

Refined indicator mapping – Complementary note to the excel file Expert group on targets 10a-d

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The expert group on targets 10a-d comprises 28 volunteer experts from across the globe. It is co-led by Dr. Timo Leiter (London School of Economics and Political Science) and Rohini Kohli (UNDP). In this document, we are outlining our analysis and key findings and provide recommendations for negotiators to consider in their deliberations at CMA.6 in Baku in order to guide and focus the work of the experts in 2025. This document therefore serves as an important complement to the refined excel file that contains the results of our analysis.

Approach to the analysis

At the mandated workshop of the indicator work programme in Sharm el-Sheikh on 8-9 October 2024, experts across the expert groups who participated in-person met to discuss the refinement of the excel file and how its findings could be presented in a coherent way. We agreed to develop two products that jointly form the refinement: an excel file that contains the results of our analysis and an additional document where each expert group describes the approach it has taken and what progress it has made. This document provides essential background and explanations that an excel file cannot include, and therefore serves as an important input to the negotiations in Baku. The document also enables each expert group to describe the specific challenges it encountered in the assessment of indicators for their target. The UNFCCC secretariat provided a common template for consistency across the groups which this document is based on.

Following the guidance received by the SB Chairs after the mandated workshop in Sharm el-Sheikh, we focused our analysis on:

- The relevance of indicators to targets 10a-d
- The relevance to adaptation for those indicators linked to targets 10a-d

These two aspects represent the first two criteria for indicator selection that Parties agreed to at the June negotiations in Bonn (paragraph 12a and 12b in document FCCC/SB/2024/L.6).

After the workshop, the secretariat shared the merged excel file containing the indicators that were extracted from the submissions that Parties, UN organisations and observer organisations made in July and August of 2024, and the indicators that were compiled by the Adaptation Committee. The merged excel file includes around 7,500 unique indicators¹ (see Table 1). For each indicator, the excel file shows which of the targets under the GGA framework it relates to. This **association of indicators to targets** was provided by the secretariat based on information contained in the submissions. The first part of our analysis was to review these linkages **to determine what proportion of the indicators are actually linked to targets 10a-d**. The resulting list of indicators that are relevant to targets 10a-d will be a main resource for the identification of indicators in 2025.

¹ As discussed below, some of them are not indicators, just statements or words that lack essential detail.

Table 1 shows the number of indicators included in the merged excel file and the number of indicators claimed to be related to targets 10a-d (see columns N-Q in the excel file). In total, over 3,000 indicators were linked to targets 10a-d, and these are the indicators we examined. This includes indicators that were linked to a thematic target and one or more of the dimensional targets (10a-d). We included indicators that were linked to multiple targets, but we did not review indicators that were not linked with any of the dimensional targets (10a-d) as this would have required examining another 4,500 indicators.

Given the very short period of time that expert groups had to undertake this work (two weeks after receiving the merged excel file), we decided to prioritise assessing the relevance to the targets as this criterion is of foremost importance to identify indicators to track progress towards the targets. If an indicator was rated as irrelevant to the associated target(s) under paragraph 10, then we did not prioritise rating its relevance to adaptation. Overall, we rated about 95% of the around 3,000 indicators that were linked to targets 10a-d for their relevance to the targets and around 60% for their relevance to adaptation (see Table 2).

Table 1: Number of indicators in the merged excel file that are associated with targets 10a-d.

Total number of indicators	9966
After removal of identical duplicates (filter in column E)	7497
Associated with target 10a	566
Associated with target 10b	552
Associated with target 10c	1651
Associated with target 10d	302
Associated with all four targets of para 10	55
Total indicators associated with targets 10a-d	>3000

Explanation: The table lists the number of indicators that the merged excel file shows when filtering via columns N-Q for indicators linked to each of the dimensional targets. The filtering for targets 10a-d was done after excluding identical duplicates via column E of the excel file.

To facilitate the review, we drafted a guidance document that informed the rating of the relevance to targets including examples. The guidance was based on discussions during multiple calls with the majority of our group members where we talked through numerous examples. We also discussed how to rate relevance to adaptation but did not produce written guidance for it due to the limited time available. While we aimed for the majority of indicators to be examined by two raters, this was only achieved for a small proportion due to the large number of indicators and the limited time available.

Key findings

Overall, 2,837 indicators were rated for their relevance to the dimensional targets and 1,787 indicators were rated for their relevance to adaptation. Table 2 shows the proportion of

indicators that were rated as relevant, irrelevant and ‘maybe’ relevant to the four dimensional targets 10a-d and to adaptation. Key findings are:

- **Less than 40% of the indicators assigned to targets 10a-d are actually relevant to these four targets**
- **Just one-third of the indicators assigned to targets 10a-d are relevant to adaptation and another 7% are ‘maybe’ relevant to adaptation**

These key findings clearly demonstrate that **a large proportion of the indicators contained in the excel file are not relevant for the task of identifying indicators that can track progress towards the four dimensional targets of the GGA framework.** More than half appear not even directly relevant to tracking adaptation, at least when assessed based on the information contained in the excel file. The work in 2025 should therefore further examine those indicators that were rated as relevant to the targets and relevant to adaptation. However, work in 2025 should not be limited to considering only indicators contained in the merged excel file. In fact, the SB conclusions from June 2024 provide a mandate to “as needed, developing new indicators” (para. 14) which might draw inspiration from the indicators that were rated as relevant in the refined indicator mapping.

Table 2: Relevance to targets and relevance to adaptation of the indicators linked to targets 10a-d.

	Relevance to targets (12a)				Relevance to adaptation (12b)		
Number of indicators rated	Yes	No	Maybe	Number of indicators rated	Yes	No	Maybe
2837	1098	1496	243	1787	586	1077	124
100%	38.7%	52.7%	8.6%	100%	32.8%	60.3%	6.9%

Explanation: This table shows the results of the work of the expert group on the four dimensional targets 10a-d. It is the summary of all indicators that were rated by members of this expert group for their relevance to the targets and the relevance to adaptation.

Additional high-level observations, including examples

Relevance to targets 10a and 10c

- **Many indicators that were linked to target 10a could be input variables for assessing vulnerability or impacts of climate change** e.g. climatic conditions or distribution of natural resources, but they do not measure the specific wording of target 10a. In other words: identifying indicators for target 10a does not mean listing

any of the very many variables or indicators that could potentially be part of climate vulnerability or risk assessments. Without directly measuring target 10a, such indicators were rated not relevant (see examples below).

- Many indicators were associated with target 10c under the broad notion of “implementation”, but target 10c is specific to implementation of “national adaptation plans, policies and strategies”. Hence, being directly relevant to target 10c requires that actions are linked to NAPs or similar documents. This explains why many indicators about the implementation of specific adaptation measures were rated as not relevant to tracking the specific wording of target 10c.
- Target 10c also implies attribution/causality whereby social and economic impacts have been reduced “as a result of” NAP implementation. Indicators would need to account for this causality to be rated as “yes” rather than as merely “maybe” relevant to the target.
- The excel file includes indicators that are linked to one of the dimensional targets but that apply to another one, and there are indicators that are not linked to any of the dimensional targets but that would be relevant for one of them. Both of these cases are not accounted for in the results shown in Table 2.

Unclear, incomplete or highly-similar indicators

- **A significant number of indicators were unclear or lacked detail** which made it difficult to assess their relevance. It generally led to rating them as either not relevant or just as ‘maybe’ relevant. Similar to what was expressed by multiple expert groups at the Sharm el-Sheikh workshop, many of the entries are not indicators but just statements. Hence, many of the entries within the merged excel file are not ready to use and do at best provide ideas for what possible indicators could cover.
- **Some indicators include terms that need to be further defined to be operationalised for measurement**, e.g sustainable forest management. Similar to the SDGs were, for example, for the indicator on sustainable agriculture it is defined in its metadata by a series of parameters what “sustainable” means, such definitions would be needed for indicators that track the GGA targets.
- **There are many duplicated or similar indicators** within the same party’s submission. The merged excel file only allowed to filter indicators that were identical, but not to filter indicators that were very similar. As a result, this slowed down the review by having to rate very similar indicators multiple times.

Problem with using the excel file for indicators linked to multiple targets

- The formatting of the excel file is geared towards indicators that are linked to only one target. This caused a problem for rating indicators that were linked to multiple dimensional targets as it was not possible to directly record differences in relevance to these targets. This problem affected approximately 200 indicators that were linked to two or more dimensional targets (for example, 55 indicators were linked to all four dimensional targets). In these cases, if the indicator was relevant to one of the targets, the advice to our group members was to rate the indicators as “maybe” and to explain differences in the comment column.

Common reasons for deciding relevance in relation to 12a

- Indicators considered ‘Yes’ had a clear and direct relation to the wording of the respective target

For **target 10a as worded at COP28**, directly relevant indicators measure:

- whether a country has conducted climate change vulnerability or risk assessments
- whether these assessments have informed the formulation of national adaptation plans and policies
- whether countries have established:
 - multi-hazard early warning systems by 2027
 - climate information services for risk reduction and systematic observation

For **target 10b as worded at COP28**, directly relevant indicators measure:

- whether a country has national adaptation plans, policy instruments, and planning processes and/or strategies in place
- whether these plans, policies and processes are gender-responsive, participatory, transparent and inclusive, and covering vulnerable communities
- whether adaptation has been mainstreamed in all relevant strategies and plans

For **target 10c as worded at COP28**, directly relevant indicators measure:

- whether a country has progressed in implementing their national adaptation plans, policies and strategies
- whether, as a result of that implementation, social and economic impacts of climate hazards have been reduced

For **target 10d as worded at COP28**, directly relevant indicators measure:

- whether countries have a system for monitoring, evaluation and learning for their national adaptation efforts²
- whether countries have built the required institutional capacity to implement the system
- Indicators considered ‘No’ were lacking a clear and direct relation to the wording of the respective target, were unclear or otherwise lacking detail to understand what the indicator is measuring

For **target 10a as worded at COP28**:

- Climate parameters like temperature or precipitation were considered not relevant because these indicators do not tell us whether countries have conducted climate change vulnerability or risk assessments or whether they have improved their climate services or systematic observations. Indicators for the latter would need to measure directly whether countries have enhanced their climate services or systematic observations.

² As background, see: Leiter, T. (2021). Do governments track the implementation of national climate change adaptation plans? An evidence-based global stocktake of monitoring and evaluation systems. *Environmental Science & Policy*, 125, 179-188. <https://www.sciencedirect.com/science/article/pii/S1462901121002379>

- By the same token, indicators measuring the occurrence or impacts of natural disasters were rated as not relevant to target 10a. Some of them might be relevant to target 10c if they measure reductions in economic or social impacts due to the implementation of NAPs.

For target 10c as worded at COP28:

- Some indicators are just stating status e.g. Forest area as a proportion of total land area. If the statement contained change of forest area as a result of implementing adaptation policy or efforts, then it would be a 'yes'.

Additional reasons for rating indicators as **not relevant** (applying to all four dimensional targets):

- Indicators that were out of scope of the targets, e.g. about ozone or plastic pollution
- Indicators unrelated to the agreed purpose of the GGA framework.
- Indicators that were lacking detail, e.g. ID9214 which just states "Awareness campaigns"

There were multiple reasons for considering an indicator as '**maybe**' relevant:

- The indicator appeared potentially relevant, but some detail was missing to determine with certainty whether the indicator measures the respective target
- Indicators that could be relevant, but were too general and would need to be modified to be more specific
- Several indicators refer to "natural disasters" while it is not clear to what extent these are climate change induced disasters. It was therefore at times difficult to decide if indicators that mention natural or weather events are to be considered.

Examples for target 10a

Examples for a clear "**yes**":

- ID221: National Vulnerability Assessment Related to Climate Change [have been conducted]
- ID555: Vulnerability and risk assessments conducted in all provinces
- ID559: Percentage of LGUs [local government units] with operating early warning systems increased
- ID1170: Number of national early warning systems for key sectors and risks
- ID1174: Number of countries that have multi-hazard monitoring and forecasting systems
- ID1382: Number of local governments that regularly collect, update and analyse climate change information and/or CVA/CRA
- ID1579: Uptake of early warning systems

Reason for Yes: these indicators directly measure a component of target 10a

Examples for a clear "**no**":

- Temperature, precipitation, any indicators of climate parameters or similar indicators (e.g. ID247: Glacier mass balance)

- o Reason: while these variables can be part of climate services, the target asks about the establishment of climate information services. Indicators about temperature, precipitation or other climate variables do not answer whether climate services have been established
- ID 246: Water Distribution Network Infrastructure Leakage Index (ILI)
- ID557: Number of missing persons attributed to disasters per 100,000 decreased
 - o Reason: Can be a variable within a national risk assessment, but doesn't say whether such an assessment has been conducted

Examples for target 10b

Examples for a clear “**yes**”:

- ID24: SDG 13.2.1, Sendai Framework E-2: Number of countries with NDCs, long term strategies, national adaptation plans and adaptation communications as reported to the secretariat of the UNFCCC
- ID560: No. of LGUs [local government units] with CCA-DRRM plans implemented
- ID1576: Degree of integration of climate change into development planning
- ID9197: No. of revised transport regulations, guidelines and design codes integrating climate risks
- ID1577: Percentage of municipalities with local regulations considering adaptation and vulnerability assessment results
 - Reason for Yes: This indicator measures applied mainstreaming

Examples that could be rated as “**maybe**”:

- ID2329: Document strategy for adaptation policies
 - o Reason: while it sounds relevant, it is not clear what this indicator is saying
- ID2332: Number of governmental institutions and agencies engaged
 - o Reason: Unclear what they are engaged in. It might be an indicator relevant to the aspect of participatory planning

Examples for target 10d

Examples for a clear “**yes**”:

- OD9181: NAP database and a progress dashboard published on the CCDA website and regularly updated
- ID9187: Adopted the by-law on reporting on the implementation of the Adaptation Programme

Examples that could be rated as “**maybe**”:

- ID9164: Número de hombres y mujeres fortalecidos en capacidad para el uso del sistema de monitoreo. (Number of men and women strengthened in capacity to use the monitoring system.)
 - o Unclear what the monitoring system is monitoring.
- ID9162: Gendered MRV mechanism to gather data developed
 - o It is unclear what the MRV mechanism is referring to, and ‘MRV’ is typically used in the context of mitigation rather than adaptation
- ID9207: Annual M&E reports drafted

- Reason for ‘maybe’: it is not clear what M&E reports this is referring to. If referring to NAP M&E reports are M&E reports of actions contained in NAPs, it would be a ‘yes’

Examples for a clear ‘no’:

- ID9198: No. participants/action/year focusing on development of communication plan
- ID9203: N° de documentos técnicos básicos actualizados (Number of updated basic technical documents)
- ID9180: Number of additional staff trained in specialised areas
 - It is unclear what areas the training refers to

Common reasons for deciding relevance in relation to 12b

- Indicators considered ‘Yes’ had a clear and direct relation to adaptation to climate change
- Indicators considered ‘No’ were unrelated to climate change adaptation
- Indicators considered ‘Maybe’ seemed to be possibly related to climate change adaptation, but it could not be determined based on the available information or the indicator would need to be tweaked to ensure it is relevant to adaptation

To avoid a large number of ‘maybe’ ratings, we agreed to apply a strict interpretation where it had to be clear from the indicators that they directly measure adaptation (in relation to targets 10a-d) for them to score with ‘yes’. When an indicator could possibly be related to adaptation under numerous assumptions, we decided to rate them as ‘unrelated’. This strict criterion explains the high number of ‘no’ ratings compared to the relatively small proportion of ‘maybe’ ratings (see Table 2). We discussed this approach to rating in two calls, but due to the limited time available we did not get to produce a written rating guidance on criterion 12b. Hence, with the oral discussions in mind, it was up to each expert to apply their expertise when scoring this criterion.

Specific questions arising from the ‘maybes’ and recommendations for how to address them

- For 10c, it depends on how strict the term “as a result” is interpreted, i.e. whether evidence is required that the reductions in social and economic impacts have been caused by NAP implementation
- In many cases, ‘maybe’ ratings resulted from a lack of detail or lack of information about exactly what the indicator referred to. If such information was available, many of the ‘maybe’ ratings could be re-classified into ‘yes’ or ‘no’.

Insights on cross-cutting nature of the target, as well as links between thematic and dimensional targets, including examples

As explained under “Approach to the analysis” (see above), we included any indicators that were linked in the merged excel file to targets 10a-d, including indicators that were simultaneously linked to one or more of the thematic targets. For example, indicator ID 9197 “No. of revised transport regulations, guidelines and design codes integrating climate risks” was linked to the infrastructure target (under ID 7554 as a duplicate indicator) and to target 10d³ and was therefore included in the group of indicators that we reviewed.

The largest occurrence of indicators that were linked to one of the dimensional targets and to a thematic target was for indicators linked to target 10c. However, and importantly, since target 10c is explicitly about progress in NAP implementation rather than implementation of any adaptation action, an indicator for it needs to be specific to actions implemented under the NAP. This specification actually reduces the overlap between target 10c and the thematic targets.

Due to the limited time, we did not undertake any further analysis or breakdown of the ratings of relevance in regard to indicators that were linked to a dimensional and a thematic target. However, such an analysis could be undertaken based on the refined exile file.

Suggestions for next steps post-COP and into 2025

- Based on a clarified scope and purpose regarding the intended outcomes of the work programme (see below), expert groups can develop a suitable approach on how to get there.
- Clarifying the role of the refined list of indicators relative to the new indicators that are mandated to be developed by May 2025.
- For any further work on the refined indicator list, agree on a set of **criteria**.
- Explore and introduce an **online platform, tool or database** that enables jointly working on indicators with a large group of people. The software should also be able to transparently register different ratings and enable voting/weighting where experts differ in their assessments. Software used for qualitative research and coding could be potentially relevant.
- Hold some **(in-person) workshops** for the experts to expedite the process and to facilitate collaboration across the expert groups
- Develop/compile a **glossary of definitions** that is agreed to and used across expert groups. This glossary could serve as a useful supplement in reporting to Parties.

Specific questions for Parties to address at COP 29

- **Purpose and scope: Clarity is needed on:**

³ The relevant dimensional target would have been 10b rather than 10d because this indicator measures mainstreaming of adaptation.

- The **intended outcome** of the indicator work programme, especially whether indicators are to be included that track progress at the global level
 - Whether indicators are meant to measure the targets as worded at COP28, or to measure adaptation more broadly. While the mandate for the indicator work programme seems to imply the former⁴, many of the indicators that were submitted by Parties, UN and observer organisations were far broader in scope (e.g. including climate parameters) which resulted in the compilation of over 7,500 indicators. Clarity or re-confirmation of the scope of the indicators to be developed under this work programme would greatly help in concentrating the work in 2025.
- **Types and approximate number of indicators:**
 - Is the intention to focus on indicators that are able to track the collective achievement of the targets at the global level, or to develop indicators for various national contexts, or both?
 - If the intention covers indicators that can track the collective achievement of the targets, what range of number of indicators would countries deem suitable?
 - Would there be different layers or types of indicators, e.g. globally-relevant headline indicators and indicators that are specific to national circumstances? This information would help experts to develop or screen indicators for each type of indicator.
- **Means of implementation and relation to financial tracking**
 - Are the indicators expected to include Means of Implementation? If so, how would such indicators relate to existing tracking of support provided and received?
- **Usage of the indicators**
 - How are the indicators intended to be used, i.e. who will report on them? How do they relate to adaptation reporting under the transparency framework and what is their role in the context of future Global Stocktakes?
- **Work of the experts**
 - The process of the indicator refinement has clearly shown the limits of working in various excel files with a large group of people. It also limits joint work across the expert group since each group has its own files. Could a mandate be given to the secretariat to explore options for online software tools to enable a more efficient and effective work on a large number of indicators by a large group of people?
 - How could individual experts opt out or be replaced in relevant circumstances, e.g. due to changes in jobs or where someone consistently failed to engage and contribute over an extended period of time?

⁴ Paragraph 39 of Decision 2/CMA.5 reads “Decides to launch a two-year United Arab Emirates–Belém work programme on indicators for measuring progress achieved towards the targets referred to in paragraphs 9–10 above”.

- While the conclusions from SB60 in June 2024 mandate a workshop in conjunction with SB62 in June 2025, it would be very helpful to have an earlier workshop were experts could organise and discuss work that informs the technical report that the secretariat has to prepare by May 2025 including “a list of proposed new indicators”⁵, i.e. whose delivery date is before the SB workshop.

⁵ Paragraph 18 of draft conclusions proposed by the Chairs as contained in document FCCC/SB/2024/L.6.