Disaster related statistics and Disaster Risk Financing

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Introduction

- Disasters caused by natural and man-made hazards have a significant impact on societies and economies worldwide.

- In the last two decades, 62 million people were Directly affected by disasters in countries without an operating early warning system (2023 Global Assessment Report on Disaster Risk Reduction).

- The frequency of disasters is increasing, and developing countries face higher risks.

- The number of People exposed to extreme weather events (flood, drought, cyclone, or heatwave) an increase from 4 billion in 2010 to 4.5 billion in 2019 (World Bank: Policy Research Working Paper 2023).

- Mis-and disinformation is perceived as the greatest short-term risk the world faces, followed by extreme weather event (Global Risks Report 2025).

- The ability to understand, monitor, and respond to these events is crucial for effective DRM and mitigation efforts.

- Disaster-related statistics plays an important role in informing decision-making, formulating policies, and allocating resources for disaster prevention, preparedness and response.

Global disaster losses by continent

Disasters undermine development gains and Its Adverse effect is an equal.

Development i.e. GDP Growth % annual rate

Original Development Path

Disaster Event

post disaster trend

Time

Proportion of Economic Losses by Continent in 2023

US$15.1B Europe 7.4%

8%

US$75.9B

Asia 37.5%

40.2%

US$88.9B

Americas 43.9%

48.1%

US$13.7B Africa 6.8%

1%

US$9.0B Oceania 4.4%

2.7%

2023

2003-2022

Source: CRED (2024). 2023 Disasters in Numbers

Hazard and Disasters in Ethiopia

Afar Region, Dulech Wereda, Dofan Mountain- Volcano

- More than 58,000 people have left their homes.

- The roads are damaged.

- Around 16 schools destroyed, 21 damaged

- Kesem Sugar Factory damaged and all employees(Around 4,000) forced to flee, leaving them displaced.
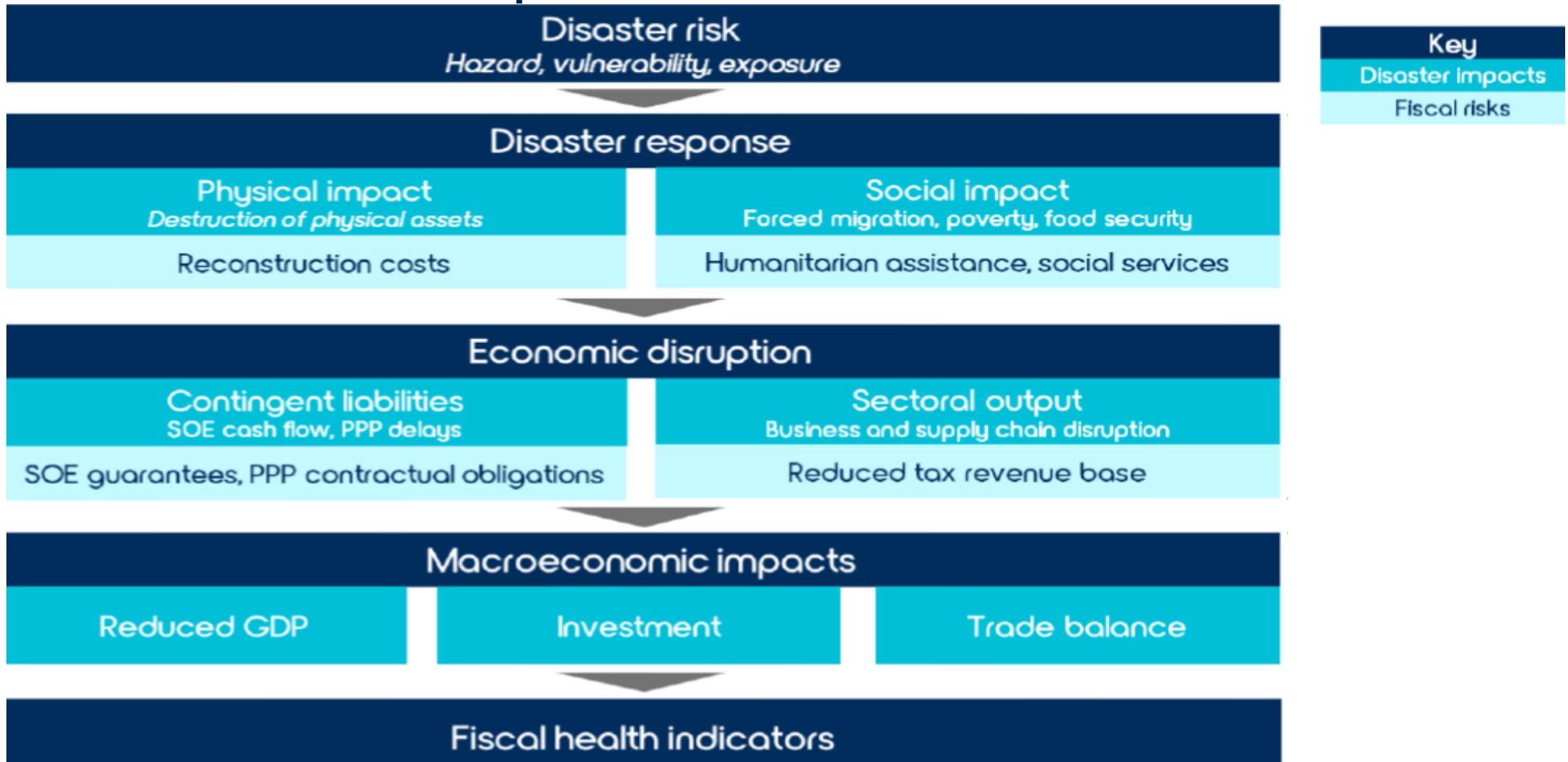
Cont...

- More than 230 people have reportedly died and more than 14,000 affected by landslide incidents on 21 and 22 July 2024 in Gofa Zone, South Ethiopia;

- Over the past three years, 3.3 million livestock have perished, approximately worth 3.3 billion birr due to climate-related humanitarian crises happened for three (2021-2023) Years in Borena, Oromia Region.
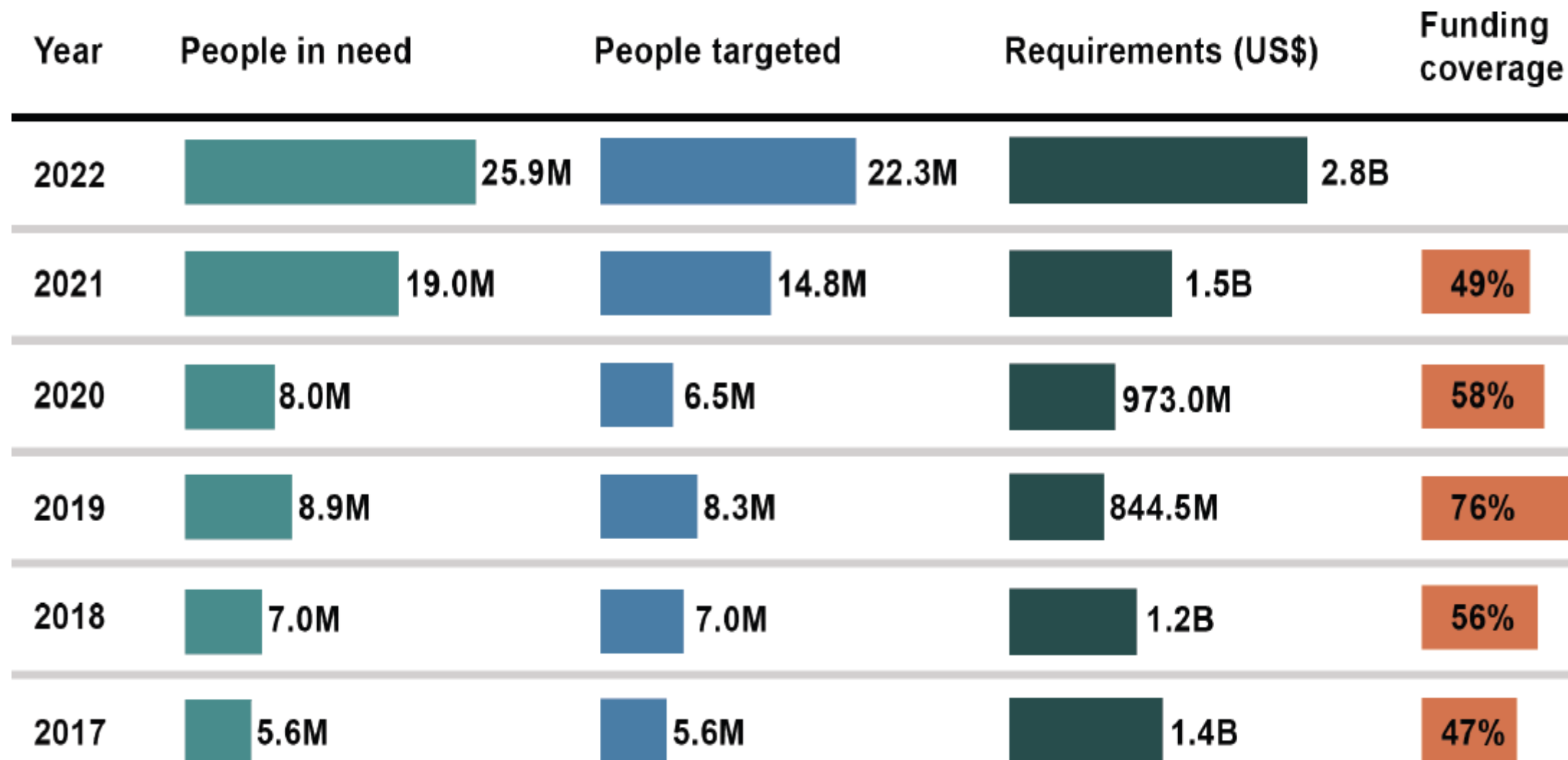
Disaster Impact and Fiscal Risk

Disaster risk
Hazard, vulnerability, exposure

Disaster response

Physical impact	Social impact
Destruction of physical assets	Forced migration, poverty, food security
Reconstruction costs	Humanitarian assistance, social services

Economic disruption

Contingent liabilities	Sectoral output
SOE cash flow, PPP delays	Business and supply chain disruption
SOE guarantees, PPP contractual obligations	Reduced tax revenue base

Macroeconomic impacts

Reduced GDP	Investment	Trade balance

Fiscal health indicators

Key
Disaster impacts
Fiscal risks

Source: Vivid Economics

Fiscal impacts of varying levels of Drought and flood

Drought return period	Agriculture gross value added (GVA) loss (%)	Hydropower loss (%)	GDP loss (%)	Loss of general government revenue* (%)	Additional number of people in need of assistance**	Expenditure need (US$ million)
1 in 5	0.26	1.33	0.26	0.17	7,464,880	797.25
1 in 10	0.58	3.18	0.57	0.38	9,522,784	1,017.03
1 in 30	1.16	6.02	1.14	0.76	12,668,642	1,353.01
1 in 38	1.26	6.67	1.24	0.83	13,163,119	1,405.82
1 in 50	1.42	7.37	1.39	0.93	13,904,835	1,485.04
1 in 100	1.79	9.44	1.76	1.17	15,262,800	1,630.07

Flood return period	Agriculture GVA loss (%)	Other sector loss (%)	GDP loss (%)	Loss of general government revenue (%)*	Cost of humanitarian aid (US$m)**	Cost of reconstruction (US$m)	Total cost of disaster (US$m)
1 in 10	0.18	0.19	0.52	0.19	32.50	91.32	123.82
1 in 30	0.20	0.32	0.62	0.32	59.94	112.45	172.39
1 in 50	0.22	0.41	0.67	0.41	74.55	123.70	198.25
1 in 100	0.24	0.71	0.76	0.71	99.01	145.81	244.81

Source: DRM-Financing Strategy (MOF, Disaster-Related Fiscal Risk quantification Model)

Ethiopia's appeals for international assistance, 2017–2022

Year	People in need	People targeted	Requirements (US$)	Funding coverage
2022	25.9M	22.3M	2.8B	
2021	19.0M	14.8M	1.5B	49%
2020	8.0M	6.5M	973.0M	58%
2019	8.9M	8.3M	844.5M	76%
2018	7.0M	7.0M	1.2B	56%
2017	5.6M	5.6M	1.4B	47%

Source: OCHA 2022c. of Ethiopian Climate and disaster risk Finance diagnostic 2022

Disaster Risk Financing methods and instruments

## DRF instrument: EX-ante, Ex-post and Risk Transfer

❖ Contingency budget

❖ Budget reallocations

❖ Risk transfer instruments

❖ Establishment and administration of the Green Legacy initiative and degraded land rehabilitation special fund Proclamation 1361/2017 (between 0.5% to 1% of the federal Annual budget). Also, Support from development partners, civil society and the private sector expected.

❖ External grants from development partners: Example
  ◎ Bilateral (Denmark, Norway, UK, Austria)
  ◎ Multilateral Climate Finance (GCF, Adaptation Fund)
  ◎ International Development Finance (World Bank) and
  ◎ international organization (EU and UNDP)

Disaster related statistics

❖ Standardized, high quality, integrated statistics is a high demand at the local, national and international levels to inform all phases of the disaster risk management cycle.

❖ Furthermore, disaster related data used for:

❖ Resource allocation: COP27 (L&D Fund)

❖ To prepare the NDC (UNFCCC)

❖ Research institutions and policy analysts

Various literatures shows an Average return of $32 for every $1 invested in strengthening data systems
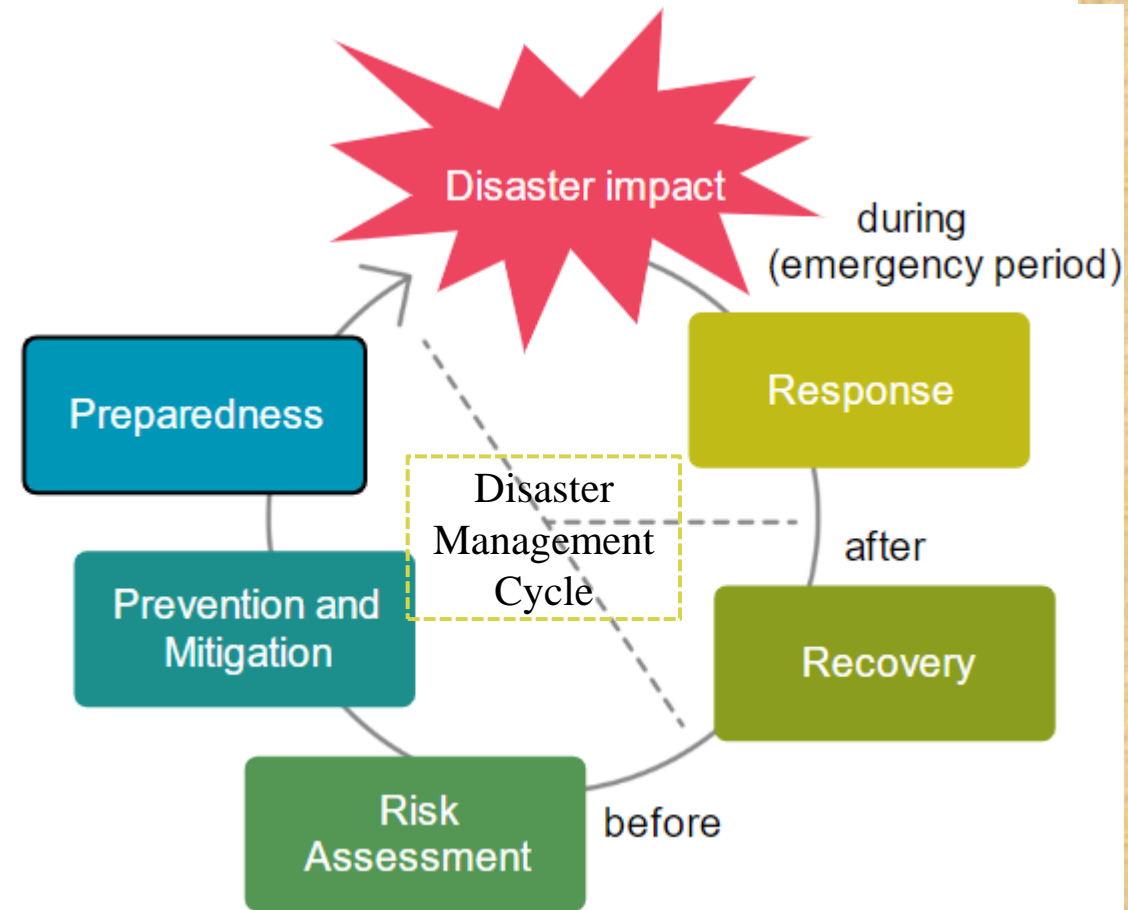
Opportunities: Frameworks, Agreements, Strategies and Policies

Regional and Global

- Sendai Framework for Disaster Risk Reduction 2015-2030

- 2030 Agenda for Sustainable development

- Paris Agreement- UNFCCC

- Agenda 2063: The Africa We Want

- African Union Green Recovery Action Plan 2021-2027

- African Union Climate Change and Resilient Development Strategy and Action Plan (2022-2032)

Local

- Climate resilient green economy (CRGE) strategy

- National Adaptation Plan

- Nationally Determined Contribution (NDC)

- Long-term Low Emission and climate resilient development strategy (2020-2050)

- Guidelines for quantifying disaster-related fiscal risks

- Disaster risk management (DRM) policy

- Disaster risk management financing strategy (2023–2030)

Challenges

- Lack of harmonized disaster related Statistics

- Miss information (over and/ or under estimation)

- Lack of capacity to interpret information

- Absence of alignment of Disaster action (**CCA & DRR**) with development plan and budgeting

- Lack of resource tracking system

- Poor coordination (Vertically and Horizontally)

- Lack of actionable commitments and Agreements

- Unclear threshold, disaggregation and standardization,

- Lack of data sharing mechanism

Policy Recommendation

- Integrated DRR with budgeting, and planning.

- Promoting Disaster related statistics both from national potentials, and international cooperation's

- All those disaster related financing data should be integrated with national statistical systems

- Capacity Building

- Data sharing regulation (mechanism)

- Engage new technologies (Server, gadgets)

- Engaging and coordination among lead agencies including government and private sectors