and **displaced 1.6m people**

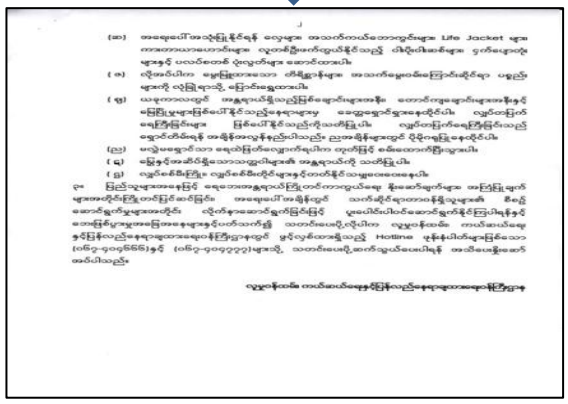
- Destroyed **houses, roads, bridges and other infrastructure, impacted rural livelihoods**.

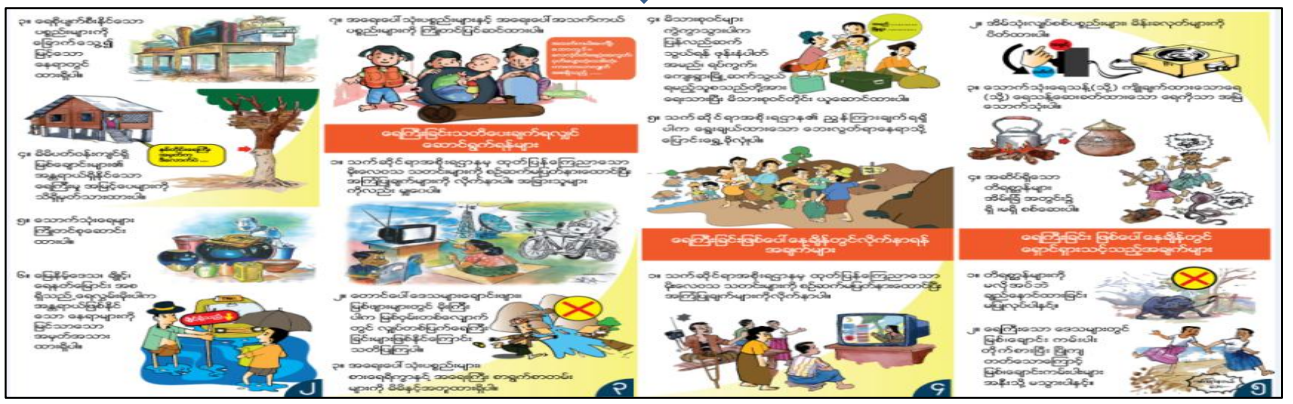
- **Low quality of housing, lack access to basic services and local infrastructure** – increased disaster vulnerability.

- Rural communities in remote areas, **poorer households, women, children, elderly are the most impacted**

၂၀၁၆ခုနှစ်၊ ရေကြီး/ရေလျှံမှုများကြောင့် ထိခိုက်ပျက်စီးမှု အခြေအနေနှင့် ရေဘေးအန္တရာယ် ကြိုတင်ကာကွယ်ရေး ပြည်သူသို့ အသိပေးနှိုးဆော်ခဲ့မှုအခြေအနေ







ရေဘေးအန္တရာယ်ကြိုတင်ပြင်ဆင်ရေး/ကြိုတင်ကာကွယ်ရေးနှင့် ဆောင်ရန်/ရှောင်ရန်အချက်များကို ပြည်သူများသိရှိလိုက်နာဆောင်ရွက်တတ် စေရန် ရုပ်သံမီဒီယာမှတဆင့် ထုတ်လွှင့်အသိပညာပေးခြင်းနှင့် လက်ကမ်းစာစောင်များ ဖြန့်ဝေခြင်းများ ဆောင်ရွက်ခဲ့ပါသည်။

Support for water shortage in 2016

ပဲခူးတိုင်းဒေသကြီးဦးစီးမှူးရုံးမှ တာဝန်ရှိသူများသည် ကဝမြို့နယ်၊ ခမုန်းလေးကျေးရွာနေပြည်သူများ အတွက် သောက်သုံးရေများ ဖြန့်ဝေပေးနေစဉ်

ကယ်ဆယ်ရေးနှင့် ပြန်လည်နေရာချထားရေးဦးစီးဌာန၊ ဖျာပုံခရိုင်ဦးစီးမှူးရုံးမှ တာဝန်ရှိသူများသည် ဖျာပုံမြို့နယ်၊ မြစ်တန်းကျေးရွာသို့ သောက်သုံးရေ ဖြန့်ဝေပေးနေစဉ်

မကွေးတိုင်းဒေသကြီးဦးစီးမှုးရုံး (ကဆရ) မှ တာဝန်ရှိသူများသည် နတ်မောက်မြို့နယ်၊ ဒိုင်စောက်ကျေးရွာနှင့်၊ ကျူချောင်းကျေးရွာ ပြည်သူများအတွက် သောက်သုံးရေများ ဖြန့်ဝေပေးနေစဉ်

ရခိုင်ပြည်နယ်ဦးစီးမှူးရုံးမှ တာဝန်ရှိသူတစ်ဦးက ရခိုင်ပြည်နယ်၊ ပုဏ္ဏားကျွန်းမြို့နယ်၊ လက်ဝဲမြန်ကျေးရွာရှိပြည်သူများအတွက် ရေသန့်ဘူးကြီးများ ဖြန့်ဝေပေးနေစဉ်

WATER DISASTER PREPAREDNESS AND SUSTAINABLE ***WATER RESOURCES MANAGEMENT***

ARE KEY ELEMENTS FOR

DISASTER RISK REDUCTION

Thanks for your kind attention