Background Statistics, Hazard Exposure and DRSF

The 18th TWG on Disaster-related Statistics

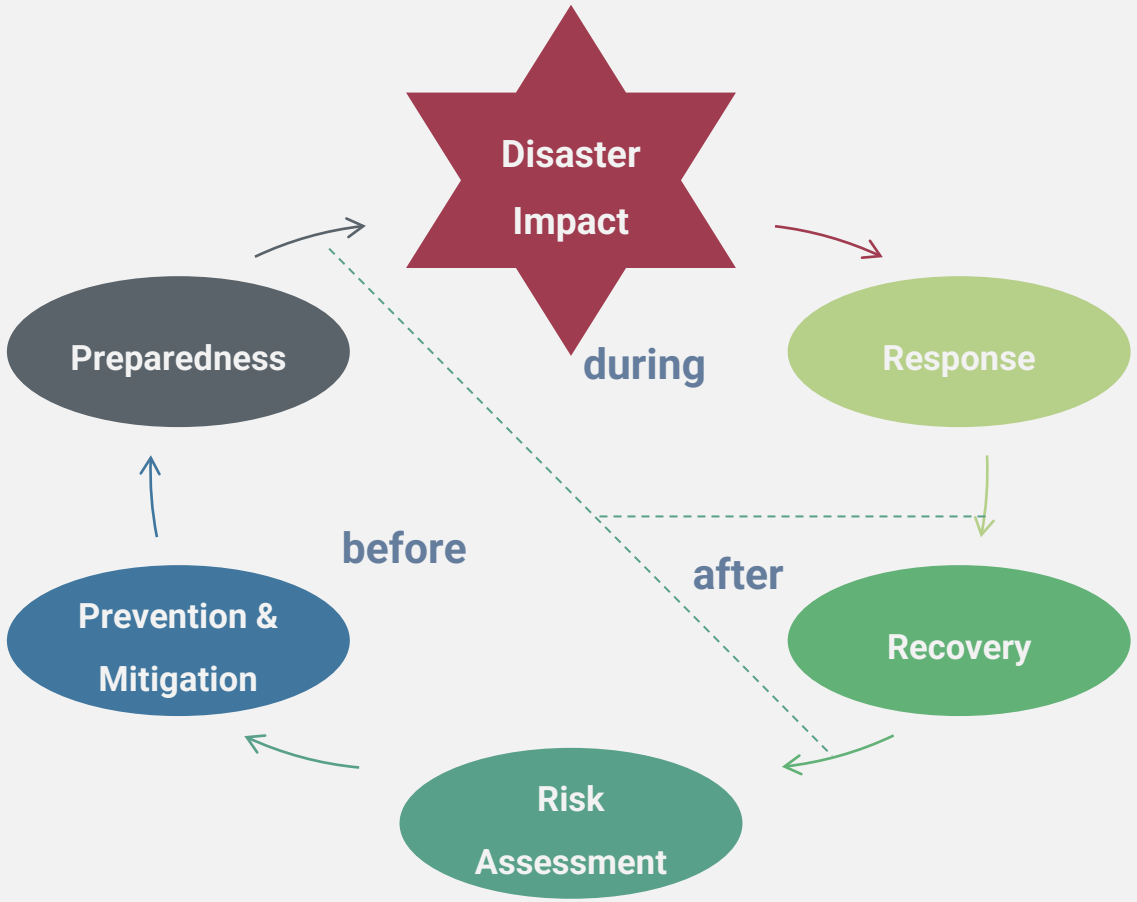
Wednesday, 29th June 2022, 14:00 – 15:30 hours, Bangkok time

Outline

- Introduction
- Uses of background statistics and hazard exposure
- DRSF Tables
- Basic concepts, definitions and classifications
- Data sources and existing tools and guides
- Institutional dimension
- Linkages to SDGs and Sendai Framework

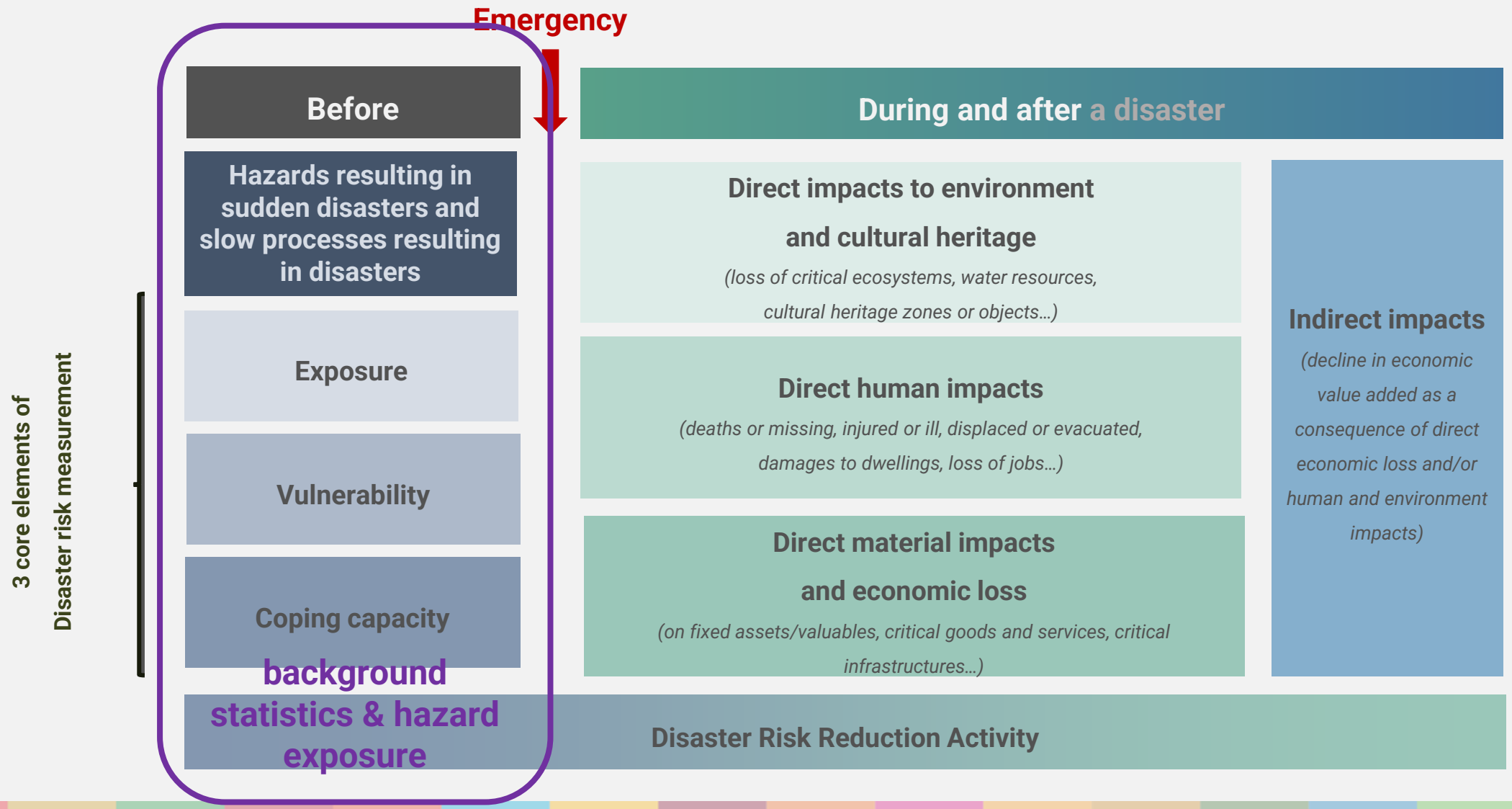
INTRODUCTION

Cycle of disaster risk management

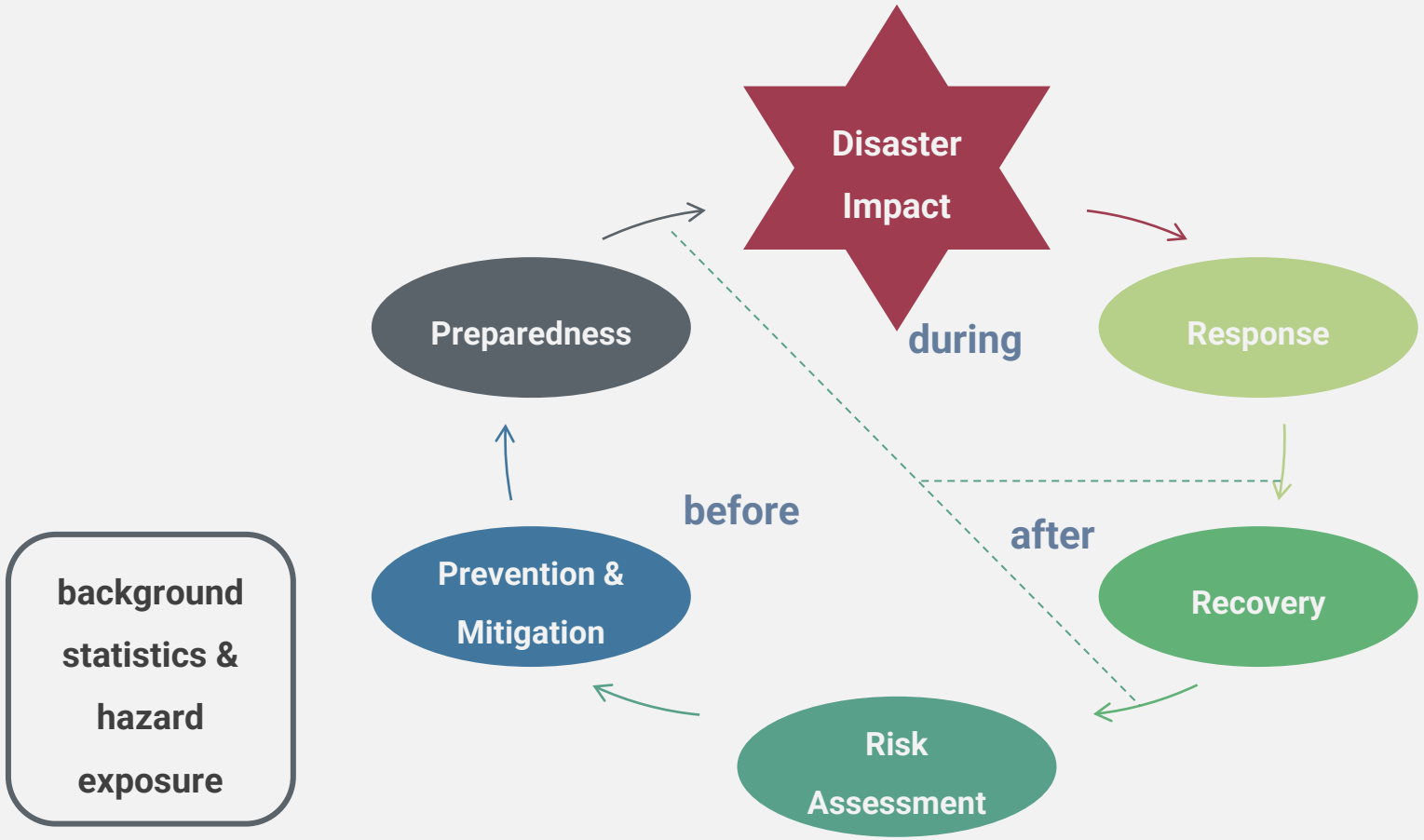


Source: Diagram adapted from Thailand Department of Disaster Prevention and Mitigation (DDPM)

Components of the DRSF



Cycle of disaster risk management



Source: Diagram adapted from Thailand Department of Disaster Prevention and Mitigation (DDPM)

USES OF BACKGROUND STATISTICS AND HAZARD EXPOSURE

Statistics in disaster risk reduction decision making:

Sample uses of background statistics & hazard exposure

Issue:

- Use of best available knowledge so that development does not exacerbate existing (and or create new) disaster risks

Decision & plan:

- Guide policies for reducing exposure and for vulnerable groups (including, potentially, via relocation outside of hazard areas)

Statistics:

- Vulnerability and baseline of exposure: (demographic and socioeconomic statistics) e.g. baseline of exposure in areas prone to hazards and identifying vulnerable groups

Issue:

- Risk profiles are changing as new information becomes available and development in potentially vulnerable areas takes place

Decision & plan:

- How to invest in risk reduction measures as an integrated part of the broader poverty reduction and sustainable development initiatives

Statistics:

- Identifying factors that cause and or exacerbate disaster risks, e.g., environmental degradation, highly vulnerable infrastructure, or extreme poverty.

Statistics in disaster risk reduction decision making:

Sample uses of background statistics & hazard exposure (cont.)

Risk assessment

- ***Data and Statistics:***
  - Population density by location
- ***Indicators:***
  - Disaster risk indices

Exposure to hazards

- ***Data and Statistics:***
  - Hazard map + map of the population and critical infrastructure
- ***Indicators:***
  - Hazard Exposure by geographic regions

Vulnerability

- ***Data and Statistics:***
  - Statistics on basic social & demographic characteristics of populations
- ***Indicators:***
  - Women's participation in post recovery process (~ SDG Indicator 16.7.2)

Coping capacity

- ***Data and Statistics:***
  - DRR plans and strategies
- ***Indicators:***
  - Share of local government adopting DRR strategies (SDG Indicator 11.b.1)

Risk reduction activity

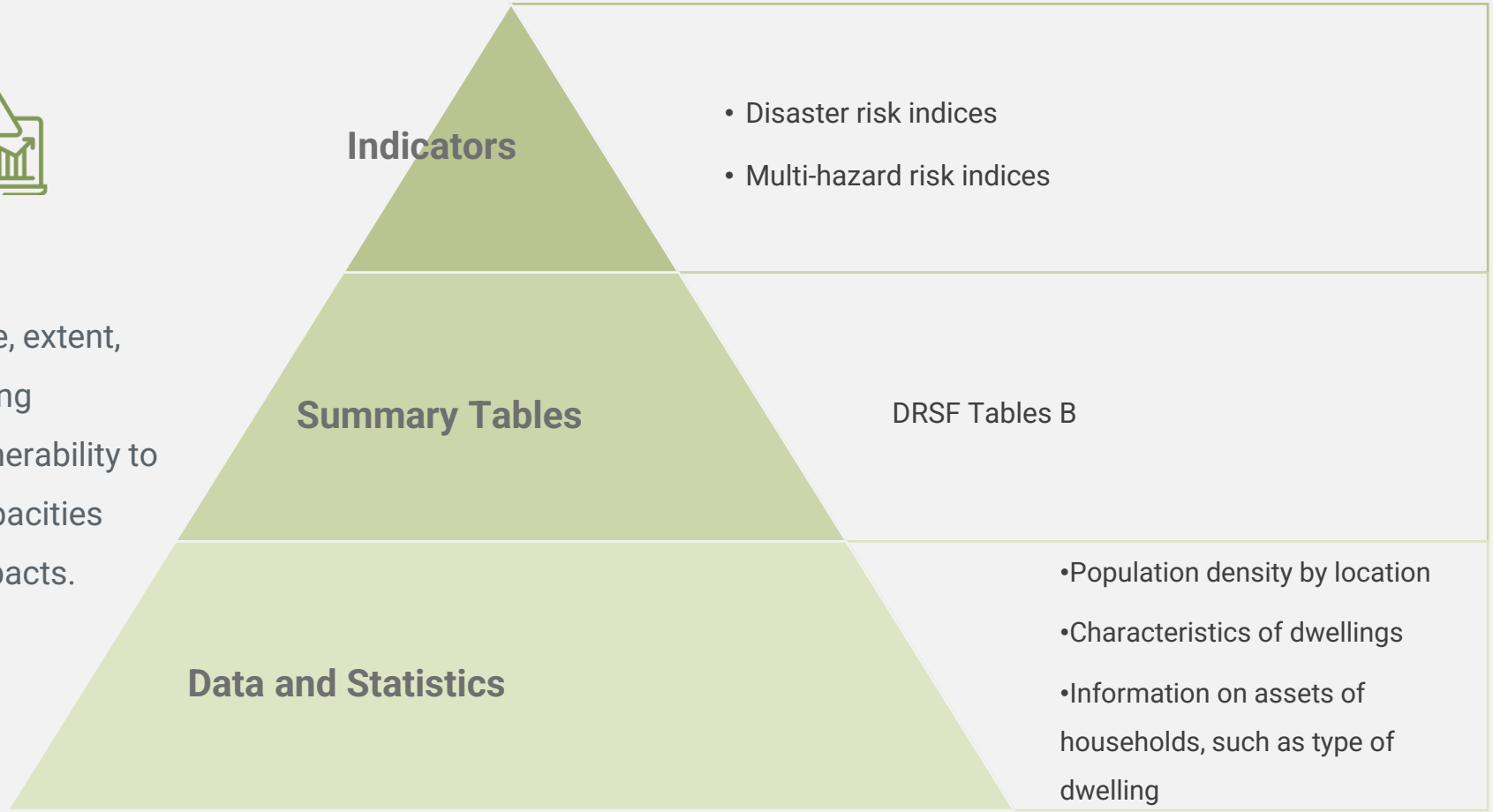
- ***Data and Statistics:***
  - Expenses on early warning systems
- ***Indicators:***
  - Activity expenditure and investment in disaster risk prevention and mitigation

Information, data, statistics and indicators:
background statistics & hazard exposure (cont.)

RISK ASSESSMENT

Concept

Process to determine the nature, extent, and locations of risk, by analysing exposure and conditions of vulnerability to hazards and present coping capacities against all types of disaster impacts.

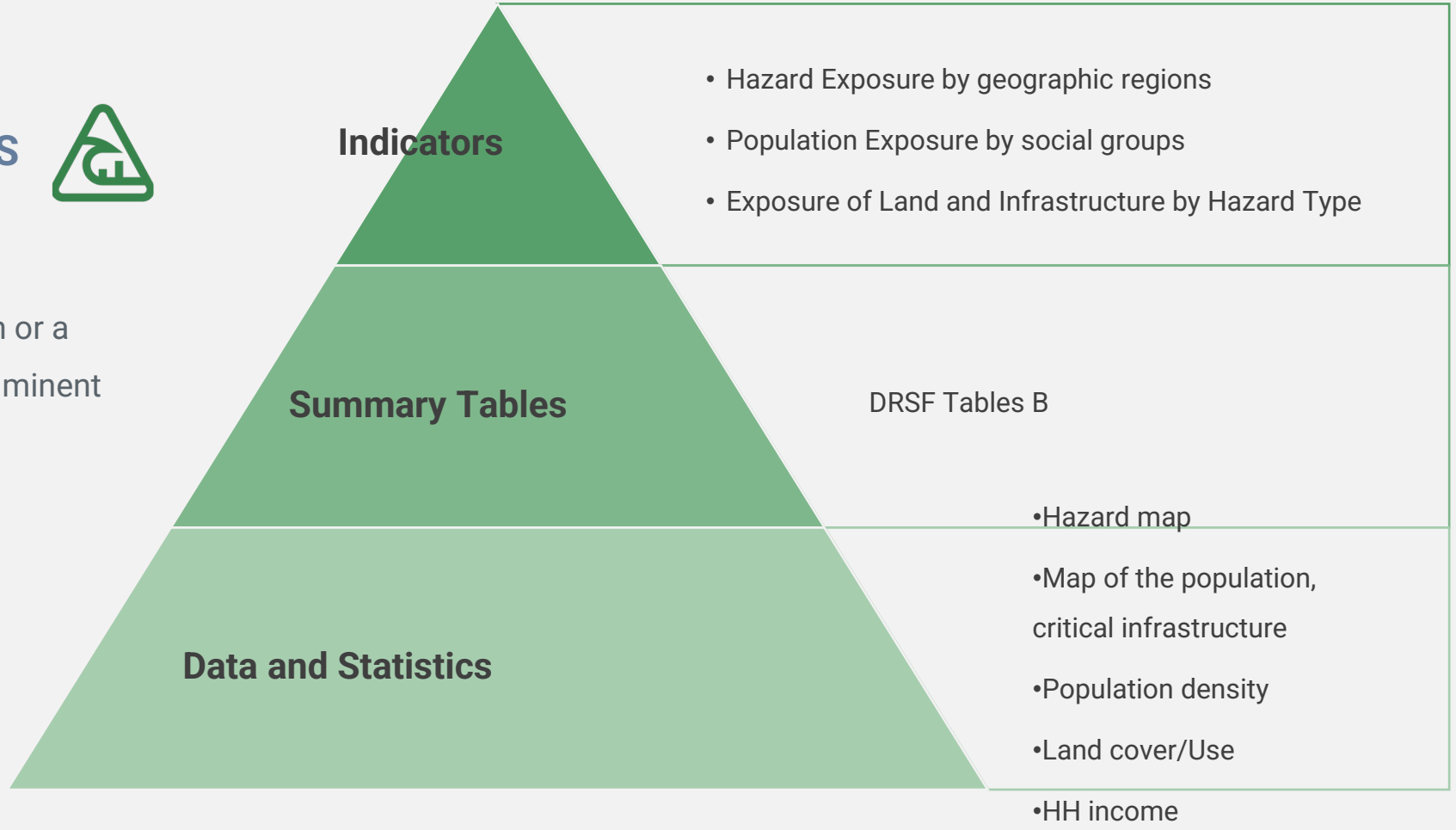


Information, data, statistics and indicators:
background statistics & hazard exposure (cont.)

EXPOSURE TO HAZARDS

Concept

State of being in which a person or a group of people remain in an imminent risk of danger due to hazards

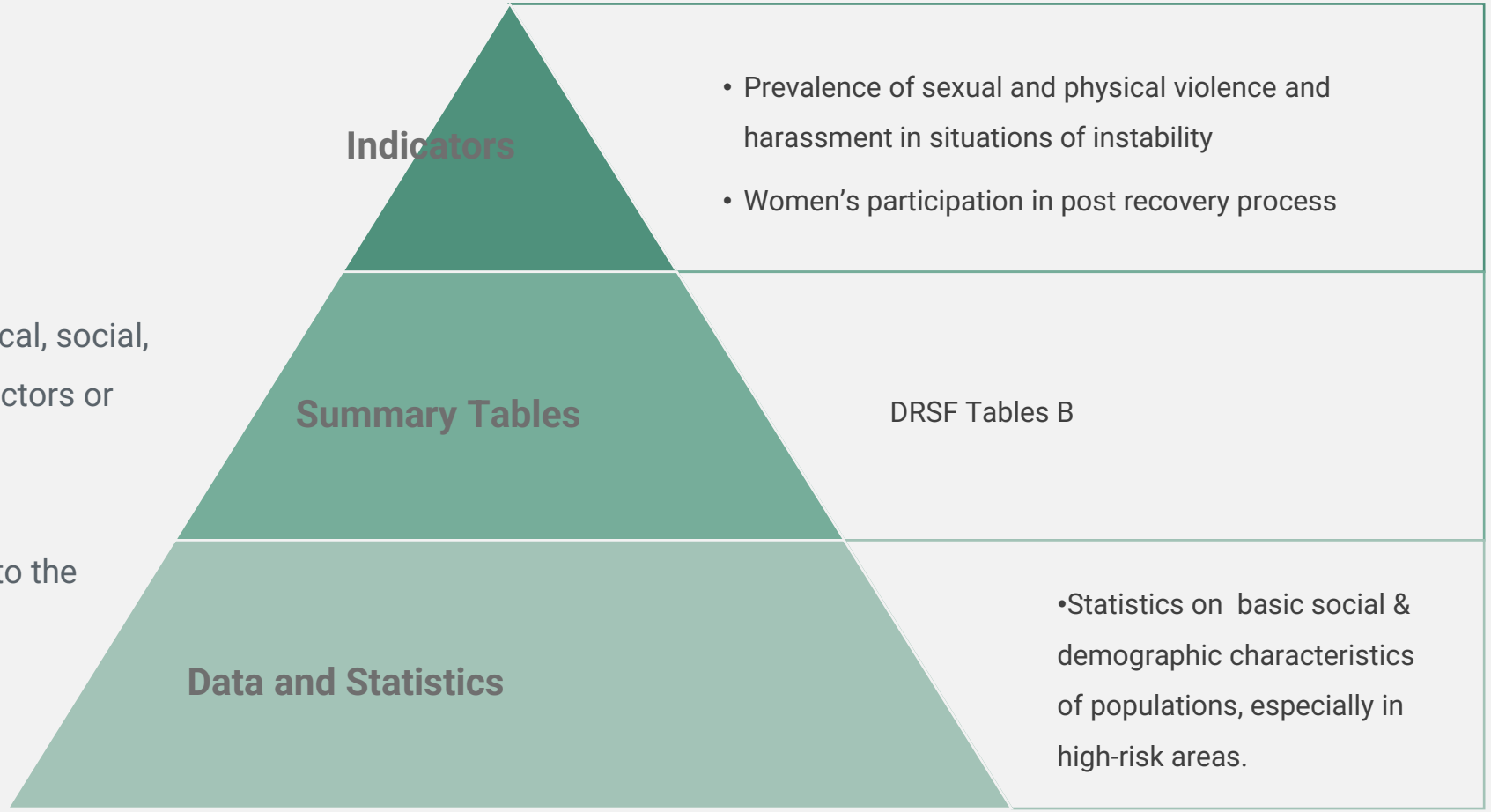


Information, data, statistics and indicators:
background statistics & hazard exposure (cont.)

VULNERABILITY

Concept

Conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.

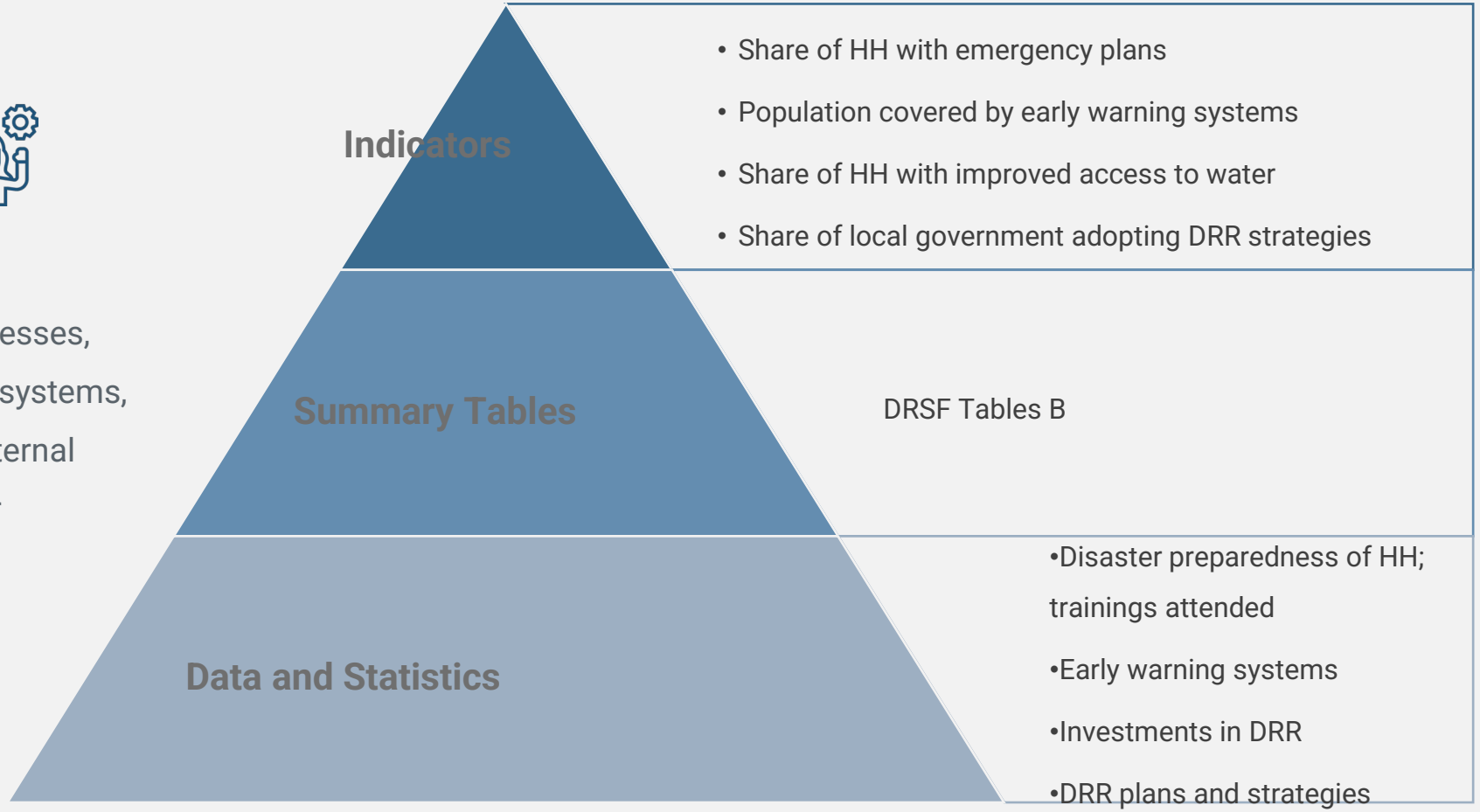


Information, data, statistics and indicators:
background statistics & hazard exposure (cont.)

COPING CAPACITY

Concept

Resilience of households, businesses, communities, social-ecological systems, and whole countries against external shocks in the form of a disaster



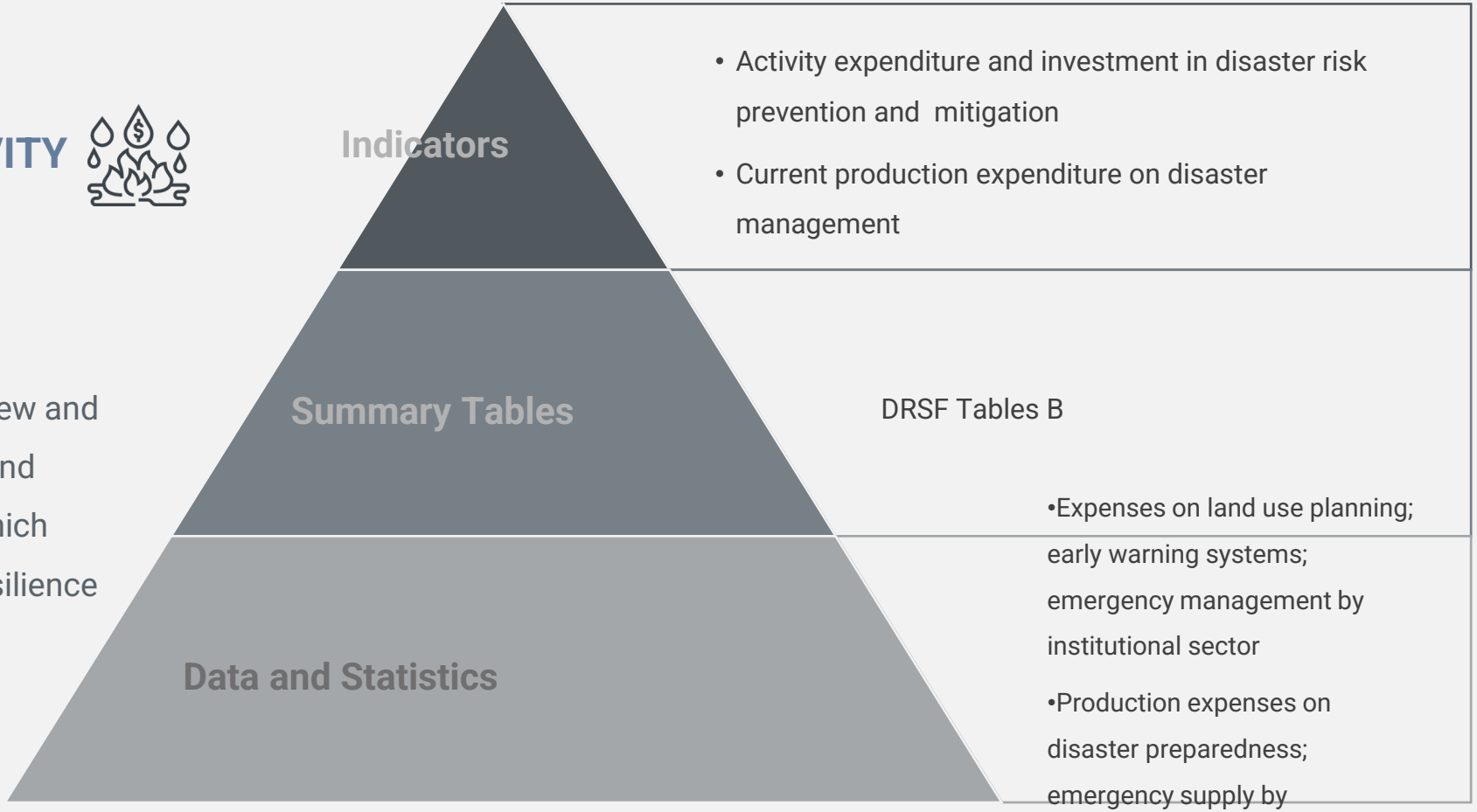
Information, data, statistics and indicators:
background statistics & hazard exposure (cont.)

RISK REDUCTION ACTIVITY

(before a disaster)

Concept

Activities aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contributes to strengthening resilience



DRSF TABLES

DRSF Tables

- The basic range of disaster related statistics is organized according to generic tables or categories of tables, as follows:
  - **A**: Summary tables of **disaster occurrences**
  - **B**: Selected **background statistics and exposure to hazards**
  - **C**: Summary tables of **human impacts**
  - **D**: Summary tables of **direct material impacts in physical terms**
  - **E**: Summary tables of **direct material impacts in monetary terms**
  - **F**: Summary of **material impacts to agriculture**
  - **G**: Summary table of **direct environmental impacts**
  - **DRRE**: **Disaster risk reduction expenditure accounts**

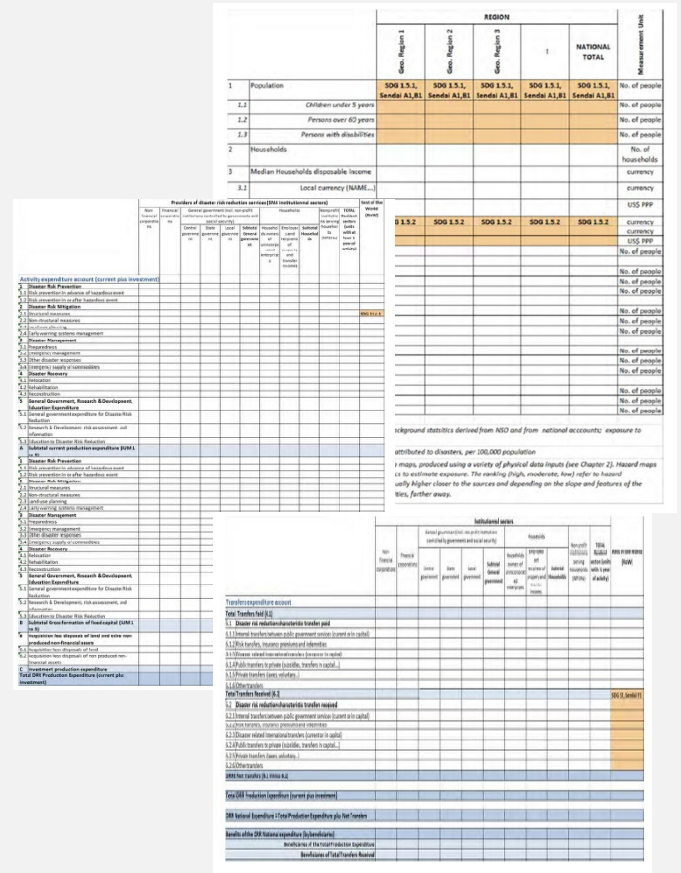


Table B1a: Population Background Statistics and Hazard Exposure by geographic regions

- Population
  - Children under 5 years
  - Persons over 60 years
  - Persons with disabilities
- Households (no. of households)
- Median household disposable income
  - Local currency
  - US$ PPP
- Population in hazard area (high, moderate and low exposure)
  - Geo-physical
  - Hydrological
  - Meteorological & Climatological
  - Biological
  - Other (specify)
- *By* geographic regions

B Selected Background Statistics and Exposure to hazards

B1a Population Background Statistics and Hazard Exposure by geographic regions

Measurement units: see column at right

		REGION					Measurement Unit
		Geo. Region 1	Geo. Region 2	Geo. Region 3	Geo Region ...	NATIONAL TOTAL	
1	Population	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	No. of people
1.1	*Children under 5 years*						No. of people
1.2	*Persons over 60 years*						No. of people
1.3	*Persons with disabilities*						No. of people
2	Households						No. of households
3	Median Households disposable income						currency
3.1	*Local currency (NAME...)*						currency
3.2	*US$ PPP*						US$ PPP
4	GDP	SDG 1.5.2	SDG 1.5.2	SDG 1.5.2	SDG 1.5.2	SDG 1.5.2	currency
4.1	*Local currency (NAME...)*						currency
4.2	*US$ PPP*						US$ PPP
5	Population in Hazard Area						No. of people
5.1	Geophysical						
5.1.1	*High exposure*						No. of people
5.1.2	*Moderate exposure*						No. of people
5.1.3	*Low exposure*						No. of people
5.2	Hydrological						
5.2.1	*High exposure*						No. of people
5.2.2	*Moderate exposure*						No. of people
5.2.3	*Low exposure*						No. of people
5.3	Meteorological & Climatological						
5.3.1	*High exposure*						No. of people
5.3.2	*Moderate exposure*						No. of people
5.3.3	*Low exposure*						No. of people
5.4	Biological						
5.4.1	*High exposure*						No. of people
5.4.2	*Moderate exposure*						No. of people
5.4.3	*Low exposure*						No. of people
5.5	Other (specify)						
5.5.1	*High exposure*						No. of people
5.5.2	*Moderate exposure*						No. of people
5.5.3	*Low exposure*						No. of people

Table B1b: Population Exposure by Social Groups

- Population
- Population in hazard areas (high, moderate and low exposure)
  - Geo-physical
  - Hydrological
  - Meteorological & Climatological
  - Biological
  - Other (specify)
- *By* social groups
  - Age group:
    - 0- < 5
    - 0-15
    - 16-64
    - 65+
  - Sex: male, female
  - Urban/ rural population: urban/ rural
  - Specific vulnerability groups: disabled, poor, etc.

B1b Population Exposure by social groups

Measurement units: Number of people

		C3a1 - Age groups				TOTAL	C2a2 - Sex		TOTAL	C2a3 - Urban/Rural population		TOTAL	C2a4 - Specific vulnerability groups		NO TOTAL
		0-5	0-15	16-64	65+		Male	Female		Urban	Rural		Disabled	Poor	
1	Population		SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	SDG 1.5.1, Sendai A1,B1	
2	Population in Hazard Areas														
2.1	Geophysical														
2.1.1	*High exposure*														
2.1.2	*Moderate exposure*														
2.1.3	*Low exposure*														
2.2	Hydrological														
2.2.1	*High exposure*														
2.2.2	*Moderate exposure*														
2.2.3	*Low exposure*														
2.3	Biological														
2.3.1	*High exposure*														
2.3.2	*Moderate exposure*														
2.3.3	*Low exposure*														
2.4	Meteorological & Climatological														
2.4.1	*High exposure*														
2.4.2	*Moderate exposure*														
2.4.3	*Low exposure*														
2.5	Other [specify]														
2.5.1	*High exposure*														
2.5.2	*Moderate exposure*														
2.5.3	*Low exposure*														

Data disaggregation and disaster vulnerability

Age groups

- 0- <5
- 0-15
- 16-64
- 65+

Sex

- Male
- Female

Human settlement

- Urban
- Rural

Specific vulnerability groups

- Disabled
- Poor

Different social groups and disaster vulnerability *(cont.)*

Women

- Less access to livelihoods and dependence on natural resources
- Less likely than men to own assets
- Less access to financing
- Less access to information and technology
- Less decision-making power and participation in reconstruction efforts
- Raise the risk of sexual and physical violence and harassment (post-disaster)

Children

- High-dependency on parents and other caregivers
- When disaster strikes, get cut off from schooling, nutrition and health care
- Raise the risk of child marriage, child labour, conflict and public health emergencies
- Limited voice and representation

Persons with Disabilities

- Inaccessible facilities and services and transportation systems during evacuation
- PWD needs not incorporated in long-term recovery and reconstruction efforts

Poor

- More likely to live in hazard-exposed areas
- Engaged in informal economy
- Less able to invest in risk-reducing measures
- Lack of access to insurance and social protection

Table B2: Exposure of Land and Infrastructure by Hazard Type

- Critical infrastructures in hazard area
  - Hospitals, health facilities
  - Education facilities
  - Roads
  - Bridges
  - Etc.
- Land
  - Land
  - Agricultural land
  - Forest areas
  - Built-up areas
- *By* hazard type
  - Geo-physical
  - Hydrological
  - Meteorological & Climatological
  - Biological
  - Other (specify)

B2a Exposure of Land and Infrastructure by Hazard Type
Measurement units: see below table

		Geo-physical	Hydrological	Meteorological & Climatological	Biological	Other	NATIONAL TOTAL		Measurement Units
1	Critical infrastructures in Hazard Area								
1.1	Hospitals, health facilities								buildings, by type
1.2	Education facilities								buildings, by type
1.3	Other critical public administration buildings								sq m.
1.4	Public Monuments								sq m.
1.4.1	*Religious buildings*								
1.5	Roads								km
1.6	Bridges								m
1.7	Airports								buildings, by type
1.8	Piers								facilities, by type
1.9	Railways								km
1.10	Transport equipments								facilities, by type
1.11	Electricity generation facilities								facilities, by type
1.12	Electricity grids								facilities, by type
1.13	ICT Equipments								facilities, by type
1.14	Dams								facilities, by type
1.15	Water supply infrastructure								facilities, by type
1.16	Water sewage & treatment systems								facilities, by type
1.17	Other critical infrastructures								facilities, by type
2	Land								
2.1	Land								sq km
2.2	Agricultural land								sq km
2.3	Forest Areas								sq km
2.4	Built-up areas								sq km

Table B3: Coping Capacity Background Statistics *(to be discussed with DRRE tables)*

- GDP (per capita)
- Median household disposable income
- Number of dwellings with slum designation
- Population living in areas with slum designation
- Early warning systems
- Household preparedness
- Environmental resilience
- Risk reduction activity
- Disaster Risk Reduction Characteristics Activities (DRRCA) Transfers from Central to local government
- *By* geographic regions

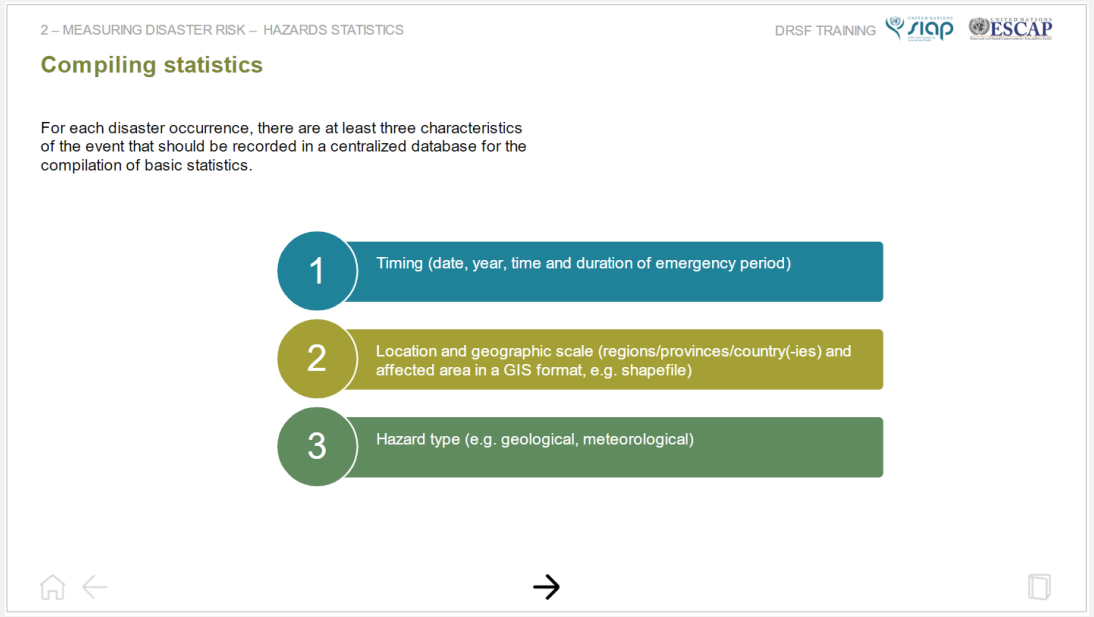
B **Disaster Risk Reduction Expenditure Account**

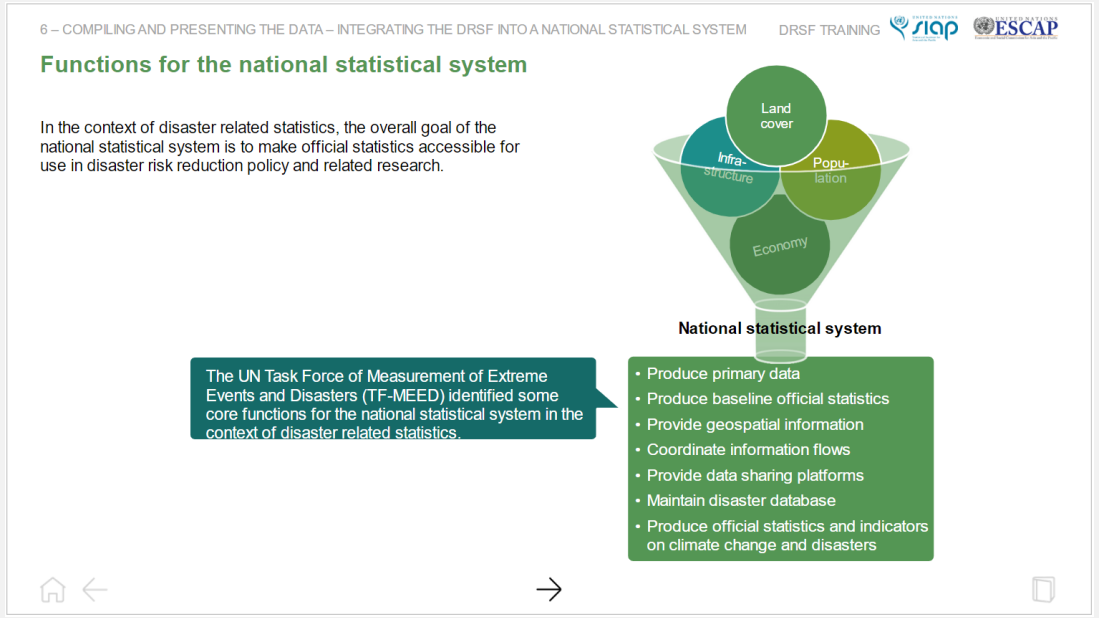
B3 **Coping Capacity Background Statistics**

		Geo Region 1	Geo Region 2	Geo Region 3	...	National	Measurement Units
1	GDP	SDG 1.5.2	SDG 1.5.2	SDG 1.5.2	SDG 1.5.2	SDG 1.5.2	Currency
2	GDP per capita						Currency
3	Median Households disposable income						Currency
3.1	Local currency (NAME...)						Currency
3.2	US$ PPP						US$ PPP
4	Number of dwellings with slum designation						no. of units
5	Population living in areas with slum designation						no. of people
6 Early Warning Systems							No. of systems
6.1	Population covered	Sendai G-3	Sendai G-3	Sendai G-3	Sendai G-3	Sendai G-3	%
6.2	Share of population in exposure areas covered						%
6.3	Investment Expenditure (also DRRE_A, 3.2)						Currency
7 Household Preparedness							
7.1	Share of households with emergency plan						%
7.2	Share of households with backup storage of food and water						%
7.3	Share of households with improved access to water and sanitation						%
7.4	Other Preparedness (household level)						%
8 Environmental Resilience							
8.1	Forest area						sq km
8.2	Share of water bodies in good condition						%
8.3	Other ecosystem condition measures						
9 Risk Reduction Activity							Currency
9.1	Disaster risk reduction characteristic transfers received						Currency
9.2	Disaster Risk Prevention						Currency
9.3	Disaster Risk Mitigation						Currency
9.4	Disaster Management						Currency
9.5	Disaster Recovery						Currency
9.6	General Government, Research & Development, Education Expenditure						Currency
10 DRRCA Transfers from Central to local government							Currency

DRSF E-learning Course:
background statistics & hazard exposure

- Module 2
- Module 6





BASIC CONCEPTS AND DEFINITIONS

Concepts and definitions:
Disaster risk

Disaster risk function

$$\text{Disaster risk} = f(Hazard\ Exposure, Vulnerability, Capacity)$$

Source: Birkmann, J. (2013)

Basic concepts, definitions and classifications:
background statistics & hazard exposure (cont.)

Disaster risk

- *"The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity."* (UN, 2016)

Basic concepts, definitions and classifications:
background statistics & hazard exposure

Hazard

- *"A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation."* (UN, 2016)

Exposure

- *"The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard prone areas."* (UN, 2016)

Basic concepts, definitions and classifications:
background statistics & hazard exposure (cont.)

Vulnerability

- *"The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards."* (UN, 2016)

Coping capacity

- *"The ability of people, organizations and systems, using available skills and resources, to manage adverse conditions, risk or disasters."* (UN, 2016)

Basic concepts, definitions and classifications:
background statistics & hazard exposure (cont.)

Urban (area)

- Definitions vary between countries (see further in UNSD, 2018)

Slum household

- *"One in which the inhabitants suffer one or more of the following 'household deprivations': lack of access to improved water source, lack of access to improved sanitation facilities, lack of sufficient living area, lack of housing durability and lack of security of tenure."* (UN-Habitat, 2016)

Persons with disabilities

- *"Those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others."* (UN, 2006)

Basic concepts, definitions and classifications:
background statistics & hazard exposure (cont.)

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."* (UN, 2016)

Land

- *"A unique environmental asset that delineates the space in which economic activities and environmental processes take place and within which environmental assets and economic assets are located."* (SEEA; UN, 2012)

Basic concepts, definitions and classifications:
background statistics & hazard exposure (cont.)

- Classifications for background statistics:
  - **System of National Account (SNA) 2008**
  - **Central Product Classification (CPC) Version 2.1**
  - **System of Environmental-Economic Accounting (SEEA) 2012: Central Framework**
  - **Etc.**

- Examples:
  - Dwellings (SNA)
    - *"Buildings, or designated parts of buildings, that are used entirely or primarily as residences, including any associated structures, such as garages, and all permanent fixtures customarily installed in residences."* (SNA, 2008)

- Critical buildings and structures (DRSF provisional list)
  - Healthcare facilities, education facilities, other critical public administration buildings, public monuments, roads, bridges, railways, airports, pier, electricity generation facilities, electricity grids, dams, water supply infrastructure, etc.
- Other buildings and structures (CPC)
  - Defined according to CPC and not designated as critical
  - Commercial buildings or public government buildings, or facilities not included as critical.
- Land cover and land use (SEEA)
  - Also areas covered by water
  - Agricultural land
  - Forest areas
  - Build-up areas

DATA SOURCES AND EXISTING TOOLS AND GUIDES

Data sources

Data/Statistics	Data Sources
Disaster-related data	NDMA and NSO (FDES)
Administrative data	NSO
Demographic changes: birth rate, migration, population density, settlement	NSO
Poverty and inequality	NSO and related ministries/agencies
Structure of economy: economic status, household income	NSO and/or ministry of planning/ finance
Infrastructure, including critical infrastructure	NSO and related ministries/agencies
Land management: land use planning	Related ministries/ agencies and NSO
Environment-related data and statistics: ecosystems conditions, forest, water, waste	Related ministries/ agencies (ex. Min. of Environment, Forest, Agriculture, Mining, etc.) and NSO (FDES and compendium)
Agriculture data: agricultural census	NSO and Ministry of Agriculture
Climate change-related statistics: carbon emission	Related ministries/ agencies (ex. Min. of Environment, Forest, Agriculture, Mining, etc.)

Data sources *(cont.)*

- Table B1a 
  - NDMA / national meteorological, geological, hydrological organisationsMaps of hazards
    - Exposure to hazards
  - NSO
    - Background statistics (socio-economic)
    - National accounts
  - Line ministries (Min. of planning/finance, Min. of Health, Min. of Interior, Min.. of Environment, etc.)
  - Local emergency response authorities

- Table B1b 
  - NDMA / national meteorological, geological, hydrological organisations
    - Maps of hazards
    - Exposure to hazards
  - NSO
    - Population and housing census
    - Gender statistics
    - Disability statistics
  - Line ministries (Min. of Health, Min. of Interior, Min. of Social Welfare, etc.)
  - Local emergency response authorities

Data sources *(cont.)*

- Table B2

  - NDMA / national meteorological, geological, hydrological organisations
    - Maps of hazards
    - Exposure to hazards
  - NSO
    - Background statistics (socio-economic)
  - Line ministries (Min. of Health, Min. of Interior, Min. of Environment, etc.)
    - Land cover and land use statistics
    - Infrastructure maps
  - Local emergency response authorities or local authorities

- Table B3

  - NSO
    - Household preparedness: population and housing census/ household survey
    - Disaster risk reduction activity: national accounts
  - Ministry of environment
    - Water and ecosystem assessment
  - Ministry of planning / finance
    - Disaster risk reduction activity
  - Local emergency response authorities or local authorities

Data sources for Background Statistics

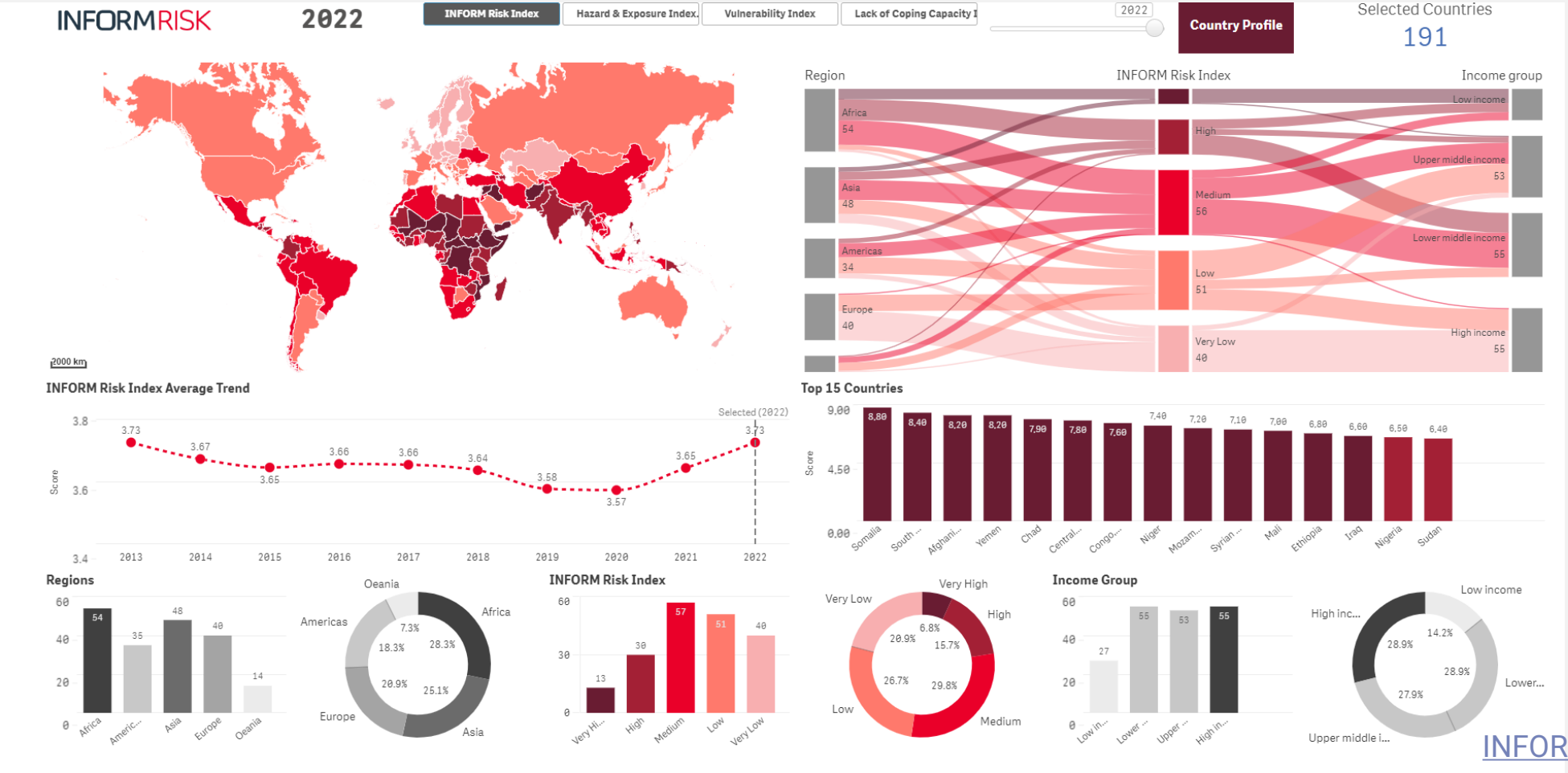
- Censuses
- Non official data
  - Assessments (needs, vulnerability, rapid mortality etc)
  - Profiling
  - Non traditional sources
  - Demographic surveillance sites
- Administrative data
  - CRVS – Civil Registration and Vital Statistics
  - EMIS – Education Management Information Systems
  - HMIS – Health Management Information Systems
  - Sample registration sites
- Surveys
  - Household
  - Specialized

Existing tools and guides

- WorldPop's subnational age and sex population estimates
- UNHCR's Demographic Projection Tool
- Demographic and Health Surveys
- Multiple Indicator Cluster Surveys
- UNSD (2016), Integrating a Gender Perspective into Statistics
- UNSD (2001), Guidelines and Principles for the Development of Disability Statistics
- UN Statistical Commission (2020), A recommendation on the method to delineate cities, urban and rural areas for international statistical comparisons

- INFORM Risk Website
- WorldRiskIndex Website
- CRED's EM-DAT
- UNDRR's DesInventar
- German Aerospace Center's (DLR) Global Urban Footprint
- ESCAP's Risk and Resilience Portal
- ESCAP's Mapping Population Exposure to Flood Hazards
- ACAP's Risk Analysis Methodology
- WFP's Vulnerability Analysis and Mapping
- JIPS' Essential toolkit for profiling displaced populations

Disaster risk indices:
INFORM Risk 2022

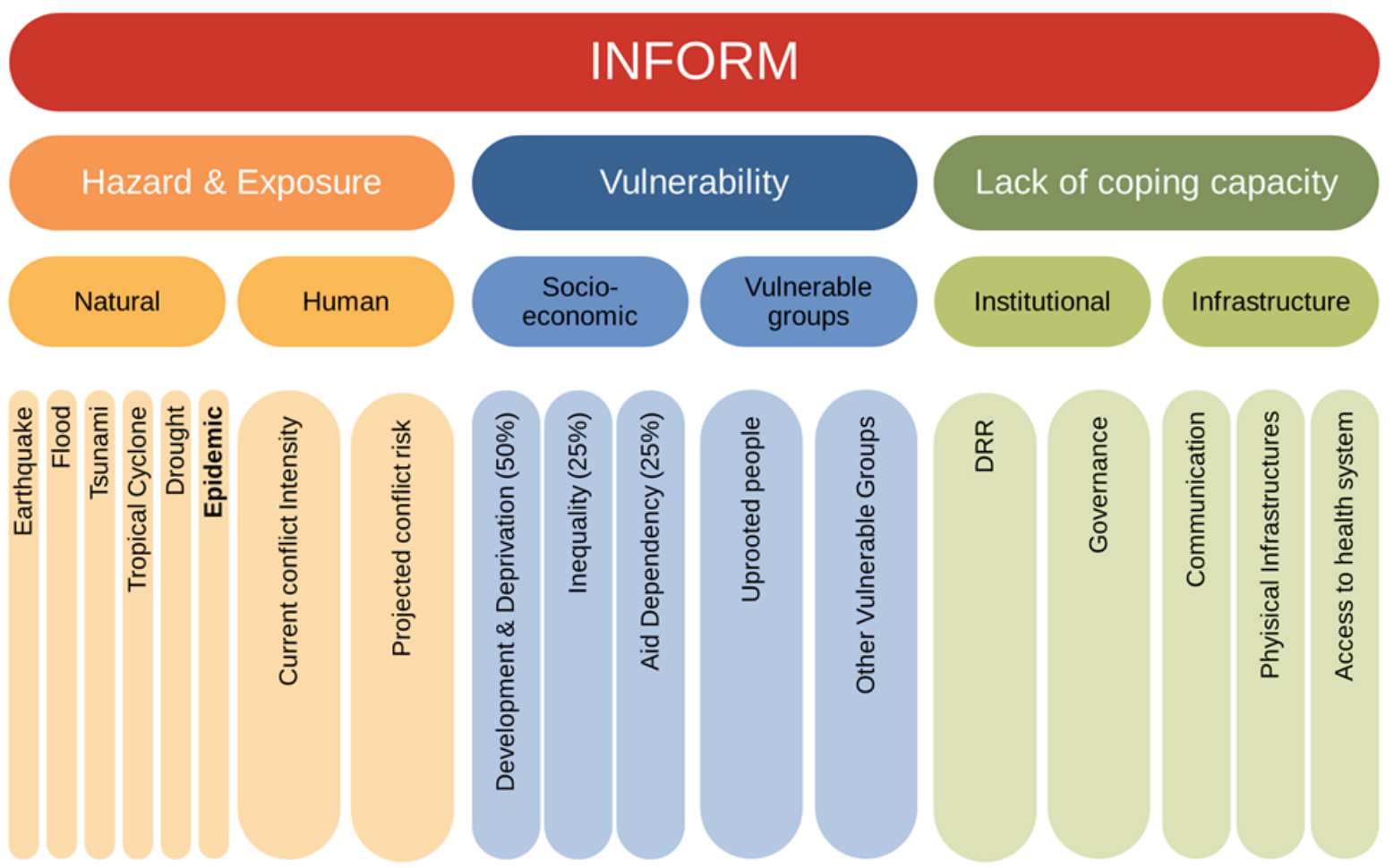


[INFORM Risk Website]

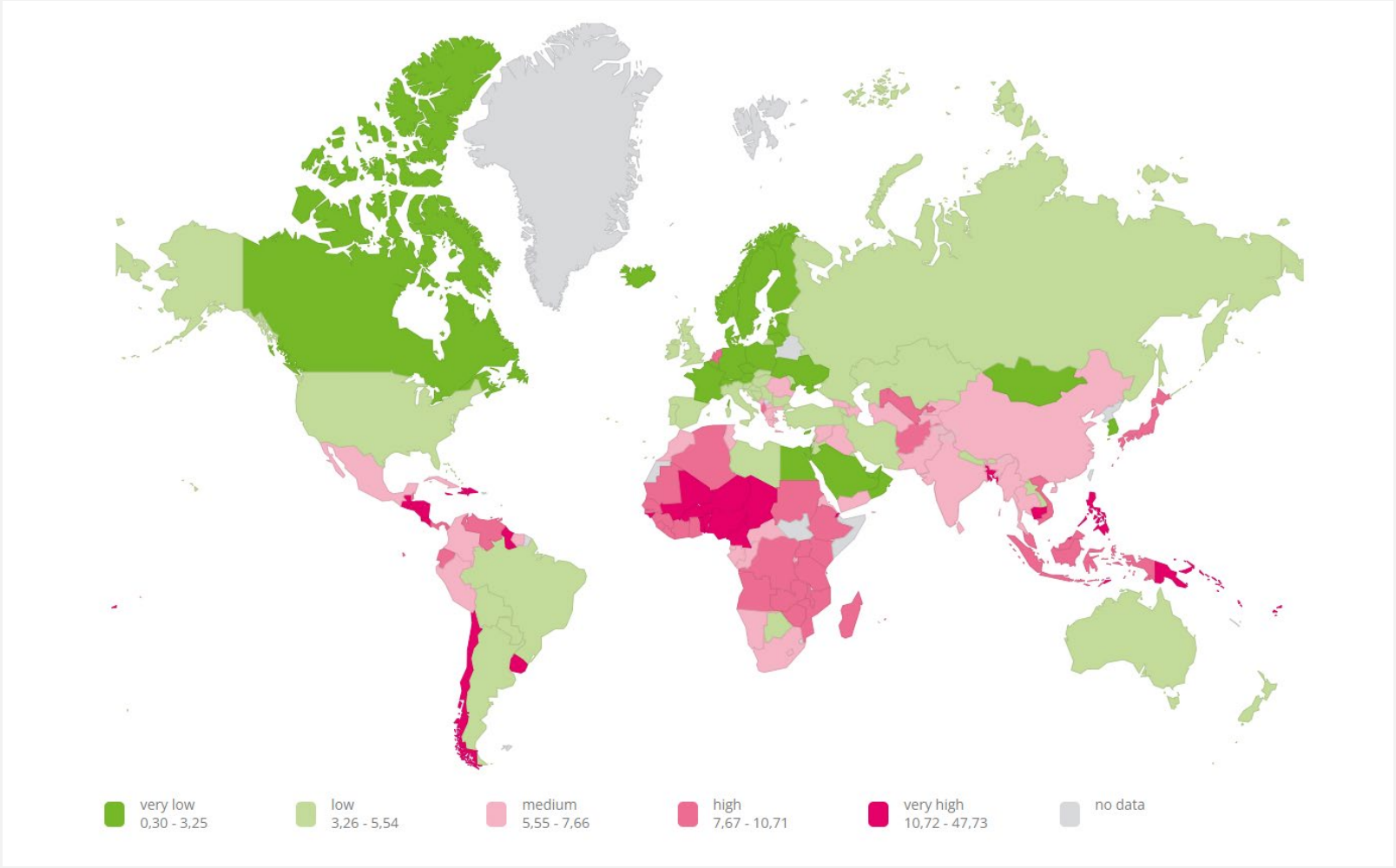
Disaster risk indices:
INFORM Risk 2022 (cont.)

Rank	COUNTRY	INFORM RISK	RISK CLASS	HAZARD & EXPOSURE	VULNERABILITY	LACK OF COPING CAPACITY
(1-191)	(a-z)	(0-10)	(Very Low	(0-10)	(0-10)	(0-10)
1	Somalia	8.8	Very High	8.9	8.7	8.7
2	South Sudan	8.5	Very High	7.2	9.0	9.4
3	Afghanistan	8.2	Very High	8.9	8.4	7.3
4	Yemen	8.1	Very High	8.4	8.1	7.9
5	Chad	7.8	Very High	7.3	7.5	8.8
6	Central African Republic	7.7	Very High	6.2	8.6	8.7
7	Congo DR	7.6	Very High	7.4	7.4	8.1
8	Niger	7.4	Very High	7.3	7.2	7.6
9	Mozambique	7.2	Very High	7.8	7.6	6.3
9	Syria	7.2	Very High	8.7	8.0	5.4
11	Mali	7.0	Very High	7.3	7.0	6.7
12	Ethiopia	6.9	Very High	7.3	6.5	6.8
12	Iraq	6.9	Very High	7.8	6.5	6.5
14	Nigeria	6.5	Very High	7.3	5.7	6.5
15	Burkina Faso	6.4	High	5.5	7.3	6.4
15	Sudan	6.4	High	5.7	6.8	6.7

Disaster risk indices:
INFORM Risk 2022 (cont.)



Disaster risk indices:
WorldRiskIndex 2021

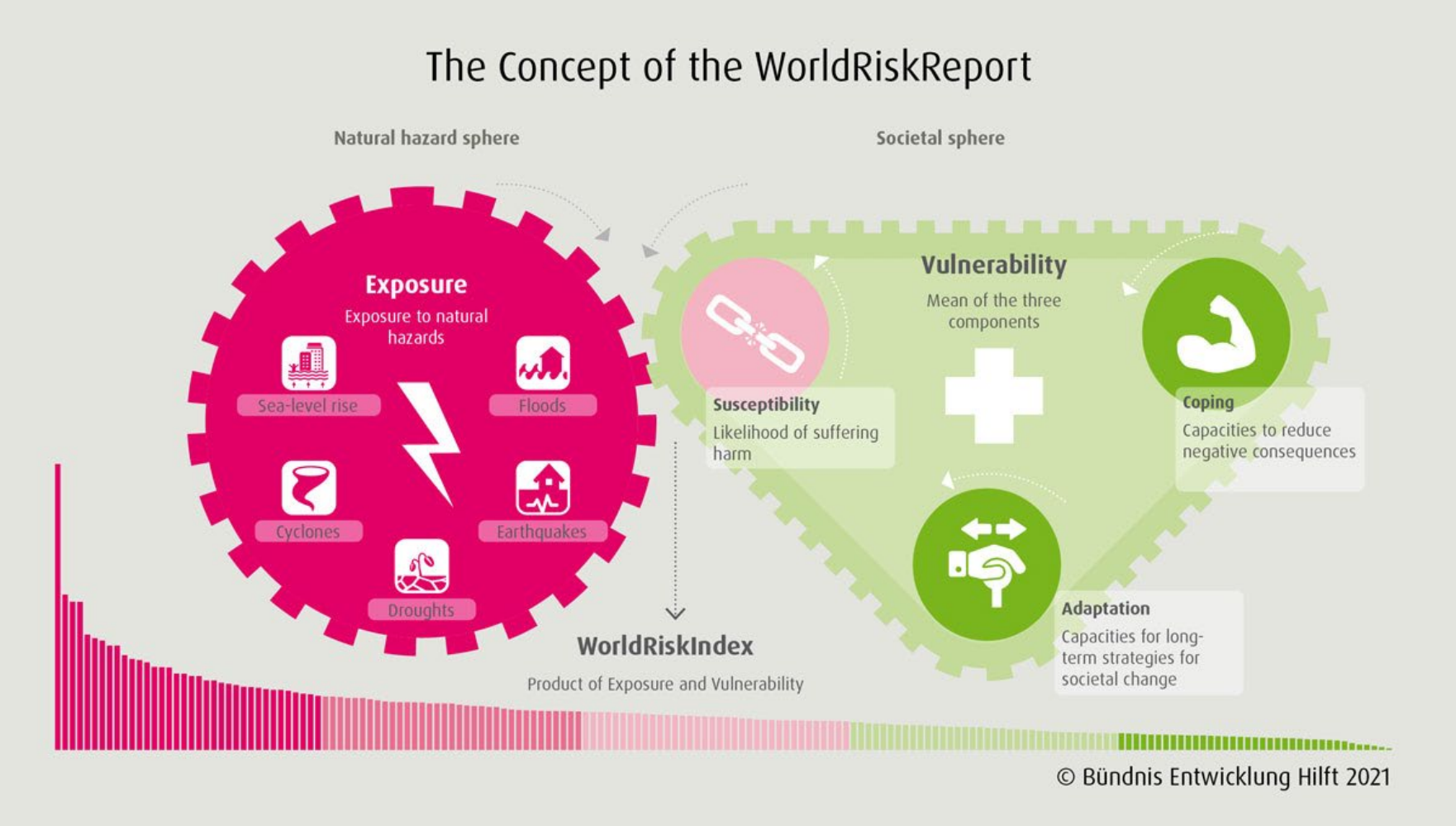


WorldRiskIndex Website

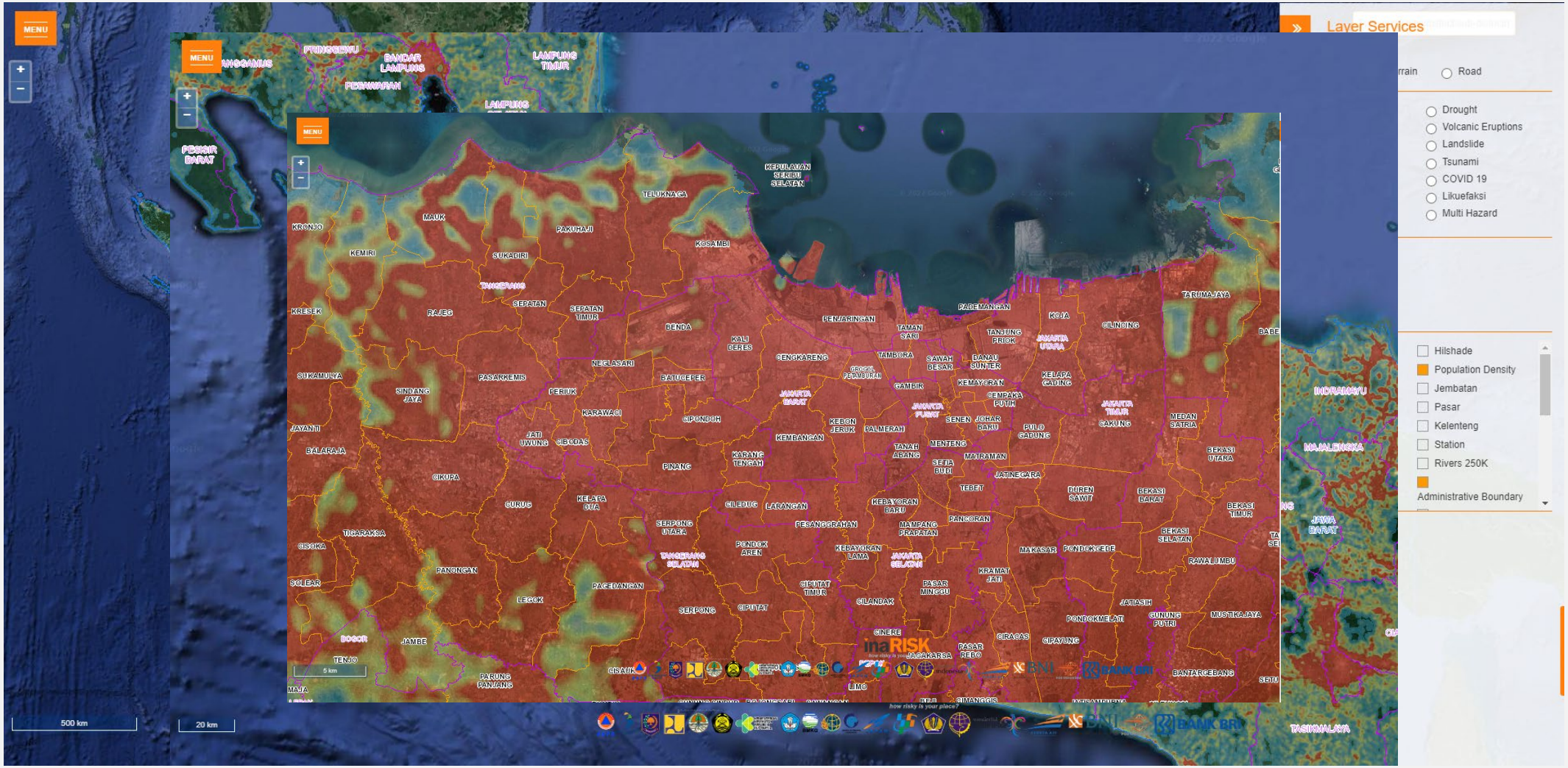
Disaster risk indices:
WorldRiskIndex 2021 (cont.)

Rank	Country	WorldRiskIndex	Exposure	Vulnerability	Susceptibility	Lack of coping capacities	Lack of adaptive capacities
1.	Vanuatu	47.73	82.55	57.82	39.66	81.21	52.59
2.	Solomon Islands	31.16	51.13	60.95	46.07	81.14	55.63
3.	Tonga	30.51	63.63	47.95	28.42	79.81	35.62
4.	Dominica	27.42	61.74	44.41	23.42	71.13	38.67
5.	Antigua and Barbuda	27.28	67.73	40.28	23.80	64.41	32.62
6.	Brunei Darussalam	22.77	58.17	39.14	15.33	68.13	33.96
7.	Guyana	21.83	43.93	49.69	25.96	77.23	45.88
8.	Philippines	21.39	42.68	50.11	28.63	82.14	39.56
9.	Papua New Guinea	20.90	30.62	68.27	55.28	86.16	63.37
10.	Guatemala	20.23	36.79	54.98	32.55	85.66	46.72
11.	Cape Verde	17.72	37.23	47.59	28.86	72.71	41.21
12.	Costa Rica	17.06	44.27	38.54	19.96	65.33	30.34
13.	Bangladesh	16.23	28.11	57.74	32.57	85.57	55.07
14.	Fiji	16.06	34.51	46.55	22.06	76.63	40.95
15.	Cambodia	15.80	26.89	58.76	38.89	86.61	50.79

Disaster risk indices:
WorldRiskIndex 2021 (cont.)



Indonesia’s inaRISK Platform



INSTITUTIONAL DIMENSION

Needs for coordination between NSO and NDMA

- To assure quality of statistics, these dimensions should be considered:
  - ✓Relevance
  - ✓Accuracy
  - ✓Reliability
  - ✓Timeliness
  - ✓Punctuality
  - ✓Accessibility
  - ✓Clarity
  - ✓Coherence
  - ✓Comparability
- Conceptual harmonisation, including in occurrence statistics will facilitate production of impact and risk statistics.
- Classifications, definitions and methodologies should be coherent and aligned with national and international reporting frameworks

Metadata explains fundamental information about data (definitions, classifications, scaling, etc.) and bridges gaps of data from different domains, such as socio-economic and environmental statistics.

Coordination beyond NSO and NDMA

- Other stakeholder in line ministries and local governments should also be consulted and included in stakeholder meetings where relevant and possible.

LINKAGES TO SDGS AND SENDAI FRAMEWORK

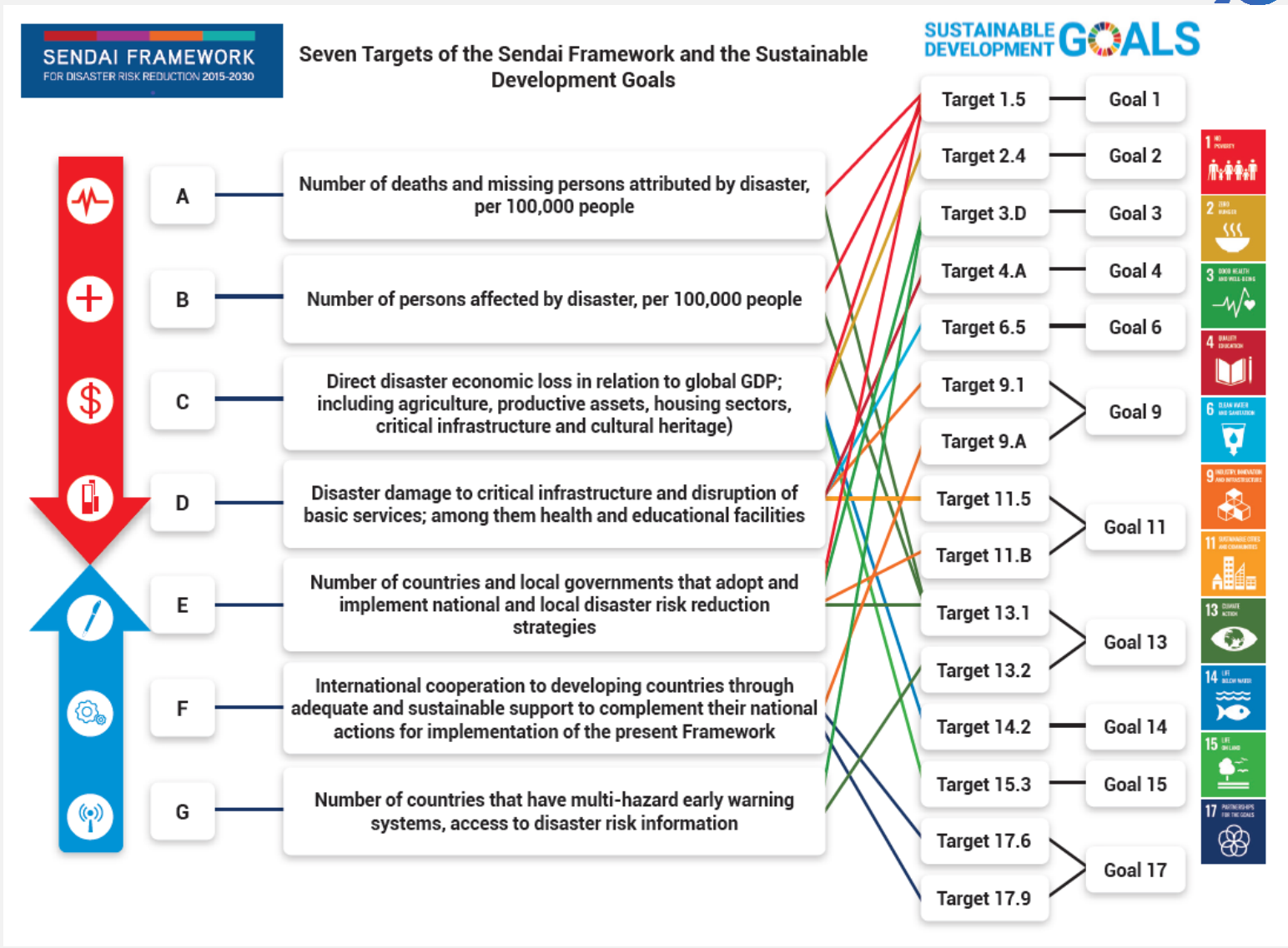
SDGs and Sendai Framework

SDGs and Sendai Framework *(Cont.)*

SDG Indicators	Description	Sendai Framework Indicators
Goal 1. End poverty in all its forms everywhere		
1.5.1	Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population	**A1 and B1**
1.5.2	Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)	**C1**
1.5.3	Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030	**E1**
1.5.4	Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies	**E2**
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable		
11.5.1	Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population	**A1 and B1**
11.5.2	Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters	**C1, D1, D5**
11.b.1	Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030	**E1**
11.b.2	Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies	**E2**
Goal 13. Take urgent action to combat climate change and its impacts		
13.1.1	Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population	**A1 and B1**
13.1.2	Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030	**E1**
13.1.3	Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies	**E2**

Links between Sendai Framework targets and Sustainable Development Goals

Source: WHO technical guidance notes on Sendai Framework reporting for Ministries of Health. Geneva: World Health Organization; 2020.



SDGs with targets related to disaster risk

- Tables B: Background statistics and exposure to hazards
  - Aggregated by hazard types, different social groups, geographical regions for multiple targets/indicators

Acknowledgement

Thank you for the contribution of **Petra Nahmias** and **Nasikarn Nitiprapathananun** from the Social and Population Statistics Section, Statistics Division

THANK YOU

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