

## Trigger presentations

### 1. Basic range of Desinventar Sendai and Post Disaster Needs Assessment

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13th TWG on Disaster-related Statistics  
Workshop on Determining the scope of data in the DRSF basic range of disaster-related statistics.

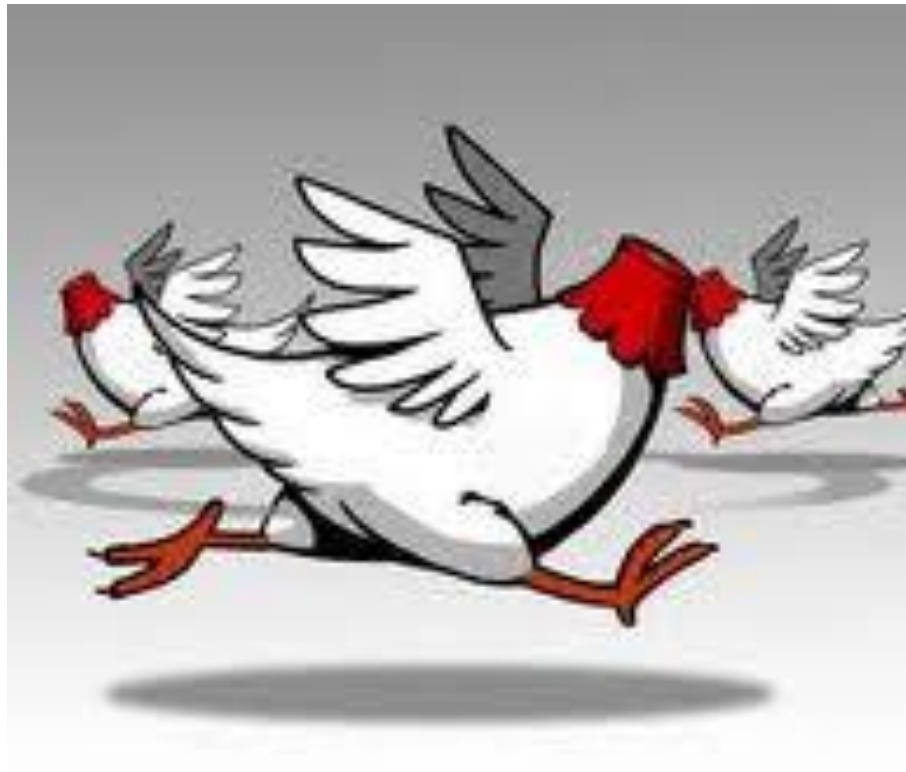
# Self-introduction

- 25 years of wishes and actions to establish disaster loss and damage data and statistics at the global level
- WMO-UNISDR-ESCAP: more than 10 years of working at the UN to develop and support the system
- Now, serving as Director, Global Centre for Disaster Statistics in partnership with UNDP and others at Tohoku University in Sendai, Japan



**Policy makers making decisions  
not based on science**

**are not so different from**



**Science without  
sound statistics**

**are not so different from**



The question is: [Are we disaster management agencies making decisions based on science supported by sound data and statistics?](#)

The answer, my friend, is blowin' in the wind  
The answer is blowin' in the wind.

Quoting Bob Dylan, 2016 Nobel Laureate in Literature

Why?

Only few countries had national disaster loss and damage data/statistics before the 21<sup>st</sup> century

Why MDGs did not have disaster-related goals in 2000?

Why then SDGs in 2015-2030 contain disaster-related goals and indicators?

How many of you attended the negotiation of the Sendai Framework for Disaster Risk Reduction in Sendai, March, 2015?

How many of you attended the negotiation of the indicators and terminology for the seven global targets of the Sendai Framework?

# Sendai Framework on Disaster Risk Reduction

- Adopted 7 “Global targets”

**(a) Substantially reduce global disaster mortality by 2030, aiming to lower the average per 100,000 global mortality rate in the decade 2020–2030 compared to the period 2005–2015;**

(b) Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020–2030 compared to the period 2005–2015

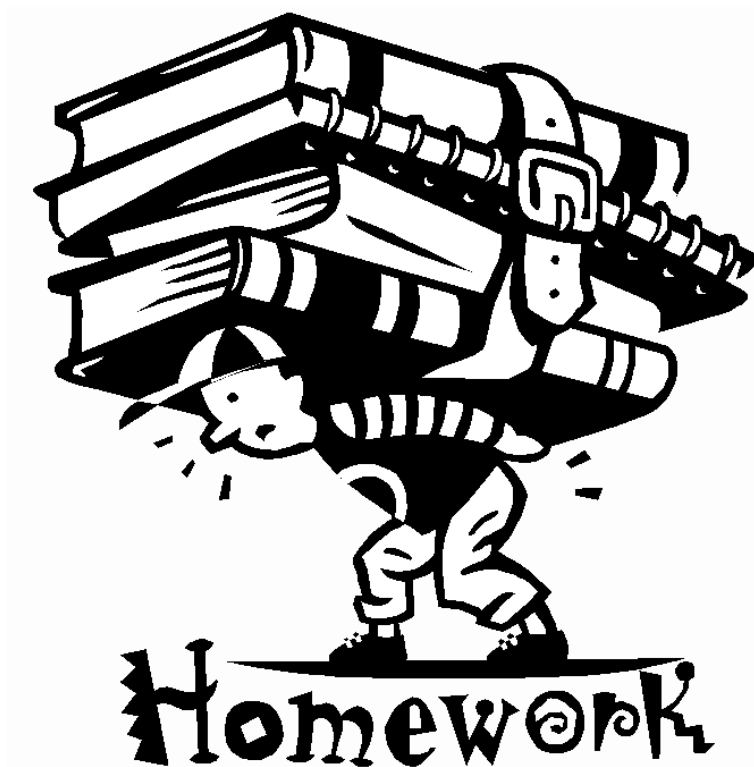
**(c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030**

(d) 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

(e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020;

(f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the present Framework by 2030

(g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030



Item 49: What processes?

Item 50: Indicators to monitor the SFDRR



# Indicator and Terminology of the Sendai Framework

## Sendai Framework Paragraph 50

The Conference recommends to the General Assembly the establishment, at its sixty-ninth session, of an **open-ended intergovernmental working group**, comprising experts nominated by Member States, and supported by the United Nations Office for Disaster Risk Reduction, with involvement of relevant stakeholders, **for the development of a set of possible indicators to measure global progress** in the implementation of the present Framework in conjunction with the work of the Inter-Agency and Expert Group On Sustainable Development Goal Indicators. The Conference also recommends that the working group consider the recommendations of the United Nations Office for Disaster Risk Reduction Scientific and Technical Advisory Group on the update of the publication entitled “2009 UNISDR **Terminology on Disaster Risk Reduction**” **by December 2016**, and that the outcome of its work be **submitted to the Assembly for its consideration and adoption.**

# Indicator and Terminology of the Sendai Framework

Open-ended intergovernmental working group on Indicators and Terminology relating to disaster risk reduction

1<sup>st</sup> Informal and formal session, 2015 Sep. 28-30<sup>th</sup>

2<sup>nd</sup> Informal and formal session, 2016 Feb. 9-11<sup>th</sup>

1<sup>st</sup> Informal consultations , 2016 Jun. 20-21<sup>st</sup>

2<sup>nd</sup> Informal consultations , 2016 Oct. 10-11<sup>st</sup>

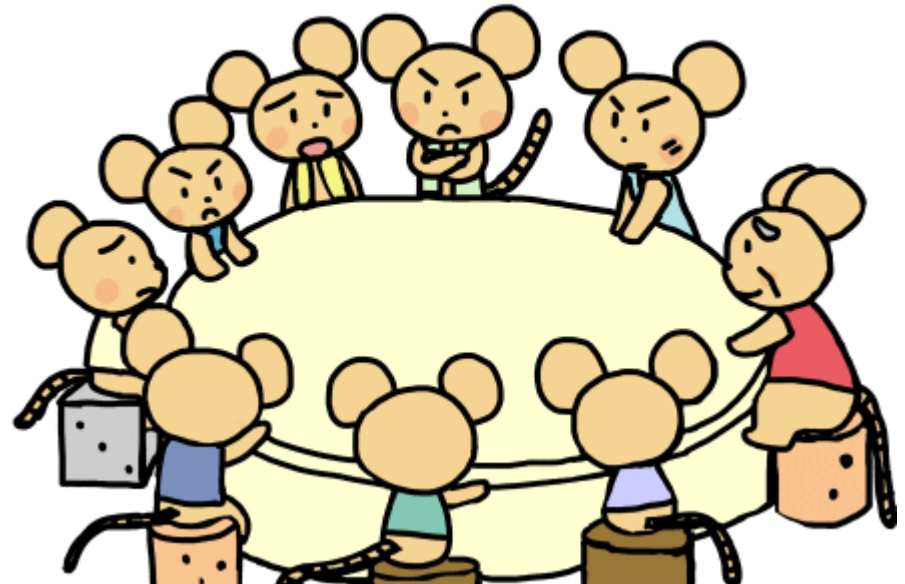
3<sup>rd</sup> Informal and formal session, 2016 Nov. 14-18<sup>th</sup>

## Informal Informal Meeting

Open-ended Inter-governmental Expert Working Group on Indicators and Terminology relating to Disaster Risk Reduction

20-21 June 2016

Geneva





**Feasibility assessment of proposed indicators, using existing disaster damage statistics in  
Japan**

**20-21 June 2016**

**By the Government of Japan**



The most important criteria in selecting indicators are :

- **Feasibility** of practical data collection; and
- **Relevancy** to show actual impacts of disasters.

Question :

**Are the proposed outcome indicators A-D feasible in every country?**



**Feasibility assessment using presently available data in Japan.**

The statistics and data used in the study :

**1. “Statistics of water-related disaster damage”**

Water and Disaster Management Bureau of the Ministry of Land, Infrastructure, Transport and Tourism

**2. “Statistics of disaster damage to public infrastructure”**

Water and Disaster Management Bureau of the Ministry of Land, Infrastructure, Transport and Tourism

**3. “Annual report of disaster damage”**

Fire and Disaster Management Agency of the Ministry of Internal Affairs and Communications

**4. “Survey on agricultural damage, farm product statistics”**

Statistics Department, Minister's Secretariat, Ministry of Agriculture, Forestry and Fisheries

**5. “Statistics of disaster damage to farmland and agricultural facilities”**

Rural Development Bureau, Ministry of Agriculture, Forestry and Fisheries



## **Global Target (a)**

**- Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared to 2005-2015.**

		Data in Japan	
		Item / Data Source	Feasibility
A-1	Number of deaths and missing / presumed dead due to hazardous events per 100,000	(A-2 + A-3)	OK
A-1 alt.	Number of death, missing, injured, displaced or evacuated due to hazardous events per 100,000.	Number of death	No data available on number of people who were actually displaced or evacuated.
		Number of missing	
		Number of person seriously injured *treatment of 1 month and up	
		Number of person slightly injured *treatment of less than 1 month	
A-2	Number of deaths due to hazardous events	Number of death /	OK
A-3	Number of missing persons / presumed dead due to hazardous events.	Number of missing /	OK

Global Target (a)

Our Proposal on the Global Indicators :

- The sum of **number of deaths** and **number of missing persons**. **(relevant and feasible)**

## **Global Target (b)**

**- 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.**

		Data in Japan	
		Item / Data Source	Feasibility
B-1	Number of affected people by hazardous event per 100,000.		
B-2	Number of injured or ill people due to hazardous events.	Number of person seriously injured *treatment of 1 month and up	Injure is OK. (Ill people cannot be counted.)
		Number of person slightly injured *treatment of less than 1 month	
B-3	Number of people who left their places of residence due to hazardous events.		No data available on number of people who left their places of residence
B-4	Number of people whose houses were damaged due to hazardous events.	Number of persons with house(s) half damaged	OK
		Number of persons with house(s) partly damaged	
		Number of persons with house(s) flooded above floor	
		Number of persons with house(s) flooded below floor	

Data in Japan			
		Item / Data Source	Feasibility
B-5	Number of people whose houses were destroyed due to hazardous events.	Number of persons with house(s) totally damaged	OK
B-6	Number of people who received aid including food and nonfood aid due to hazardous events.		
B-7	Number of people whose livelihoods were disrupted, destroyed or lost due to hazardous events.	Number of households of farmers and fishermen whose houses used as the workplace were damaged due to water-related disasters	
		Number of workers in offices damaged due to water-related disasters	

## Global Target (b)

Our Proposal on the Global Indicators :

- As **proxies for the number of people whose livelihoods were disrupted, destroyed or lost, number of people whose houses were damaged or destroyed.**  
**(relevant and feasible)**

## **Global Target (c)**

**- Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.**



		Item / Data Source	Feasibility
C-1	Direct economic loss due to hazardous events in relation to global gross domestic product.		
C-2	Direct agricultural loss due to hazardous events.	Area (ha) of damaged farmlands	OK
		Weight (ton) of damaged agricultural products	
		Loss (yen) of damaged agricultural products	
		Recovery cost (yen) of damaged farmlands	
		Recovery cost (yen) of damaged agricultural facilities	
		Direct economic loss (yen) to livestock industry	
		Direct economic loss (yen) to forestry	
		Direct economic loss (yen) to fishery	

Data in Japan

		Item / Data Source	Feasibility
C-3	Direct economic loss due to industrial facilities damaged or destroyed by hazardous events.	Direct economic loss (yen) to commerce and industry (other than buildings)	OK (However, only a limited portion is covered.)
		Number of offices (on the ground) damaged due to water-related disasters	
		Number of offices (underground) damaged due to water-related disasters	
		Economic loss of assets in offices (yen) due to water-related disasters	
		Economic loss of assets of transport (yen) due to water-related disasters	
		Economic loss of assets of telecommunication (yen) due to water-related disasters	
		Economic loss of assets of power companies (yen) due to water-related disasters	
		Economic loss of assets of gas companies (yen) due to water-related disasters	
		Economic loss of assets of water suppliers (yen) due to water-related disasters	
C-4	Direct economic loss due to commercial facilities damaged or destroyed by hazardous events.	Direct economic loss other than buildings (yen) to commerce and industry	OK (However, only a limited portion is covered.)
		Number of offices (on the ground) damaged due to water-related disasters	
		Number of offices (underground) damaged due to water-related disasters	
		Economic loss of assets in offices (yen) due to water-related disasters	

		Data in Japan	
		Item / Data Source	Feasibility
C-5	Direct economic loss due to houses damaged by hazardous events.	Number of houses half damaged	OK
		Number of houses partly damaged	
		Number of houses flooded above floor	
		Number of houses flooded below floor	
		Direct economic loss to houses (buildings) due to water-related disasters *economic loss to houses totally damaged is included.	
		Direct economic loss to assets in houses due to water-related disasters *economic loss to houses totally damaged is included.	
C-6	Direct economic loss due to houses destroyed by hazardous events	Number of houses totally damaged	OK
C-7	Direct economic loss due to damage to critical infrastructure caused by hazardous events.	Number of damaged hospitals	OK (Also available for other infra-structures)
		Damage amount (yen) to educational facilities	
		Number of damaged schools	
		Recovery cost (yen) of damaged roads	

		Data in Japan	
		Item / Data Source	Feasibility
C-8	Direct economic loss due to cultural heritage damaged or destroyed by hazardous events.		
C-9	Direct economic loss due to environment degraded by hazardous events.		
C-10	Financial transfer and access to insurance. (Total insured direct losses due to hazardous events)		
C-11	Direct economic losses due to disruptions to basic services		
C-12	Direct economic loss due to service sectors (such as transportation, tourism, finance)	Recovery cost (yen) of damaged roads	Available for some sectors.
		Recovery cost (yen) of damaged bridges	
		Recovery cost (yen) of damaged ports	
		Economic loss of assets of transport (yen) due	

## Global Target (c)

Our Proposal on the Global Indicators :

- **Direct agricultural loss and direct economic loss due to houses damaged and destroyed.**  
(relevant and feasible)
- **Direct economic loss to industry and commercial.** Various approaches to estimate loss should be allowed.  
(relevant, but difficulty in data collection)
- **Direct economic loss due to damage to critical infrastructure.**  
(relevant and feasible)

## **Global Target (d)**

**- 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.**

		Data in Japan	
		Item / Data Source	Feasibility
D-1	Damage to critical infrastructure due to hazardous events.		
D-1 bis.	Number of electricity plants and transmission towers destroyed or damaged by hazardous events.		
D-2	Number of health facilities destroyed or damaged by hazardous events.	Number of damaged hospitals	OK
D-3	Number of educational facilities destroyed or damaged by hazardous events.	Number of damaged schools	OK

		Item / Data Source	Feasibility
D-4	Number of transportation units and infrastructures destroyed or damaged by hazardous events.	Number of damages to ports	OK
		Number of damages to roads	
		Number of damages to bridges	
		Number of places where railways were interrupted	
D-5	Number of basic services have been disrupted due to hazardous events.	Number of damaged hospitals	OK
		Number of damaged schools	
		Number of damages to ports	
		Number of damages to roads	
		Number of damages to bridges	
		Number of places where railways were interrupted	
		Number of ships destroyed	
		Number of houses with interruption of tap water service	
		Number of damages to sewage systems	
		Number of damages to solid waste management and excrement treatment	
		Number of houses with interruption of electricity service	
		Number of houses with interruption of telephone	
Number of houses with interruption of gas service			



		Data in Japan	
		Item / Data Source	Feasibility
D-7	Number of security service structures destroyed or damaged by hazardous events.		
D-8	Number of tourist infrastructure facilities destroyed or damaged by hazardous events.		
D-10	Number of communication infrastructure destroyed or damaged by hazardous events.		
D-13	Number of agricultural facilities destroyed or damaged by hazardous events.	Number of damaged agricultural facilities	OK
D-14	Number of water and sanitation infrastructures destroyed or damaged by hazardous events.	Number of damages to sewage systems	OK
		Number of damages to solid waste management and excrement treatment	
	Number of days financial		

## Global Target (d)

Our Proposal on the Global Indicators :

- **Economic loss to public infrastructures.**

Extra burden of processing existing data can be avoided.

(relevant and feasible)

## **A proposal :**

1. Assess feasibility in some volunteer countries, in view of practical data availability and submit results to the secretariat.
2. Reflect the results in the decision process, to select realistically operational indicators.

## **Results :**

19 countries agreed to test how many indicators are feasible to count with existing data.

**Technical Guidance for Monitoring  
and Reporting on Progress in  
Achieving the Global Targets  
of the Sendai Framework for Disaster  
Risk Reduction**

Collection of Technical Notes on Data and Methodology

December 2017



On December 1, 2016, the Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction was adopted at the UN General Assembly.

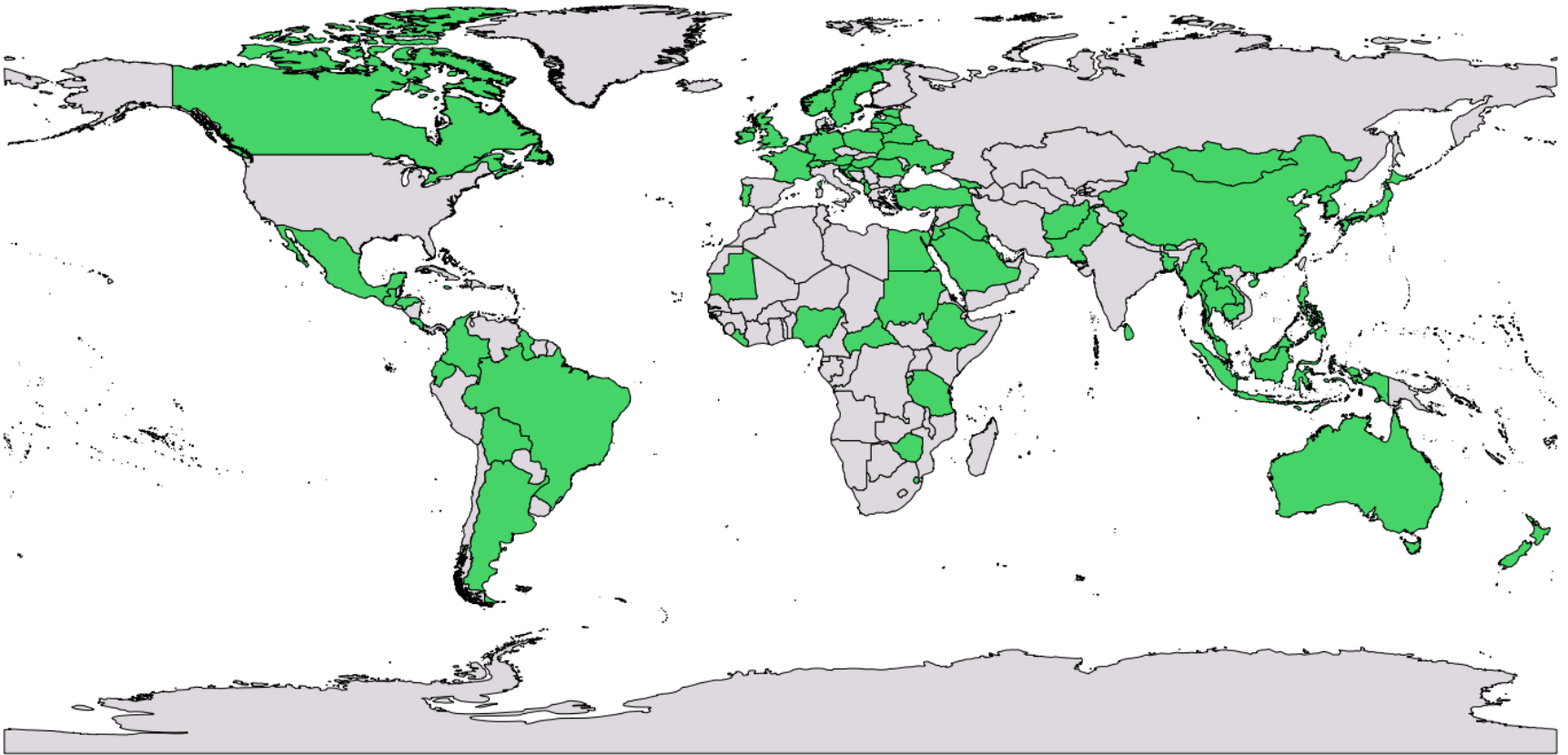
In December 2017, UNISDR launched the Technical Guidance for Monitoring and Reporting on Progress in Achieving the Global Targets of the SFDRR

UNISDR provided the DesInventar Sendai and set deadlines for member states to submit data

# Disaster-related Data for Sustainable Development

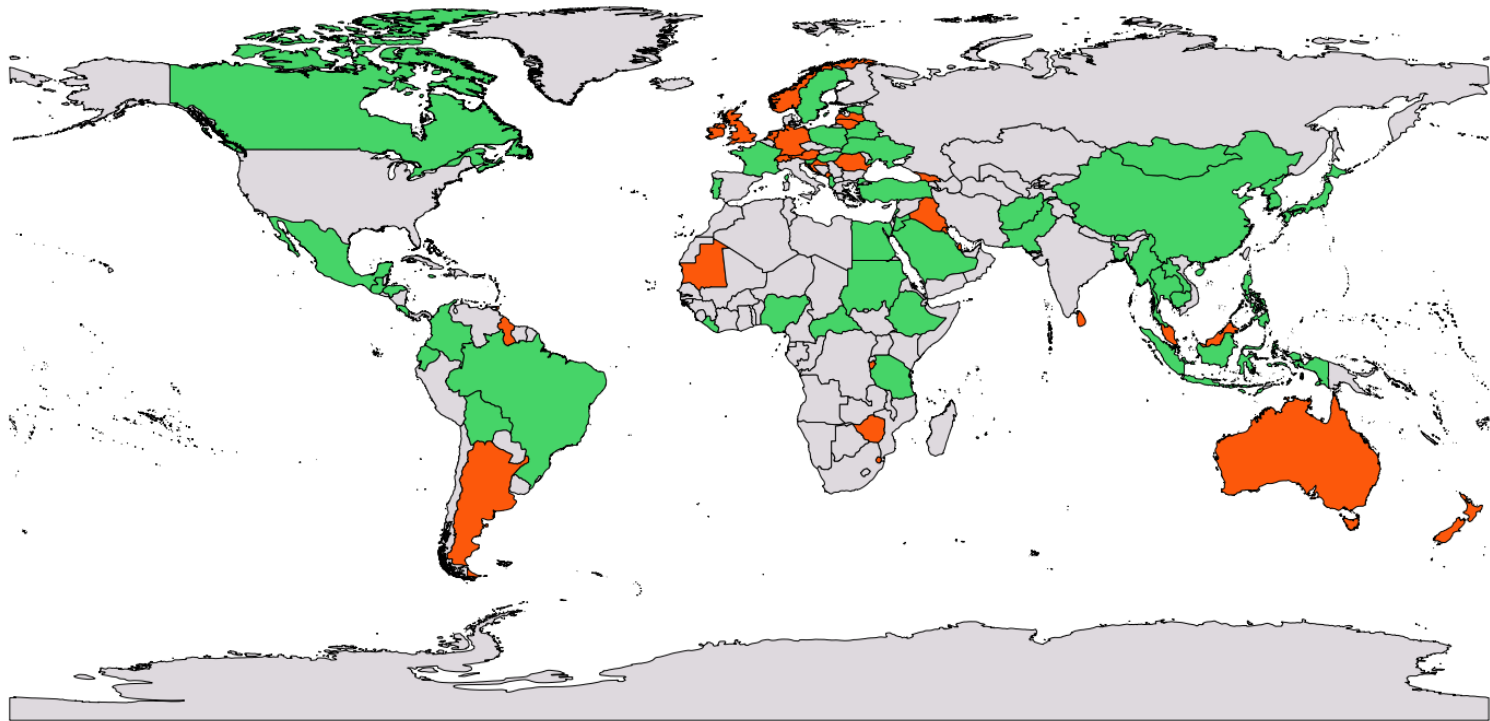
## Sendai Framework Data Readiness Review 2017 Global Summary Report

By UNISDR (UNDRR now)



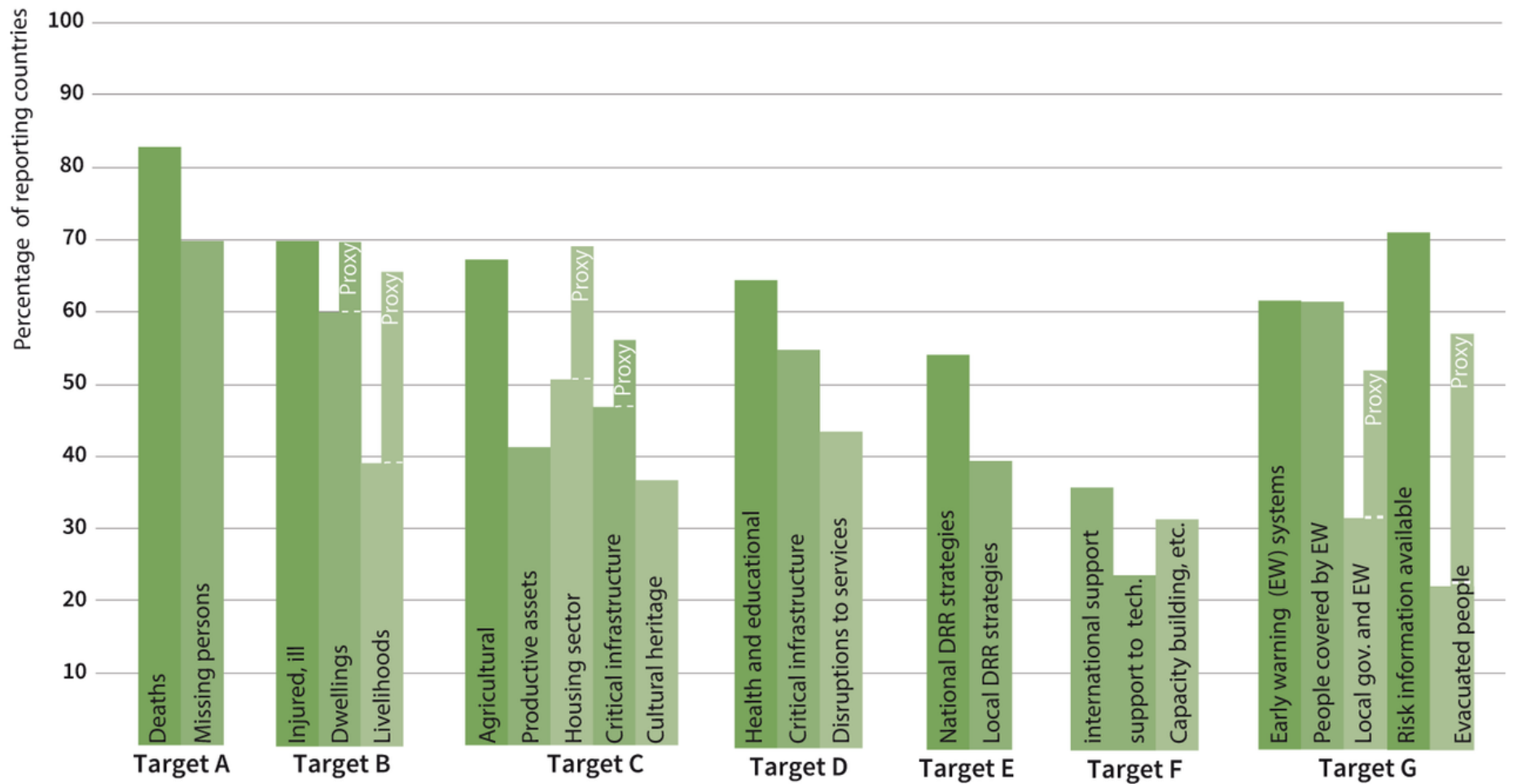
As of 20 April 2017, it had received the inputs of 87 countries with the following regional distribution:

- Africa – 10
- Americas – 17
- Arab States – 10
- Asia – 17
- Europe – 26



Countries with national disaster loss databases operated by government (in green); countries without (orange); no response (grey)





The **availability of data** to monitor and report on the indicators measuring the global targets of the Sendai Framework

2020 was a deadline for the SFDRR Global Target E

90 countries reported the progress to the UNDRR by the summer 2020

120 countries were expected to report it by the end of 2020

Still 70+ countries are not reporting

Yet, the details have not been shared (as of today)

## Existing international databases on disaster losses and impacts

	<b>EM-DAT database</b>	<b>NatCatSERVICE</b>	<b>DesInventar format</b>
Organized by	CRED: Centre for Research on the Epidemiology of Disaster	Munich Reinsurance	Mostly Government based Some by NGO, Research Institute etc.
Scope of the database	126 countries	Not Identified ✳mainly developed countries	Over 82 countries
	21,468 events	21,700 events	Over 490,000 events
	1990-Present	1980-Present	Depends on the country (Oldest record )
Disaster Collected	Disaster meeting a certain criteria	Disaster with Human or Economic loss	<u>All Disaster</u>
Data Source	Multiple Source (UN agencies, Countries, Red Cross, Red Crescent, World Bank, Reinsurance, Media)	Insurance Company based (Munich Reinsurance offices and clients, International Insurance association)	Authorized by the Government

# Situations in different Regions

- Latin America

27 database based on DesInventar Format.

DesInventar was developed based on the similar methodology developed by groups of researchers and institutional actors in Latin America called LARED.

- Europe and the European Commission

Joint Research Centre of the European Commission is preparing guidelines for standardize European Union Loss database (Groeve et al. 2013).

4 database based on DesInventar Format.

- Asia and the Pacific

18 database based on DesInventar format.

UNESCAP (UN Economic and Social Commission for Asia and the Pacific), Committee on Disaster Risk Reduction have played an important roll in promoting development of disaster loss database in the region.

- Africa

18 database based on DesInventar format.

Some other database exists

- Global Information and Early Warning System  
(not focused on disaster loss)
- Natural Disaster Database for Central Africa  
(data gathered from existing database)



220,000 records First event in 1815 AD 15 countries

# What are the lacking points of the existing database?

- Not many country collect and own disaster loss data authorized by there government
- Data collection methodology installed in 82 countries as of 2015 – now 89!

But the problem is

- Some database stopped updating
  - Not collected from all regions of the country
  - Methodology and Standard is some how different between countries
- ※Especially with countries not in the DesInventar format

Welcome to DesInventar Sendai !!!

Disaster loss data for Sustainable Development Goals and Sendai Framework Monitoring System



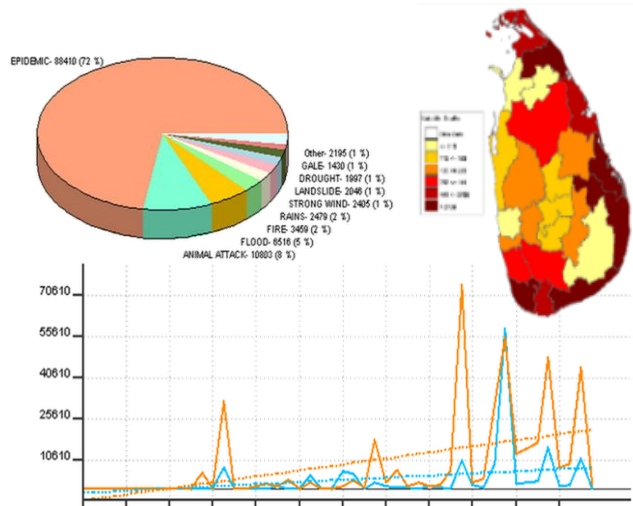
Available datasets worldwide

Detailed disaster loss data for more than 89 countries are available →

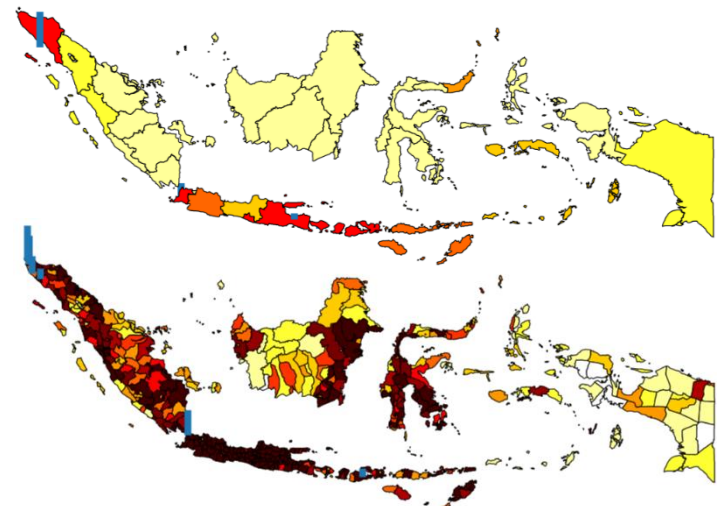
[http://www.desinventar.net/index\\_www.html](http://www.desinventar.net/index_www.html)

# DesInventar platform

- Based on inputs from the local officials
- Web based platform to output simple graph and map
- Some country has its own database based on DesInventar (example: Indonesia)



Sample of Database in Sri Lanka (DesInventar platform)



Sample of Database in Indonesia (modified DesInventar platform)

## ➤ Conclusions and recommendations 1

Do not set the bar (standards, minimum requirements, framework, etc.) too high from the beginning!

- because many countries have just started developing the system of national disaster loss and damage

- Can you teach this in the elementary school?

$$\begin{aligned} \mathcal{S} = & \int d^4x \sqrt{-\det G_{\mu\nu}(x)} \left[ \frac{1}{16\pi G_N} (R[G_{\mu\nu}(x)] - \Lambda) \right. \\ & - \frac{1}{4} \sum_{i=1}^3 \text{tr} (F_{\mu\nu}^{(i)}(x))^2 + \sum_f \bar{\Psi}^{(f)}(x) i \not{D} \Psi^{(f)}(x) \\ & + \sum_{g,h} (y_{gh} \Phi(x) \bar{\Psi}^{(g)}(x) \Psi^{(h)}(x) + \text{h.c.}) \\ & \left. + |D_\mu \Phi(x)|^2 - V[\Phi(x)] \right] \end{aligned}$$



## ➤ Conclusions and recommendations 2

Give good reasons why NDMOs need to develop the disaster-related statistics.

Not just for monitoring of Sendai targets or SDGs.

Disaster-related statistics could suggest NDMOs what policy should be implemented objectively

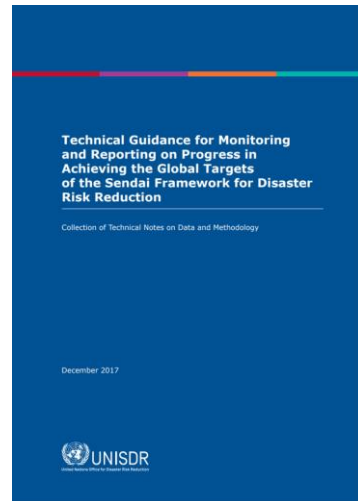
Or, NDMOs could insist on proposing investment in disaster risk reduction to financial minister, donor agencies, etc. objectively



## ➤ Conclusions and recommendations 3

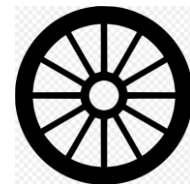
Basic range of disaster-related statistics should be stemming from globally negotiated documents,

namely



You could only provide supplement to this at least until 2030.

Not recommended to reinvent the



!