

# Infrastructure Human and Settlements Expert Team: Initial insights and recommendations

## 1. List of Experts

The following experts were involved (listed alphabetically).

- Donovan Burton (Informed.City)
- Lisa Green (Pacific Community)
- Michelle Mycoo (University of the West Indies)
- Tiago Cisalpino Pinheiro (Brisa Soluções Ambientais)
- Debra Roberts (University of KwaZulu-Natal)
- Alida Saleh (JLL Sustainability for Middle East and Africa)
- Çiğdem TUĞAÇ (Ankara Hacı Bayram Veli University)

## 2. Analysis Methods Used (to date)

Given the size of the initial data provided by the UNFCCC a combination of human and computer supported methodologies were applied to analysis the data. These include :

- Desktop analysis (people reviewing lines of data). In this approach the experts first reviewed the indicators, and then met online to discuss insights and best approach for analysis. To date the expert team has reviewed approximately 550 indicators.
- Data analyst extracted Human Settlements and Infrastructure and placed into a new spreadsheet. Columns were re-worded to align in order (against paragraph 12.)
- Inserted a column for draft themes – this would help identify gaps and comment on notable gaps and thematic areas (for future reviews)
- Obtaining clearer insight from parties regarding the method
- Analysing the data reviewed by experts and completing the remaining indicators.
- Rating the indicators against the initial (or potentially revised) UAE-Belem criteria
- Attempting to use data systems to visualise the information
- Group indicators into key themes to better improve analysis. Potential themes: Governance, vulnerability, risk exposure, risk monitoring, land use planning, adaptation planning, economic planning , implementation, finance, natural environment, social resilience

## 3. Key Insights: Indicators

The following initial insights are based on the indicators themselves, not the database, thematic challenges (see Table 1). Initial insights include (in no particular order):

- Most entries reviewed are not actually in indicator format yet – they more just statements.
- It will take substantial work to rework the indicator set if the that is a problem that applies across the board.
- There is a need to provide clearer direction from the Parties on the use and definition of the themes.
- A scan across our full set seems to indicate that informal settlements only feature in terms of a number or a percentage of people living in informal settlements – nothing specifically about adaptation in informal settlements
- There doesn't seem to be very much on means of implementation or means of support
- There is a heavy focus on risk metrics
- There are a number of climate-related adaptation to risks missing (e.g. adaptation to hail etc)
- Almost no indicators associated with tipping points, cascading risks, confluence risks etc
- No indicators focused on detection of maladaptation.
- No indication of the indicators being current or projected indicators (e.g. difference between current risk and future risk based on range of climate projections).
- Some indicators are more mitigation focused.
- Will need a concerted effort from all parties to help clean up the significant number of indicators.
- Many of the indicators are country or region specific (e.g. reindeer grass, household basements). A more global focused indicator could cover the same topic.
- The extent of overlap between the themes cannot be discerned at this point.
- Duplication of indicators would need to be addressed.
- No indicators based on scenarios (e.g. indicator aligned to projected IPCC model or other qualitative narrative)
- Very few indicators linked to transition risk (for example government climate policy change, climate technology, climate-related market risk etc)
- Current approach in sorting into thematic areas increases risk of reductionist approach and also limits oversight of complex / system risks.
- It would be interesting to explore an indicator that highlights if an adaptation indicator is a high carbon option (e.g. concrete walls) or a low one (e.g. mangroves)
- The indicators seem to be based on different scales, and transitioning between some of them is not always feasible. This creates uncertainty in the evaluation process and in determining which scale the indicators should primarily rely on.
- Some indicators are country-specific, limiting their applicability at the local or regional levels. Furthermore, the extent of overlap between thematic areas remains unclear at this point.

- There is an absence of indicators that differentiate between current risks and future risks based on projections, which would allow for more comprehensive assessments.

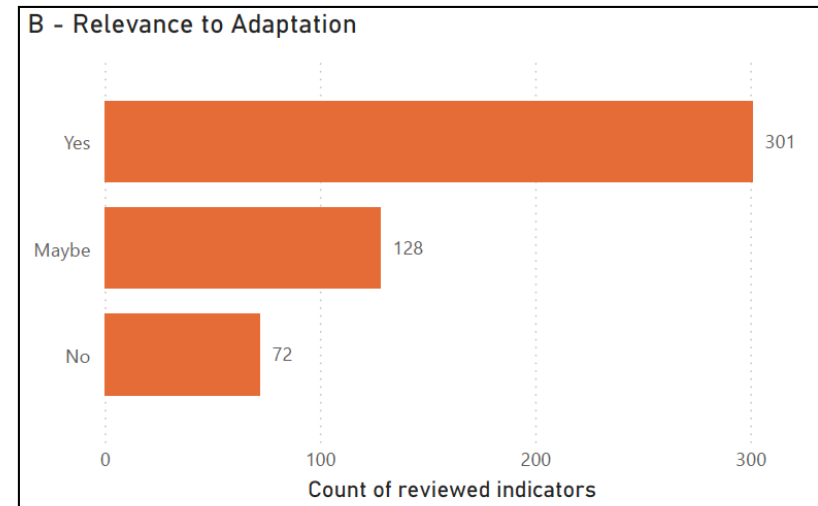
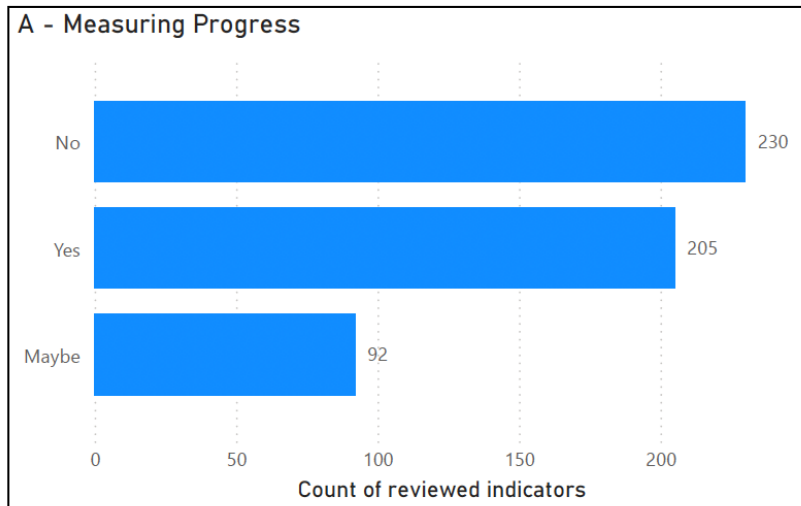
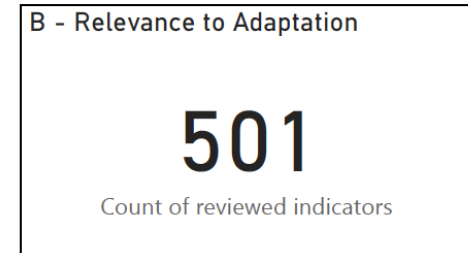
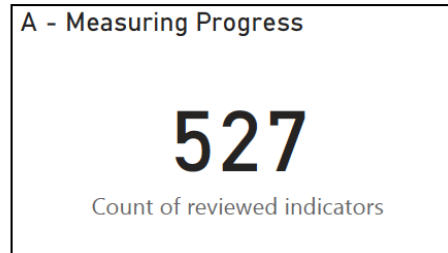
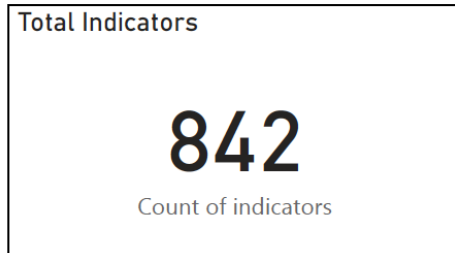
A total of 842 indicators were identified as being relevant to the “human settlement and infrastructure” theme.

The experts were only able to review 527 indicators for relevance of the indicators to measuring progress towards one or more of the targets referred to in paragraphs 9–10 of decision 2/CMA.5. Of these, only 205 (39%) were deemed to be relevant, with a further 92 (17%) considered to being maybe relevant. Almost half were not considered relevant.

The experts were only able to review 501 indicators for specific relevance of the indicators to adaptation, including enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change. Of these, most were considered to be relevant (301 indicators, 60%) and a further 128 (25%) were considered a maybe. 72 (14%) were not considered suitable by the experts.

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Some of the indicators may have relevance, but due to the way in which they were written, or combined with multiple indices, refinement would be required. In terms of the process (e.g. data collation, data formatting) associated a sophisticated analysis and communication of the information to the parties will likely be problematic. See the table below (Table 1).

#### 4. Key insights: Process

Table 1. Insights and recommendation on the indicator approach

Insights	Recommendation to Secretariat
There is no one single master document for all experts, with each expert being sent a spreadsheet. Even one spreadsheet per group this will still result in inefficiencies and double handling.	Create a single document / database on sharepoint or similar platform. The document can then be worked collectively.
The whole collection of indicators needs data cleaning and improved data architecture to enable the technical experts and parties to review.	Employ a data architect and analyst. The analyst will enable to show data visuals to further support party analysis of indicator themes, gaps etc.
The clarity of methodologies associated with the indicators is not strong. The lack of specific references for many of the indicators impedes the technical expert's ability to verify.	Provide hyperlinks and references to each indicator
Some entries have more than one indicator.	Separate each so only one per line
Lack of indicator theme, makes it difficult to review	Create indicator themes (e.g. risk type, exposure, action, process, governance)
Inconsistency in text (e.g. #, No. or Number) makes data cleaning challenging	Establish a format / writing style for all entries.
Some indicators are not indicators	Approve technical experts to delete items (or have protocol – e.g. highlight red). Establish protocol for deleting (e.g. capture justification).
Numerous duplicates or similar indicators.	Establish process in data base that captures duplicates and deletes and flags duplicates before being entered again
Indicators that are identical to those in existing accepted frameworks with associated methodologies (eg SDGs, Global Set) are not always clearly indicated	Identify clearly which indicators are already being used and their relevant number, metadata etc
Indicators do not have any groupings / thematic areas	Agree on thematic (e.g. risk, process, adaptation etc.)
The expertise of the elected experts will be a limiting factor in reviewing indicators	Need to be transparent where there are expertise gaps.

<p>Lack of consistency in approach to analysis between thematic groups will affect reliability of outcome.</p>	<p>Need clearer direction on overall approach to be adopted</p>
<p>Large volume of indicators stymies the ability of experts to review those not yet categorised into their theme</p>	<p>Improved database system would support broader analysis</p>
<p>The availability of experts will be a limiting factor.</p>	<p>Improved organisation of the data would help experts with limited time. The parties should consider supporting the experts to physically attend meetings.</p>
<p>The process of analyzing the indicators highlights the challenges in establishing a method for evaluating them across different scales.</p>	<p>It is important to establish how these indicators will be evaluated across different scales and to address any uncertainties regarding their applicability in various contexts.</p>