Sendai Targets and Indicators: A roadmap for implementation TARGETS A-B

Technical Workshop
Launch of Sendai Framework Monitoring System
December 6-8, Bonn, Germany

United Nations Office for Disaster Risk Reduction

In support of the Sendai Framework
for Disaster Risk Reduction 2015 - 2030

UNISDR
The United Nations Office for Disaster Risk Reduction

Sendai Framework Target A

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.***

- *Indicators*
- *Definitions*
- *Methodologies*
- *Data requirements*
- *Disaggregation*
- *The Baseline*
- *Challenges and issues*

Target A - Indicators defined by OIEWG

Global target A: Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared with 2005-2015.	
A-1 (compound)	Number of deaths and missing persons attributed to disasters, per 100,000 population.
A-2	Number of deaths attributed to disasters, per 100,000 population.
A-3	Number of missing persons attributed to disasters, per 100,000 population.
	The scope of disaster in this and subsequent targets is defined in paragraph 15 of the Sendai Framework for Disaster Risk Reduction 2015-2030 and applies to small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters caused by natural or man-made hazards, as well as related environmental, technological and biological hazards and risk.

Target A - Definitions

Key terms

Death: The number of people who died during the disaster, or directly after, as a direct result of the hazardous event

Missing: The number of people whose whereabouts is unknown since the hazardous event. It includes people who are presumed dead, for whom there is no physical evidence such as a body, and for which an official/legal report has been filed with competent authorities.

Note from the Secretariat: *The data on number of deaths and number of missing/presumed dead are mutually exclusive, so no-one should be double counted.*

Note from the Secretariat: *According to the definition of "Missing" the Secretariat suggests that the data is contingent upon the existence of legal reports or declarations.*

Target A

5. Computation Methodology

In the case of Target A, the formula for calculating the compound indicator is a simple summation of related indicators from national disaster loss databases divided by the sum of represented population data (from national censuses, World Bank or UN Statistics information)**:**

$$A_1 = \frac{(A_{2a} + A_{3a})}{Population} * 100,000$$

Where:

A-1:	Number of deaths and missing persons attributed to disasters per 100,000
A-2a:	Number of deaths attributed to disasters
A-3a:	Number of missing persons attributed to disasters
Population:	Represented population.

Note that the above formula can be derived from:

$$A_2 = \frac{A_{2a}}{Population} * 100,000$$

$$A_3 = \frac{A_{3a}}{Population} * 100,000$$

$$A_1 = A_2 + A_3$$

Target A – Methodology

- The source of data and methodology used by each Member State will be determined depending on the laws of each country and the type of hazard.

- In all cases the death of persons should be backed up by some form of legal certificate or by an official report stating the mortality numbers.

- In most sudden-onset disasters mortality figures are collected initially during the Response, and Search and Rescues phases. However, some deaths will occur some time after the event.

- Slow onset disasters and events associated to certain hazards require different methodologies, such as Excess Mortality calculation. Examples are Droughts, heat waves, epidemics and biological hazards. (WHO presentation)

Target A

Data requirements

Indicator No.	Indicator
A-1	**<u>Number of deaths and missing persons attributed to disasters, per 100,000 population.</u>** COMPOUND INDICATOR. See method
A-2	**<u>Number of deaths attributed to disasters, per 100,000 population.</u>** **[Minimum data requirements]:** **Data to be collected by disaster** **A-2a** Number of deaths attributed to disasters **[Desirable Disaggregation Requirements]:** Hazard Geography Sex Age Disability Income **METADATA** **Additional demographic and socio-economic parameters needed** **Population**: Population of the country for each of the years of the reporting exercise. The national indicator would be calculated using the population of the country. The global indicator is the sum of the populations of all countries having reported.

Target A Landing Screen in the online system

GLOBAL TARGETS: REPORTING

STATUS: In progress

DOWNLOAD

- Metadata
- A Mortality
- B People
- C Economic loss
- D Infrastructure & services
- E DRR strategies
- F International cooperation
- G Risk & early warning
- Report cover information

TARGET A
Substantially reduce global disaster mortality

Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality between 2022-30 compared to 2005-2015

Pre-filled data is imported from the National Disaster Loss Database. Data can also be entered independently.

A-1 Number of deaths and missing persons attributed to disasters, per 100,000 population

2021	2022	2005-15	2019-20
15.5	-	- 2.4%	+ 1.0%

> PREVIOUS CYCLES

A-2 Number of **deaths** attributed to disasters, per 100,000 population

2021	2022
7.8	

A-3 Number of **missing persons** attributed to disasters, per 100,000 population

2021	2022
7.4	

Target A

Indicator A-2 data entry

- G Risk & early warning
- Report cover information

A-2 Number of deaths attributed to disasters, per 100,000 population

YEAR	NUMBER	SOURCE
2022		
2021	19.5	National Disaster Loss Database

> PREVIOUS CYCLES

A-2a Number of deaths attributed to disasters

Import from National Disaster Loss Database

YES | NO

Number of deaths

YEAR	NUMBER	SOURCE *
2022		
2021 *	1'403	National Disaster Loss Database

> PREVIOUS CYCLES

Disaggregation (optional)

- > HAZARD
- > GEOGRAPHY
- > SEX
- > AGE
- > DISABILITY
- > INCOME

Target A Indicator disaggregation

Disaggregation (optional)

HAZARD

HAZARD	2021	2022
Earthquake	450	
Hurricane	650	
Flood	803	

GEOGRAPHY

SEX

SEX	2021	2022
Women	870	
Men	653	

AGE

AGE	2021	2022
Children (0-17)	870	
Adults (18-64)	23	
Seniors (65 +)	23	

DISABILITY

DISABILITY	2021	2022
Persons with disability	870	

INCOME

Target A Indicator disaggregation (loss database)

UNISDR DesInventar Sendai

SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION

UNISDR | English

HOME ANALYSIS DOWNLOAD ABOUT

Region | Geography | Events | Causes | Extension | Query | Edit Data | Data Entry | Admin | Sendai | Security | English Data

Region ***Serbia*** - [srb]

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Serial: 2 Date (YMD): 2010 11 11 Duration (d): Source: Status: Approved

Municipality: PRIJEPOLJE n/a: n/a :

Event: FLOOD Location: GLIDEnumber: @@1

Cause: Description of Cause:

EFFECTS

Sendai Framework Target A

Please record in this section human losses (in number of people) needed for Target A, Number of deaths and missing persons attributed to disaster. These fields will be used to compute Indicators A2, A3, B2, B5 and others. If possible, enter disaggregated figures and use the Σ button to calculate the sum of each subgroup, and then the Σ button of the overall category to obtain to total of the group

Number of deaths (A-2)

Total of Deaths (Sub-indicator A-2a): Number Σ

By sex: Female: Number Male: Number

By Age: Children: Number Adult: Number Elder: Number

Other disaggregation: With disabilities: Number Below Poverty Line: Number

Number of missing (A-3)

Total missing (Sub-indicator A-3a): Number Σ

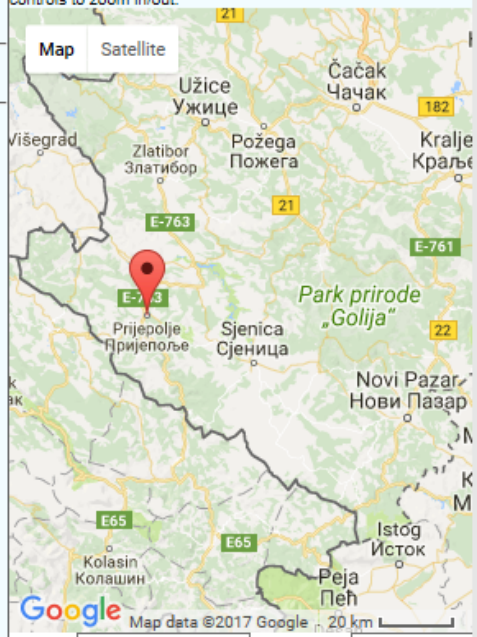
By sex: Female: Number Male: Number

By Age: Children: Number Adult: Number Elder: Number

Other disaggregation: With disabilities: Number Below Poverty Line: Number

Please locate aproximately the centroid of the dis

Right-click to position disaster. Double-click to zoom in, and dra controls to zoom in/out.



Latitude: Longitude:

Target A **Baseline**: data for 2005-2015

" … ***to lower average per 100,000 global mortality between 2020-2030 compared to 2005-2015.*** "

- Strictly speaking, the measurement of the Target requires only the **Average per 100,000 between 2005 and 2015**
- However, Member states will need to conduct a full data collection (review of all disasters within the Framework scope) required to obtain this figures.
- This review of past disaster data must be comprehensive and detailed, in order to avoid introducing a bias due to lower level of data collection.
- According to Priority 1 of the Framework conducting a comprehensive and detailed data collection for this period will bring many benefits to countries in better understanding of the risks they face.
- Collecting detailed data will allow for intermediate calculations (example, decade 2008-2018 compared to 2005-2005, and provide indication of progress.
- Statistical processing will most likely require detailed data collection (by disaster)

Target A Baseline: data for 2005-2015

RECOMMENDATION:

The Secretariat strongly recommends Member States the development of comprehensive and detailed disaster loss datasets with start date 2005 (or prior)

[* many countries will be able to benefit from existing National Disaster Loss Databases with data for this period. For example, DesInventar databases cover today more than 100 countries, and many include already most of the required hazards]

Sendai Framework Target B

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.

- *Indicators*
- *Definitions*
- *Methodologies*
- *Data requirements*
- *Disaggregation*
- *Baseline*

Target B Indicators defined by OIEWG

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 with 2005-2015.

B-1 (compound)	Number of directly affected people attributed to disasters, per 100,000 population.
B-2	Number of injured or ill people attributed to disasters, per 100,000 population.
B-3	Number of people whose damaged dwellings were attributed to disasters.
B-4	Number of people whose destroyed dwellings were attributed to disasters.
B-5	Number of people whose livelihoods were disrupted or destroyed, attributed to disasters.

Target B - Definitions

Key terms

Directly affected: *People who have suffered injury, illness or other health effects; who were evacuated, displaced, relocated; or have suffered direct damage to their livelihoods, economic, physical, social, cultural and environmental assets.*

Indirectly affected*: People who have suffered consequences, other than or in addition to direct effects, over time due to disruption or changes in economy, critical infrastructures, basic services, commerce, work or social, health and physiological consequences.*

** Given the large number of variables eligible for consideration in 'Affected', it is important to emphasize that no single indicator will provide an absolutely precise, accurate and exhaustive measure of affected population. The OIEWG indicators will provide a proxy of those directly affected. Double counting will occur between the current indicators. Indicators B-3 and B-4 (people living in damaged or destroyed dwellings will be an estimation and includes those evacuated, displaced and relocated, avoiding additional double counting.

Target B

Computation

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for Disaster Risk Reduction 2015 - 2030

5. Computation Methodology

In the case of Target B, the method of computation is a simple summation of related indicators from national disaster loss databases divided by the sum of figures of global population data (from national censuses, World Bank or UN Statistics information).

$$B_1 = \frac{sum(B_2 .. B_5)}{Population} * 100,000$$

Indicators B-3 and B-4 shall be computed using the Average Number of Occupants per Household of the country, **AOH** where:

$$AOH = \frac{Population}{Number\ of\ Households}$$

And

$$B_3 = \text{number of dwellings damaged} * AOH$$
$$B_4 = \text{number of dwellings destroyed} * AOH$$

Thus:

$$B_3 = B_{3a} * AOH$$
$$B_4 = B_{4a} * AOH$$

Where the number of dwellings/houses damaged and destroyed are also to be used in Target C.

If countries have a national methodology to measure Indicator B-5 the indicator can be entered directly as measured in situ. If a methodology or measurement is not available, B-5 will be computed using several ratios such as number of workers per hectare, number of workers per livestock, average number of employees per commerce and per industrial facility.

$B_{5a} = \text{hectares of crops affected} * \text{average workers per hectare}$

$B_{5b} = \text{Livestock lost} * \text{average workers per livestock}$

$B_{5c} = \text{Sum of productive assets and infrastructure facilities affected} * \text{average workers per facility}$

Data required will be collected for target C, therefore:

$B_{5a} = C2C_a * \text{average workers per hectare}$

$B_{5b} = C2L_a * \text{average workers per livestock}$

$B_{5c} = C3_b * \text{average workers per facility} + C5_b * \text{average workers per infrastructure}$

$$B_{5c} = \sum_{i=1}^{n} C3_{bi} * Workers_i + \sum_{i=1}^{n} C5_{bi} * Workers_i$$

where i=1 ....n are the types of productive assets and infrastructure declared in the Metadata

Target B – Methodology

- The source of data and methodology used by each Member State will be determined depending on the laws, the health and emergency management system of each country, and the type of hazard.

- It is strongly recommended that the number of injure/ill persons should be backed up by official health statistics or by an official report stating these numbers.

- In most sudden-onset disasters morbidity figures are collected initially during the Response, and Search and Rescues phases. However, some illnesses will occur some time after the event (for example mental health issues).

- Slow onset disasters and events associated to certain hazards require different methodologies, such as Excess Morbidity calculation. Examples are Droughts, heat waves, epidemics and biological hazards. (WHO presentation)

Target B – Methodology (cont…)

- The methodology for the calculation of the number of people living in destroyed and damaged dwellings is for member states to decide.

- The Technical Guidance proposes a simple estimation methodology based on the number of houses damaged and destroyed, and demographic parameters of population, number of households and average number of habitants per dwelling. The number of houses damaged and destroyed is also required for Indicator C-4.

- Similarly, methodology for the calculation of the number of people whose livelihoods were disrupted or destroyed, attributed to disasters is for member states to decide.

- The Technical Guidance proposes a simple estimation methodology based on the number of destroyed productive assets and statistical parameters of number of workers per productive asset.

Target B

Data requirements

Indicator No.	Indicator
B-1	**Number of directly affected people attributed to disasters, per 100,000 population** COMPOUND INDICATOR. See computation method **Additional demographic and socio-economic parameters needed** **Population**: number of inhabitants of the country for each of the years of the reporting exercise. The National indicator will be calculated using the population of the country. The global indicator is calculated with the sum of the populations of all countries having reported.
B-2	**Number of injured or ill people attributed to disasters.** **[Minimum Requirement]** **Data to be collected by disaster** **B-2** Number of injured or ill people attributed to disasters **[Desirable Disaggregation Requirements]:** Hazard Geography Sex Age Disability Income

Target B

Data requirements

B-3	**Number of people whose damaged dwellings were attributed to disasters.** **[Minimum Requirement]** **Data to be collected by disaster** **B-3** Number of people whose damaged dwellings were attributed to disasters (calculated based on B-3a or directly measured in situ) **B-3a** Number of damaged dwellings/houses attributed to disasters **[Desirable Disaggregation Requirements]:** Hazard Geography (The following disaggregations could be artificially calculated) Sex Age Disability Income **Additional demographic and socio-economic parameters needed** **Population**: number of inhabitants and number of households of the country for each of the years of the reporting exercise. The National indicator will be calculated using the population of the country. The global indicator is calculated with the sum of the indicators of all countries having reported.

Target B

Data requirements

B-4	**<u>Number of people whose destroyed dwellings were attributed to disasters.</u>** **[Minimum Requirement]** **Data to be collected by disaster** **B-4** Number of people whose destroyed dwellings were attributed to disasters (calculated based on B-4b or directly measured on the field) **B-4b** Number of destroyed dwellings/houses attributed to disasters **[Desirable Disaggregation Requirements]:** Hazard Geography (The following disaggregations could be artificially calculated) Sex Age Disability Income **Additional demographic and socio-economic parameters needed**: see B-3

Target B

Data requirements

B-5	**Number of people whose livelihoods were disrupted or destroyed, attributed to disasters.** **[Minimum Requirement]** **Data to be collected by disaster** **B-5** Number of people whose livelihoods were disrupted or destroyed, attributed to disasters (**directly measured in situ and/or using a nationally defined methodology)** **NO OTHER DATA. Countries may opt not to enter B-5 and if socio-economic parameters are provided and , requiring UNISDR to make the calculation using** the following data to be collected by disaster, related to the indicators for Target C: - **C-2a** Number of hectares of crops damaged or destroyed by disasters. (to be used to establish the statistic of Number of Workers affected) - **C-2b** Number of Livestock lost in disasters (to be used to establish the statistic of Number of Workers affected) - **C-3a** Number of Productive Assets Facilities (such as Industrial, Commercial, Services, etc.) damaged or destroyed by disasters (to be used to establish the statistic of Number of Workers affected in all facilities type) [Note this data will be collected for Target C, so no additional data would be needed for this indicator] **[Desirable Disaggregation Requirements]:** Hazard Geography Sex Age Disability Income **Additional demographic and socio-economic parameters needed** **Population**: Population of the country and number of workers per type of asset in the country, OR the average number of people per household, for each of the years of the reporting exercise. The national indicator would be calculated using the data of the country. The global indicator with the sum of the indicators of all countries reporting.

- Metadata
- A Mortality
- B **People**
- C Economic loss
- D Infrastructure & services
- E DRR strategies
- F International cooperation
- G Risk & early warning
- Report cover information

TARGET B
Substantially reduce number of affected people globally

Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2022-2030 compared to 2005-2015.

Pre-filled data is imported from the National Disaster Loss Database. Data can also be entered independently.

B-1 Number of directly affected people attributed to disasters, per 100,000 population

2021	2022	2005-15	2017-18
15.5	-	- 2.4%	+ 1.0%

> PREVIOUS CYCLES

		2021	2022
B-2	Number of **injured or ill people** attributed to disasters	2,394	
B-3	Number of people whose **damaged dwellings** were attributed to disasters	5'405	
B-4	Number of people whose **destroyed dwellings** were attributed to disasters	3,405	
B-5	Number of people whose **livelihoods** were disrupted or destroyed, attributed to disasters	2,304	

CALCULATE TARGET B

F International cooperation

G Risk & early warning

Report cover information

> PREVIOUS CYCLES

- B-2 Number of injured or ill people attributed to disasters

PS 3

Import from National Disaster Loss Database

YES | NO

Number of injured or ill people

YEAR	NUMBER	SOURCE *
2021 *	1'403	National Disaster Loss Database
2022		

> PREVIOUS CYCLES

Disaggregation (optional)

> HAZARD

HAZARD	2021	2022
Earthquake	450	
Hurricane	650	
Flood	374	

> GEOGRAPHY

> SEX

> AGE

> DISABILITY

> INCOME

THANK YOU

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for Disaster Risk Reduction 2015 - 2030

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