SDG Implementation - what to do when it's not clear what to do?

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1. The problem

Agenda 2030, the UN's agenda for sustainable development in the Post-2015 Development Agenda era, has put a spotlight on all national statistical systems[1] to enable globally coherent monitoring and measurement of 17 goals, 169 targets and 232 indicators. These indicators are intended to be disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant to national contexts. Notwithstanding the challenge of national relevance with global coherence, these indicators have become the subject of much activity related to SDG implementation.

The statistical interpretation of "implementation" is "*Can national statistical systems provide reliable data?*". The governance interpretation is "*Can we get these indicators to move in the right direction?*"

Many approaches have been developed or are in the process of being developed to support the statistical[2] and governance[3] interpretations. Many approaches consider implementation as a technical challenge to be resolved through the application of authoritative expertise and known structures, procedures and ways of doing things. In practice, implementation is an adaptive challenge requiring us to go beyond any one authoritative expertise to discover and generate new capacity, new expertise, and new ways of doing things[4].

This paper presents a framework to assist the statistical and governance communities of practice to decide on which approaches are suitable in different SDG implementation conditions.

2. The premise

Statistical development and governance (broadly, collective decision making) are often seen as separate endeavours, yet governance requires evidence and statistical development requires guidance on priority needs for evidence. The upper part of **Figure 1** focuses on policy making, but could also refer to decision making processes in any organization from large corporations to households. It describes five main stages of policy making:
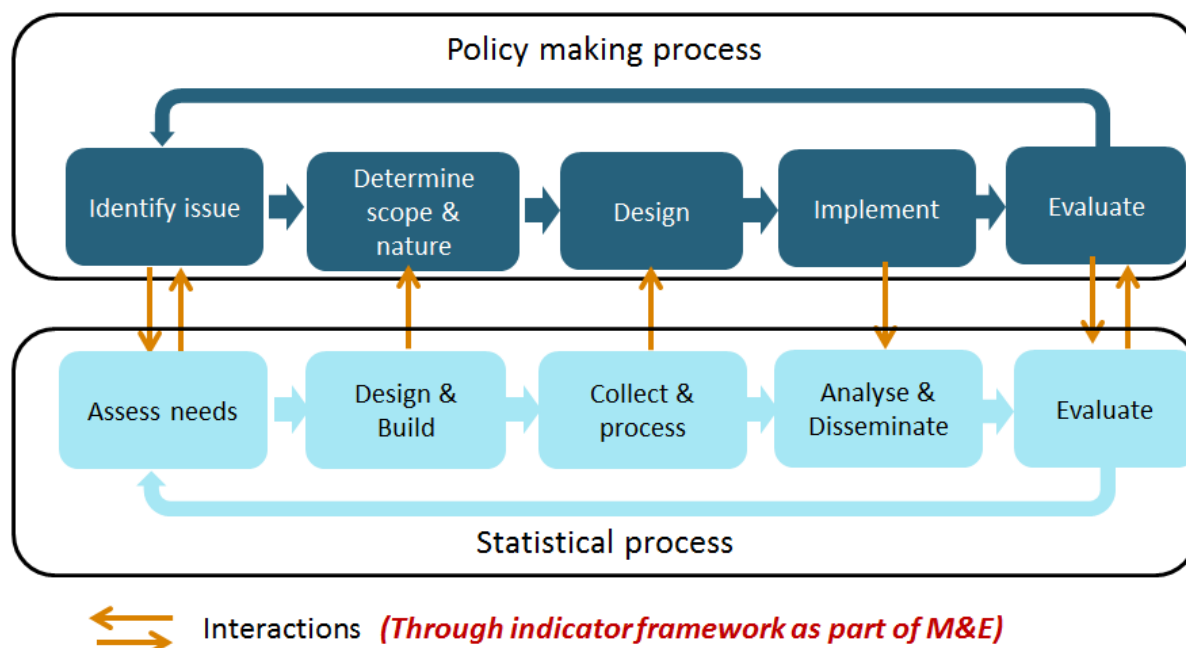
- "Identify the issues" is agreeing a decision needs to be made

- "Determine scope and nature" is agreeing on what options are available to make the decision

- "Design" is agreeing on the decision

- "Implement" is making the decision

- "Evaluate" is understanding whether the decision achieved its intended objective (if not, go back to design).

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[1] National statistical systems include the national statistical office, but also other stakeholders involved in producing official statistics.

[2] See https://unstats.un.org/sdgs/

[3] See https://sustainabledevelopment.un.org/vnrs

[4] See http://cambridge-leadership.com/documents/Ch-2-Theory-Behind-the-Practice.pdf

Figure 1 - Stylized relation between policy making and statistical development

Individual policies contribute to an overall policy framework, which is often the basis of a national plan.

Statistical development (the lower part of **Figure 1**) follows a similar process:

- "Assess needs" is agreeing on data priorities

- "Design and Build" is agreeing on what options are available to meet the data needs

- "Collect and process" is agreeing on collection methods and processes

- "Analyse and Disseminate" is compiling and disseminating the collected data to inform agreed data priorities

- "Evaluate" is understanding whether the data achieved its intended objective (if not, go back to design).

Statisticians have mapped these stages to a General Statistical Business Process Model (GSBPM, see ECE, nd.). The objective is to create or redesign a statistical process (survey, account, indicator, etc.) as a contribution to the body of official statistics.

Ideally, the two processes are connected, and we propose (Bidarbakht Nia, 2018) that the influences between the two are the indicator framework. Ideally, as well, the indicator framework is part of an agreed monitoring and evaluation framework. The indicators play this role by providing evidence for identifying the issue and supporting the evaluation process.

3.   Missing links: What do you do when there's no data or no agreement on priorities?

The statistician's answer to the first part of the question would be "*Get more data!*" Of course, data development is a long process for social and economic data and even more so for environmental data. Lead time for household or business surveys is one to two years depending on whether we are adding questions to an existing survey or developing a new survey. For environment statistics, lead time could be longer if specific monitoring or spatial data are not yet available. For many statistics, data sharing agreements between data custodians can introduce additional lead time.

The statistician's answer to the second part of the question would be "*Tell me when you've agreed on the priority needs for evidence.*" This is not a very helpful answer to either statistical or governance communities.

Stirling (2010), in his Uncertainty Matrix (**Figure 2**), phrases the question in terms of "knowledge about possibilities" and "knowledge about probabilities".

"Knowledge about possibilities" is whether we know what *could* happen. For example, what could happen if global temperature increased by 2°C? Would the climate and ecological regimes shift into a new self-perpetuating cycle further increasing temperatures by 4-5°C? (Steffen, et al. 2018). This is the realm of scientific speculation.

"Knowledge about probabilities" is whether we understand the phenomenon well enough to measure it and its likelihood as a range of probabilities.

Figure 2 - *The Stirling Uncertainty Matrix*

Adapted from Stirling (2010).

The intersection of the two types of knowledge creates four scenarios: When we have enough understanding about probability of a possible phenomenon, we can measure the **risk**. When our knowledge about probability of a possible phenomenon is insufficient we face **uncertainty**[5] **Ambiguity** is a situation in which the possibility of a phenomenon is not clear to us, but it is possible to theoretically understand probabilities. Finally, in the lower right quadrant, we have **ignorance**—we're not even sure of what could happen; so, probability and possibility are no longer useful to guide our decisions.

Stirling's premise is that in each quadrant, we have methods to help make the most effective decisions given the knowledge we have--or don't have. For example, under "ignorance", Stirling suggests: monitoring and surveillance, reversibility of effects, flexibility of commitments, adaptability, resilience, robustness and diversity. It is mostly in the "risk" quadrant that quantitative evidence is produced, and we focus there on possible and probable outcomes. One of Stirling's observations (and hence his title "Keep it Complex") is that decision makers tend to favour simple evidence, and therefore prefer decision processes that focus on risk assessment. Keeping it complex is a call to scientists (and we suggest statisticians and policy makers) to appropriately address uncertainty, ambiguity and ignorance when there is lack of evidence, a range of possible outcomes or unknown effects of decisions.

Statisticians can provide data on **risk** (probabilities) and **uncertainty** (confidence intervals), but are often unfamiliar with what to do under conditions of **ambiguity** (prioritizing a range of possible outcomes) or **ignorance** (unknown effects of outcomes).

4. SDG Implementation and the Data/Priority Matrix

We have translated the Stirling Uncertainty Matrix into the Data/Priority Matrix for SDG Implementation (**Figure 3**). To do this, we interpret "probability" as the frequency of observation and translate this into "availability of data". We interpret "possibility" as the logical acceptance of the phenomenon and translate this into "agreement on priorities for intervention".

As there are many approaches to SDG implementation, we are interested in which SDG implementation approaches are appropriate under different scenarios of "data availability" and "agreement on priorities for intervention". The quadrants are the intersections of whether data are available and fit for use, or they are not; with whether the country's priorities are clear and agreed on, or they are not. This creates four scenarios:
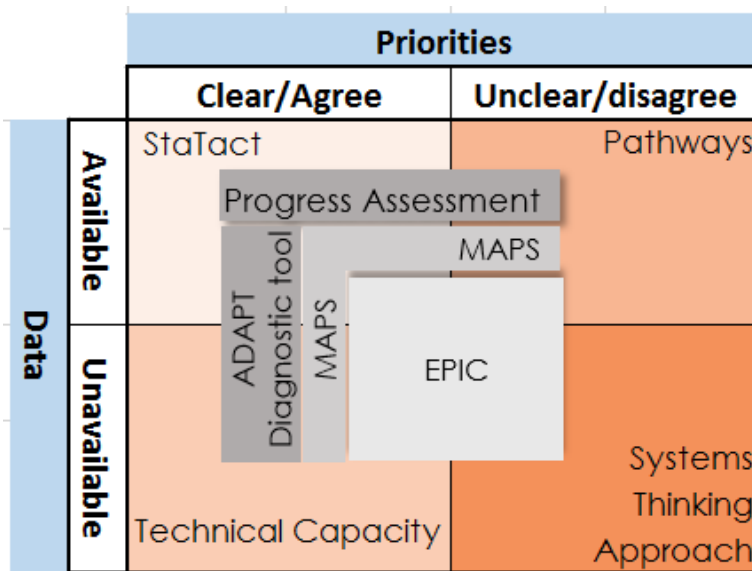
1) **Data available, priorities clear**: stakeholders agree on priority interventions that need to be monitored and data are available to do so (top-left cell). This quadrant covers the more straightforward statistical development management and costing.

2) **Data not available, priorities clear:** stakeholders agree on what interventions need to be made and what indicators are needed for monitoring, but data are not available (bottom-left cell).

3) **Data available, priorities not clear**: there may be data on the issue but less or no agreement whether it should be a priority for intervention (top-right cell). For example, data for many SDG indicators may be available, but there is no agreement on which interventions to make first.

4) **Data not available, priorities unclear**: there is neither data on the issue nor clear agreement that the issue should be a priority for intervention (bottom-right cell). For instance, in many countries, data for many SDG targets are not available and there is also less agreement on priorities. This may arise from the fact that different stakeholders in a country have differing ideas of which interventions to make first.

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[5] Gaudreau et al. (2014) suggest that the matrix does not consider all meanings of uncertainty, but it is appropriate for the current purpose.

Our matrix should be considered in the context of the systemic development of national statistical systems. Assessing national statistical systems, and providing tools to support their systemic development has long been an important role of the international statistical community. This role is now amplified by the expectations of SDG implementation. Enabling the national statistical system ensures that they have an appropriate role in SDG implementation, are sufficiently funded, and have the capacity to meet expectations. Priorities also include: engaging stakeholders, ensuring statistical literacy of all, andensuring policy literacy of all. Given the objective of policy and official statistics to inform each other, the following discussion is of relevance to policy development as well as to SDG implementation.

Figure 3 - Data/Priority Matrix for applying SDG implementation tools

5.   Applying the Data/Priority Matrix

When the 2030 Development Agenda was adopted by world leaders, many international partners, together with national experts, began to develop tools and frameworks for SDG implementation. These tools are intended to be applied under specific conditions and to produce specific outputs. The Data/Priority Matrix in **Figure 3** aims to help national and international stakeholders decide on the tool and type of output that fit their requirements. For each quadrant of the matrix, we have suggested a few tools that can be used to move forward on policy priority setting and statistical development under the four sets of conditions. For example:

- UNITAR has prototyped *StaTact* (UNITAR, 2018), which is designed to map the "data ecosystem" and to overcome obstacles to producing specific indicators. This is a workshop approach to engaging senior stakeholders in a dialogue, but is also accompanied with detailed spreadsheets to compile information on costs and benefits. The tool is useful under the condition that policy priorities are clear, and data are available to compile the priority indicators.

- Paris21 is proposing their **ADAPT** (Advanced Data Planning Tool) (Paris21, nd) to manage and cost the development of specific SDG indicators. This is an online tool for national SDG managers. The tool goes beyond what data are currently available and begins by setting policy targets. Therefore, it supports the process of indicator development when there is agreement on policy targets. If data are not available, the tool will help estimate costs of compilation.

- ESCAP's *Diagnostic Tool* for SDG Implementation (ESCAP, 2016a) is a statistical work planning tool. It asks a set of questions that can be completed in a stakeholder workshop:

  o   What is the national vision?

  o   What are the policy priorities?

  o   What stakeholders should contribute to the work planning?

  o   What knowledge is already available to address the priorities?

  o   What other activities are occurring that could benefit or benefit from the work?

  o   Given the above, what are the priority statistical elements (registers, surveys, accounts, indicators) that need to be strengthened?

  o   What are the constraints to and opportunities for achieving the result?

This results in an agreed work plan among stakeholders to achieve the result. As in the case of ADAPT, the Diagnostic Tool may be applied when there is agreement in priorities regardless of data availability.

- A work plan developed using the Diagnostic Tool may include *technical capacity building* on specific statistical topics. ESCAP's Statistical Institute for Asia and the Pacific (SIAP) conducts capacity building for technical staff and managers in national statistical systems. The capacity building modalities are supplementary to the diagnostic exercise for closing the data gap when there is agreement on priorities.

- SDG *progress assessment frameworks*, such as the one used in ESCAP's SDG Progress Reports (ESCAP, 2017b), analyses national or regional progress on SDGs on a fixed time scale. They reveal progress made so far and acceleration needed to achieve the SDGs by 2030. In fact, the reports can show where we have regressed and need to reverse the trend. This approach would suggest focussing on interventions that can reverse negative trends and accelerate those with slower progress. The tool does not recommend specific interventions, but is a useful instrument to monitor progress where we agree on priorities and highlight progress gaps when we may not agree on priorities and needs to urgently make decisions.

- ESCAP's *Pathways* (for adapting SDGs to the national context) (ESCAP, 2016b) is an analytical framework that accounts for the complementarities, synergies, and trade-offs across goals and targets at the national level, considering each country's unique level of development capacities and structural characteristics. The tool identifies bottlenecks and suggests an optimal pathway based on those SDG indicators on which countries should focus. For example, investments in health and education will improve capacities to achieve many other SDG targets. The tool requires at least one data point per indicator. The pathways framework is helpful when there is ambiguity on priorities. If so, the evidence can be used to bring more clarity to what must be prioritized to maximize the impacts of intervention.

- ESCAP's *Systems Thinking Approach* (ESCAP 2017a) is a multi-stakeholder deliberative process to identify direct interlinkages between SDG targets. The process produces a causal loop diagram to identify positive or negative feedback connections between the targets, and identifies key feedback loops and high-impact leverage points. The approach is useful under situations where there is no clarity on interlinkages and little evidence available to analyze them quantitatively.

- The UN *MAPS* (Mainstreaming, Acceleration, and Policy Support) (United Nations, nd) is a toolkit to facilitate the conciliation between national policies and SDGs. MAPS helps to identify synergies and trade-offs between the SDG indicators to improve planning and policy efficacy of national governments. This cuts across three out of four quadrants, since it contains examples of tools to address conditions under which priorities are clear or unclear, but evidence is available to establish agreement. The documentation, however, does not necessarily link to statistical development and does not necessarily provide guidance on which tools are appropriate for which conditions. The MAPS also does not provide tools or guidance for the condition of **ignorance** when there is no data and no agreement on priorities.

- ESCAP's *EPIC* (Every Policy is Connected) (ESCAP, 2018) tool reviews the data needs for monitoring national policies. It does so by reviewing all policy documents related to one theme with respect to its coherence with a set of agreed principles and intended beneficiaries/target groups. The exercise is participatory and goes beyond agreed policies. It produces a diverse set of outputs that can contribute to all four quadrants. The outputs include indicators needed for the current policies, data gaps for monitoring agreed policies, new agreement on policy priorities and input to the future considerations for filling current policy void.

6.   The way forward

ESCAP has tested tools such as ADAPT and EPIC and, in some cases, linked them together. For example, the Systems Thinking Approach can be used to identify leverage points and then, the Diagnostic Tool can be used to develop a statistical work plan to monitor the leverage points.

Building out from this simple schema, ESCAP has developed a more detailed set of criteria with which to better classify SDG implementation tools. Assessing tools using these criteria will help users understand the capacity of each tool to address their needs under one of the four Data/Priority Matrix conditions and, when necessary, to combine appropriate tools to achieve a more complete set of desirable outputs. Following are the criteria we suggest for classifying existing tools:

- **Description:**
  - What is the name of the tool?
  - Who is the custodian?
  - What is the intended facilitation approach (workshop, model, analytical, online, other)?
  - Who are the intended users or participants (senior, technical; policy, statisticians; other)?
  - What are the intended outputs (assessment, work plan, priorities, other)?

- **Requirements:**
  - Does the tool require national data?
  - Does the tool require participation of national stakeholders?
  - Does the tool require specific technical capacity or support to implement?

- **Outputs:**
  - Does the tool support data development?
    - By identifying data disaggregation needs?
    - By identifying the need for data?
    - By assessing data availability?
    - By assessing data quality?
    - By identifying data development constraints (including technical capacity and budgetary)?
  - Does the tool support setting policy priorities?
    - By identifying existing national policy priority areas?
    - By identifying governance (policy, institutional, regulatory) bottlenecks/constraints?
    - By suggesting high-impact areas/leverage points?
    - By benchmarking current priorities against agreed core principles/values?
    - By analysing existing data?

Having consistent information on the requirements and outputs of a tool will better place it into one or more quadrants. For many of the tools described, however, this information is not clear from the documentation. Tool makers would better manage user expectations by specifying the conditions for which the tool is intended, its requirements and what outputs are expected from its application. To this end, we suggest the tool makers conduct a critical self-assessment of their tools according to these criteria and convey the results to their users. Of course, the proposed list is not exhaustive, and others may add additional criteria that best describes the tool.

7.   References

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