Selection of indicators for Target 9c: Health, health services morbidity & mortality

Progress to date

The health experts' group has now finished reviewing all indicators provided, following the criteria laid out by paragraphs 12a and 12b. Suitability of indicators has been indicated as "yes/maybe/no" in the spreadsheet attached. While no other criteria were used at this stage, we used our expert understanding to ascertain whether the proposed indicators would be suitable for inclusion.

The constraint of scoring indicators against paragraphs 12a and 12b only has meant that much of our expert assessment is not captured in the attached spreadsheet. **The indicators marked as "yes" under these criteria should therefore not be interpreted as indicators recommended as suitable for the GGA**.

Many of the indicators identified are not based on the best available indicators, or best available science. Many of the proposals cannot be categorised as being indicators either. To optimise and make better advantage of this group of experts' recommendations, we suggest that the process is kept flexible, offering experts clear instructions on the criteria, purposes, constraints and uses of the indicators, so that we can make recommendations on indicators that would be fit for purpose for the GGA. We also suggest this is open for experts to include suggestions for indicators that have not been identified in the attached spreadsheet.

Key findings

747 indicators were identified as relevant to target 9c, including the newly-incorporated WHO indicators which had been accidentally left out of the original datasheet.

Of these, 136 were identified as duplicated indicators

146 were found to be relevant to paragraph 12a (labelled as "yes"), and 169 were found to be relevant to paragraph 12b (labelled as "yes"), although the differences between these two criteria were not always clear.

Included in the numbers above, 136 were found to be relevant to both paragraphs.

223 were found to be "maybe" relevant for 12a, and 185 for 12b

221 were found not to be relevant ("no") for 12a, and 227 for 12b.

Additional high-level observations

General comments on the selection of indicators:

- We find the indicators being used as part of official reporting processes (e.g. SDGs and Sendai Framework) to be more concrete given that they have existing methodologies, are universally applicable, and being used by countries to report for several years.
- Most indicators identified in the attached spreadsheet are not suitable. Many of the "indicators" proposed are not actually indicators, but the outcome which it would be desirable for indicators to monitor progress against. We only consider indicators to be those which can be associated with a specific metric. We also noted that there are many suitable indicators that exist or could be readily developed, which have not been included in the spreadsheet.
- It is unclear whether a large number of the indicators proposed, or the data needed to develop them, actually exist. Many appear to be concepts for indicators, or description of ideal indicators, which might have not ever been developed. The information provided in the spreadsheet under column "Existing/New/Unsure" does not seem accurate. Therefore, a large number of indicators selected might not be feasible.
- There is a lack of essential information that undermined our capacity to adequately assess the indicators provided
- Many indicators are also specific to a given country, and might not be applicable or desirable for other countries. Since at this stage the assessment was only made against paragraphs 12a and 12b, these have been marked as a "yes". However, our expert recommendation would be not to include them in the final GGA list of indicators
- The majority of indicators selected as "maybe" are indicators for which it is not clear whether the data exists, or whether it is an indicator that has been already developed.

General description of selected indicators:

For the reasons noted above, the sub-set of indicators marked as "yes" for 12a and/or 12b should not be considered indicators recommended for inclusion in the GGA, but rather indicators that fulfil those specific criteria, as requested by parties.

Indicators identified as relevant for target 9c that have been found to fulfill the criteria identified in paragraphs 12a and 12b fell under the following broad categories:

Outcome indicators; including:

- indicators that monitor changes in health impacts that are attributed to changes in a climate or climate change-relevant variable (for example, heat-related mortality; lethality of extreme weather events). These indicators can be useful for measuring progress towards one or more of the targets referred to in paragraphs 9–10 of decision 2/CMA.5. However, it is important to ensure they are based on observed and not on modelled data, to ensure they are sensitive to adaptation progress.
- indicators which monitor the incidence or impact of diseases that are known to be sensitive to climate change, but do not attribute the change in incidence to a specific climate change-relevant variable. These types of indicators include, for example, those monitoring incidence of climate-sensitive infectious diseases such as dengue or malaria, but which do not indicate the influence of climate change-related changes on that monitored health impact. These indicators are only useful if they are combined with indicators monitoring changes in the relevant climate hazard, or if the impact is

attributed to changes in climate change-sensitive variables. For example, changes in the incidence of severe dengue could be associated with changes in the climatic suitability for the transmission of dengue. If adaptation is successful, an increase in the climatic suitability for the transmission of dengue would not be associated with an increase in severe dengue cases, for example. However, changes in the incidence of the diseases observed in this group are determined by multiple different factors, most of which are not associated with climate change. Therefore, an ideal indicator would attribute the observed change in incidence to a change in climate change-sensitive variables. Performing such attribution represents a substantial technical challenge, which scientists are working on overcoming.

- indicators monitoring adaptation-sensitive change in a climate change-related health hazard. This includes, for example, the number of disasters declared by governments per year (which would decrease with good adaptation to extreme weather events); or the concentrations of pollen (which could be affected by prioritising non-allergenic tree species, and the control of allergenic varieties)

Indicators monitoring implementation, including:

- indicators which monitor the extent to which health adaptation interventions have been implemented, or the extent to which relevant adaptation processes have been undertaken. These include, for example, the status of implementation of early warning or early response systems for relevant climate change-related health impacts.
- indicators monitoring different activities related to awareness building, measuring, for example, the number of awareness building sessions provided to relevant communities.
- Indicators monitoring access to relevant health-protecting services. These indicators monitor the extent to which populations have access to relevant health-protective services. These include, for example, the proportion of the population covered by relevant healthcare, or health early warning or early response systems; or the proportion of the population with access to urban greenspaces.

Contextual indicators

- Indicators monitoring changes in a climate-related health hazard. These indicators monitor changes in climate change-related health hazards, which cannot be modified through adaptation. They include, for example, the climatic suitability for the transmission of infectious diseases, or the length of the pollen season. While these are not adaptation indicators per se, they are important context indicators, which can be used alongside indicators of health impacts to ascertain whether adaptation efforts are successfully reducing adverse health impacts in spite of growing climate change-related health hazards. They can also be useful to monitor whether the implementation of adaptation interventions is occurring in places in which associated climate change-related health hazards are growing.

Note on indicators monitoring general health system performance and universal healthcare access:

- Within the indicators monitoring access to relevant health-protecting services, there is a subset that measures the quality and coverage of healthcare services. Access to

quality healthcare is integral to improving resilience against health impacts, promoting resilient health services, and reducing morbidity and mortality associated with any health hazard, including those induced by the changing climate.

- Universal health coverage healthcare are therefore are needed for adaptation to climate change-related health hazards to be possible but do not represent progress towards climate change adaptation for health specifically.
- We therefore recommend the incorporation of a small subset of healthcare access and quality indicators as measure of essential prerequisites and enabling conditions for the attainment of target 9c. These would ideally be the same indicators selected to measure progress against SDG3.8. This will avoid generating additional data collection and reporting demands on parties, while helping focus efforts towards improvement in healthcare access and quality.

Note on the use of health impact indicators

As indicated above, there are proposed indicators under target 9c which would monitor incidence, mortality, hospitalisation or burden of disease from diseases that are climate sensitive. While in principle monitoring these is recommended, their incidence is determined by a wide multiplicity of factors, many of which are not climate change-related. Their incidence is therefore likely to change for factors other than climate change, or adaptation to it. Monitoring their incidence, mortality, hospitalisation or burden of disease is therefore only relevant to adaptation if changes are related or, ideally, attributed, to the change in the climate, or to climate change impacts, as indicated above. The science of health impact attribution is complex, and the methodologies needed to do so are still at an early-stage. However, data related to these health impacts is essential for progress towards health impact attribution to be made. Therefore, it is advisable that data on morbidity and mortality of climate-sensitive diseases is systematically collected and reported. However, the GGA indicators should attribute this mortality and morbidity to climate change, for it to be effective at measuring progress towards climate change adaptation.

Note on overlapping indicators

There are large numbers of indicators that monitor similar areas of progress. We did not group indicators at this initial stage of expert assessment. However, in such cases, it is recommended that only one such indicator is adopted, preferably prioritising those included within other international monitoring systems like the SDGs or the GPW14 indicators of the WHO, even in cases where more sophisticated indicators might exist in a subset of countries. This is important in order to optimise data collection and reporting requirements for all countries.

At the end of the exercise it is expected that indicators will cut across different targets, and hence the current duplicates should be treated with that lens.

Note on data availability and indicator feasibility

Some indicators have been proposed by high income countries where there is sophisticated data availability and analytical capacity. The data infrastructure and technical support availability need to be taken into account so that these indicators can be developed by LMICs if chosen

Note on prioritisation

Some indicators could be relevant to monitor adaptation progress. However, they are very specific, and might not be of high priority. Experts have not undertaken an exercise of prioritisation, which needs to be undertaken, taking into account the relevance of the metric to health adaptation, the monitoring capacity and data infrastructure of different countries, and the suitability and relevance of the indicator for goal-setting

Gaps

Few indicators offer disaggregation of data by gender, ethnicity, socioeconomic status, deprivation, race and other relevant characteristics. They are therefore in their current state unsuitable for monitoring the impacts of climate change on the health of the most vulnerable communities, or to assess whether adaptation efforts are targeting vulnerable peoples, in line with paragraph 12b. addressing the health and wider wellbeing needs of all populations, especially the most vulnerable, and does not mask inequalities.
There are a small minority of indicators that monitor observed climate-sensitive health impacts for an adequate number of countries, and with adequate temporal and geographical resolution. Health impact monitoring is a considerable challenge, but one without the capacity to assess the health impacts of climate change and the attainment of adaptation will continue to be limited.

None of the indicators identified monitor adaptation towards the mental health impacts of climate change, which remains a considerable challenge to measure.

No indicator captured traditional and indigenous knowledge, or adaptation measures that incorporate indigenous knowledge.

In general, data availability for the indicators identified is limited to a few countries. Global coverage remains a major challenge.

<u>Insights on cross-cutting indicators, and dimensional targets</u>

A considerable number of indicators , which relate to sanitation and hygiene conditions that are major determinants of health were identified. This group of experts is unsure of whether these are covered already by target 9a, and these indicators were therefore considered for inclusion under 9c. Similarly, numerous indicators monitoring nutritional status were identified, and these could be covered under target 9b.

It was also noted that many indicators that would be relevant for the dimensional targets have not been identified as so in the attached spreadsheet. It would be important for the process for identifying dimensional target indicators to be better aligned with the process for selection of thematic target indicators. Most thematic target indicators would be relevant to the dimensional targets.

Due to the limited time available, coordination with other expert groups was not possible. We recommend that more opportunities are provided for alignment and exchange between different groups.

Recommended next steps post-COP and into 2025

1. We request that parties provide clear guidance to the experts on the process, criteria, and considerations for evaluating indicators, and the flexibility to apply expert judgement to make sound recommendations on the indicators that would be suitable for the GGA, including beyond those identified in the current list. This guidance should include clarity on the expected process, methodology and criteria for the selection of indicators, and on the possibility of incorporating new indicators, including through *de novo* data collection. This will help ensure the contributions from experts meets the needs of parties, and help improve the quality of the assessment experts put forward, optimising the use of expert's time.
2. We recommend that systems are implemented to ensure improved alignment between the different groups of experts, to ensure cross-cutting indicators are adequately selected and presented.
3. We recommend that the process for selection of GGA indicators incorporate the experience and learnings from other similar indicator selection processes that have been undertaken in other UN processes. These could include the SDGs, Sendai Framework indicators, WHO GPW14 indicators, which have encountered similar challenges in the identification, assessment and selection of indicators.
4. We strongly recommend that a system is put in place to aid the selection of meaningful indicators, following the system of indicator Tiers used by UNSG, whereby indicators are divided in 3 tiers, taking into account the availability and quality of methodologies and data. This will be critical to ensure indicators are adequate and feasible for implementation across the largest possible number of countries, and that *de novo* data collection requirements are limited.
5. There are a large number of indicators which have been proposed for target 9c. Some of these are critical or particularly informative in establishing a goal for health adaptation and/or measuring progress against it. Others are technically adequate indicators, but which reflect secondary aspects of health adaptation, or monitor processes that have only been identified as a priority by a small minority of countries. We recommend that a tiered system is put in place, to select a small subset of highly informative "core" indicators that countries can prioritise reporting on, which can help act as proxies or metrics for meaningful progress against target 9c, and a lager sub-set of "complementary" indicators that can provide meaningful but non-essential information.
6. The ideal indicator for the GGA would measure the reduction in adverse health impacts attributed to anthropogenic climate change, or to the implementation of adaptation interventions. Since such indicators do not exist as of yet, most of the indicators identified are currently generally insufficient and/or suboptimal to set goals and monitor progress towards Decision2/CMA5, especially towards the targets set in paragraph 9c. However, much work is going both within countries and research agencies to develop better indicators and monitoring mechanisms that in future years will enable a more adequate monitoring of the attainment of this target.
   As experts in climate change and health adaptation, we strongly recommend that a process for the iterative improvement of indicators is established, with an initial set

of feasibly measured indicators, including some of those identified in this document, adopted at COP30, to avoid delays in monitoring essential progress towards adaptation. Subsequently, the process should enable iterative improvements, which will be crucial to avoid locking-in suboptimal indicators that undermine the ability to adequately set the Global Goal on Adaptation, and monitor progress towards its attainment, inline with Decision2/CMA5, and to ensure indicators reflect changes in adaptation needs, climate hazards, and advances in methodologies and availability of data.

7. We also recommend that a process is put in place for the development of new, globally-standardised, indicators designed specifically for the GGA. This process could mirror the process undertaken by UNDRR for the development of indicators for the Sendai Framework. At initial stages, we recommend that this builds only on currently-available data. However, it is strongly recommended that guidance is provided to countries for new data collection and/or reporting. This should help ensure data collection efforts are optimised, minimising the efforts required from countries. It is also recommended that efforts are focused on bridging the gaps identified above. The provision of adequate means of implementation will be essential for the successful development of new indicators to monitor progress against the GGA

8. There is interest for selected indicators to work across targets. In particular, there was a steer towards making health indicators to be cross-cutting in nature. While this would be desirable, the broad applicability risks reducing specificity, and jeopardising the monitoring of health adaptation in particular. We therefore recommend that a set of health-specific indicators are included to monitor progress against target 9c. Currently, indicators on the climate – food security (availability/production/access) - health are missing and will need to be developed.

9. Given none of the indicators identified reflects the needs, priorities or knowledge of Indigenous Peoples, recalling decision 2/CMA.5 paragraph 8 and FCCC/SB/2024/L.6 paragraph 12 we recommend parties mandate the Secretariat to coordinate engagement with Indigenous science leaders to incorporate their assessment and recommendations in the selection and/or development of these indicators.