Goal 13 Take urgent action to combat climate change and its impacts

(Updated on 3 March 2016)

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Target 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

Indicator 13.1.1: Number of countries with national and local disaster risk reduction strategies[1]

From UNISDR:

Definition:

National DRR strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030*:* national disaster risk reduction strategies and plans, across different timescales with targets, indicators and time frames, aimed at preventing the creation of risk, the reduction of existing risk and the strengthening of economic, social, health and environmental resilience (Sendai Framework, para 27(b)). In the Sendai Framework, link with DRR and climate change adaptation is strongly advocated. Note: the DRR strategies need to be based on risk information and assessments.

Country: A nation with its own government, occupying a particular territory

> Note: Terminology will be discussed and finalized in the Open-ended Intergovernmental Working Group for Sendai Framework for Disaster Risk Reduction.

Method of computation: Summation of data from National Progress Report of the Sendai Monitor

Rationale and interpretation (mainly based on TST Issue Brief 23, 12 and 20)**:**

The Sendai Framework for Disaster Risk Reduction 2015-2013 calls for national governments to adopt and implement national DRR strategies with their own targets, indicators and timeframes.

Impacts of climate change on sustainable development are observed through both slow-onset events (e.g. sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification) and extreme weather events.

Cities around the world, as well as rural populations, witness growing disaster risks. Impacts of climate change on sustainable development are observed through both slow-onset events (e.g. sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification) and extreme weather events.

Cities are some of the most vulnerable areas to natural disasters. Unplanned urban development (e.g. informal settlements, overcrowding, inadequate infrastructures) exacerbates urban vulnerability to climate change impacts and hydro-meteorological and geological hazards. Over half of all coastal areas are urbanized and 21 of the world's 33 mega cities lie in coastal flood zones. SIDS and coastal regions are particularly affected by sea level rise, coastal flooding and erosion, and extreme events (e.g. tsunamis and storm surges) due to the undermining natural protective barriers, low levels of development combined with rapid population growth in low lying coastal areas and

[1] An open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction established by the UN General Assembly (A/RES/69/284) is developing a set of indicators to measure global progress in the implementation of the Sendai Framework. These indicators will eventually reflect the agreements on the Sendai Framework indicators.

inadequate capacity to adapt. Poor urban populations must often resort to unsustainable coping strategies and mechanisms.

Large numbers of people remain perilously close to falling into poverty, experiencing shocks that they are unable to cope with. For the poor, a shock of even a relatively short impact and duration can have long term consequences. Several dimensions of poverty are closely related to environment, which is often affected by natural disasters. Better management of natural resources can themselves strengthen the resilience of the poor, by both reducing the likelihood of natural hazard events and offering resources to help cope with them.

These challenges require enhanced vulnerability and impact assessments, mitigation and adaptation plans, resilience building and DRR strategies. It is necessary to adapt to climate change, enhance resilience of ecosystems, and reduce disaster risk and build resilience to natural disasters.

Proactive DRR strategies will address climate change impact and enhance resilience of nations. Resilient infrastructures will be critical part of such strategies because infrastructures such as health, education, road and other critical infrastructures will have direct impact on reducing inequality and making growth more inclusive.

Increasing number of national governments that adopt and implement national DRR strategies will contribute to sustainable development from economic, environmental and social perspectives.

The indicator will build bridge between the SDGs and the Sendai Framework for DRR because the adoption of national DRR strategies is one of Sendai Framework targets and will be also monitored under the Sendai Framework Monitoring System.

Sources and data collection: National Progress Report of the Sendai Monitor, reported to UNISDR

Disaggregation: by country

Comments and limitations:

- ✓ This is proposal by UNISDR based on our experience and knowledge built in the period under the Hyogo Framework for Action (2005-2015). The proposed indicator was further reviewed and examined by other UN agencies including FAO, GFDRR, IOM, UNCCD, UNDP, UNESCAP, UNESCO, UNFPA, UNHCR, UNOCHA, UNOOSA, UNOPS, UNU, UNWOMEN, WHO and WMO (though not all organizations listed here provided comments for this indicator) and submitted to the IAEG process in early-July 2015, then again reviewed by the Technical Expert Group consisting of more than 60 experts from UN system, academic and research, civil sector and private sector in 27-29 July 2015 and submitted and examined by the Member States in the 1st Open-ended Intergovernmental Expert Working Group on Indicators and Terminology on Disaster Risk Reduction held in 29-30 September 2015. The suggested indicator is currently under review by the Member States and UNISDR is receiving written inputs from the Member States.

- ✓ The proposed indicators will be also used to monitor Sendai Framework global targets and therefore the detailed definitions shall be discussed and agreed in Open-ended Intergovernmental Expert Working Group on Indicators and Terminology on Disaster Risk Reduction, as outlined in Sendai Framework for Disaster Reduction 2015-2030. The Working Group is likely to finalize the discussion and submit the final report to the GA in December 2016.

- ✓ Reporting of the HFA Monitor and the succeeding Sendai Monitor under development is not mandatory but it is only global database collecting DRR policy information. The HFA Monitor started

in 2007 and over time, the number of countries reporting to UNISDR increased from 60 in 2007 to 133 in 2013. Because there is no specific data addressing this indicator at this moment, a baseline as of 2015 should be created through a questionnaire to all countries in order to monitor both the Sendai Framework and the SDGs.

Gender equality issues: Not included.

Data for global and regional monitoring: Summation of data from National Progress Report of the Sendai Monitor

Main linkage with SDG Targets:

This indicator is proposed as "multi-purpose indicator".

Target 13.2:
Integrate **climate change** measures into **national policies**, strategies and planning

Target 13.1:
Strengthen **resilience and adaptive capacity to climate-related hazards and natural disasters** in all countries

Target 13.b:
Promote mechanisms for raising capacities for effective **climate change-related planning and management**, in least developed countries, including focusing on women, youth, local and marginalized communities

Target 9.1:
Develop quality, reliable, sustainable and **resilient infrastructure**, including regional and trans border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

Target 11.5:
By 2030, significantly reduce **the number of deaths** and **the number of people affected** and substantially decrease the direct economic losses relative to global gross domestic product caused by **disasters**, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

Target 1.5:
By 2030, build **the resilience of the poor and those in vulnerable situations** and reduce their **exposure and vulnerability to climate-related extreme events** and other economic, social and environmental shocks and **disasters**

Target 3.9:
By 2030, substantially reduce the number of **deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination**

Target 3.d:
Strengthen the capacity of all countries, in particular developing countries, for **early warning, risk reduction and management of national and global health risks**

Supplementary information:

Related targets in the Sendai Framework for Disaster Risk Reduction 2015-2030:

Substantially increase the number of countries with ***national and local disaster risk reduction strategies*** by 2020.

Sendai Framework for Disaster Risk Reduction 2015-2030:
(http://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf)

Indicator 13.1.2 Number of deaths, missing persons and persons affected by disaster per 100,000 people[1]

From UNISDR:

Definition:

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 although there is no physical evidence. The data on number of deaths and number of missing are mutually exclusive.

Affected people: People who are affected by a hazardous event.

Comment: People can be affected directly or indirectly. Affected people may experience short-term or long-term consequences to their lives, livelihoods or health and in the economic, physical, social, cultural and environmental assets.

***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.

In this indicator, given the difficulties in assessing the full range of all affected (directly and indirectly), UNISDR proposes the use of an indicator that would estimate "directly affected" as a proxy for the number of affected. This indicator, while not perfect, comes from data widely available and could be used consistently across countries and over time to measure the achievement of the Target B.

From the perspective of data availability and measurability, it is proposed to build a composite indicator which consists of **"directly affected",** or those who are

- Injured or ill,
- Evacuated,
- Relocated

and to measure the number who suffered direct damage to their livelihoods or assets,

- People whose houses were damaged or destroyed
- People who received food relief aid.

Injured or ill: The number of people suffering from physical injuries, trauma or cases of disease requiring immediate medical assistance as a direct result of a hazardous event.

Evacuated: The number of people who temporarily moved from where they were (including their place of residence, work places, schools and hospitals) to safer locations in order to ensure their safety.

Relocated*:* The number of people who moved permanently from their homes to new sites due to hazardous event. Note: This definition excludes preventive relocation before the event.

People whose houses were damaged or destroyed due to hazardous events: The estimated number of inhabitants previously living in the houses (housing units) damaged or destroyed. All the inhabitants of these houses (housing units) are assumed to be affected being in their dwelling or by direct consequence of the destruction/damage to their housings (housing units). An average number of inhabitants per house (housing unit) in the country can be used to estimate the value.

Houses destroyed: Houses (housing units) levelled, buried, collapsed, washed away or damaged to the extent that they are no longer habitable.

Houses damaged: Houses (housing units) with minor damage, not structural or architectural, which may continue to be habitable, although they may require some repair or cleaning.

People who received food relief aid: The number of persons who received food /nutrition, by government or as humanitarian aid, during or in the aftermath of a hazardous event.

Hazardous event*:* The occurrence of a natural or human-induced phenomenon in a particular place during a particular period of time due to the existence of a hazard.

Hazard: A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

UNISDR recommends setting NO threshold for recording hazardous event in order to monitor *all* hazardous events. Small-scale but frequent hazardous events that are not registered in international disaster loss databases account for an important share of damages and losses when they are combined, and often go unnoticed by the national and international community. These events, when accumulated, are often a source of poverty in developing countries but can be effectively addressed by well-designed policies. The scope of the Sendai Framework for Disaster Risk Reduction 2015-2030 is "the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters, caused by natural or man-made hazards as well as relate environmental, technological and biological hazards and risks".

Regarding the inclusion of biological and environmental hazards in natural hazards category and whether and how to integrate man-made hazards, UNISDR will discuss the issue with WHO and other organizations (for example, WHO would be in a better position in terms of data, knowledge and relationship with Member States and other stakeholders to monitor biological events including epidemics. However, we generally do not expect biological disasters will cause physical damages to facilities.).

> Note: Terminology will be discussed and finalized in the Open-ended Intergovernmental Working Group for Sendai Framework for Disaster Risk Reduction.

Method of computation:

Summation of data on related indicators from national disaster loss databases. Make the sum a relative figure by using global population data (World Bank or UN Statistics information). Relativity is important because population growth (expected to be 9 billion in 2050) may translate into increased hazard exposure of population.

The Expert Group recommends not using the indicators related with the people whose houses were damaged/destroyed in the computation. UNISDR and IRDR groups recommend using them as they can be estimated from widely available and verifiable data and reflect vulnerability and livelihood issues. Data on housing damage and destroyed is essential for economic loss, so using these indicators would not impose additional data collection burden.

Double-counting: From practical perspective, double counting of affected people is unavoidable (for example, injured and relocated) in many countries. Minimum double counting is summing "number of injured" and Number of people whose housings were damaged or destroyed. Relocated is sub-set of number of people whose housings were destroyed.

The data can be disaggregated by hazard type. When applied to proposed target 13.1 and 15.3, hydrological, meteorological and climatological and indirectly biological disasters are monitored.

Rationale and interpretation (mainly based on TST Issue Brief 2, 5, 20 and 23-26)**:**

Cities around the world, as well as rural populations, witness growing disaster risks. Impacts of climate change on sustainable development are observed through both slow-onset events (e.g. sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification) and extreme weather events. Human loss can be measured by the number of deaths, missing, injured or ill, evacuated, relocated, people whose houses were damaged/destroyed and people who received food relief aid as a direct result of the hazardous events.

Cities are some of the most vulnerable areas to natural disasters. Unplanned urban development (e.g. informal settlements, overcrowding, inadequate infrastructures) exacerbates urban vulnerability to climate change impacts and hydro-meteorological and geological hazards. Over half of all coastal areas are urbanized and 21 of the world's 33 mega cities lie in coastal flood zones. SIDS and coastal regions are particularly affected by sea level rise, coastal flooding and erosion, and extreme events (e.g. tsunamis and storm surges) due to undermining natural protective barriers, low levels of development combined with rapid population growth in low lying coastal areas and inadequate capacity to adapt. Poor urban populations must often resort to unsustainable coping strategies and mechanisms.

Large numbers of people remain perilously close to falling into poverty, experiencing shocks that they are unable to cope with. For the poor, a shock of even a relatively short duration can have long term consequences. Several dimensions of poverty are closely related to environment, which is often affected by natural disasters. The poverty reduction agenda could include well-designed social protection scheme to help protecting the poor against sudden shocks and the development of capacities to better predict and prepare for such shocks. Better management of natural resources can themselves strengthen the resilience of the poor, by both reducing the likelihood of natural hazardous events and offering resources to help cope with them.

Biodiversity provides ecosystem resilience and contributes to the ability to respond to unpredictable global changes and natural disasters. Healthy ecosystems act as buffers against natural hazards, providing valuable yet underutilized approaches for climate change adaptation, enhancing natural resilience and reducing the vulnerability of people, for example to floods and the effects of land degradation. These ecosystem services improve the sustainability and economic efficiency of built infrastructure, and are critical for sustainable and resilient urban areas.

This indicator will track human-related loss. The disaster loss data (particularly mortality) are significantly influenced by large-scale catastrophic event, which represent important outliers. UNISDR recommends countries to report the data by event, so complementary analysis can be done by both including and excluding such catastrophic events.

The indicator will build bridge between SDGs and the Sendai Framework for Disaster Risk Reduction because the reduction of human related loss is included in the Sendai Framework global targets and will also be monitored under the Sendai Framework Monitoring Mechanism.

Sources and data collection: National disaster loss database, reported to UNISDR

Disaggregation: by country, by event, by hazard type (e.g. disaggregation by climatological, hydrological, meteorological, geophysical, biological and extra-terrestrial for natural hazards is possible following IRDR* classification), by death/missing/injured or ill/evacuated/relocated/people whose houses were damaged/people whose houses were destroyed/people who received food relief aid.

*Integrated Research on Disaster Risk (2014), *Peril Classification and Hazard Glossary (IRDR DATA Publication No.1*), Beijing: Integrated Research on Disaster Risk

Additionally, the Expert Group recommended disaggregation by age, sex, location of residence and other characteristics (e.g. disability) as relevant and possible. Aggregation of "location of residence": ideally by sub-national administrative unit similar to municipality.

Comments and limitations:

- ✓ This is proposal by UNISDR based on our experience and knowledge built in the period under the Hyogo Framework for Action (2005-2015). The proposed indicator was further reviewed and examined by other UN agencies including FAO, GFDRR, IOM, UNCCD, UNDP, UNESCAP, UNESCO, UNFPA, UNHCR, UNOCHA, UNOOSA, UNOPS, UNU, UNWOMEN, WHO and WMO (though not all organizations listed here provided comments for this indicator) and submitted to the IAEG process in early-July 2015, then again reviewed by the Technical Expert Group consisting of more than 60 experts from UN system, academic and research, civil sector and private sector in 27-29 July 2015 and submitted and examined by the Member States in the 1st Open-ended Intergovernmental Expert Working Group on Indicators and Terminology on Disaster Risk Reduction held in 29-30 September 2015. The suggested indicator is currently under review by the Member States and UNISDR is receiving written inputs from the Member States.

- ✓ The proposed indicators will be also used to monitor Sendai Framework global targets and therefore the detailed definitions shall be discussed and agreed in Open-ended Intergovernmental Expert Working Group on Indicators and Terminology on Disaster Risk Reduction, as outlined in Sendai Framework for Disaster Reduction 2015-2030. The Working Group is likely to finalize the discussion and submit the final report to the GA in December 2016.

- ✓ Not every country has a comparable national disaster loss database that is consistent with the UNISDR guidelines (current coverage is 85 countries. Additional 32 countries are expected to be covered in 2015-16). Therefore, by 2020, it is expected that all countries will build/adjust the database according to the UNISDR guidelines and report the data to UNISDR.

Gender equality issues: Disaggregated by gender (if agreed by country in the Open-ended Intergovernmental Expert Working Group)

Data for global and regional monitoring: Summation of data from national disaster loss databases

Main linkage with SDG Targets:

This indicator is proposed as "multi-purpose indicator".

Target 1.5:

By 2030, build **the resilience of the poor and those in vulnerable situations** and reduce their **exposure and vulnerability to climate-related extreme events** and other economic, social and environmental shocks and **disasters**

Target 11.5:

By 2030, significantly reduce **the number of deaths** and **the number of people affected** and substantially decrease the direct economic losses relative to global gross domestic product caused by **disasters**, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

Target 13.1:

Strengthen **resilience and adaptive capacity to climate-related hazards and natural disasters** in all countries

Target 1.3:

Implement nationally appropriate **social protection systems and measures** for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable

Target 14.2:

By 2020, sustainably manage and protect **marine and coastal ecosystems** to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

Target 15.3:

By 2030, combat desertification, restore degraded land and soil, including **land affected by desertification, drought and floods**, and strive to achieve a land-degradation-neutral world

Target 3.9:

By 2030, substantially reduce the number of **deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination**

Target 3.6:

By 2020, halve the number of **global deaths and injuries from road traffic accidents**

Target 3.d:

Strengthen the capacity of all countries, in particular developing countries, for **early warning, risk reduction and management of national and global health risks**

Supplementary information:

Related targets in the Sendai Framework for Disaster Risk Reduction 2015-2030:

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

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.

Sendai Framework for Disaster Risk Reduction 2015-2030:
(http://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf)

Target 13.2 Integrate climate change measures into national policies, strategies and planning.

Indicator 13.2.1: Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)

No metadata received on current indicator formulation.

Target 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

Indicator 13.3.1: Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula

No metadata received on current indicator formulation.

Indicator 13.3.2: Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions

No metadata received on current indicator formulation.

Target 13.a Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible.

Indicator 13.a.1: Mobilized amount of United States dollars per year starting in 2020 accountable towards the $100 billion commitment

No metadata received on current indicator formulation.

Target 13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries, including focusing on women, youth and local and marginalized communities.

Indicator 13.b.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities

From WMO:

Definition and method of computation: # of LDCs that are receiving specialized support for raising capacities for effective climate change related planning and management, including focusing on women, youth, local and marginalized communities

Rationale and interpretation: As the effects of climate change are becoming more evident and acute, the need for effective climate services is greater than ever before. Climate services underpin climate action and achieving SDGs. Nevertheless, the GFCS High level Task Force had identified 70 countries that do not yet have sufficient capacities to develop and use climate services. This is a major focus of the GFCS.
This indicator contributes and supports the achievement of several targets such as 1.5, 2.1, 6.1, 6.4, 6.5, 7.1, 9.1, 11.3, 11.5, 12.8, 13.1, 13.2, 14.2, 15.3.

Sources and data collection: GFCS has developed a web-based platform to allow Member countries and Partners to report and designate activities currently being implemented related to climate services, including activities for raising capacities of LDCs for effective climate change planning and management. To access the platform, Members and Partners were requested to nominate a focal point who would receive the credentials to upload the information on the platform. So far more than 45 focal points were designated by Member countries and Partners. These focal points are providing data that is being used to populate a data base of projects that is being displayed on the GFCS website.

Data for global and regional monitoring:

i. Number of LDCs receiving support for raising capacities of LDCs for effective climate change planning and management
ii. Project information (focus country, timeframe, objectives, description, benefits, activities, deliverables, sectors, partners etc.)

References:

http://www.wmo.int/gfcs/
http://www.wmo.int/gfcs/projects-map
http://library.wmo.int/pmb_ged/wmo_1065_en.pdf