



ブラジルのマリーナ・シルバ環境・気候変動相(筆者撮影)

Annex

Belém Adaptation Indicators for measuring progress achieved towards the targets referred to in paragraphs 9–10 of decision 2/CMA.5

1. Adaptation is context-specific, and capturing progress in adaptation in a comprehensive manner requires contextual information, which may be reflected through the disaggregation of indicators, as appropriate. Parties may determine the categories for and extent of such disaggregation in accordance with their national circumstances and contexts. Indicators may be disaggregated, as appropriate, by:

(a) Social categories, which may include demographic and socioeconomic characteristics such as vulnerability, gender, age, disability, race, socioeconomic status, status as Indigenous Peoples, status as migrants, as well as children and young people, as noted in paragraph 21(d) of decision 3/CMA.6, paragraph 41(i) of document FCCC/SBSTA/2024/7 and paragraph 79(i) of document FCCC/SBI/2024/13;

(b) Climate-related hazards (with this category remaining flexible to reflect the different hazards faced by countries), which may include floods, droughts, increased temperatures, storms, cyclones, landslides and other extreme climate events, and Parties may take into account all climate hazards currently faced or anticipated in the future;

(c) Geographical characteristics, accounting for different physical and regional contexts, including coastal areas, islands, mountains, arid and semi-arid regions, deltas, river basins, and cryosphere regions;

(d) Ecosystems, which may include terrestrial, inland water, mountain, marine and coastal ecosystems and other relevant ecosystems, as applicable and as referenced in paragraph 9(d) of decision 2/CMA.5;

(e) Administrative and settlement levels, which may include national, subnational and local levels, as well as urban and rural areas;

(f) Type of adaptation measures, such as building resilience and retrofitting;

(g) Thematic sectors referred to in paragraph 9 of decision 2/CMA.5, and for which Parties are encouraged (1) to disaggregate the dimensional target indicators referred to in paragraph 10 of decision 2/CMA.5, as appropriate, in order to reflect the full adaptation cycle characteristics of each thematic sector and (2) to consider, where relevant, disaggregation by thematic sector under the thematic target indicators to capture interlinkages between different thematic targets;

(h) Subcomponents of the targets referred to in paragraph 9 of decision 2/CMA.5, which may include, for 9(b) food and agriculture target indicators, disaggregation by type of agriculture, including crops, livestock, fisheries and agroforestry; for 9(c) health target indicators, disaggregation by diseases, as applicable; for 9(d) ecosystem target indicators, disaggregation by ecosystem services, where appropriate; for 9(e) infrastructure and human settlements target indicators, disaggregation by type of infrastructure and type of settlement; and for 9(f) poverty eradication and livelihoods target indicators, disaggregation by poverty levels, income groups and social protection measures, as applicable.

2. The indicators listed in paragraphs 3–13 below contain both quantitative and qualitative indicators as per paragraph 21(c) of decision 3/CMA.6, where applicable, so as to ensure a comprehensive assessment of progress achieved towards the targets referred to in paragraphs 9–10 of decision 2/CMA.5.

3. The indicators for assessing progress under target 9(a), significantly reducing climate-induced water scarcity and enhancing climate resilience to water-related hazards towards a climate-resilient water supply, climate-resilient sanitation and access to safe and affordable potable water for all, are as follows:

- (a) Level of water stress, including as an outcome of adaptation actions where applicable, accounting for relevant climate hazard intensity and/or frequency;
- (b) Level of water use efficiency, including as an outcome of adaptation actions where applicable;
- (c) Proportion of critical water and sanitation infrastructure systems that are resilient to climate-related hazards under different warming scenarios, as appropriate for regions and contexts, including as an outcome of adaptation actions where applicable;
- (d) Proportion of the total area of basins and cryosphere for which a climate adaptation plan has been developed and implemented on the basis of different warming scenarios, as appropriate for regions and contexts where applicable;
- (e) Proportion of the population using safe and affordable potable water services that are climate-resilient, including as an outcome of adaptation actions where applicable;
- (f) Proportion of the population using sanitation services that are safely managed and climate-resilient, including as an outcome of adaptation actions where applicable;
- (g) Extent of measures taken to improve and extend water, sanitation and hygiene services to populations disproportionately affected by climate change and to vulnerable groups relative to needs;
- (h) Proportion of bodies of water with good ambient water quality for drinking water supply, including as an outcome of adaptation actions where applicable;
- (i) Number of people per 100,000 supported in planned relocation processes in response to water-related hazards, where adaptation measures were taken to ensure safety of populations.

4. The indicators for assessing progress under target 9(b), attaining climate-resilient food and agricultural production and supply and distribution of food, as well as increasing sustainable and regenerative production and equitable access to adequate food and nutrition for all, are as follows:

- (a) Proportion of area under management for food and agricultural production utilizing practices and technologies relevant to climate change adaptation;
- (b) Extent of implementation of institutional frameworks for knowledge transfer, research and development, and extension services supporting climate change adaptation in the areas of food and agriculture relative to needs;
- (c) Level of degraded areas that are under management for food and agricultural production, including as an outcome of adaptation actions where applicable;
- (d) Level of food and agricultural yield in areas that are under management for food and agricultural production, including as an outcome of adaptation actions where applicable;
- (e) Proportion of the population with equitable access to adequate food and nutrition, including as an outcome of adaptation actions where applicable.

5. The indicators for assessing progress under target 9(c), attaining resilience against climate change related health impacts, promoting climate-resilient health services and significantly reducing climate-related morbidity and mortality, particularly in the most vulnerable communities, are as follows:

- (a) Rate of mortality associated with climate impacts compared with counterfactual rates, including as an outcome of adaptation actions or coverage of early warning systems where applicable;
- (b) Level of incidence of climate-sensitive infectious diseases, including as an outcome of adaptation actions where applicable;
- (c) Rate of morbidity associated with climate impacts compared with counterfactual rates, including as an outcome of adaptation actions where applicable;

- (d) Proportion of the population vulnerable to climate change with access to mental health and psychosocial support;
- (e) Extent to which climate health services have remained at full capacity during and following climate-related events relative to pre-event service capacity;
- (f) Percentage of health facilities that are resilient to climate-related hazards under different warming scenarios, as appropriate for regions and contexts, including as an outcome of adaptation actions where applicable;
- (g) Coverage of essential health services that are supported by adaptation measures to ensure continuity during and following climate-related events;
- (h) Proportion of health practitioners who have received capacity-building support pertaining to climate change adaptation and health.

6. The indicators for assessing progress under target 9(d), reducing climate impacts on ecosystems and biodiversity, and accelerating the use of ecosystem-based adaptation and nature-based solutions, including through their management, enhancement, restoration and conservation and the protection of terrestrial, inland water, mountain, marine and coastal ecosystems, are as follows:

- (a) Proportion of climate-resilient ecosystems that are providing services to populations that depend on them;
- (b) Proportion of ecosystem areas with adaptation actions implemented towards enhanced resilience and services;
- (c) Level of resilience of ecosystems, including as an outcome of adaptation actions where applicable;
- (d) Level of threat status of ecosystems, including as an outcome of adaptation actions where applicable;
- (e) Level of threat status of species, including as an outcome of adaptation actions where applicable;
- (f) Level of adaptive capacity, resilience and vulnerability to climate impacts resulting from the implementation of ecosystem-based adaptation actions and nature-based solutions according to information reported by Parties, as appropriate.

7. The indicators for assessing progress under target 9(e), increasing the resilience of infrastructure and human settlements to climate change impacts to ensure basic and continuous essential services for all, and minimizing climate-related impacts on infrastructure and human settlements, are as follows:

- (a) Proportion of settlement upgrading programmes implemented that include climate change adaptation measures and maintain sustained engagement at the local level;
- (b) Proportion of infrastructure and human settlements vulnerable to climate-related hazards and other extreme events relocated to a safer location.

8. The indicators for assessing progress under target 9(f), substantially reducing the adverse effects of climate change on poverty eradication and livelihoods, in particular by promoting the use of adaptive social protection measures for all, are as follows:

- (a) Level of population living in poverty, including as an outcome of adaptation actions where applicable;
- (b) Proportion of the population in climate-vulnerable areas with access to social protection services;
- (c) Level of social protection systems that consider climate risk management aspects and can respond to climate change impacts.

9. The indicators for assessing progress under target 9(g), protecting cultural heritage from the impacts of climate-related risks by developing adaptive strategies for preserving cultural practices and heritage sites and by designing climate-resilient infrastructure, guided

by traditional knowledge, Indigenous Peoples' knowledge and local knowledge systems, are as follows:

- (a) Percentage of at-risk cultural and natural heritage sites and elements with adaptation measures implemented to enhance resilience to climate-related hazards under different warming scenarios, as appropriate for regions and contexts, guided by traditional, local or Indigenous Peoples' knowledge and practices, disaggregated, as appropriate, by tangible and intangible cultural elements;
- (b) Proportion of cultural heritage protected from climate impacts through digitization measures for preservation and recovery and by storing movable heritage in climate-resilient facilities;
- (c) Percentage of cultural heritage and sites with adaptation measures and emergency preparedness plans in place for climate change related hazards under different warming scenarios, as appropriate for regions and contexts;
- (d) Level of establishment of institutional arrangements for the provision of regular training on climate change adaptation that incorporates guidance from traditional, local and Indigenous Peoples' knowledge where applicable;
- (e) Percentage of climate adaptation measures focused on cultural heritage that maintain sustained engagement with Indigenous Peoples and/or local communities.

10. The indicators for assessing progress under target 10(a), impact, vulnerability and risk assessment, towards achieving the outcome specified thereunder – by 2030 all Parties have conducted up-to-date assessments of climate hazards, climate change impacts and exposure to risks and vulnerabilities and have used the outcomes of these assessments to inform their formulation of national adaptation plans, policy instruments, and planning processes and/or strategies, and by 2027 all Parties have established multi-hazard early warning systems, climate information services for risk reduction and systematic observation to support improved climate-related data, information and services – are as follows:

- (a) Level of establishment of multi-hazard early warning systems;
- (b) Level of conduct of assessments of climate hazards, climate change impacts, and exposure to risks and vulnerabilities based on different global warming scenarios, as appropriate for regions and contexts;
- (c) Level of establishment of multi-hazard monitoring and impact-based forecasting systems, including monitoring stations;
- (d) Number of people per 100,000 that are covered by early warning information through local governments or through national dissemination mechanisms;
- (e) Percentage of the population in a country exposed to or at risk from climate-related disasters protected through pre-emptive evacuation measures following early warning;
- (f) Level of establishment of climate information services for risk reduction and systematic observation to support improved climate-related data, information and services;
- (g) Extent of usage of climate risk information and comprehensive risk assessment based on different global warming scenarios, as appropriate for regions and contexts, to inform formulation of national adaptation plans, policy instruments, and planning processes and/or strategies.

11. The indicators for assessing progress under target 10(b), planning, towards achieving the outcome thereunder – by 2030 all Parties have in place country-driven, gender-responsive, participatory and fully transparent national adaptation plans, policy instruments, and planning processes and/or strategies, covering, as appropriate, ecosystems, sectors, people and vulnerable communities, and have mainstreamed adaptation in all relevant strategies and plans – are as follows:

- (a) Status of having national adaptation plans, policy instruments, and planning processes and/or strategies in place;

(b) Status of having gender-responsive adaptation plans, policy instruments, and planning processes and/or strategies in place;

(c) Existence of national adaptation plans, policy instruments, planning processes and strategies that have been informed by traditional knowledge, knowledge of Indigenous Peoples and local knowledge systems.

12. The indicators for assessing progress under target 10(c), implementation, towards achieving the outcome thereunder – by 2030 all Parties have progressed in implementing their national adaptation plans, policies and strategies and, as a result, have reduced the social and economic impacts of the key climate hazards identified in the assessments referred to under target 10(a) – are as follows:

(a) Extent of implementation of national adaptation plans, policies and strategies relative to planned implementation thereof;

(b) Number of deaths and missing persons associated with climate-related hazards, per 100,000 people, including as an outcome of adaptation actions where applicable;

(c) Net savings as a percentage of gross domestic product from avoided losses, including as an outcome of adaptation actions where applicable;

(d) Amount of finance for climate adaptation reported in line with chapters IV, V and VI, as relevant and as appropriate, of the annex to decision 18/CMA.1, disaggregated by the parameters listed in paragraphs 123, 125, 133 and 134, as applicable, of the same decision, which includes the amount of international public finance for climate adaptation provided by developed countries and received by developing countries for the implementation of national adaptation plans, policy instruments, and planning processes and/or strategies;

(e) Technology development and transfer for climate adaptation reported in line with chapters IV, V and VI, as relevant and as appropriate, of the annex to decision 18/CMA.1, disaggregated by the parameters listed in paragraphs 127, 136 and 138, as applicable, of the same decision, which includes technology development and transfer support for climate adaptation provided by developed countries and needed and received by developing countries for the implementation of national adaptation plans, policy instruments, and planning processes and/or strategies;

(f) Capacity-building for climate adaptation reported in line with chapters IV, V and VI, as relevant and as appropriate, of the annex to decision 18/CMA.1, disaggregated by the parameters listed in paragraphs 129, 140 and 142, as applicable, of the same decision, which includes capacity-building support for climate adaptation provided by developed countries and needed and received by developing countries for the implementation of national adaptation plans, policy instruments, and planning processes and/or strategies.

13. The indicators for assessing progress under target 10(d), monitoring, evaluation and learning, towards achieving the outcome thereunder – by 2030 all Parties have designed, established and operationalized a system for monitoring, evaluation and learning for their national adaptation efforts and have built the required institutional capacity to fully implement the system – are as follows:

(a) Extent of design of a system for monitoring, evaluation and learning for national adaptation efforts relative to needs;

(b) Level of operationalization of a system for monitoring, evaluation and learning for national adaptation efforts;

(c) Level of periodic publication of monitoring, evaluation and learning findings regarding the implementation of national adaptation efforts;

(d) Level of integration of monitoring, evaluation and learning system findings into national adaptation efforts;

(e) Level of institutional capacity to fully operate systems for monitoring, evaluation and learning for national adaptation efforts.

MEMO

〈執筆者略歴〉

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保険・エネルギー関連の民間企業勤務を経て、2014年JACSESスタッフ。気候変動(適応策・非CO2温室効果ガス削減など)・SDGsに関する調査研究・政策提言・普及啓発活動などに従事。ESD活動支援センター企画運営委員、W20(Women 20)日本デリゲート、(一社)SDGs市民社会ネットワーク事業ユニット幹事会議進行役、Climate Action Network Japan役員、2023年C7(Civil 7)気候・環境正義ワーキンググループ共同コーディネーター等も務める。

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東京大学教養学部卒。化学・素材関連企業勤務後、JACSESスタッフ。他のNPO役員・企業役員・省庁等の委員・シンクタンクフェロー・大学講師(環境政策論・グローバル市民社会論等)等も兼務・歴任。著書に、『ギガトン・ギャップ—気候変動と国際交渉』(JACSES編、オルタナ発行、編著)、『カーボン・レジーム—地球温暖化と国際攻防』(JACSES編、オルタナ発行、編著)、『環境税—税財政改革と持続可能な福祉社会』(築地書館発行、単著)、『地球の限界』(日科技連発行、共著)等。オルタナにて「気候変動とSDGs」連載中。



「環境・持続社会」研究センター(JACSES) 気候変動ブリーフィング・ペーパー

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