Sendai Targets and Indicators: A roadmap for implementation TARGETS C-D

Technical Workshop
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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 C

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

- *Indicators*
- *Definitions*
- *Methodologies*
- *Data requirements*
- *Disaggregation and Metadata*

Target C

Indicators defined by OIEWG

Global target C: Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.	
C-1 (compound)	Direct economic loss attributed to disasters in relation to global gross domestic product.
C-2	Direct agricultural loss attributed to disasters. *Agriculture is understood to include the crops, livestock, fisheries, apiculture, aquaculture and forest sectors as well as associated facilities and infrastructure.*
C-3	Direct economic loss to all other damaged or destroyed productive assets attributed to disasters. *Productive assets would be disaggregated by economic sector, including services, according to standard international classifications. Countries would report against those economic sectors relevant to their economies. This would be described in the associated metadata.*
C-4	Direct economic loss in the housing sector attributed to disasters. *Data would be disaggregated according to damaged and destroyed dwellings.*
C-5	Direct economic loss resulting from damaged or destroyed critical infrastructure attributed to disasters. *The decision regarding those elements of critical infrastructure to be included in the calculation will be left to the Member States and described in the accompanying metadata. Protective infrastructure and green infrastructure should be included where relevant.*
C-6	Direct economic loss to cultural heritage damaged or destroyed attributed to disasters.

Target c - Definitions

Key terms

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 - Definitions

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 Techical Guidance 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 UNISDR (for example, to assess economic loss on crops).
- Assessment of built environment losses (C-3, C-4, C-5): Developed by UNISDR, 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)

Target c – Methodology

Computation of C-1 – Direct Economic loss due to hazardous events in relation to global gross domestic product

$$C_1 = \frac{(\mathbf{C_2} + \mathbf{C_3} + \mathbf{C_4} + \mathbf{C_5} + \mathbf{C_6})}{GDP}$$

An important challenge to take into account is the methodology for adding price adjustment (i.e. taking into account inflation and other factors, see Technical Guidance)

Target c – Methodology

Computation of C-2 – Direct agricultural loss attributed to disasters

This indicator is calculated based on the following sub-indicators:

C-2C: Direct crop loss
C-2L: Direct livestock loss
C-2FO: Direct forestry loss
C-2A: Direct aquaculture loss
C-2FI: Direct fisheries loss
C-2La: Direct loss on Agricultural productive assets
C-2Lb: Direct loss on Agricultural stored stocks and production

$$\boldsymbol{C_2} = C_{2C} + C_{2L} + C_{2FO} + C_{2A} + C_{2FI} + C_{2La} + C_{2Lb}$$

Target c – Methodology

Computation of C-3 and C-5 – Direct economic loss to all other damaged or destroyed productive assets and critical infrastructure attributed to disasters.

Methodology for Buildings

No distinction of Damaged/Destroyed

C-3 **=** $Number\ of\ affected\ facilities * average\ size\ of\ the\ facilities * construction\ cost\ per\ Unit * equipment\ \ ratio * infrastructure\ ratio * affected\ ratio$

Data disaggregated in Damaged and Destroyed

C-3 **=** $Number\ of\ affected\ facilities * average\ size\ of\ the\ facilities * construction\ cost\ per\ Unit\ * equipment\ \ ratio * infrastructure\ ratio * damaged\ ratio$

+

$Number\ of\ affected\ facilities * average\ size\ of\ the\ facilities * construction\ cost\ per\ Unit * equipment\ \ ratio * infrastructure\ ratio$

Target c – Methodology

Computation of C-3 and C-5 – Direct economic loss to all other damaged or destroyed productive assets and critical infrastructure attributed to disasters.

Methodology for Buildings

- $Average\ asset\ size$ is size established in the Metadata describing the asset type.
- $Construction\ cost\ per\ square\ meter$ is the average national value of construction cost per square metre
- $Equipment\ ratio$ is the estimated value (expressed as a percentage of the value of the asset) of stored equipment and products (including raw materials & finished product)
- $Infrastructure\ ratio$ is the estimated value (expressed as a percentage of the value of the asset) of the associated connections to utilities infrastructure
- $Damaged\ ratio$ is calculated as the estimated average ratio of damage (as a percentage) of all damaged productive assets (by default 25%)
- $Affected\ ratio$ is calculated as the estimated average ratio of damage (as a percentage) of all productive assets, including all damaged/destroyed productive assets (by default 40%)

Target c – Methodology

Computation of C-3 and C-5 – Direct economic loss to all other damaged or destroyed productive assets and critical infrastructure attributed to disasters.

Methodology for unit prices (vehicles, vessels, livestock, etc.)

<u>Data not disaggregated (no distinction of Damaged/Destroyed)</u>

C-3 **=** $Number\ of\ affected\ elements * Unit\ cost * affected\ ratio$

<u>Data disaggregated in Damaged and Destroyed</u>

C-3 **=** $Number\ of\ damaged\ elements * Unit\ \ cost * damaged\ ratio$

+

$Number\ of\ destroyed\ elements * Unit\ \ cost$

Target c – Data Requirements

C-3	**Direct economic loss to all other damaged or destroyed productive assets attributed to disasters.** ***Annotation from A/71/644:*** *Productive assets would be disaggregated by economic sector, including services, according to standard international classifications. Countries would report against those economic sectors relevant to their economies. This would be described in the associated metadata.* **Please see note and brief description of Metadata in Indicator C-2 in this table.** *Please see ANNEX I for more information and examples of proposed Metadata schema.* **Data to be collected for each disaster [Minimum Requirement]:** **For each of the asset types declared in Metadata that are affected in a disaster:** - **C-3:** Direct economic loss to all other damaged or destroyed productive assets attributed to disasters. If a proper economic valuation of direct loss (compliant with SFDRR) is available, it can be reported. - **C-3a:** Number of productive assets of each type, either damaged or destroyed **or** - **C-3b:** Number of productive assets damaged of each type - **C-3c:** Number of productive assets destroyed of each type **Recommended disaggregation:** - by Hazard - by Geography (Administrative Units) - By type level of affectation (damaged/destroyed). This should be reflected in Metadata. - By size of Facility (small/medium/large). This should be reflected in Metadata.

Target c – METADATA

Metadata is defined as "*a set of data that describes, provides context and gives information about other data".*

- In the context of the Sendai Framework Targets and Indicators, Metadata provides the additional information **about the type and description of the elements** (Productive Assets and Infrastructure elements) for which Member States are collecting data and estimating losses.

- Additionally, Metadata will also be used to provide additional information about the described items, information required to support the economic assessments (like average size, unit cost, percentage for equipment, etc.) and livelihoods (no. of workers).

- Sendai Metadata also describes the country (with data such as population, GDP, total number of households, etc.) providing the required context for several indicators (notably human, economic loss and livelihoods) to be successfully estimated.

Target C
Metadata

Table: Example for Illustration of Suggested Metadata for Productive Assets of C3, C4 and C5 indicators

Type of Productive Asset	average size of facilities	construction cost per Unit USD $, by YEAR (b) USD of 2015	Additional % Equipment, furniture & materials	Additional % associated infrastructure	Measurment UNIT	Formula	No. Workers
Small Industrial Facility (Group C Manufacturing on ISIC)	100	1,200 2017 1,220 2018 1,245 2019 ….. …..	25%	25%	Mt^2	A*B*C*D*X	10
Medium Industrial Facility (Group C Manufacturing on ISIC)	600	1,200 2017 1,205 2018 1,215 2019 ….. …..	40%	25%	Mt^2	…	50
Large Industrial Facility (Group C Manufacturing on ISIC)	3,000	1,200 2017 1,220 2018 1,245 2019 ….. …..	60%	20%	Mt^2	…	1000
Commercial – small shop (Group G Wholesale and retail trade on ISIC)	60	800 2017 809 2018 ….. …..	50%	25%	Mt^2	…	3
Commercial – large shop (Group G Wholesale and retail trade on ISIC)	1,000	800 2017 809 2018 ….. …..	800	25%	Mt^2	…	100.
Small tourism facility (Group I Accommodation and food service on ISIC)	1,000	800 2017 809 2018 ….. …..	25%	25%	Mt^2	…	15
Large tourism facility (Group I Accommodation and food service on ISIC)	10,000	1,200 2017 1,220 2018 1,245 2019 ….. …..	25%	25%	Mt^2	…	300
Housing (C4)	55	500 2017 509 2018 ….. …..	25%	25%	Mt^2	…	1

Target C
Metadata

Table: Example for Illustration of Suggested Metadata for Productive Assets of C-2 sub-Indicators

Type of Crop or Livestock or Agricultural Productive Asset	average size of facilities	Average replacement cost per Unit USD $, by YEAR (b) USD of 2015	Additional % Equipment, furniture & materials	Additional % associated infrastructure	Measurement UNIT	Formula	No. Workers
Corn	10000	1,200 2017 1,220 2018 1,245 2019	0%	0%	Hectare		10
Rice	10000	800 2017 805 2018 815 2019	0%	0%	Hectare		50
Wheat	10000	200 2017 220 2018 245 2019	0%	0%	Hectare	..	1000
..... (OTHER)	10000	800 2017 809 2018	0%	0%	Hectare	...	3
Cow	1	600 2017 609 2018	0%	0%	Animal	...	0.1
Pig	1	600 2017 609 2018	0%	0%	Animal	...	0.15
Sheep	1	200 2017 220 2018 245 2019	0%	0%	Animal	...	0.03
Goat	1	300 2017 409 2018	0%	0%	Animal	...	0.03

Target C Landing page

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

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

C-1 Direct economic loss attributed to disasters in relation to global gross domestic product

2021	2022	2005-15	2019-20

> PREVIOUS CYCLES

		2021	2022
C-2	Direct **agricultural** loss attributed to disasters	USD 103,403	
C-3	Direct economic loss to all other damaged or destroyed **productive assets** attributed to disasters	USD 3,302,309	
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		
C-6	Direct economic loss to **cultural heritage** damaged or destroyed attributed to disasters		

CALCULATE TARGET C

Target C Sub-indicator C-2c with disaggregation

Risk & early warning

Report cover information

C-2 Direct agricultural loss attributed to disasters

Data entry options

- Enter monetary value & hectares manually
- Enter hectares manually & monetary value to be calculated
- Both values to be imported from National Disaster Loss Database

Agricultural loss (calculated indicator)

YEAR	AMOUNT (USD)	SOURCE
2021	1 345 900	National Disaster Loss Database
2022		

C-2C Loss of crops damaged or destroyed attributed to disasters

Loss of crops

YEAR	MONETARY VALUE	HECTARES			SOURCE *
2021 *	USD 103,403	total 128,309	64,309 Damaged	64,000 Destroyed	National Disaster Loss database
2022					

Disaggregation (optional)

TYPE OF CROP

CROP	2021				2022			
	MONETARY VALUE	HECTARES			MONETARY VALUE	HECTARES		
		Total	Damaged	Destroyed		Total	Damaged	Destroyed
Barley								
Millets								
Rice								
Tea								
Wheat								

C-2L Loss of livestock lost attributed to disasters

C-2Fo Loss of forests affected/destroyed by disasters

C-2A Loss of aquaculture production area affected

C-2F Loss of Fisheries production area affected

Target C

Indicator C-3 with disaggregation

C-3 Direct economic loss to all other damaged or destroyed productive assets attributed to disasters

Data entry options

- ○ **Option 1:** Enter manually number of facilities and monetary value of DIRECT economic loss
- ○ **Option 2:** Enter number of facilities manually, monetary value to be calculated
- ○ **Option 3:** Both values to be imported from National Disaster Loss Database

Other damaged or destroyed productive assets loss (calculated indicator)

YEAR	AMOUNT (USD)	SOURCE
2020	1 345 900	National Disaster Loss Database
2021		

Loss of assets

YEAR	MONETARY VALUE	ASSETS			SOURCE *
2021 *	USD 103,403	total 81	63 Damaged	18 Destroyed	National Disaster Loss database
2022					

Disaggregation (optional)

TYPE OF ASSET

ASSETS	2021				2022			
	MONETARY VALUE	ASSETS			MONETARY VALUE	ASSETS		
		Total	Damaged	Destroyed		Total	Damaged	Destroyed
Small hotel								
Medium hotel								
Small industry								
Large industry								

Target C Metadata definition

GLOBAL TARGETS: Setup

- Responsible institutions
- Disaggregation
  - Hazards
  - Geography
  - Productive assets: Agriculture
  - Productive assets: Other
  - Critical infrastructure

Disaggregation: Critical infrastructure

The information on size, number of workers and percentage of additional equipment and infrastructure only needs to be entered once and is used to calculate the direct economic loss of damaged or destroyed critical infrastructure (Targets C and D).

Filter by: Type of infrastructure | Search | GO

CRITICAL INFRASTRUCTURE	AVERAGE SIZE *	UNITS *	NO. WORKERS *	ADDITIONAL % EQUIPMENT *	ADDITIONAL % ASSOCIATED INFRASTRUCTURE *	
Health facility - small	80	sq m	4	40	25	
Health facility - medium		sq m				
Health facility - big		sq m				
Education – small school		sq m				
Education – medium facility		sq m				
Education – large facility		sq m				
Road - unpaved		sq m				
Road - paved		sq m				
Highway, single		sq m				
Highway, double		sq m				
Bridge, single small		sq m				
Bridge, single medium		sq m				
Bridge, large, single or double		sq m				
		sq m				

+ ADD MORE

Target C Metadata definition (Loss database)

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]

DesInventar Sendai Metadata Manager

Select the Metadata Group you want to create/edit: **Critical Infrastructure**

Code	FAO	Sector	Source	Description	Unit	Measure	Average size	% Equip.	% Infra.	% damage	% Formula
H492		Roads	M. Transport/M. Commerce/M. Infr	Road (DesInventar legac	Road	M	1.0	0.0 %	0.1 %	0.25 %	UNISDR Methodology
H492		Paved road - 1 Lane	M. Transport/M. Commerce/M. Infr	Road - 1 Lane	Road	M	1.0	0.0 %	0.1 %	0.25 %	UNISDR Methodology
H492		Paved road - 2 Lanes	M. Transport/M. Commerce/M. Infr	Road - 2 Lanes	Road	M	1.0	0.0 %	0.1 %	0.25 %	UNISDR Methodology
H492		Paved road - 4 Lanes	M. Transport/M. Commerce/M. Infr	Road - 4 Lanes	Road	M	1.0	0.0 %	0.1 %	0.25 %	UNISDR Methodology
H491		Overground Metro/Tram/Subway/T	M. Transport/M. Commerce/M. Infr	Railway	Rail track lane	M	1.0	0.0 %	0.1 %	0.25 %	UNISDR Methodology
H491		Underground Metro/Tram/Subway/	M. Transport/M. Commerce/M. Infr	Railway	Rail track lane	M	1.0	0.0 %	0.1 %	0.25 %	UNISDR Methodology
H5011		Port/Dock	M. Transport/M. Commerce/M. Infr	Port/Dock complex	Dock	Units	1.0	0.0 %	0.25 %	0.25 %	UNISDR Methodology
H502		Port	M. Transport/M. Commerce/M. Infr	Port/Dock complex	Dock	Units	1.0	0.0 %	0.25 %	0.25 %	UNISDR Methodology
H51		International Airport	M. Transport/M. Commerce/M. Infr	Airport	Airport	Units	1.0	0.0 %	0.25 %	0.25 %	UNISDR Methodology
H51		National Airport	M. Transport/M. Commerce/M. Infr	Airport	Airport	Units	1.0	0.0 %	0.25 %	0.25 %	UNISDR Methodology
H51		Regional airport	M. Transport/M. Commerce/M. Infr	Airport	Airport	Units	1.0	0.0 %	0.25 %	0.25 %	UNISDR Methodology
J61		Telecommunications	M. Transport/M. Commerce/M. Infr	Facility	Facility	M2	300.0	0.0 %	0.25 %	0.25 %	UNISDR Methodology
		Government buildings	M. Commerce/trade/industry	Government buildings an	Area	M2	400.0	1.0 %	0.25 %	0.25 %	UNISDR Methodology
		Protective Infrastructure	M. Infrastructure/M. Environment	Other protective Infrastru	Protective Infrastruc	Units	1.0	0.0 %	0.25 %	0.25 %	UNISDR Methodology
		Green Infrastructure	M. Infrastructure/M. Environment	Other green Infrastructur	Green Infrastructure	Units	1.0	0.0 %	0.1 %	0.25 %	UNISDR Methodology

Add | New Element | Save Edits | Delete Selected

Done

Target C Indicators C, D data entry(Loss database)

Damages and losses to other infrastructure (C-5, D-4)

Economic loss and number of facilities/units of other infrastructures (C-5, D-4):

Economic loss from affected Infrastructures (for C-5):	Number of other affected infrastructures (D-4):	Number of damaged infrastructures:	Number of destroyed infrastructures:
Number	Number Σ	Number	Number

Disaggregation:

Roads (Economic loss): Number	Road [M] (Total Affected): Number Σ	Road [M] (Damaged): Number	Road [M] (Destroyed): Number
Paved road - 1 Lane (Economic loss): Number	Road [M] (Total Affected): Number Σ	Road [M] (Damaged): Number	Road [M] (Destroyed): Number
Paved road - 2 Lanes (Economic loss): Number	Road [M] (Total Affected): Number Σ	Road [M] (Damaged): Number	Road [M] (Destroyed): Number
Paved road - 4 Lanes (Economic loss): Number	Road [M] (Total Affected): Number Σ	Road [M] (Damaged): Number	Road [M] (Destroyed): Number
Overground Metro/Tram/Subway/Train (Economic loss): Number	Rail track lane [M] (Total Affected): Number Σ	Rail track lane [M] (Damaged): Number	Rail track lane [M] (Destroyed): Number
Underground Metro/Tram/Subway/Train (Economic loss): Number	Rail track lane [M] (Total Affected): Number Σ	Rail track lane [M] (Damaged): Number	Rail track lane [M] (Destroyed): Number
Port/Dock (Economic loss): Number	Dock [Units] (Total Affected): Number Σ	Dock [Units] (Damaged): Number	Dock [Units] (Destroyed): Number
Port (Economic loss): Number	Dock [Units] (Total Affected): Number Σ	Dock [Units] (Damaged): Number	Dock [Units] (Destroyed): Number
International Airport (Economic loss): Number	Airport [Units] (Total Affected): Number Σ	Airport [Units] (Damaged): Number	Airport [Units] (Destroyed): Number
National Airport (Economic loss): Number	Airport [Units] (Total Affected): Number Σ	Airport [Units] (Damaged): Number	Airport [Units] (Destroyed): Number
Regional airport (Economic loss): Number	Airport [Units] (Total Affected): Number Σ	Airport [Units] (Damaged): Number	Airport [Units] (Destroyed): Number
Telecommunications (Economic loss): Number	Facility [Units] (Total Affected): Number Σ	Facility [Units] (Damaged): Number	Facility [Units] (Destroyed): Number
Government buildings (Economic loss): Number	Area [Units] (Total Affected): Number Σ	Area [Units] (Damaged): Number	Area [Units] (Destroyed): Number
Protective Infrastructure (Economic loss): Number	Protective Infrastructure [Units] (Total Affected): Number Σ	Protective Infrastructure [Units] (Damaged): Number	Protective Infrastructure [Units] (Destroyed): Number
Green Infrastructure (Economic loss): Number	Green Infrastructure [Units] (Total Affected): Number Σ	Green Infrastructure [Units] (Damaged): Number	Green Infrastructure [Units] (Destroyed): Number

Sendai Framework 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

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

Target D - Definitions

Key terms

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 build 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.

Target D

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.	
D-1 (compound)	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. *The decision regarding those elements of critical infrastructure to be included in the calculation will be left to the Member States and described in the accompanying metadata. Protective infrastructure and green infrastructure should be included where relevant.*
D-5 (compound)	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. *The decision regarding those elements of basic services to be included in the calculation will be left to the Member States and described in the accompanying metadata.*

Target D – Methodology

- Indicators **D-2, D-3, and D-4** directly monitor the elements of "**damage to critical infrastructure**" by measuring the **number of facilities and number of infrastructure units** which are damaged or destroyed. This is the same number that is required for Target C (Indicator C-5)

- Indicators **D-6, D-7 and D-8** directly monitor the elements of "**disruption to basic services**" of Target D by counting the **number of times** the provision of basic services are **disrupted as a consequence of a disaster**.

*Emphasis is made in the fact that a "**disruption"** includes: interruptions, either single or multiple, short or long, of the services, damage to the facilities or networks that provide the service, or a measurable/noticeable reduction in the quality of the service, or reduction in the population covered by the service, **or a combination of all the above**.*

Target D – Computation Methodology

D-1 = Index of Critical Infrastructure Damage =
number of infrastructure units and facilities damaged/ population * 100,000

D-5 = Index of Service Disruptions =
number of disruptions occurred/ population * 100,000

Target D – Indicators D-7 and D-8 data

Disruptions to Basic Services (D-6)

Public services disrupted:

- [ ] Health (D-6)
- [x] Education (D-7)
- [x] Transportation (D-8)
- [x] Power and Energy (D-8)
- [x] Communications (D-8)
- [x] Water supply (D-8)
- [ ] Relief (D-8)
- [x] Sewerage (D-8)
- [x] Administrative sector (D-8)
- [x] Agriculture/Food (D-8)
- [x] Industrial/Services (D-8)
- [ ] Other services (D-8)

Disruptions of services in one disaster (loss database)

Note: a service can be disrupted once (yes or no) in a given disaster. The accumulation of these disruptions in multiple disasters is the number of disruptions to be reported

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

To be imported from National Disaster Loss Database

YES NO

Health services disrupted

YEAR	NUMBER	SOURCE
2021		National Disaster Loss Database
2022		

Disaggregation (optional)

> HAZARD

> GEOGRAPHY

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

To be imported from National Disaster Loss Database

YES NO

Number of disruptions to basic services

TYPE	2021	2022	SOURCE
Transport system			National Disaster Loss Database
Water supply			National Disaster Loss Database
Information and Communication Technology (ITC) system			National Disaster Loss Database
Emergency response			National Disaster Loss Database
Protective infrastructure			National Disaster Loss Database
Green infrastructure			National Disaster Loss Database

THANK YOU

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

UNISDR
The United Nations Office for Disaster Risk Reduction