

Expert group meeting for the Global Sustainable Development Report: A systematic approach to science and technology issues for the attention of policy makers

Room XXIV, Palais des Nations, 1211 Genève, Switzerland, 28-29 May 2015

MEETING REPORT

Summary points arising from the Meeting:

A systematic, collaborative and inclusive approach for future GSDRs is feasible. Various approaches were identified that could be utilized in a complementary way, such as the Sutherland and Delphi methods, foresighting and scenarios, horizon scanning and emerging issues indices, and infrastructures for engagement of national and local scientific communities. Participants agreed to elaborate a work plan with key scientific stakeholders. A similar work plan could be considered for engagement with the relevant UN system entities and the HLPF.

Elements identified by the meeting included:

- Indicative multi-year timeline
- Scoping discussions on possible themes and issues
- National engagement supported by FE national committees, SDSN centres, and ICSU/ISSC focal points (supported by CSTD members??)
- Regional/global consultative workshops and working teams
- Sourcing of inputs
 - Bottom-up inputs: briefs elicited, reviewed and sorted by national partnerships, growing a decentralized library of science-policy briefs (based on common standard); existing thematic and SD country reviews; existing NSDR.
 - Top-down inputs: synthesis of global thematic scientific assessments, UN flagship publications, and horizon scanning of scientific literature; Emerging issues index and big data approaches; Global SDG scenarios.
- Report drafting and tools development
- Peer review
 - Led by organized scientific community
 - Bottom-up and top-down process
 - Inter-academy panel (IAP)
- Scientific communities' participation in the intergovernmental process
 - Science-policy dialogues and presentations at HLPF, CSTD, and other relevant forums
 - Dialogues
- Outreach/partnerships
- Modalities for cooperation
 - ICSU/ISSC/FE/SDSN alliance
 - Academies of sciences and their organizations
 - Individual scientists
 - Think tanks and other NGOs

The following provides an account of the deliberations of the meeting.

Session 1: Setting the scene

What is the context of this meeting? What is the High-level Political Forum on Sustainable Development? What is the current status and lessons learnt from the Global Sustainable Development Report process? Which options did the UN Secretary General recommend for scope and methodology of the Report? What are recent developments with respect to science and technology issues for policymakers? What is the likely impact of the SDGs and post-2015 development agenda? What are the most important perspectives on the role of scientific communities in supporting these and related international policy processes?

- Alexander Roehrl, UN DESA, provided an Introduction to the Global Sustainable Development Report and the process for chapter 7, and recent SDG developments.
- The group discussed a number of points arising from the presentation, including the review process for the science briefs and how to deal with emerging issues at varying scales and specificity.

During this session, participants also outlined the relevant work and capabilities of their organizations:

- Future Earth a science platform, connecting scientists and organizing them to respond to global policy processes. It could assist in bringing in voices from under-represented regions and disciplines. It could also use its convening power, e.g. in relation to exercises such as the open call for briefs, including through national committees.
- It was mentioned that the role of the Sustainable Development Solutions Network (SDSN) was evolving, including with respect to supporting the HLPF.
- An update was provided about the recent forging of an alliance of ICSU, ISSC, Future Earth (and possibly SDSN) in the context of a common position on science and the post-2015 development agenda.

The group discussed cooperation at the national level and the role of national academies and other science network as brokers at the national level. The view was expressed that among many national science academies there existed a pervasive lack of knowledge on how to engage with policymakers. Academies remained very discipline-specific. It was suggested that Future Earth national committees could assist in this regard by convening national academies and other actors.

Other points raised during the discussion included:

- The need to bring together the natural and social sciences, which was often not considered the “normal” course of business.
- The potential role of the Inter-Academy Council – now Inter-Academy Partnership (IAP) – was mentioned, especially in relation to peer review.
- There is a need to create incentives for participation, including through recourse to partners like the Belmont Forum, a network of global funders. Also, it was significant that a network of the younger scientists was more attuned to policy processes.
- There is a need to move away from stylized approaches towards making trade-offs and synergies visible, so that policymakers could make informed decisions. There were no adequate regional repositories for data and ideas.

- It was noted that recent developments were often characterized by “fads”, e.g. a few years ago the biofuels craze was in full swing but the focus has since shifted. How could the process be made more stable? In this regard, it would be important to have some kind of institutionalized arrangement, e.g. IEA has technology implementing agreements and a system of focal points on different topics. Without institutions, networks may not survive.
- The science-policy interface all too-often remains one-way, with no real feedback from policymakers. In this regard, the dialogue between IPCC and UNFCCC could be considered a noteworthy exception.

Session 2: Stocktaking of approaches for identifying science and technology issues for policymakers

What are existing approaches for identifying science and technology issues for decision-makers and policymakers on sustainable development? Which effective models are being used in the context of high-profile international assessments? What are some preliminary conclusions on approaches and models?

The group discussed the various approaches to identifying science and technology issue for decision-makers. Among the points raised were:

- Science-policy-society interface weak and under-developed. Lack of process for science to reach out to civil society. Processes should be complementary and build on existing knowledge and networks. For instance, assessments should correspond with global priorities set by the SDGs and the post-2015 agenda.
- Existing approaches for identifying science and technology for sustainable development are diffuse and based on voluntary initiatives of individual countries and academic institutions, which are poorly integrated in development decision-making.
- There is a need to enable different entry points, e.g., through working groups as in the IPBES.
- As regards emerging issues, these could be considered within the context of the SDGs or, drawing a narrower frame, one could explore the constraints to achieving then SDGs.
- There remains a great deal of “translational” work to be done in communicating scientific findings to policymakers in an actionable format. Who are the intended and actual users of knowledge? A suitable infrastructure is required to harvest, package and make available latest research and findings.
- Looking forward, in presenting and communicating the GSDR and its main messages, much could be learnt from experiences and innovations of science partners.

Session 3: Options for more systematic approaches

How can the identification of emerging issues be formalized/systematized and the coverage of social, economic and environmental dimensions be ensured? What would be the best options for the Global Sustainable Development Report process (e.g., standing or ad hoc expert groups, stakeholder consultations, intergovernmental science assessments models like the IPCC, formal surveys, quantitative desk analysis approaches)? What are experiences and lessons learnt from these options? Is it possible to create credible, aggregate emerging issues indices or other quantitative approaches?

The group continued the discussion begun in session two.

- A large scale and varied expert and stakeholder group which could “preview” in some form relevant knowledge, information and concerns and transmit it to a smaller group which might focus on establishing links with policy issues.
- The creation of international and independent networks of experts and policy makers is a needed first step for identifying emerging issues. There is a need for independent international assessment and planning mechanisms to be adequately representative.
- Infrastructure, especially when housing taxpayer-funded research should be open access and platforms should be inter-operable.
- Reference was made to collecting proposals through online platforms, which had made such crowd-sourcing easier and less resource intensive. However, the view was also expressed that making a “market place of ideas” work required management and updating to keep it active.

Session 4: Overview of tools for identification of issues

What kind of tools can be used and what are their strengths and weaknesses (Scenario models, horizon scanning, forecasting, Delphi, Crowdsourcing, Big data, Indices, etc.)? What do you think is most useful for the Report process?

What are some preliminary conclusions regarding systematic approaches for identifying emerging issues? What are key considerations in designing methodologies that capture three dimensions of SD?

- Stakeholder engagement from different sectors and different countries has been crucial in the overall analysis
- All tools have strengths and weaknesses; the issue is handling these tools in a systematic and effective way, including views from a wide-ranging diversity of actors. There should be no presumption in terms one approach versus others.
- One participant outlined her group’s experience with horizon scanning, including with respect to incorporating the social sciences, benefiting from a consultative element, and the regional dimension.
- Foresighting exercises can be used to identify synergies and trade-offs. Other approaches that were mentioned included “back-casting” and scenario planning tools. One participant gave an example of robust portfolio analysis in presenting the findings of a foresight report. A large-scale EU meta-analysis of foresighting studies prepared was mentioned, as well as a study for the bureau of European policy advisors.
- One participant outlined the so-called Sutherland method for coming up with emerging or critical issues. In the ensuing discussion, it was pointed out that the ultimate output of such exercises was only as good as ideas fed in at the beginning. In such expert-led exercises, there was also the need to consider co-design and involving non-scientists.

Session 5: Quick de-briefing and break-out into task groups

Task groups:

- (1) Infrastructure: Dong Wu, **Paul Walsh**, Mathew Kurian, Mari Kosaka
Possible action: Preparation of concept note
- (2) Analytics to narrow down large groups of issues: Vicente Carabias-Hutter, Belinda Reyers, Fred Soltau, **Dimitris**
Possible action: Prepare prototype questionnaire and web interface for scoping exercise, followed by expert review of issue using modified Sutherland method.
- (3) Institutional dimension: Lucilla Spini, Claudio Huepe Minoletti, Mari, Dong Wu, **Owen Gaffney**
Possible action: Draw up elements to guide cooperation between partners and the UN GSDR team, covering, inter alia, scoping processes to identify possible issues and themes for GSDR 2016, processes for identifying emerging issues, preparation of inputs and material for GSDR, and assistance in formalizing peer review process.
- (4) Index and/or dashboard: Fred Soltau, Vicente, Mathew Kurian, Owen Gaffney , **Magnus Andersson**
Possible action: Further develop remote sensing applications to create spatial – temporal measures of a selection of SDGs
- (5) SDG models (for later): Vicente Carabias-Hutter, Dong Wu, Belinda Reyers, Lucilla Spini
(tbc)

Session 6 and 7: Presentation of group work, planning and next steps

The group reflected on the key outcomes of the break-out groups and discussed elements for cooperation going forward.

Annex 1

LIST OF PARTICIPANTS

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Annex 2: Group outputs/notes

Group 1: Infrastructure

The group discussed a number of ideas related to infrastructure for inputs and briefs for the GSDR, using the example of the Directory of Open Access Repositories. OpenDOAR provides a quality-assured listing of open access repositories around the world. OpenDOAR staff harvest and assign metadata to allow categorisation and analysis to assist the wider use and exploitation of repositories. Each of the repositories has been visited by OpenDOAR staff to ensure a high degree of quality and consistency in the information provided: www.opendoar.org/countrylist.php

A system such as this has a number of advantages:

- Discoverability, traceability
- Can to do crowdsourcing this space.
- Pre-existing human infrastructure
- Can also link data, videos, etc.

Under such a system designated national points to collect the briefs and a local committee would look at analytics, decide on translation. Selected briefs could be highlighted at the HLPF, all briefs are in the repository. And on the ground one encourage local partnerships with major groups and stakeholders. It would be necessary to design a common template for policy briefs, based on a referenced academic paper. A draw-card for potential contributors would be that inputs submitted in the prescribed format could be harvested by the UN and other international actors.

Possible action: Preparation of concept note

Group 2: Analytics to narrow down large group issues

The group discussed analytics that could be used in relation to systematizing emerging issues.

- As discussed in the larger group, the so-called Sutherland method was starting point for many exercises. This involved a number of participants, drawn from different communities, identifying a number of questions/issues, which are then narrowed down through a process of voting.¹ See also <http://www.futureearth.org/blog/2014-aug-25/strategic-exciting-research-agenda-sustainable-future>
- One proposal in seeking to systematize emerging issues would be to examine the elements of Impact, Novelty, and Probability. It might be possible to apply these to different sources of information to get some kind of index to identify emerging issues. There would be a need to find a good measure of novelty. Some possibilities could cover highlights from abstracts of briefs written in different languages and the Thomson-Reuters index. After some discussion in the group it was felt that measures or indicators of probability could be difficult to identify, therefore it would be advisable to focus on a single measure. Instead of probability, *importance* measure. The probability might be low but the importance and potential impact high. This proposal stemmed from the

¹ William Sutherland et al, A Collaboratively-Derived Science-Policy Research Agenda, PLOS One <http://www.plosone.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pone.0031824&representation=PDF>

experience of one of the group members with foresight forecasting exercise which put together experts and stakeholders in the context of river basins.

- In taking such an approach forward, the importance in relation to the SDGs could be captured with a rating of positive, negative, neutral impact on SDGs. The process could commence with a desk study with focus on scoping and Delphi approach. The initial questionnaire could be handled with web analytics, so not much effort there. In addition, scenario analysis could be utilized to identify/quantify the importance of certain issues.
- Thus a first step would be a broad-based scoping of issues, potentially using a web-based interface. The initial list would be whittled down by an expert and stakeholder group. Experts would be involved in the grading/rating exercise could also suggest indicators for the issues/measures of importance. The result would be issues ranked by importance, with associated indicators. Indicators change over time and after 4 years get back to experts to see whether the issue is still important or not and if there are more or other indicators. This would yield a more systematic, stable framework for emerging indicators.
- Importance of issues categorized by SDGs (0-5 scale); top voted and another list for SDGs that are not included in the *top voted*
- Specific extreme scenarios could be prepared for the chosen issues done by groups specialized in scenario thinking (see Vicente Carabas-Huetter's group and OECD)

Possible action: Prepare prototype questionnaire and web interface for scoping exercise, followed by expert review of issue using modified Sutherland method.

Group 3: Institutional dimension

This group discussed the institutional dimension relating to efforts to identify emerging issues of interest to policymakers. More broadly, the discussion also covered how various partners in the scientific community could contribute to the GSDR.

It was noted that a range organizations were interested in, and capable of, brokering inputs for the GSDR, and the institutional framework needed to take this into account. In considering engagement with the report, one needed to bear in mind its different phases (e.g. scoping/identification of issues, selection of issues, preparation of drafts, peer review, presentation to policymakers, dissemination and communication of key messages).

Among the points that emerged from the discussion were: (i) the need for a formalized peer review process; (ii) appropriate institutional frameworks to engage all relevant stakeholders; and (iii) participating science institutions should represent the whole scientific community, not special interests, and there is a need to involve both natural and social scientists; (iv) the need for scoping processes to identify possible issues and themes; (v) processes for identifying emerging issues; and (vi) whether formally or informally, there was a need to begin cooperating for future editions of the GSDR.

The group discussed models for institutional arrangements. One participant outlined the system of implementing agreements operated by the International Energy Agency (IEA). Under this system, countries signed a formal agreement in area of interest, such as solar PV, and nominated a focal point, who could be drawn from government, the business sector or academia. Joining the implementing agreements enabled countries to remain abreast of new developments, engage in joint projects, and share experience, all at fairly low cost. Perhaps a similar system of nominations could be used for the GSDR, in order to build commitment and buy-in from countries.

It was mentioned the different networks and organizations had different strengths they could bring to support the GSDR. For example, ICSU was good at reaching out to members, and it had a good capacity to leverage volunteer work by scientists. For its part, UNU had a range of specialized institutes that could be called on. The potential for academic institutions to prepare – “bring to the gate” - high-quality material as input for assessments such as the GSDR was also highlighted. Academia, working through designated local repositories, could play a central role in crowd-sourcing inputs. These would be saved in a searchable and readily accessible format, e.g. using a standard employed by libraries around the world. The briefs could be ranked and ordered. There would be a need for clear guidelines on relating to the content/structure of briefs and the methods for submission. It was noted that, under the scenario outlined here, there would be two separate processes – the crowdsourcing and then what the UN GSDR team does with the collected material. In regard to making crowd-sourced material available to the UN, concern was expressed that misrepresentation of scientists’ work, real or perceived, could have a negative impact on trust. Another participant, while cognizant of the potential problem, underlined that the aim was not to “get perfect science out”. Rather, the issue was how one could put in place a process that delivered science that could serve as a reliable basis for policy-making on sustainable development. Another participant emphasized that to be read the report should be of use to its intended audience(s). In this regard, it was felt that having national and regional contributing structures would be necessary. One participant identified his institution as able to assist with regional repositories.

The group also addressed matters of content related to the GSDR. Thus it was highlighted that the report should be poster case for integrating the three dimensions; one participant stated that among the academic and research community integration remained a “minority sport”. Several participants said that the report need to address means and implementation, and that it ought to be framed in terms of solutions and transformation. Another participant asked whether readers would not expect the report to answer the headline questions – whether the world was making progress in achieving the SDGs. This led naturally to other questions: What would it take to make progress? What is the roadmap? What are the clusters? What are the trade-offs and synergies on making progress on other goals as the international community moves forward? It was noted that there was strong support for address the latter point – the interlinkages. Other questions that merited consideration included country case-studies, which led to analysis of the science-policy interface at the national level. What are the solutions and are they transferrable between countries.

The GSDR should also identify the newest research findings of policy relevance to decision-makers in the area of sustainable development. Similarly, there was a need to see what could be learnt from big assessments and flagship reports, inside and outside the UN system. How he could the key conclusions be synthesized and presented in the GSDR?

A participant from UNCTAD shared with the group the experience with the Commission on Science and Technology for Development (CSTD). The secretariat prepared two products – one a SG’s report on technology innovation report, and the second science and technology innovation reviews. These reports analysed a nations’ innovation policy, based on a national innovation system approach. The reports are prepared based on an in-country assessment by outside experts, and they are then presented to the Commission. The experience with these reviews had been very successful, stemming from their hands on character and the active engagement of governments. The reports could identify main players in given national innovation system and help zero in on weak links. It was noted that there was scope for science organizations and networks to become involved in the CTSD innovation reviews.

Possible action: Draw up elements to guide cooperation between partners and the UN GSDR team, covering, inter alia, scoping processes to identify possible issues and themes for GSDR 2016, processes for identifying emerging issues, preparation of inputs and material for GSDR, and assistance in formalizing peer review process.

Group 4: Index and or dashboard

Members: Alex Roehrl, Matthew Kurian, Magnus Andersson

Matthew highlighted work conducted within UNU in Dresden, describing the experience with building an index on drought risk in Africa. Key points related to:

- Mapping of water points: – what data is needed, remote sensing data, village data (survey).
- Different actors: provide different aspects – combining different actors
- 3 types of data ministry data, remote sensing data, and GPS point data.
- How do you manage drought risks? Specific knowledge to one theme which has been decided based on the needs and data gaps within a region.
- Data visualization
- A drought index. A professor find out what data is needed and then different actor's competence is used. UNU act as an broker and setting up an observatories
- Asia – ministries in context countries – UNU – Dresden Technical University

Work carried out in relation to flooding risk was also described:

- Same structure as above – to monitor flooding risk.
- One idea is to locate specific Focus clusters – which contexts can be studied,
- Theme risk – finding a way to combine and link to SDGs – risks can be of importance as it can be used to integrate policymakers,
- How to access to data for different tasks?
- Risks – SDGs – how to put priority –
- How to define an area? 2 ways:
- The number of poor people that are affected of the risks.
- Locating a region ranking most important SDG risk – finding a theme – keeping the theme for 3 years.
- Alex: Data-mining of scientific community's research focus.
- How do develop global index to measure SDG?

Possible action: Further develop remote sensing applications to create spatial – temporal measures of a selection of SDGs

Annex 3:

COMPILATION OF INITIAL INPUTS TO THE SURVEY

(1) Context: What are recent developments with respect to science and technology issues for policymakers? What is the likely impact of the SDGs and post-2015 development agenda? What are the most important perspectives on the role of scientific communities in supporting these and related international policy processes?

- Possible guiding ideas/principles
 - Supportive of a universal, aspirational agenda for sustainable development, as encapsulated in the sustainable development goals (SDGs)
 - Peaceful and inclusive societies as the foundation for sustainable development, underpinned by just, effective and accountable institutions
 - A commitment to equality, dignity, and the realization of human rights
 - Recognizing that poverty has been identified by UN Member States as the greatest global challenge facing the world today and an indispensable requirement for sustainable development
 - Strive for a balanced treatment of the three dimensions of sustainable development. Identify gaps or methodological issues that may hamper such an approach in practice.
 - Strive for open and participatory processes (multi-stakeholder approach). Be open about assumptions.
 - Maintain openness to the inputs from multiple perspectives and research communities. Avoid privileging selected modes of analysis over others
 - Be open about ethical and normative dimensions of the analysis.
 - Compatibility with Rio Principles
- Recent developments: integrated cross sectoral cross scale assessments driven by the fact that our resources are limited and intrinsically linked to each other and their sustainable utilization is necessary to achieve the proposed sustainable development goals
- Scientific communities develop tools upon requests of national authorities to assess science and technology issues
- SDGs and post 2015 development agenda affect scientific studies as they form the basis of the targeted goals; as for instance sustainable energy for all (see optimizing electrification solutions using geospatial approaches for developing countries as published in the World Energy Outlook, 2014; attached the related section)

- The Food-Energy Nexus Programme of the United Nations University (UNU) which began in 1983 sought to understand the coupled nature of food and energy challenges in developing countries. The discussions emphasized the water resources dimension of the nexus between energy (hydropower) and agriculture (food production, groundwater pumping). In 2011 the Bonn Freshwater Conference epitomized the growing support that the nexus approach to sustainable development had received from the research community and member states. The Sustainable Development Goals (SDGs) and post- 2015 development agenda are bound to find strong support from the nexus approach because of its emphasis on three aspects: (a) understanding of trade-offs, (b) potential for synergies and (c) methodologies that capture feedback loops between resource use decisions and impact in terms of sustainable development.
- The draft Chapter 7 of the Sustainable Development Report highlights UNEP’s foresight criteria relating to disaster risk reduction as an illustrative issue. The draft Chapter 7 also points out that the crowd sourced briefs pay limited attention to issues of finance. The choice of multi-stakeholder partnerships is positive as it offers the possibility to engage with issues of data, measurement and monitoring. With reference to policy uptake in Africa Chapter 7 points out “there is no regional repository of learning or “clearing house” for assessing and coordinating research and evaluation.” We welcome the initiative of UN-DESA that emphasizes “clustering of issues” that supports the nexus approach to identifying emerging issues and strategies for implementation.
- Aside from the extensive discussions on the Technology Facilitation Mechanism in the UN General Assembly, there are a few other developments that are of interest. First, the assistance activities of the World Intellectual Property Organization are undergoing a review; this review could identify to what extent intellectual property regimes facilitate or hinder technology transfer. Second, the negotiations in the UNFCCC directed at universal emission commitments on all countries have generated widespread attention to the fact that one of “quids” for the *quid pro quo* for emission commitments on the part of developing countries is clear pathways on technology transfer for climate change purposes under the principle of common but differentiated responsibilities. There are many debates on the manner which technology transfer will take place, particularly in regard to the developed country position that such transfers occur only on a “mutually agreed” basis. Because the overwhelming majority of technology is in the private domain, transfer on mutually agreed basis might not be rapid or extensive enough to respond adequately to climate change. Third, we have just crossed the 20 year mark of the TRIPs agreement under the WTO. This means there is sufficient data on which to evaluate how the WTO-enforced intellectually property regime is faring as far as technology propagation is concerned to developing countries.

Summary points:

- Coming to the fore of integrated, cross-sectoral, cross scale assessments driven by the fact that our resources are limited and intrinsically linked to each
- Use of nexus approach emphasizing three aspects: (a) understanding of trade-offs, (b) potential for synergies and (c) methodologies that capture feedback loops between resource use decisions and impact in terms of sustainable development.
- Pressure for accommodation on technology transfer and IPRs in light of the climate change agenda

(2) Stocktaking of approaches: *What are existing approaches for identifying science and technology issues for decision-makers and policymakers on sustainable development? Which effective models are being used in the context of high-profile international assessments?*

- Results of UN survey contained in GSDR chapter 7.
- As was mentioned in the Report of the Secretary-General any processes should be complementary and build on existing knowledge and networks. For instance, assessments should correspond with global priorities set by the SDGs and the post-2015 agenda as well as voluntary commitments by individual states, including work on indicators and monitoring frameworks.² Taking stock in such a comprehensive manner not only avoids duplication, but leads to a more holistic assessment of progress in sustainable development, while taking account of economic, environmental and social dimensions.
- The Swiss Development Corporation (SDC) with support from World Health Organization (WHO), United Nations Programme for Human Settlements (UN-HABITAT) and United Nations Environment Programme (UNEP) has initiated an ambitious project that attempts to build upon experience of the Joint Monitoring Programme (JMP). The innovative elements of the programme includes a focus on big data and remote sensing applications and political buy-in by member states for establishment of a monitoring framework based on effective data sharing. UNU-FLORES contributed to the initiative by serving on the task team on earth observations.
- A list of approaches and models are attached
- Big picture view of input channels to be considered

Input channels	Tools and approaches	Stakeholder reached	Strengths	Weaknesses
UN expert staff				
Traditional UN expert group meeting				
Scientific expert committees				
Government officials/national processes				
Surveys and calls for contribution				
“Crowdsourcing”				
Desk study of literature				
Big data analysis of literature				
“Major groups”/civil society/“organised science”				
Etc.				

- Relationship to vulnerability/resilience measures and country groups (example LDCs)³ (GSDR):

² Note the recently published report by SDSN on “Indicators and a Monitoring Framework for the Sustainable Development Goals – Launching a data revolution for the SDGs”

³ The LDC criteria: refinements and gaps, by Ana Cortez and Matthias Bruckner (Secretariat for the UN Committee for Development Policy), Presentation at the “Regional meeting on financing graduation gaps of Asia-Pacific LDCs (Dhaka, 28-30 October 2014).

http://www.un.org/en/development/desa/policy/cdp/cdp_news_archive/Bangladesh_LDC%20Criteria%20and%20gaps_28%20Oct.pdf

Goal/Target	LDC indicator
1.5. Build resilience to shocks	EVI
2.2. End malnutrition	% Pop. Undernourished (MDG)
3.2. End preventable deaths	USMR (MDG)
4.2. Primary and secondary education	Gross secondary enrolment ratio
4.6. Adult literacy	Adult literacy rate
8.8. Productivity through diversification	Export concentration; % of agriculture, fisheries, forestry in GDP
11. Sustainable human settlements	% Pop living in LECZ
11.5. Death and affected by disasters	Victims
13.1. Resilience to natural disasters	Victims
17.11 Double % LDC exports	Export concentration; remoteness

- Existing approaches for identifying science and technology for sustainable development are diffuse and based on voluntary initiatives of individual countries and academic institutions, which are poorly integrated in development decision-making. IIASA analyses are particularly rigorous and have fed into IPCC evaluations but have not systemically been inputted into national decision-making or considered in evaluating or designing the international technology propagation and transfer regime. What appears to be required is more specific and detailed analysis of technologies that are required in each of the areas mitigation, adaptation, disaster risk reduction that developing countries can apply in their own interest. **(MM – South Centre)**

Summary points

- Processes should be complementary and build on existing knowledge and networks. For instance, assessments should correspond with global priorities set by the SDGs and the post-2015 agenda
- Existing approaches for identifying science and technology for sustainable development are diffuse and based on voluntary initiatives of individual countries and academic institutions, which are poorly integrated in development decision-making.

(3) Options for more systematic approaches: How can the identification of emerging issues be formalized/systematized and the coverage of social, economic and environmental dimensions be ensured? What would be the best options for the Global Sustainable Development Report process (e.g., standing or ad hoc expert groups, stakeholder consultations, intergovernmental science assessments models like the IPCC, formal surveys, quantitative desk analysis approaches)? What are experiences and lessons learnt from these options? Is it possible to create credible, aggregate emerging issues indices or other quantitative approaches?

- Starting with a desk analysis, followed by stakeholder consultations and expert group’s analysis which will then inform stakeholders and policy makers for another round of analysis. The latter should be done in order to incorporate and accommodate any potential gaps of the expert group’s analysis.
- A systematic approach requires some kind of “institutional structure” that can define and review certain basic principles and methodologies and maintain a constant effort to review information.
- A large scale and varied expert and stakeholder group which could “preview” in some form relevant knowledge, information and concerns and transmit it to a smaller group which might focus on establishing links with policy issues. The relevance could come from a choice of

participants that doesn't focus exclusively on scientists, but also on selected stakeholders that could have relevant opinions about issues of their concern, and contrast with scientific views.

- This model could be useful for the GSDR as a means of having a permanent basis for work which could be complemented by surveys at policy makers' level. This could bring greater involvement of countries into the GSDR.
- Indices for issues, although possible, could end up being controversial because it is likely there would always be some perception of permanent bias.
- UNU-FLORES has committed resources towards development of an online platform called the Nexus Observatory with the objective of bridging the science-policy divide. Sustainable development could be supported by better alignment of data collection protocols, access to complete data, comparable standards of measurements, improved analysis of data as well as a unified monitoring framework. With the above objective in mind the nexus observatory aims to support three functions:
 - Data Classification through recourse to data from UN agencies, member states and private users
 - Knowledge classification through analysis of scientific outputs emerging from E-Learning and Ph.D. research programmes of UNU-FLORES
 - Knowledge translation through regional consultations, publication of policy briefs and engagement with research partners, private foundations and civil society in developing and developed countries.
- The Nexus Observatory platform focusses on five goals: (a) cross-fertilization, (b) piloting, (c) capacity development, (d) policy advocacy and (e) impact monitoring and evaluation. The activation of the four windows of the Nexus Observatory - linked databases, blended learning platform, nexus laboratory and nexus repository – can provide key inputs for the GSDR as they support the monitoring of nexus knowledge, nexus methodologies, policy frameworks and management actions as well as partnerships with policy-makers, UN agencies and donors. **(MK)**
- The creation of international and independent networks of experts and policy makers is a needed first step for identifying emerging issues. This is needed to overcome the suspicion of self-interested proponents of technology by those who own and price their use. The question of how detailed such assessment networks will have to be will depend on the technology area. There is some attention paid to the ARPE-E process, which consists of at least two things – risk-taking supported by public finance and blue-sky analysis independent of ownership of existing technologies. How to apply this in the international sphere will be a big challenge. The previous experience of the Green Revolution in agricultural yields was based on public (non-private) processes whose outcomes were put in the public domain. Even here, the technology choices have subsequently been accused to be biased in terms of over dependence on modern inputs. There is thus a need for independent international assessment and planning mechanisms to be adequately representative.

Summary points

- A large scale and varied expert and stakeholder group which could “preview” in some form relevant knowledge, information and concerns and transmit it to a smaller group which might focus on establishing links with policy issues.
- The creation of international and independent networks of experts and policy makers is a needed first step for identifying emerging issues. There is a need for independent international assessment and planning mechanisms to be adequately representative.

(4) Overview of tools: *What kind of tools can be used for identification of issues, and what are their strengths and weaknesses (Scenario models, horizon scanning, forecasting, Delphi, Crowdsourcing, Big data, Indices, etc.)? What do you think is most useful for the Report process?*

- The best approach is probably a mix of the various tools, as all of them have strengths and weaknesses.
- The issue is handling these tools in a systematic and effective way, including views from a wide-ranging diversity of actors.
- In the KTH UNECE project “Assessing the water land energy ecosystem nexus in transboundary river basins” several approaches have been used (find attached draft methodology and some of the assessments)
- Delphi approach: Qualitative overview of nexus issues; questionnaires are distributed to experts to get an initial overview of the problem before a workshop where stakeholders are engaged.
- Stakeholder engagement from different sectors and different countries has been crucial in the overall analysis (identification of nexus hotspots, solutions, synergies)—Supporting material is provided when possible to facilitate the discussions and process; for instance several resource maps of the region were provided and missing information was added by the workshop attendants on the maps which would be an input to the assessment.
- Scenario models have been deployed to inform stakeholders and policy makers about possible nexus interlinkages in case some policies/measures were to be applied.
- Institutional assessment where all institutions in the riparian countries related to the nexus components were mapped.
- The nexus observatory is working on developing the following tools: (a) data proxies, (b) index on drought risk, (c) scenario analysis, (d) data visualization and (e) benchmarking delivery of critical public services- eg, irrigation, water supply or wastewater. It is expected that the tools will be developed in partnership with UN agencies, regional ministries, research and training institutes and think tanks in the developed world. In line with the Common African Position on Disaster Risk a research consortium on drought risk in Africa has been established with support of concerned ministries of water and research and training institutes. The expected outcomes of a consortium based approach could include identification of indicators, planning approaches, elements of local fiscal systems, decision support tools and an impact monitoring framework that supports the SDG post 2015 development agenda.
- There should be no presumption in terms one approach versus others. All methodologies have their own strengths and weaknesses and time lags to completion of assessments. Report processes should consider all methodologies, but also tag each of these methodologies in terms of type.

Summary points

Stakeholder engagement from different sectors and different countries has been crucial in the overall analysis

All tools have strengths and weaknesses; The issue is handling these tools in a systematic and effective way, including views from a wide-ranging diversity of actors. There should be no presumption in terms one approach versus others.

(5) Your proposal: Please provide us your ideas for a methodology and/or approach a proposal on how to systematically identify science and technology issues to be featured in the Global Sustainable Development Report and how to bring them to the attention of policy makers.

- The approach should be “institutionalised” as a permanent activity, probably through a permanent network of actors.
- The participants in this group should include “science –users”: stakeholders that can present their concerns on scientific issues without being “scientists”.
- There should be some type of major “foresight” activity where these issues are distilled systematically and placed in context for policy makers establishing some type of priority “scale” .
- Define what kind of issues the GSDR is looking for. The three criteria in table 1 of GSDR chapter 7 could be a start. Additional criteria could be:
 - a. Is related to at least one of SDGs (this is probably easy to achieve, but may help to clarify the relevance for policy makers)
 - b. Is not (adequately) covered by the existing SDG targets (these will be reviewed by the HLPF in any case. Other chapters of the GSDR would cover contributions of the science community to these reviews)
 - c. Is not adequately addressed by more specialized institutions, for example because the issue isn’t covered by any institution or because problem or possible policy interventions are of a cross-cutting nature.
 - d. Novelty is not a suitable criterion. Issues could be well known, but become more relevant due to change in external environments. (It is also very difficult judge. Most of the issues/cases listed from the crowdsourcing in section 1.3 are actually well established and have often been brought to the attention of policy makers, even though novelty was listed as review criterion)
- Use multiple avenues and tools to solicit candidate issues. It is hard to see benefit from restricting processes and tools a priori. Main options are:
 - e. submissions from UN entities (to be decided: governing bodies or Secretariats), which in turn use their own methods (as described in section 1.6 of chapter 7)
 - f. Crowdsourcing. Contributors could use various methods to prepare their inputs. Attention needs to be given to ensure balanced outreach.
 - g. Additional literature review as discussed in section 1.4 could be added for areas not covered by existing UN entities, but perhaps this could be subsumed in crowdsourcing. However, more robust methods may be needed, the ‘horizon scanning’ in section 1.5 of chapter 7 didn’t give issues, but rather specific aspects of issues or possible policy responses. (However, lake disappearance could be an issue if it is more widespread than the given example of Mongolia; antimicrobial use in food animals could be an issue, but

because of the wide spread evidence documented elsewhere, not because of the cited paper alone).

- Select one issue to be brought to the attention of policy makers in more detail (see point b above). It would be beneficial if the selection is done or overseen by an external expert body/advisory board etc. That body should not have vested interest in the process, but adequate knowledge of science and policy processes. Selection would be done in two steps:
 - h. Rigorously apply the criteria described under a) (or whatever criteria are chosen)
 - i. From the remaining issues, select one on basis of a set of criteria (e.g., relation to main topic(s) covered by the GSDR; overlap should be avoided but choosing issues related to the main SDGs/nexus considered in the report could be useful. Variety of issues covered overtime should also be ensured)
- Briefly discuss the selection in the GSDR of the present year (so you would finalize the selection around early spring, assuming the GSDR is published in June for the HLPF). This assumes an annual GSDR, otherwise points d) and e) could be included in the same report.
- Dedicate one chapter of the GSDR in the following year to the chosen issue (allowing for a comprehensive review and additional inputs, the chapter should cover why it is a concern, which SDGs it affects and in which countries, what are relevant policy options, how would these policies affect the issues and the existing SDG targets)
- Provide clear and visual outputs of assessments that can be easily understood and digested by policy makers (an example here is the geospatial electrification approach developed by KTH Division of Energy Systems Analysis)
- By utilizing an issue cluster approach that responds to the SDGs, the post-2015 agenda and national priorities, the GSDR can produce relevant assessments. Once the negotiations conclude this year, targets have been agreed and states have indicated priority areas, a mapping exercise to identify clusters could take place.
- To identify priorities at regional level and facilitate political buy-in, a consortium approach may also be considered useful. Consortia bring together ministries and research/training institutes. At a practical level, this approach could be adapted to the GSDR process through national consultation processes of these consortia with relevant stakeholders. This would ensure that national/regional contexts are accounted for. The consortia could, further, assist with implementation efforts (close the policy-implementation gap), strengthen monitoring and feedback loops (identify issues that are of significance to grassroots to be raised at the policy-level) and support capacity development by organizing trainings etc.⁴ The HLPF could facilitate these processes by serving as a mechanism that (through the GSDR process) links regional/national consortia and stakeholder groups with relevant scientific, international, UN organizations etc. In this manner cross-sectoral engagement may be advanced and needs are determined from the bottom-up.
- The UNU-FLORES Nexus Observatory and other appropriate tools can support evidence-based decision-making by identifying emerging issues, performing gap analyses and monitoring engagement. The Nexus Observatory can serve two functions – stocktaking and identification of cluster issues and/or regional/national priorities, as well as providing policy-makers with

⁴ The experience of the national groups, made up of independent experts, established to bridge the implementation-policy gap with regards to the European Higher Education Area (Bologna Process) may serve as an interesting best practice example in how to organise feedback loops, capacity building and priority identification. While supporting implementation and grassroots engagement, feedback from these independent experts (appointed due to their expertise by the ministerial agency chairing the group) is then considered at ministerial conferences.

evidence and information to choose between management options in line with their specific needs.

- The creation of annotated technology banks, organized according to specific sustainable development problems, is a first step. The annotation has to be undertaken by committees that are sufficiently seen to be expert and independent. A further step is for committees to associate evaluations of technologies in terms of where to apply them and as to their cost. A third step is for such committees to make suggestions on how to accelerate the propagation of desired technologies.

Summary points:

The approach should be “institutionalised” as a permanent activity, probably through a permanent network of actors.

Novelty is not a suitable criterion. Issues could be well known, but become more relevant due to change in external environments.

Use multiple avenues and tools to solicit candidate issues. It is hard to see benefit from restricting processes and tools a priori.

To identify priorities at regional level and facilitate political buy-in, a consortium approach may also be considered useful. Consortia bring together ministries and research/training institutes.