Sendai Framework Monitor Global Targets and Indicators from A-D

UNDRR
UN Office for Disaster Risk Reduction

UN environment programme

SENDAI FRAMEWORK
FOR DISASTER RISK REDUCTION 2015-2030

Mortality

Target A

Indicators – Target A

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.

Options for data disaggregation:

- Hazard
- Sex (Male / Female)
- Age (Children 0–14 yo ; Adults 15–64 yo Seniors 65+)
- People with disabilities
- Income level (below poverty line)

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.

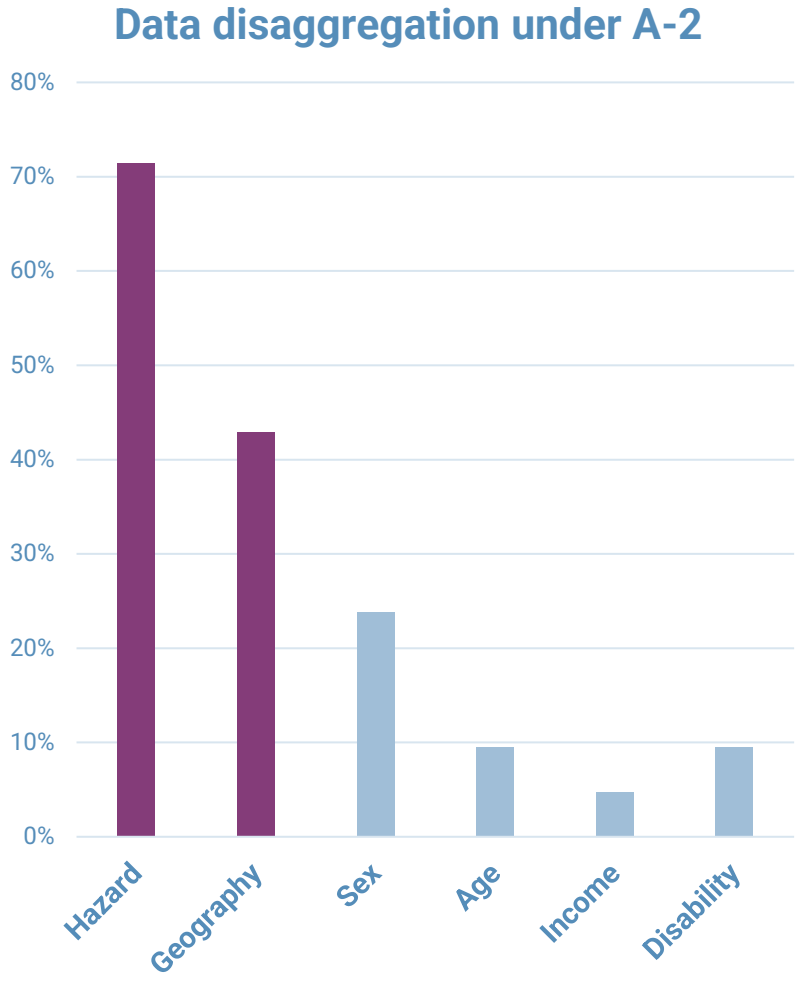
Note from the Secretariat: *The data on number of deaths and number of missing/presumed dead are mutually exclusive, so no-one should be double counted.*

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.*

Overview of data reported under Target A

Key messages

- **Target A is the most reported on.**
- The number of deaths tend to be much higher for countries who include road accidents in their report.
- Countries reporting on deaths **disaggregate by:**
  - **hazard (70%)**
  - **geography (42%) –** regions/provinces/districts
- **Countries rarely disaggregate data by sex, age, income and disability**



Affected People

Target B

Indicators – Target B

Target B :

Substantially reduce the number of affected people globally by 2030, aiming to lower average per 100.000 global mortality 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.

Directly affected people :

- suffered injury, illness or other health effects;
- were evacuated, displaced, relocated;
- have suffered direct damage to their livelihoods, economic, physical, social, cultural and environmental assets.

Options for data disaggregation:

- Hazard
- Sex (Male / Female)
- Age (Children 0–14 yo ; Adults 15–64 yo Seniors 65+)
- People with disabilities
- Income level (below poverty line)

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 – 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)

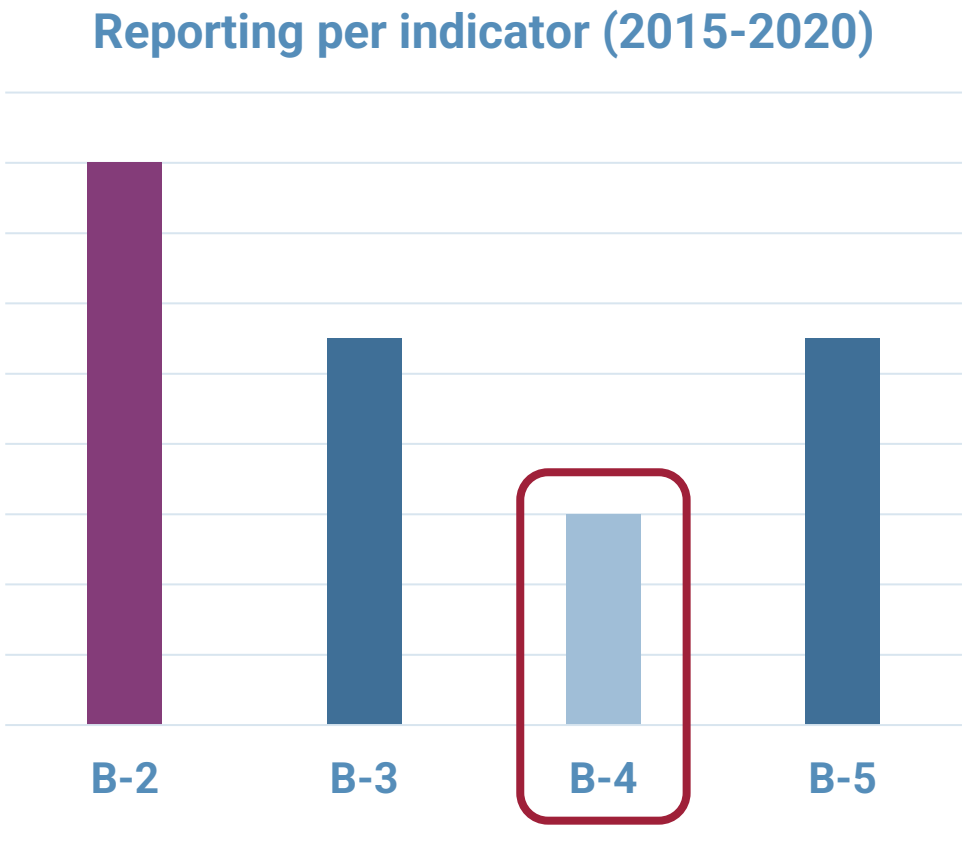
Target B – Methodology (cont…)

- 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.

Current status of reporting for Target B

Key messages

- Target B is one of the targets **most reported on**
- The main source of information in the system is **Civil protection / National Disaster Management Agency or Departments**
- **Reporting varies according to indicators.** B-2 related to ill and injured people is very well reported on compared to B-4 related to destroyed dwellings



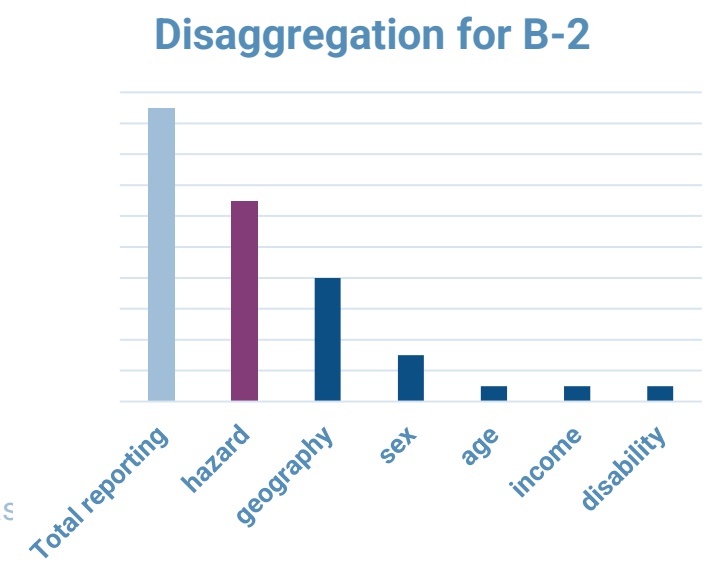
Indicator B-2 – Number of ill and injured people

Overview of data

- **High variations of numbers between countries** depending on the hazards reported on. Data can range from 0 to +500.000 people ill or injured / year.
- Most countries report injuries/illness on the following **hazards**:
  - **Biological** – Epidemics (10)
  - **Hydrometeorological** – Floods, Winds, Rain, Storm, Lightening (15)
  - Technological – accidents (3)

Data disaggregation

- **Countries disaggregate by hazards (70%) and geography (42%).** But disaggregation by sex, age, income and disability is very rare.



Sources of data

- Ad-hoc sources: **Very few countries include Ministries of Health as sources of data (20%)**
- Other sources: reports, disaster loss databases

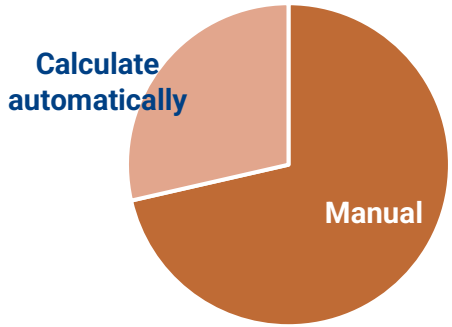
Indicators B-3 & B-4 – Number of people whose dwellings were damaged and destroyed

B-3 → Damaged dwellings

B-4 → Destroyed dwellings

Overview of data

- Most countries report on **Hydrometeorological hazards** – Floods, Winds, Fire, Rain (17)
- Most countries report **manually rather than automatic calculation.**



Data disaggregation

- About **50% of countries disaggregate by hazard.**
- About 25% of countries disaggregate by geography.
- Other disaggregation is almost non-existent.

Sources of data

- Ad-hoc sources: **Housing department (1), PDNA (1), IOM (1), UNICEF (1)**
- Other sources: reports, disaster loss databases

Indicators B-5– Number of people whose livelihoods were disrupted or destroyed

Overview of data

- Most countries report on **Hydrometeorological hazards** – Drought, Winds, Fire, Rain
- **Drought** is the hazard most disaggregated by under B-5.
- One country added data related to Covid-19 disruptions the agriculture sector and its impact on people.

Data disaggregation

- **Disaggregation is scarce.** About 10% disaggregate by hazard types.

Sources of data

- **Main sources of data are Civil protection/ NDMA.**
- Ad-hoc sources: **Police, Statistics, Ministry of Agriculture, Ministry of Environment, Ministry of Finance**
- Other sources: national **reports on early warning assessments, drought relief etc.**

UNDRR proposed methodology for indicator B-5

If a national methodology is not available, UNDRR proposes the following:

B-5 = *hectares of crops damaged/destroyed * average workers per hectare*
*+ livestock lost * average workers per livestock*
*+ sum of productive assets and infrastructure damaged/destroyed * average workers per facility*

This methodology is based on data reported as part of target C:

- The number of hectares of crops damaged/destroyed is reported under sub-indicator C-2C
- The number of livestock lost is reported under sub-indicator C-2L
- The number of productive assets and infrastructure damaged/destroyed are reported as part of C-2LA, C-3 and C-5.

For indicator B-5, the 'automatic calculation' option is currently not available. But MS can use the above methodology and the pre-defined ratios in the 'set-up' to calculate the number of people who had their livelihoods disrupted.

Economic Losses

Target C

Indicators - Target C

Target C: Reduce direct disaster economic loss in relation to Global Domestic Product (GDP) by 2030.

C-1 (Compound C2-C6) **Direct economic loss attributed to disaster in relation to GDP**

C-2 Direct agricultural loss attributed to disasters including the crops, livestock, fisheries, apiculture, aquaculture and forest sectors as well as associated facilities and infrastructure.)

C-3 Direct economic loss to all other productive assets attributed to disasters (includes economic sectors).

C-4 Direct economic loss in the housing sector attributed to disasters.

C-5 Direct economic loss resulting from damaged or destroyed critical infrastructure attributed to disasters (education, health, other)

C-6 Direct economic loss to cultural heritage attributed to disasters.

Options for data disaggregation:

- Type of crops
- Type of infrastructures
- Type of asset
- ....

Method to measure losses

Two options:

1. Countries use **their own methodology** (consistent over time)

2. Countries use the **proposed methology in SFM** based on methodologies from the FAO (agriculture) and UN ECLAC (other economic losses)

Three steps

1. Collect data
2. Convert physical losses into economic value
3. Conversion from LCU to USD

Target c - Definitions

Economic Loss:
Total economic impact that consists of direct economic loss and indirect economic loss.

Direct economic loss: the monetary value of total or partial destruction of physical assets existing in the affected area. Direct economic loss **is nearly equivalent to physical damage.**

Indirect economic loss: a decline in economic value added as a consequence of direct economic loss and/or human and environmental impacts.

***Annotation**: Examples of physical assets that are the basis for calculating direct economic loss include homes, schools, hospitals, commercial and governmental buildings, transport, energy, telecommunications infrastructures and other infrastructure; business assets and industrial plants; production such as crops, livestock and production infrastructure. They may also encompass environmental assets and cultural heritage.*

Target c - Important annotations:

Direct economic losses *usually happen* ***during*** *the event or* ***within the first few hours after*** *the event and are often assessed soon after the event to estimate recovery cost and claim insurance payments. These are tangible and relatively easy to measure.*

Indirect economic loss *includes* ***micro-economic impacts*** *(e.g. revenue declines owing to business interruption, impacts on natural assets, loss of revenue or income due to missing assets, interruptions to transportation networks, supply chains or temporary unemployment) and* ***macroeconomic impacts*** *(e.g. price increases, increases in government debt, negative impact on stock market prices, and decline in GDP). Indirect losses can occur inside or outside of the hazard area and often with a time lag. As a result they may be intangible or difficult to measure.*

Target C – Methodology

- Member States have freedom to choose between nationally-defined methodologies or the methodologies proposed by the Secretariat by which **direct** economic loss to damaged or destroyed productive assets attributed to disasters is determined.

The following major groups of methods are developed in the Technical Guidance Note to be used when estimating direct economic losses:

- **C-1 compound indicator** is expressed as **a simple sum of Indicators C-2 to C-6** in relation to GDP.
- **Estimation of Agricultural Sector losses (C-2):** Jointly developed by **FAO and UNDRR** (for example, to assess economic loss on crops).
- **Assessment of built environment losses (C-3, C-4, C-5):** Developed by **UNDRR, based on ECLAC/DALA** (for example, to assess economic loss on houses).
- **Assessment based on replacement value and unit prices** (for example, to assess economic loss on vehicles or vessels)

Infrastrcutures

Target D

Indicators – Target D

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

D-1 (Compound D2-D4) **Damage to critical infrastructure attributed to disasters.**

D-2 Number of destroyed or damaged health facilities attributed to disasters

D-3 Number of destroyed or damaged educational facilities attributed to disasters

D-4 Number of other destroyed or damaged critical infrastructure units and facilities attributed to disasters.

Damages – Reported under C-5

D-5 (Compound D6-D8) **Number of disruptions to basic services attributed to disasters.**

D-6 Number of disruptions to educational services attributed to disasters

D-7 Number of disruptions to health services attributed to disasters

D-8 Number of disruptions to other basic services attributed to disasters

Disruption of services

Target D - Definitions

Critical infrastructure
The physical structures, facilities, networks and other assets which provide services that are essential to the social and economic functioning of a community or society

Protective Infrastructure: The set of built elements designed to protect human life and societal assets from different hazards such as floods, tsunamis, wind, landslides and many others.

Green Infrastructure: Green infrastructure is a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation and climate mitigation and adaptation, and management of wet weather impacts that provides many community benefits.

Thank you for your attention

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