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CASE STUDY

Strengthening Science Advisory Processes within the UN General Assembly

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Abbreviations

AGSA	Ad Hoc Working Group on Scientific Advice
CCC	Committee on Climate Change
COP	Conference of the Parties
CSO	Civil society organisation
EBP	Evidence-based policy
ECOSOC	Economic and Social Council
EIP	Evidence-informed policymaking
FSN	Food security and nutrition
GA	General Assembly
GEO	Global Environment Outlook
GSDR	Global Sustainable Development Report
HLPF	High-Level Political Forum
INRAB	Institute of Agricultural Research of Benin
IPBES	Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IRP	International Resource Panel
ISC	International Science Council
MAEP	Ministry of Agriculture, Livestock, and Fisheries
MEP	Multidisciplinary Expert Panel
NGP	Non-governmental organisation
OBS	Open Budget Survey
PFM	Public financial management
PGA	President of the General Assembly
RIU	Research Integration Utilisation
SDG	Sustainable Development Goal
SDSN	Sustainable Development Solutions Network
SNRA	National Agricultural Research System
STC	Scientific and Technological Community
STI	Science Technology and Innovation

Abbreviations

TULab	Tanzanian Urbanisation Laboratory
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNGA	United Nations General Assembly
WHO	World Health Organization
WMO	World Meteorological Organization

1. Introduction

Natural hazards are five times more common than they were 50 years ago (WMO 2021). Climate change and other anthropogenic influences have increased the insecurity and unpredictability of our natural world, with consequential effects upon socio-economic systems. As recognised in the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), better data and information is essential for people and governments to respond to this uncertainty. With well-grounded analysis and insights, policymakers can be better equipped to find appropriate responses and to reach consensus.

The importance of science for decision-making has been championed by Ambassador Csaba Kőrösi, since he assumed the presidency of the UN General Assembly (UNGA) in September 2022. In his inaugural address, Ambassador Kőrösi committed to make science a pillar of the UNGA's work as it grapples with the 'ominous challenges' of food and energy shortages, debt, climate change, biodiversity loss, and urgent humanitarian and protection needs. And since September 2022 there has been positive momentum; in February 2023 and April 2023, the president of the General Assembly convened informal plenaries for member state representatives to hear from eminent global scientists on topics such as 'Beyond GDP' and 'Food Security'. Also, in April 2023, a group of member states committed to establish the Group of Friends on Science for Action, with the intention of strengthening scientific advisory processes within the UNGA. While the terms of reference for this group are still to be determined, it shows a widening interest among member states for strengthening the evidence base for UNGA decision-making.

Central to the work of this group and the broader UNGA membership is to clarify exactly what kinds of 'evidence' and/or 'science' are required to inform international policy processes; how this evidence should be collated and from what institutions; what policy questions should be put to evidence producers; and how the evidence can be fed into and made relevant for international policy discussions. Central to the latter objective is to clarify the institutional arrangements; while informal consultation and engagement processes can be highly impactful, it is only through fixed, formal consultative processes that evidence will become a mainstay of UNGA deliberative practice.

This working paper, compiled by researchers at the University of Bristol (UK), working in partnership with a consortium of Global South knowledge centres, aims to support this process. It traces the recent history of evidence usage within UNGA practice, summarises current theory on how to use evidence to inform policy, and then, drawing on a systematic literature review and four national case studies from sub-Saharan Africa, it highlights best practices from both national and international policy processes. Finally, derived from these findings, a range of considerations are presented for member states working to strengthen evidentiary processes within the UNGA.

2. Science advisory systems within the UNGA

2.1. A brief history

To understand the place and visibility of scientific information within the UNGA, it is helpful to take stock of the place afforded to it at the UN's inception and in the institutional practices that have since evolved. In 1945, 51 countries signed the UN Founding Charter envisaging the United Nations as an international mechanism to 'maintain international peace', 'develop friendly relations amongst nations', to 'achieve international cooperation in solving international problems', and to be 'a centre for harmonizing the actions of nations in attainment of these common ends', building on the role and functions that the League had played before it (UN 1945). The UN Charter refers to its central organ, the UNGA, as a 'parliament of nations', in which each member has one seat and one vote – with equal opportunity to advance their perspective – and with decision-making ultimately following consensus politics (under which there must be a two-thirds majority for all major decisions) (Ziring et al., 2000: 36). As a result of this format, policy decisions are reached through carefully managed deliberation, with member states taking turns to present national statements on the issue at hand. As articulated by Edmund Burke in the late eighteenth century, the logic behind a deliberative process is that 'not local purposes, not local prejudices . . . guide, but the general good, resulting from the general reason of the whole' (Culyer and Lomas 2006: 358). This formulaic method, chaired by the president of the GA to ensure fair participation, necessarily limits free-flowing debate and does not enable the conversational exchange and evidentiary discussion oftentimes experienced in other deliberative processes (Bobbio 2010).

A review of the institutional structures established within the UN Charter places science under the Economic and Social Council (ECOSOC), as an input to the UN's attempts to pursue a 'Darwinian state-led improvement-based model' focused on better understanding and therefore addressing social and economic conditions (Allan 2018). Specifically, 'the Charter mandates the General Assembly and the Economic and Social Council . . . to initiate studies for the promotion of international cooperation in the political, economic, social, cultural, educational and health fields as well as for assisting in the realization of human rights and fundamental freedoms' (Art. 13.1.a–b; Art. 62.1) (Lichem 2015). While the charter empowered the ECOSOC to make arrangements for consultation with non-government organisations, including experts and academia, (Art. 71) there was no reference to scientific institutions or the potential value of their work, not only for spurring economic growth and innovation, but in global policy discourse. As summarised by Lichem (2015), 'with the exception of some subsidiary organs dealing with human rights or the peaceful uses of outer spaces the General Assembly grants no access to academia.'

Institutions are not static, however, and whatever the visibility of science within the UN's founding charter and initial institutional structures, it is important to note how this has evolved over time. Indeed, science enjoyed greater prominence in the 1960s under United Nations Secretary-General U Thant. Some of the first United Nations research and training institutes were established by the General Assembly and the ECOSOC under his leadership. The United Nations Institute for Training and Research was created in 1965 by the General Assembly (Res. 2044 (XX) of 8 December 1965) with a mandate to conduct research requested by the UN Secretariat and to provide capacity development training through academic courses, workshops and seminars in the numerous United Nations member states. Also under U Thant, the United Nations, with the support of the government of Japan, established the United Nations University in Tokyo, which was tasked with establishing a 'broad network of pluri-disciplinary research and training institutions in all regions of world . . . dealing with comparative regional integration studies, with environment and human security, with the natural resources in Africa, with sustainability and peace, with economic and social research and training and with water, environment and health' (Lichem 2015). Also established in the 1960s was the United Nations Research Institute for Social Development, whose mission was to conduct policy-relevant research on pressing issues of social development. Then, in 1975, the women's rights movement and the conclusions of the World Conference on Women led to the establishment by ECOSOC of the International Research and Training Institute for the Advancement of Women, which was headquartered in Santo Domingo, Dominican Republic, with a special focus on the role of women in development processes.

But for all these parallel research and training institutes, no reforms were made to the basic structure of the UN General Assembly throughout the twentieth century. The Stockholm Conference on the Environment, in 1972, was the first attempt to build a stronger bridge between scientists and policymakers. In Stockholm (and again in Rio in 1992), academics were invited to meet and engage with the intergovernmental conference, albeit in a separate event space segregated from the formal proceedings. The organiser (Mr Morris Strong) argued that, although separated, the proximity of the formal and informal gatherings would enable informal consultations between the intergovernmental delegations and the participants in the civil society and academia side event (Ibid.).

In 1988, the first standing science advisory body was created with the express purpose of informing an intergovernmental negotiation, through the Intergovernmental Panel on Climate Change (IPCC). The IPCC was set up by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) and was endorsed by the UN General Assembly in December 1988 (Assembly Resolution 43/54 of 6 December 1988). Its initial task was to 'prepare a comprehensive review and recommendations with respect to the state of knowledge of the science of climate change; the social and economic impact of climate change, and potential response strategies and elements for inclusion in a possible future international convention on climate' (IPCC 2020). Thirty years on, the IPCC has produced six assessment reports, which were fundamental to the success of the Paris Climate Agreement in 2015. Nevertheless, it remains an anomaly. As of the time of writing, the only other academic platform with a formal, standing connection to UNGA proceedings

is the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), established in 2010 and first convened in 2013.

More recently, the deliberations over the post-2015 process saw the creation of a parallel negotiation forum (the Open Working Group), which provided more procedural flexibility and allowed for regular engagement with external knowledge actors (Espey 2023), but the modality was discontinued in 2015, upon the conclusion of the negotiations.

2.2. Science-advisory processes today

As of 2023, there are four, somewhat ad-hoc, processes through which external scientific or other evidentiary inputs directly feed into the workings of the UNGA. First, through policy briefings and reports prepared by the UN agencies or UN support teams. Second, through national science-policy processes (where they exist), which may inform member states' preparations for UNGA deliberations. Third, through ad-hoc events, informal plenaries and panel discussions convened by the Office of the President of the General Assembly (PGA) or the Office of the Secretary-General. And fourth, through the inputs of the Major Groups as and when they are invited to the UNGA. The Scientific and Technological Community (STC) Major Group is a representative group, under the auspices of the UN Economic and Social Council, responsible for collating the perspectives of the scientific community and delivering statements on their behalf to member states. It is one of nine Major Groups established at the Rio Earth Summit in 1992.[1] While these avenues are oftentimes informative, the extent to which they provide member states with quality and consistent information to inform decision-making is questionable. Indeed, an empirical study recently conducted on the extent to which science informed the deliberations over the 2030 Agenda for Sustainable Development concluded that, 'science has very little representation within the current institutional arrangements of the UNGA' (Espey 2023: xiii). An informant to that work summarised the problem: 'everyone wants it in the room, but the science dialogue is [still] in parallel. It's not integrated . . . who is the chief science adviser to the UNGA? Who is the science board? It's not institutionalised and structured' (Espey 2023: 66).

In 2012, and then again in 2016, attempts were made to rectify the paucity of scientific input both by the UN Secretary-General (then Ban Ki-moon) and the GA Membership. In 2012, Secretary-General Ban Ki-moon established the Sustainable Development Solutions Network (SDSN) under the auspices of the UN. The SDSN is a global research network made up of universities and other expert knowledge centres, which initially aimed to support SDG design and today provides scientific and practitioner expertise in support of SDG achievement. The guiding leadership council is made up of eminent academics

[1] 'Since the first United Nations Conference on Environment and Development in 1992 – known as the Earth Summit, it was recognised that achieving sustainable development would require the active participation of all sectors of society and all types of people. Agenda 21, adopted at the Earth Summit, drew upon this sentiment and formalised nine sectors of society as the main channels through which broad participation would be facilitated in UN activities related to sustainable development. These are officially called "Major Groups" and include the following sectors: Women, Children and Youth, Indigenous Peoples, Non-Governmental Organisations, Local Authorities, Workers and Trade Unions, Business and Industry, Scientific and Technological Community, and Farmers.' UN (2020) https://sustainabledevelopment.un.org/majorgroups/about [Last accessed 7/5/2020].

and thought leaders who provide timely inputs to UN deliberative processes; however, the SDSN has no formal representation in the UNGA or High-Level Political Forum (HLPF) convenings and mainly operates through informal, interpersonal influencing. In 2016, member states decided that the Global Sustainable Development Report (GSDR), mandated at Rio+20, should be produced once every four years – to inform the quadrennial SDG review deliberations (SDG Summit) at the General Assembly – and that it should be written by an independent group of scientists appointed by the Secretary-General. In 2019, the first independent GSDR was prepared by 15 science advisers and another report is anticipated in September 2023. While both the SDSN network and the independently prepared GSDR are highly valuable institutional innovations aimed at strengthening science–policy exchange, both are tied to the SDG agenda and, as such, do not have a clear mandate beyond 2030. Furthermore, as the GSDR is a report and only three or four such reports will be prepared as input to the HLPF (under the UNGA) between now and 2030, it is questionable whether the format allows for regular, iterative interaction between the global scientific community and GA members.

Another important, albeit parallel, mechanism for science inputs to feed into UN processes is the Multi-stakeholder Forum for Science, Technology and Innovation for the Sustainable Development Goals, which is an annual convening of scientists and experts who provide inputs to the High-Level Political Forum on Sustainable Development, under the ECOSOC. The forum was established through the 2030 Agenda for Sustainable Development as one of the component parts of the Technology Facilitation Mechanism. Member states agreed that it would:

> . . . be based on a multi-stakeholder collaboration between member states, civil society, the private sector, the scientific community, United Nations entities and other stakeholders and for the sustainable development goals, a collaborative multi-stakeholder forum on science, technology and innovation for the sustainable development goals and an online platform.

The ambition of the forum is to discuss contributions of science and technology towards SDG achievement. Although no critical, academic review of the forum has been undertaken to date, online material suggests that the forum has been highly effective at convening large numbers of global scientists and technologists and inviting substantive research papers, but (at the request of many member states, notably the G77), it has been predominantly focused on issues of technology needs, gaps and transfer (as exemplified in the recent statement by the G77 to the STI Forum in May 2023) and on strengthening domestic innovation (see the statement by the Chinese delegate to the 8th Multistakeholder Forum). Another potential limitation is that its narrow mandate is to support the SDGs, up until 2030. Relatedly, its conclusions feed into the HLPF under the ECOSOC, meaning that its key inputs and findings are reviewed by representatives to the ECOSOC and not necessarily deliberators participating in the subsequent UNGA.

BOX 1: DEFINING EVIDENCE AND SCIENCE

The 2030 Agenda for Sustainable Development affirms the importance of a strong 'science–policy interface' to support decision-making at the highest levels, and to provide 'a strong evidence-based instrument to support policymakers in promoting poverty eradication and sustainable development' (UN 2015). While these are lofty ambitions, there is no clarity within the document about what is meant by 'science' and 'evidence' and how they should be defined in relation to other forms of knowledge. As one commentator put it, 'the phrase "scientific evidence" has become part of the vernacular – thrown about like a hot potato during discussions of major environmental, health or social issues' (Saunders 2013).

Within public policy literature, the term 'evidence' is generally used to refer to expert opinion derived from *scientific* study that is intended to influence the design of policy by governments (Lasswell 1951), or the systematic collection of insights from monitoring and evaluation of a given policy or programme (Cloete 2009). Within the more recent evidence-based-policy literature, it is commonly assumed to refer to scientific evidence (defined as evidence that has been collected systematically, in accordance with broad principles of observation, hypothesis generation and testing, the use of deductive and inductive logic and the principle of parsimony, and is subject to ongoing refinement [Gauch 2003]), but studies exploring the uptake of evidence have found that policymakers often turn to other government sources and personal contacts before science when soliciting information for a given policy problem (Oliver and De Vocht 2017). The use of other sources of evidence has led some academics to suggest we should rethink how we define evidence, making it more inclusive of other forms of knowledge, including local knowledge, participatory research, or practical insights (Gopbal and Schorr 2016).

Epistemological concerns have also been expressed by those exploring systems of power and control within international politics. They ask whether the privileging of science is another form of coloniality, lifting Western knowledge traditions above other indigenous knowledge cultures. This critique has been made of the work of the IPCC, with many Global South academics calling for the integration of non-peer-reviewed literature including, 'oral histories, traditional practices and grey literature' within IPCC processes (Jebeile 2020). As Stone wrote, as early as 2003, 'the real issue is not the mere creation and dissemination of knowledge but the kind of knowledge that is produced and the kind of knowledge that dominates', which, while often presented as a set of neutral insights, is actually 'a discursive or ideational form of power' (Stone 2003: 44).

To overcome these challenges, any new institutional arrangement or set of practices needs to make explicit what forms of knowledge and evidence are invited and from whom, what policy questions they have to serve, and what criteria make different forms of evidence useful for different purposes. As an international deliberative forum, concerned with multi-country policy frameworks and guidance, it is inevitable that large-sample, multi-country studies will be more useful than hyper-localised insights, but such criteria and rationales need to be spelt out so it is clear what evidentiary inputs count and what do not.

In addition to a lack of clarity over what constitutes evidence and more specifically 'science' (Box 1), and the limited mandates of recent SDG-related initiatives, there are three other limitations to the UNGA's approach to scientific engagement and use. First, the only institutional, regular opening for scientific engagement is through the Scientific and Technological Major Group, discussed above, which frames science – an evidentiary practice – as a stakeholder group, and requires that academics and technicians from highly diverse fields prepare short, collective input statements that necessarily lack specificity or nuance. The second limitation is the strong reliance on informal scientific consultation methods, such as irregular briefings or panel sessions convened by UN agencies or the PGA's office subject to their interest and appetite. And third is that the unwritten expectation that national delegations will consult with scientists and academicians when preparing for their engagements within the UNGA rests on the (sometimes false) assumption of equitable access to science and other evidence inputs within national governments and their delegations.

This brief synopsis of the UNGA's historical and current evidence practices demonstrates an interest and appetite for greater engagement of knowledge actors in regular UNGA proceedings, but with an amalgam of current practices that are insufficient and/or unfit for purpose. Above all else is a lack of clarity over what constitutes legitimate evidence, how it should be sourced, and what mechanisms are appropriate for its transmission and exchange among policy actors.

3. Theories of evidence-informed policymaking and a theoretical framework for supporting evidentiary production and uptake

Before providing any proposals on ways in which the UNGA might strengthen its science–policy interfaces, it is important to take stock of the latest conceptual and empirical studies on how evidence (more broadly defined) can and should inform policymaking. Although most of this literature is orientated towards the national and subnational level, much of it provides transferable insights equally relevant to international processes. Furthermore, there is a growing body of work on transnational evidence processes (Stone 2019) and critical reflection on existing science advisory mechanisms, such as the IPCC and IPBES, which is directly relevant (Borie et al. 2021). In this section, we summarise the key trends in academic and policy discourse related to evidence-informed policy processes – predominantly drawing upon literature from policy studies and political science – then in Section 3 we tease out replicable insights and best practices from national and international case study literature.

Over the past 40 years there has been growing pressure among many governments, particularly in Europe and the United States, to use more evidence, including scientific evidence, to inform public policy and political decision-making (Parkhurst 2017; Davies, Nutley and Smith 2000). This 'movement' is known as evidence-based policy (EBP). Evidence-based policy is an approach that 'helps people make well-informed decisions about policies, programmes, and projects by putting the best available evidence at the heart of policy development and implementation' (Davies 2004: 3). The underlying assumption is that greater evidence will rationally result in more precise and effective outcomes (Solesbury 2001; Sutcliffe and Court 2005). The use of evidence to inform government policy and decision-making is not new, but advances in scientific methods and data collection, particularly within public health, have resulted in a new-founded belief among many working in and on public policy that it is possible to use evidence to identify 'what works' (Berridge and Stanton 1999; Lin and Gibson 2003).

In the past 30 years the EBP argument has been extensively criticised; however, on the grounds that it is a 'medical model' that does not apply to complex and oftentimes messy social problems. Furthermore, critics have highlighted problems with the way evidence is produced, communicated, and used in policy cycles (Rittel and Webber 1973; Weiss 1979; Marston and Watts 2003; Biesta 2007; Head 2015; Simons 2010). Contested definitions of 'evidence' have led many policy scholars to question the inherent value of evidence and the degree to which it should guide political decision-making processes (see Box 1) (Parkhurst and Abeysinghe 2016; Broadbent 2012; Weiss 1979; Bonell et al. 2018; Bowen and Zwi 2005; Wesselink et al. 2014). Defining standards of legitimacy and trustworthiness, for example, requires people to articulate a preference for certain kinds of evidence over others (Bowen and Zwi 2005; Wesselink et al. 2014). Theories of evidence-based policy rarely reflect on the possibility that actors will disagree over how

the weight of influence should be distributed across inputs. They generally assume that consensus can be achieved, without considering how context and discourse factor into the politics of classifying evidence types (Culyer and Lomas 2006; Wesselink et al. 2014). To avoid disagreement, policymakers often defer to vague, encompassing terms such as 'good evidence' to describe a standard of input, without articulating a clear definition of what this means (Parkhurst and Abeysinghe 2016; Marston and Watts 2003; Shlonsky and Mildon 2014). This becomes problematic, as standards of evidence quality typically inform methods for evidence production. Some critics warn that this ambiguity can lead to the amalgamation of unsubstantiated and unverifiable data, resulting in poorly informed opinions (Perl et al. 2018; Wesselink et al. 2014; Bonell 2018).

To untangle and give nuance to evidence-to-policy processes, recent theorists have developed supply-driven and demand-driven models, which articulate rationalist and constructivist arguments respectively (Head 2015; Nevo and Slonim-Nevo 2011). The supply-driven model focuses on the process by which evidence enters and is communicated in the policy sphere, often portraying a linear input and output (What Works Network 2018; Simmons 2015). Supply-driven theories delve into the human dimension of the researcher, their methodologies of evidence production, and their capacity to process and transmit their findings. Presenting or transmitting evidence entails framing and translation functions, which require researchers to be aware of and adapt to their audience's needs and capabilities (Cairney and Oliver 2017; Jones et al. 2013; Cairney and Kwiatkowski 2017; Weiss 1977). A supply-driven model, therefore, places the responsibility of communication upon the researcher, arguing they must be able to translate complex evidence into simple stories through narrative and framing to capture decision-makers' attention (Cairney and Oliver 2017). Although this is undoubtedly true – research should be effectively communicated in accessible formats – these arguments place a significant burden on the academic, requiring skills that are not necessarily required of a good researcher. Furthermore, they often ignore the importance of context and access. If the researcher cannot reach the policymaker or has no means by which to transmit their research, evidence translation becomes somewhat moot.

The major limitation of the supply-driven model is that the evidence-user is viewed as passive, so the focus shifts towards refining the quality of the input, suggesting the positivist empiricist notion that refining the process of evidence input will lead to better decision-making (Jones et al. 2013; Parkhurst 2017; Chalmers 2005). Cartwright and Hardie (2014) argue that, while the methodology of evidence production and transmission is a critical component of the supply-driven model, it is equally necessary to consider the evidence uptake stage so as not to exacerbate the disconnect between theoretical expectations and practical utility of evidence in the policy sphere (cf. Weiss 1977).

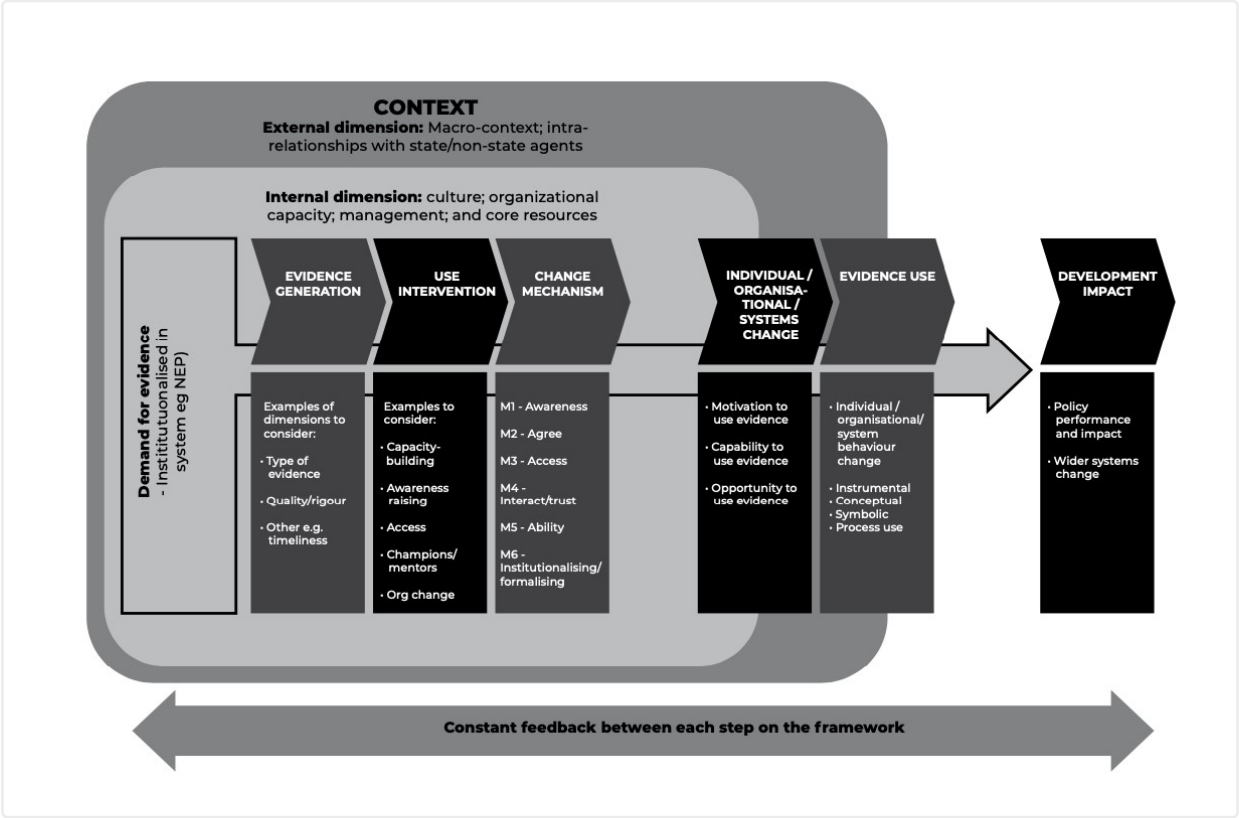
Conversely, discussion of the demand-driven model focuses on the influence of human preferences upon evidence-based policymaking. Human rationality cannot be the single decision-making theory that informs evidence-based policymaking (Bornstein 2012). Constructivists emphasise the integral role of user judgement in practice (Nevo and

Slonim-Nevo 2011; Simons 2010; Newman 2017; Rittel and Webber 1973). Specifically, the contingencies surrounding evidence uptake require a more nuanced understanding of how evidence factors into the policy process (Cairney 2013; Cairney and Kwiatkowki 2017; Wesselink et al., 2014; Druss et al. 2005; Epstein 2009; Newman 2017). As such, the demand-driven model places a stronger emphasis on the evidence user, recognising the circumstances associated with evidence uptake and use (Simmons 2015; Davies et al.2000; Weiss 1977). Particularly important are the institutional constraints of the given political process that may limit a person's capacity to use evidence, as 'real-world politics' are fundamentally different from the 'natural science milieu of the lab' (Cartwright and Hardie 2014: 1). Political beliefs are also fundamental and are particularly likely to influence evidence uptake, both through 'selective interpretation' where information is selectively interpreted to exercise power, or 'cherry-picked' to promote or advocate for partisan priorities (Cairney 2013; Head 2015). For these reasons, Marston and Watts (2003) point to the impossibility of discerning a simple or linear relationship between evidence and policy outcomes.

The transition to evidence-informed policymaking (EIP) in recent years reflects an expanding and more inclusive conceptualisation of the nature, purpose, and use of evidence in policy. The term departs from the original deterministic theory of EBP and emphasises the contingencies and context through which evidence and values interact in the policy sphere (Bonell et al. 2018; Epstein 2009; Melnyk and Newhouse 2014). The EIP literature describes and prescribes a discourse, approach, or culture, rather than a definitive problem-solving procedure (Sutcliffe and Court 2005; Waqa et al. 2013; Wesselink et al. 2014; Ward 2012; Solesbury 2001; Head 2015; Simons 2010). There is no guarantee that increased evidence use will produce good research or good policy, and, therefore, evidence is better regarded as *informing,* rather than *determining,* the policy process (Marston and Watts 2003). EIP proposes a humbler theory of change, whereby evidence has the potential to enrich policy processes (Weiss 1979; Nevo and Slonim-Nevo 2011; Simons 2010; Epstein 2009; Biesta 2007; Cairney 2013; Wesselink et al., 2014; Marston and Watts 2003; Head 2015; Druss et al. 2005).

One of the most comprehensive attempts to understand and structure the various influences and contingencies that affect evidence uptake in policy processes is provided by Langer and Weyrauch (2020). In 'The Science of Using Science', they provide a holistic framework for understanding the various layers of the evidence production, translation, transmission, and uptake processes, also identifying the various contingencies and ways they can be interrupted or affected. This approach is neatly summarised by Goldman and Pabari (2000) in Figure 1, which also highlights the importance of context, borrowing from the 'Context Matters' framework' (Weyrauch et al. 2016).

Figure 1. Understanding evidence use in policy processes, using 'The Science of Using Science' and 'Context Matters' frameworks



Source: Langer et al. (2020) in Goldman and Pabari (2020: 45)

The diagram visualises a series of key steps or processes that can help us to understand the spectrum of elements influencing the uptake of evidence. The framework starts by highlighting **the demand for evidence**, including the institutional processes through which evidence might be summoned for policy processes – through a call for evidence, for example. Next is the **evidence generation** process; who is producing the evidence, how and to what standards? It is then necessary to consider the capacity of actors to use the evidence and any specific '**use interventions'** that have been employed to strengthen evidence take-up, for example capacity-building workshops, retreats or mentorship programmes. Next, the framework sets out a range of ways that influencing or change takes place (interventions), including through increased awareness, fostering trust between relevant parties, formalising evidence-exchange processes and so on. The diagram then moves on from the intervention side to the outcome side, considering **organisational and institutional changes, evidence use**, and ultimately the resultant impacts. Enveloping the whole process is context, specifically the external context, which might determine the capacity of policymakers at any given time to engage with evidence processes, and internal context, which relates to cultures of evidence use, capacity and resourcing. The significance of context for evidence use and uptake has been clearly demonstrated through studies of the COVID-19 pandemic. In a study of trust in science and vaccine confidence, for example, it was shown that where there is a positive enabling environment for science, including a government that champions

and invests in science, then vaccine confidence is considerably higher – over and above individuals' levels of scientific trust. In summary, a positive enabling environment for science considerably increases the likelihood of governments and individuals believing in and using science to guide their individual choices and policy designs (Sturgis et al. 2021).

For the purposes of this paper, we have condensed this multi-part framework into four overarching categories. We then used these as frames through which to explore national and international case study literature, in order to better understand how evidence is used in policy and to tease out best practices for international policymaking. The four categories are:

1. **Demand (including context)**: First, we recognise the importance of there being a clear *demand* for evidence, either through an established, institutional process or through motivated and interested policy individuals stimulating demand for a specific process. Highly related to this is an understanding of the context and the extent to which there is freedom of the press, freedom of information, access to independently produced national statistics, and a culture of research within higher education – all of which are indicative of how much value is placed upon evidence and impartiality.
2. **Generation:** As per Langer and Weyrauch (2020), our next category is *generation*; specifically, an understanding of how policy-relevant evidence is produced, by whom, where, and to what and whose standards.
3. **Communication and understanding (including interventions to encourage uptake):** The third category is *evidence communication, dissemination and understanding;* specifically, what actions have been taken to distribute policy-relevant evidence to policymakers, how, and in what formats, and, concurrently, what efforts are being made by policymakers to seek that evidence out and to communicate it to peers and senior government officials.
4. **Use:** Drawing upon Goldman and Pabari (2020), Weyrauch et al. (2016) and Langer and Weyrauch (2020), we understand *evidence use* to refer to both instrumental or mechanistic use of evidence and behavioural change. Instrumental evidence use refers to activities that might facilitate the uptake and exchange of information between producers and users of evidence, fostering awareness, agreement and access (as per the categories of 'change mechanism' identified in Figure 1). Mechanistic evidence use relates to policymakers' capabilities, motivations and opportunities to use that evidence as demonstrated through individual behaviour change (perhaps citing evidence in their remarks and interventions), institutional change (introducing more evidence inputs into their own work processes, for example) or campaigning for broader change in their local, national or international policy context.

Notably absent from this simplified categorisation is an assessment of impact. Although systemic monitoring of the impact of evidence upon policy outcomes is imperative, it is not the intention of this working paper and the broader research project to assess the merits and demerits of evidence use within policy processes writ large, but rather to identify the mechanisms and pathways through which evidence can be produced, communicated, and utilised by policymakers. Furthermore, assessments of long-term impact are fiendishly difficult due to the wide array of contextual and other contributing factors that may dictate the influence or efficacy of evidence upon policy design and implementation, rendering them highly context specific. The four categories identified above are intended to serve as a diagnostic, to understand the evidence culture in a moment in time and how feasible it is for evidence to be produced, curated, and communicated to affect short-term individual and institutional changes in practices.

In the following section, we explore each of these categories with reference to national and international case studies – including four recently commissioned from sub-Saharan Africa – aiming to tease out successful and replicable practices of relevance to evidence-informed policymaking within the UNGA.

4. Insights into effective evidence production, translation, and policy uptake

4.1 National policy processes

A systematic review of academic and grey literature published in the last two decades has identified a wide number of studies on national EIP processes, with a particular bias towards cases from the Global North (notably the UK, Germany, France and the USA). Of the 74 academic papers published since 2015, 65 were from Global North. The reminder of the literature came from 19 countries in the Global South, with a slight predominance of African countries. It is important to note this scholarly bias at the outset so that any insights identified below can be treated with a measure of caution, noting their applicability to predominantly Western policy processes.

The most common policy processes considered within this EIP literature were those relating to climate change (including pollution, the environment, desertification, marine science, conservation, and biodiversity) (Böcher 2016; Wan et al. 2020; Kyriakopoulou et al. 2023), food/agriculture (Babu 2015), and healthcare (Jarman et al. 2022; Aryeetey et al. 2017; Dodd et al. 2019), while some literature considered cross-sectoral evidence–policy interfaces (Stewart et al. 2018). Insights gathered from the literature mostly pertained to **the generation of knowledge** and **mechanisms/platforms of knowledge communication and translation** to make it appropriate for policy purposes (categories 2 and 3 of our four-point framework).

With regards to **evidence generation**, the literature tends to highlight the need for more accessible, demand-driven evidence for policymaking. From healthcare to agriculture and climate change policies, national case studies point out the crucial role of **policy-driven evidence production** (Goldman and Pabari 2020) as well as the importance of involving policymakers and government professionals in the early phases of scientific research (Dodd et al. 2019; Culyer and Chalkidou 2021) or in the design of monitoring systems (Babu 2015). It is suggested that such consultation between knowledge actors and policymakers could help the 'streamlining' of information and 'reduce [the] duplication of evidence' (Babu 2015). A particularly well-documented and praised approach is that of the RIU-model (Research Integration Utilisation) adopted by the German Federal Environment Agency. The approach emphasises the importance of integrating research at all stages of policy development and vice-versa – engaging policymakers in research design to ensure research is effectively orientated towards political and practical problems (Böcher 2016). A similar approach is cited from China, where researchers and policymakers developed a co-evolutionary science–policy model to respond to problems of air pollution (Wan et al. 2020), and Bangladesh, where the engagement of research organisations and civil society in national health policymaking has resulted in a marked increase in the use of scientific information (Dodd et al. 2019). Some of the literature expresses concern, however, about there being too porous a

border between researchers and policymakers. In the case of the UK government's COVID-19 pandemic response, for example, it was found that the UK science advice system was not autonomous but rather was dependent on central government's political questions, undermining the 'autonomy and credibility of the advisers and scientists by separating their advice from actual decisions' (Jarman et al. 2022). This suggests the importance of regular consultation and exchange between policymakers and evidence producers – but not the complete integration of these units so that research is purely reactive and unable to uncover independently investigated insights.

Relating to **evidence communication**, common observations are the importance of fostering personal relationships between knowledge actors and decision-makers through both formal and informal interaction opportunities and the important role of knowledge brokers who can help sift through evidence to identify policy-relevant material and convey it to relevant policy stakeholders (Goldman and Pabari 202 0; Gluckman et al. 2021). The UK Committee on Climate Change (CCC) is an example of an entity that has played this brokerage function, having been particularly influential in the use of evidence to shape both political debates and policy formulation in the UK (Averchenkova et al. 2021). Relatedly, several knowledge translation platforms and processes are cited in the literature, among them the French Collective Scientific Assessments produced by the French National Research Institute for Agriculture – the findings of which were successfully communicated to the public and policymakers through publication in the press (Pesce et al. 2021).

Insights from four African case studies

To attempt to rectify the imbalance in academic literature relating to evidence-informed policymaking, a series of national case studies were commissioned to inform this research from four diverse sub-Saharan African countries. While these are not truly representative studies, our intention is to provide insights from previously understudied policy processes and perhaps observe alternative evidence practices.

The case studies were prepared by researchers from Samahi Research (South Sudan), the African Centre for Cities (Tanzania), the New South Institute (South Africa) and ACED-Benin (Benin). Research methods were semi-ethnographic as all four of the commissioned academics had been closely involved in the policy process under study either as active observers or as formal partners providing evidence inputs to the government. Insights were also gleaned from an extensive systematic literature review and key informant interviews with a broad spectrum of policy actors and evidence partners. A synopsis of each case study is provided below, after which we tease out common observations from the cases that are of relevance for both national and international evidence-informed policymaking. All four case studies will be published in full in winter 2023.

Benin (ACED-Benin): Evidence-informed policymaking in Benin's agriculture, food security, and nutrition ecosystem

This case study explores the food security and nutrition (FSN) policy landscape in Benin and analyses the use of evidence within its ecosystem. It places particular focus on challenges and opportunities that exist in the interplay among evidence production, communication, use, and institutionalisation within public policymaking in the agriculture sector. Agriculture accounts for 41% of Benin's labour market and is crucial area of government policy. The Ministry of Agriculture, Livestock, and Fisheries (MAEP) is the primary institution responsible for developing and implementing FSN policies and programmes in Benin. Within the MAEP, dedicated agencies support evidence production and use, such as the Department of Planning and the Department of Agricultural Statistics. The MAEP also coordinates with other ministries, like the Ministry of Health, for cross-cutting issues related to food security and nutrition. The National Agricultural Research System (SNRA) is an inter-institutional mechanism that includes research institutions, training institutions, and non-governmental organisations (NGOs) active in agricultural research. The SNRA is coordinated by the National Institute of Agricultural Research of Benin (INRAB), which has a dedicated programme on agricultural policy – the Agricultural Policy Analysis Programme. Civil society organisations and development partners also play a critical role in shaping the FSN policy landscape, providing technical assistance, financial support, and advocacy efforts.

An analysis of the production of evidence across this ecosystem suggests that that a wide diversity of evidence is used in support of FSN policymaking, including data, research, evaluation, and expert knowledge. Challenges persist in generating new evidence and in the quality of that information, specifically quantitative data. Of respondents participating in the study, 65% cited data as their preferred source of evidence, but only 17% indicated that they prioritise data production. National universities and INRAB partners are actively involved in generating relevant research on the agricultural sector; however, university-based researchers report that their work is not driven by a well-defined research agenda or by the policy imperatives expressed by the government but rather by funding opportunities. These opportunities predominantly come from external funding (such as bilateral donors and foundations) and as a result, researchers tend to align their research areas with the interests of external, mostly international, partners.

Furthermore, many academic informants expressed frustration that their work is not taken up by policymakers. Policymakers in the FSN ecosystem express a preference for practical, socially grounded evidence such as citizens, leaders, or experts' knowledge generated from rapid appraisals. These types of evidence are privileged because they are readily available or can be quickly mobilised with minimal time and resources. Others noted that it was common for policymakers to regularly employ 'advisors' to guide decision-making processes. Technical assistance, a common feature in development projects, provides expert knowledge to support project formulation and implementation. However, such evidence is often not grounded in the local context

and/or may be highly subjective, potentially defeating the expected value of mobilising evidence for decision-making.

Positively, the Benin experience suggests that intermediaries, including civil society organisations (CSOs), consultancy firms, and other brokering organisations such as think tanks, can help bridge the gap between evidence producers and policymakers, fostering evidence-based decision-making and assisting policymakers in effectively using evidence. Intermediaries can work, for instance, to build trusted relationships with policymakers to raise their awareness about the national evidence available to them and thereby generating the prospect of lasting demand. Institutional frameworks are also important, facilitating the existence of formal requirements for regular evidence production and use in policy design. In Benin, formalised consultative mechanisms have enabled the regular engagement of CSO organisations like PASCIB and PNOPPA, for instance, which hold strong positions in the national institutional architecture of the agricultural sector. Likewise, thanks to these opportunities, brokering organisations like ACED have been able to develop an evidence network and platform for decision-makers and practitioners to convene. This case study highlights the importance of understanding the interplay among evidence production, communication, and utilisation in the ecosystem as well as the need for a long-term approach to the institutionalisation of evidence generation and consultation processes. It also suggests that even within international policy processes it is important to: establish a formal institutional architecture for evidence production and use; consider that decision-makers usually prioritise messengers over types of evidence; involve multiple and diverse stakeholders for inclusive and evidence-based policymaking; address communication barriers; and recognise existing power asymmetries.

South Africa (New South Institute): **Evidence, policy-making and epistemic communities: The case of public service reform in South Africa**

The South African case study explores public service reform and the role and influence of four epistemic communities upon the production of the 'National Implementation Framework towards the Professionalisation of the Public Service' released in 2020, as well as a subsequent version approved in 2022. The four epistemic communities analysed were: (a) a small coalition of academic representatives, (b) a community of government officials that emerged in the Department of Public Services and Administration, (c) a consortium of non-state actors including lawyers, judges, journalists, civil society activists, and business executives in opposition to state capture, and (d) a body of researchers and officials serving in the National School of Government.

the study observes that, in 2020, following years of political instability and extensive state capture, the National School of Government made a first step towards the institutionalisation of a meritocratic, depoliticised, and non-partisan public service. While this step was widely welcomed by academics and public policy scholars across the country, the evidence base informing the reform agenda and its implementation remains unclear. Although there is an extensive body of academic literature on public service reform in South Africa prior to 2020, little to none of it was cited in documentation accompanying the national framework, nor were relevant academics

consulted on the reform agenda. The case study highlights the selective nature of government evidence use in South Africa, noting that the question of 'who decides what evidence counts?' is at the heart of the policy-making problem in South Africa. Generalisable insights from the case study include:

- the necessity to forge joint academic and policy-making communities that can mutually support policymaking processes;
- the need for more stable, and less occasional, links between knowledge-producing communities and decision-makers, fostered through personal outreach and relationship building and/or by working in coalitions with other parties that can help to increase the visibility of research findings (i.e., creating evidence-informed environments); and
- a recognition of the political barriers and roadblocks that might require more overt advocacy and politics, rather than behind-the-scenes coalition building.

South Sudan (Samahi Research): Institutionalising evidence use in the South Sudanese national budget process. Lessons from the Open Budget Survey research in South Sudan

Between 2017 and 2021, the government of South Sudan implemented measures to promote evidence-based policymaking in the national budget process, using the Open Budget Survey (OBS). The objective of the initiative was to improve public financial management (PFM), thereby helping to ensure that funds are allocated and utilised effectively, efficiently and transparently.

This case study observes the results of the OBS, which served as a tool for the government to evaluate and improve their financial management systems. The OBS significantly relied on the contribution of local CSOs – national NGOs, community- and faith-based organisations, and others – in their crucial capacity as evidence brokers, reaching out to and representing communities and citizens that neither international actors nor the national government can easily reach. The study, conducted by Samahi Research, the national partner for the OBS in South Sudan, featured analysis of both primary data (four rounds of the OBS and key informant interviews with Ministry of Finance and Planning officials) and secondary data (extensive literature review). It provided insights on the use of evidence within the PFM sector and specifically in relation to the national budget process. The study found that:

- Evidence inputs and requirements vary considerably across the stages of the budget process (including: (i) planning for the budget, (ii) reviewing the budget, and (iii) evaluating and auditing the budget) – from statements and proposals to review reports and evaluations. Overall, bureaucrats were found to favour quantitative information and, with regards to public finance, were most inclined to work with international institutions such as the IMF and the World Bank to collate data. On the other hand, parliamentary oversight committees, which were often not specialists in PFM, were more open to longer-form qualitative reports and assessments with synthesised evidence findings. These were prepared by both government agencies and third parties such as national CSOs, who prepared

a citizens' budget, for example. In general, there was an emphasis on quantitative data and analysis, often at the expense of useful qualitative insights. This focus was promoted by international partners through training, such as that offered by the IMF, the World Bank, UNICEF and the UNDP.

- Crucially, although there are acute evidence and information gaps across the government relating to PFM, government officials are often hesitant to partner with local CSOs and universities for technical assistance, instead appealing to international firms contracted by international partners. Despite their apparent technical skills, national actors are predominantly considered as civic engagement partners rather than providers of technical research support.
- While formal institutional arrangements for non-governmental engagement are important in the budgetary process, the case study also reveals the importance of more informal modes of influencing through interpersonal relationships and stresses the importance of building trust and cultivating relationships between evidence providers and government officials.

Tanzania (African Centre for Cities): Developing climate resilient national urban policy in Tanzania amid unfavourable political conditions: A reflection on the Tanzanian Urbanisation Laboratory, 2017–2020

The Tanzanian case study focuses on the experience of the Tanzanian Urbanisation Laboratory (TULab). The TULab was a community of urban specialists from across government, civil society, development partners, academic organisations, think tanks and the private sector who came together to identify problems, risks and opportunities facing cities in Tanzania. The lab commissioned research and encouraged collective reviews of evidence, then attempted to infuse these evidentiary inputs into local and national governance discussions. Research topics concerned political economy and multi-level governance, informal services, the fiscal constraints on local governments, and industrial strategy. In addition to commissioning research, the TULab organised and oversaw the Urban Innovation Competition, which sought to collate new research on Tanzania's primary city, Dar es Salaam, and to invite discussion of innovative ideas to address the city's urban challenges.

The TULab operated during a particularly repressive period of governance in Tanzania, where space for independent evidentiary inputs was limited (between August 2017 and February 2020). The study was prepared by Dr Anton Cartwright, then director of the TULab, and drew on his own personal experiences alongside those of his TULab colleagues, peer-reviewed research produced by the lab, and the international literature on knowledge–policy interactions and citylabs.

A key focus of the TULab community was to bring together knowledge actors and policymakers to reflect on 'what could be done next' and to foster interpersonal relationships and regular dialogue between diverse camps. Unlike more formal government workshop spaces, the TULab offered an open, critical space to deliberate and to think creatively, propositionally, and generously about Tanzania's urban

challenges and opportunities. The experience of the TULab suggests that while evidence is necessary for policymaking in Tanzania, it is equally important to consider how this evidence is collected and reviewed, bringing in as broad and diverse a range of actors as possible. The government from 2017 to 2020 was particularly repressive of non-governmental evidence inputs, so having a non-governmental space for open deliberation was seen as an important counterbalance. Although government actors were invited to participate, they did so with express guidance that it was a discursive forum and that all evidence inputs would be welcome. While convening a wide variety of in-country researchers to gather and review multiple strands of evidence was important, so too was bringing in international actors and facilitating a conversation about how international policy agendas and research could support domestic policies, decisions, and, ultimately, local communities. The process thereby helped to strike a balance between domestic inputs (drawing widely on national skills and capabilities) and international support.

Common lessons

Common insights for both national international policymaking emerge from the four African case studies. Although each uses a different modality, all of the case studies highlight the importance of integrating multiple, diverse, and local stakeholders into research for policy formulation, as well as the necessity of helping to forge and/or support multi-stakeholder epistemic communities around key policy topics. They place a strong emphasis on evidence communication, cross-fertilisation of fields and disciplines, trusted relationships, and the power dynamics between and across stakeholder groups. More specifically, from a comparison of the case studies, we can observe the importance of five factors:

a. Understanding the **political economy of evidence use in a given context.** As highlighted in South Africa and Tanzania, government demand and receptiveness to external evidence is often tied to pre-existing policy and political interests. Any evidence that pushes for a reform in one or other direction, and that is contrary to existing government policy, will be contested in proportion to the stakes held in the change by powerful players. Understanding this political economy in advance and managing the language and presentation of evidence to appeal to political interests (without compromising research integrity) can help to navigate complex political landscapes.
b. **Tailored, policy-relevant evidence.** While policymakers in all contexts noted the importance of evidence for policy-making, they were often uncritical about where it came from and the standards to which it was produced. In Benin and South Africa, academic evidence was often considered inaccessible due to its complex language and terminology and/or verbosity. It did not provide easy solutions to policymakers' daily challenges, and, as such, was deprioritised in favour of other evidence sources. In South Sudan, academic and technical inputs were often very heavy on quantitative information and lacking in qualitative insights and personal detail, which parliamentarians noted was important to them. All the cases highlight the importance of academics and other technical evidence generators

working with policymakers to better understand their needs and to moderate their language and research formats to better appeal to policy requirements. Alternatively, researchers and policymakers can work with brokers to curate and synthesise evidence for specific policy processes and opportunities.

c. **Inclusive deliberative spaces.** The TULab experience in Tanzania provides a valuable example of how forums – or critical, deliberative spaces that are open to local and diverse stakeholders – can support policymaking processes. Working together, stakeholders helped to consolidate disparate evidence strands and make the results relevant for urban policymakers. The citylab framework contrasts with more formal government workshop practices and suggests that inclusive and critical evidence-production processes have the potential to encourage greater evidence uptake and ultimately greater evidence impact within public policy processes. Such spaces are also crucial for fostering interpersonal relationships between knowledge actors and policymakers, creating trust, building social capital, and potentially forming partnerships.

d. **CSOs as knowledge brokers.** CSOs have a crucial role to play brokering information among citizens, academics, and policymakers. Although in nearly all cases CSOs were not considered appropriate partners for technical evidence generation, they were still seen as purveyors of practical knowledge and insights that policymakers highly valued. In South Sudan, the study by Samahi Research highlights the critical role played by CSOs in the preparation of the Open Budget Survey, conveying insights from remote or inaccessible communities and/or synthesising diverse sources of practice-based information. In Benin, CSOs also played a crucial role facilitating connections between a well-developed – but disconnected – academic sector and the government. Organisations such as PASCIB, PNOPPA, and ACED have helped to bridge the gap between evidence producers and policymakers in the agricultural ecosystem – notably by building trusted relationships with policymakers, facilitating communication, and assisting them in effectively using evidence.

e. **Formal institutional openings for external evidence inputs.** Effective and sustained evidence-informed policy practices require institutionalisation – the creation of spaces and formal processes for non-governmental consultations and inputs, including from academics and technical experts. In Benin, the National Agricultural Research System (SNRA) is an inter-institutional mechanism, which includes research institutions, training institutions, and NGOs active in agricultural research. The SNRA is coordinated by the National Institute of Agricultural Research of Benin (INRAB), which is under the supervision of the Ministry of Agriculture, Livestock and Fisheries. The SNRA and INRAB provide platforms for researchers to showcase research relevant for national policy and – notwithstanding that informants expressed frustration about the take-up of their evidence – it is possible to work with intermediaries and brokers to use these official conduits for the regular communication of evidence to policymakers. Another advantage to the establishment of a government-affiliated platform for science compilation and communication is that it can help to weather political turmoil. As demonstrated in Tanzania, governments can often ignore, reject,

or actively discredit non-governmental evidence when it does not serve their political interests. In Benin, having a formalised consultative and communicative process for external evidence inputs has not only ensured consistent evidence practices, but it has helped to foster trusted relationships with key stakeholders in government over time. In this way, the process has helped to maintain regular communication between evidence producers and policymakers – irrespective or changing political dynamics at the level of the minister, cabinet or head of state.

4.2. International policy processes

Although the academic literature on evidence-informed policy processes at the international level is markedly thinner than that at the national level, there are nonetheless a sample of interesting studies focused on the history and effectiveness of science advisory systems such as the IPCC and IPBES (see Box 2) (Vardy et al. 2017; Vadrot 2014; Livingston and Rummukainen 2020; Gustafsson 2019, 2021; Lucas 2021), as well as a series of studies of evidence impacts within Conferences of the Parties (COPs) more broadly and within World Health Organization (WHO) policy development (Ferrer et al. 2021; Serdeczny and Lissner 2023; Tan et al. 2022; Mitchell et al. 2023). There is also a useful body of transferable literature from the field of science technology studies on how institutions undertake practices of knowledge-making and establish knowledge-authorisation and on the history of knowledge practices within global environmental assessments (well summarised by Borie et al. 2021).

Overall, similar themes and emphases emerge to those found in the national policy literature, notably an emphasis on inclusive and collaborative research development, with researchers actively engaging with policymakers to identify policy problems for which their research may provide insights. In the field of global public health research, for example, the literature stresses the need for an 'upstream public health approach' to research that is not limited to the description of problems, but able to provide solutions and translate knowledge for policy purposes (Ding et al. 2020), as well as the necessity for 'bottom-up approaches' that draw researchers together with consumers of evidence (Tan et al. 2022). Babu (2015) points out that to effectively collate evidence relating to food and nutrition, 'require[s] better understanding of [the] political economy of policy making and [the] role of various actors and players' involved, so that insights can be tailored and targeted to suit key policy audiences and to ensure maximum utility.

A wide range of institutional arrangements exist today and are often cited within the literature (see Box 2), including expert groups, within the COPs and the UN Convention to Combat Desertification (UNCCD) (Ramifehiarivo et al. 2022; Rohden and Scholz 2020; Schuster et al. 2016; Akhtar-Schuster et al. 2022) and scientific advisory committees working to support the WHO (Gopinathan et al. 2018). Echoing across the international literature, however, is a common concern: knowledge colonialism and the lack of equity in the use of evidence within multilateral and international contexts, with Global North studies and inputs predominating in particular. More inclusive approaches are demanded that would allow more meaningful participation of underrepresented forms

of knowledge – for instance from Indigenous Peoples in COPs conventions (Ferrer et al. 2021; Marquardt et al. 2022; Gupta and Singh 2023). Advocates for inclusiveness also call for the integration of non-peer-reviewed literature, including 'oral histories, traditional practices and grey literature', within IPCC processes (Jebeile 2020) and for redressing the unbalanced composition of scientific advisory committees within the WHO (Gopinathan et al. 2018).

Knowledge colonialism is not only investigated in the literature with reference to written inputs but also with regards to the role of knowledge translation platforms (Lester et al. 2020; Partridge et al. 2020) and science–policy interfaces (Akhtar-Schuster et al. 2022; Stone 2003). These are the networks, international think tanks and consultancies that aim to act as facilitators or brokers of evidence for policy. Concerns are raised within the academic literature that the majority of these platforms are Northern-based and focused on Western academic science, thus marginalising other forms of evidence and knowledge, as acknowledged by Stone as early as 2003 (see Box 1).

BOX 2: EXAMPLES OF CURRENT MULTILATERAL SCIENCE ADVISORY PROCESSES

IPCC (Intergovernmental Panel on Climate Change)

The IPCC, established in 1988, is the United Nations body for assessing the science related to climate change. It provides regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation. The panel consists of 195 member governments meeting one or more times a year in plenary sessions. Representatives elect a bureau of scientists; governments and observer organisations nominate, and bureau members select, experts to prepare IPCC reports (writing teams consist of coordinating lead authors, lead authors, contributing authors, and review editors). The work of the IPCC is coordinated and supported by the IPCC Secretariat and the technical support units of three working groups and taskforces. The panel receives funding through a trust fund managed by the secretariat, to which member governments, the WMO, the UNEP, and other organisations contribute. (Sources: IPCC n.d.; UNEP 2017)

IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services)

The IPBES is an independent intergovernmental body established in 2012. Its mandate is to assess the state of biodiversity and of the ecosystem services and to provide scientific information in addressing key gaps in data and knowledge. It is not a UN body, but the United Nations Environment Programme (UNEP) can provide it with secretariat services. Representatives of IPBES member states meet for plenary sessions once per year. The platform also comprises observers, including the Convention on Biological Diversity and other biodiversity-related conventions, related UN bodies, and many other relevant organisations and agencies; the bureau; the Multidisciplinary Expert Panel (MEP); expert groups and taskforces; stakeholders; and the secretariat, which supports the plenary, bureau, and MEP, as well as implementing the platform's work and administrative functions. The IPBES is funded through generous voluntary contributions from its member states to the IPBES Trust Fund. (Sources: IPBES n.d.; UNEP 2017)

GEO (Global Environment Outlook)

The GEO is a consultative, participatory process that builds capacity for conducting integrated assessments about the global environment, reporting on the state, trends, and outlook for the future and identifying policy responses. The GEO is also a series of products (reports) that inform environmental decision-making and aim to facilitate the interaction between science and policy. It is globally conducted by the UNEP at regional, national, and local levels around the world. The GEO involves the UNEP Secretariat, which convenes the process, various advisory bodies, the authors and supporting fellows, and finally actors from civil society and business. (Sources: UNEP n.d.; UNEP 2017)

IRP (International Resource Panel)

The International Resource Panel (IRP) was launched by the UNEP in 2007 to build and share the knowledge needed to improve our use of resources worldwide. The panel consists of eminent scientists and practitioners (from civil society, industry and INGOs), highly skilled in resource management issues, from high-, middle- and low-income countries. The panel produces scientific assessments that aim to distil the latest scientific, technical and socio-economic findings around global resource use. Recent reports have covered decoupling, cities, water, metals, land and soils, food, trade, resource efficiency, green technology and global material flows. In recent years, the panel has included economists, political scientists and social scientists, ensuring every topic is considered from multiple angles. The panel is independent, funded by UN member states, and has a secretariat hosted in the UNEP. It consists of 36 scientists making up a scientific panel, and a steering committee including representatives from 28 governments, the European Commission and the UNEP. (Sources: IRP n.d.; UNEP 2017)

Recent literature emphasises practices of equity, diversity, and inclusion, the promotion of alternative, indigenous knowledge, and the participation of marginalised groups and scientists and countries from the Global South (Mahony and Hulme 2018; Matsuoka and Rocha 2020). The COP processes are particularly criticised for formalising and reproducing colonialities through the marginalisation of certain types of knowledge, particularly from the Global South (Ferrer et al. 2021). In response to such criticism, the IPCC created Chapter Scientists, researchers who have the potential for 'radical institutional changes', particularly in relation to the inclusion of underrepresented groups and the geographical representation of all IPCC member states (Gustafsson and Berg 2020). It is noted, however, that the IPCC presently operates a 'views from nowhere' stakeholder engagement strategy, which means it accepts all relevant knowledge without considering its equity and representation. Furthermore, the IPCC generally focuses on consensus as a product and the 'end game', rather than on the value of *forging* consensus and the process (Borie et al. 2021). Borie et al. (2021) contrast the IPCC's approach to that of the IPBES, which has a **'views from everywhere'** approach, meaning it follows a stakeholder engagement strategy based on geographic, disciplinary, and cultural diversity; creates 'experience-based situated expert knowledge'; and places emphasis on the process of fostering consensus (ibid.). As Tengo et al. (2017) highlight, the IPBES pilot thematic assessment of pollinators, pollination and food production is

a good practical example of effective engagement with indigenous and local knowledge systems.

Another interesting mechanism cited as a counterpoint to knowledge colonialism critiques is the UNCCD's Ad Hoc Working Group on Scientific Advice (AGSA). According to Schuster et al. (2016), the AGSA presents an innovative alternative mechanism with three component parts supporting science–policy communication: 1) a science–policy interface, 2) an international, self-governing, independent, non-governmental group of scientists, and 3) regional science and technology hubs in each UNCCD region (Schuster et al. 2016). Most notable is the attempt to collate information regionally to decentralise the process and ensure a broad spectrum of information and insights. Also notable is the dedicated platform for scientist–policymaker interaction to foster regular communication and exchange, from the outset of research design and policy deliberations. The WHO has also attempted to establish this kind of interface through their policy dialogue series, which focuses on key, high-priority issues and then focuses on 'building trust, generating alignment, shared understanding and shared commitments' between knowledge actors and policymakers (Mitchell et al. 2023). Across much of the literature, the concept of co-production is encouraged to promote 'diverse, even dissident knowledges, practices, political imaginations' (Mahony and Hume 2018).

Other innovations promoted by these science–policy platforms to improve both their inclusivity and their external communication include regular external reviews of stakeholder engagement policies and actions, partnerships with third parties, and the establishment of stakeholder advisory boards. The GEO, for example, underwent a stakeholder engagement survey following the production of the Fifth Global Environmental Outlook (GEO-5) (Garard and Kowarsch 2017). It recommended improved regional and stakeholder engagement with the GEO through a multi-stakeholder advisory board, leading to the establishment of the Intergovernmental and Multi-Stakeholder Advisory Group in October 2022. The group is composed of academics and technical experts from over 30 countries, and is tasked to provide expert advice from their respective regions to the executive director and the team of experts producing GEO-7.

Three of the four science advisory processes featured in Box 2 have also established partnerships with external organisations, whose expertise, resources and connections can help to fill potential gaps. The IPCC has partnered with the European Climate Foundation to improve communication and tailor messages in different European regions and key countries; the IRP has partnered with Systemiq (a systems change consultancy organisation) to learn how to communicate more effectively with wider audiences including core business and industry partners; and the IPBES has partnered with the UNEP-World Conservation Monitoring Centre non-profit consultancy to learn from its experience of the institutional landscape for biodiversity policy and ecosystem management (UNEP 2017).

Across the extant literature, a number of factors are stressed: the importance of understanding the breadth of stakeholders and the political economy of these actors in their respective fields; the importance of meaningful, transparent, participatory processes for knowledge generation; the necessity of an intentional 'views from everywhere' approach to stakeholder engagement and knowledge curation; and the necessity of regular reviews to ensure advisory processes are functioning effectively in both their knowledge curation and their knowledge communication functions.

5. Considerations for member states seeking to strengthen science within the UNGA

Drawing upon the recent literature on evidence and science–policy influencing, as well as a wide range of national and international policy-process case studies, it is possible to identify a set of considerations for member states aiming to strengthen the UNGA's science (and broader evidentiary) interfaces. The Group of Friends for Science Action may use these as a starting point for discussion and as a framework to develop a draft resolution for consideration by the broader UNGA membership. The considerations presented here are subdivided into the four categories introduced in Section 3; while some considerations relate to principles, others concern mechanisms and institutional arrangements that could be tailored to suit the unique context of the UNGA.

5.1. Creating a stronger demand for evidence

To create meaningful exchange between knowledge actors and policymakers it is important that there is not only a *supply* of evidence but also a *demand* for it (as highlighted by a range of more recent EIP literature, discussed above). Policy actors need to be aware of the evidence that is available, understand the range of potential inputs, have framed, core policy issues that they think evidence could contribute towards, and have a clear sense of this potential contribution. Creating this demand requires, from the outset, a commitment not only to strengthen evidence inputs but to work across the whole evidence–policy process (as per Figure 1), from evidence generation to systems change and evidence use (Langer et al. 2020). Particular attention must be given to setting policy priorities early to enable academics and other knowledge actors to tailor their research to ensure policy relevance.

There are a range of ways that demand can be generated; one example is the use of **sensitisation events**, such as the informal briefings recently convened by the PGA's office to showcase the latest science on key policy concerns. But fostering meaningful demand among all country delegations cannot just happen through events in New York. The UNGA needs to be clearer on expectations of national delegations with regards to evidence in advance of UNGA proceedings; for example, it could provide **a set of principles or suggested mechanisms for national delegations** on how to effectively consult with national knowledge actors in advance of UNGA participation. Without being prescriptive, this guidance could helpfully showcase successful practices from selected countries – such as the participation of chief science advisors in national delegations, national science consultation processes, traditional knowledge-outreach efforts, and subsequent peer review of policy documents (to prevent the co-option or distortion of evidence inputs).

A clear set of policy priorities and **challenges laid out at the start of each UNGA** term would provide a signal to the science community of how they can best support international political processes and provide relevant insights. These policy questions or challenges may be aligned with the annual negotiation tracks or, perhaps more effectively, could articulate four or five transdisciplinary issues related to the SDGs, such as 'how do we secure food for all and increase carbon uptake in natural ecosystems at the same time?' These priorities could be laid out by the PGA in their opening statement, with a corresponding call for scientific inputs via predetermined channels (such as UNESCO or the International Science Council (ISC), who could then synthesise inputs within a defined time and disseminate to member states).

5.2. Supporting evidence generation and compilation

A second crucial set of considerations relates to the question of how best to support policy-relevant evidence generation and compilation. A particular stumbling block is how best to categorise different types of evidence inputs. Although science is repeatedly highlighted as being of particular interest to the current sitting PGA and member states – due to the rigour of the scientific peer-review process and the ability of science (in many instances) to provide large-scale, transboundary insights – its pre-eminence in other policy processes (such as the COP) has attracted criticism from those concerned about the equity of the information guiding international decision-making. To overcome this, the UNGA may wish to issue a **typology or set of guideline for evidence categorisation**. This should not suggest a hierarchy of evidence, but clearly differentiate between evidence categories and their benefits and limitations in different contexts; for example, while science-based, large-scale observations may be most helpful for formulating ecological or public health standards, indigenous knowledge can prove highly insightful for designing policy on conservation or ecological restoration. Establishing a clear evidence typology would also provide guidance for national delegations on what kinds of evidence inputs might be required from their national actors for specific policy priorities.

Relatedly, the UNGA should consider establishing **associated principles for evidence generation** and collation; for example, the principle that evidence should be compiled regionally, with a purposeful approach to gathering evidence from underserved regions (i.e., a 'views from everywhere' approach), and undergo some form of validation through peer review.

5.3. Advocacy and communication

While principles and guidance can help direct interested parties, deliberate interventions are also required to support evidence exchange and use. Interventions commonly cited in EIP literature relate to the use of science advocates or the appointment of high-level science officers, capacity building workshops and other awareness-raising activities. A key mechanism through which evidence use can be championed and advocated for is the Group of Friends on Science Action. As a coalition of interested member states, this group is well placed to **convene events and exchange platforms** within the institutional confines of the UNGA building. These informal networking events are often crucial

sites of influencing and knowledge exchange (Senit 2019). As observed during the SDG negotiation process, informal retreats and networking events were often the sites of real deliberation and the presence of knowledge actors in these spaces helped even further to 'force a more comprehensive outcome' (Muffuh 2021, in Espey 2023: 58). Furthermore, such events and spaces can help to forge trusted relationships between policymakers and knowledge actors, with the former being able to call on the latter for evidentiary support and inputs throughout the deliberation process.

Another commonly cited mechanism to promote the value and utility of science and other knowledge inputs for policy processes is the appointment of a **high-level science advocate or officer**. This would be someone with an institutional mandate, international stature, and robust expertise, who can work at the highest levels (alongside ambassadors, the PGA, and Secretary-General) to campaign for greater engagement of science and knowledge actors, specifically in UNGA proceedings. Although the impact of one appointment is necessarily limited, it can help to communicate an institutional shift in attitudes to science and other forms of knowledge and can instigate processes of internal reform, while also opening doors to new external alliances and knowledge partnerships. The independent experts appointed every four years by the UN Secretary-General to write the GSDR can play this role up to a point; helping to show the value and contribution of independent science inputs for high-level policy processes. However, a preeminent scientist or sectoral expert appointed specifically to advance the use of science and expert evidence within UNGA practice may be more effective at driving long-term institutional change.

5.4. Mechanisms to facilitate uptake and use

Crucial to the successful integration of science and other forms of knowledge across the UNGA policy process is to formalise or institutionalise a set of evidence practices within each UNGA session, ensuring that these practices persist across PGA appointments and other political terms. As observed during the deliberations over the SDGs, it was the wide array of new institutional practices (such as the use of panel discussions) that helped to change traditional negotiation styles, encourage free-flowing exchange, and open the door for greater evidentiary inputs (Espey 2023).

Langer et al. (2020) point to a wide array of mechanisms that can be used to catalyse change, foster agreement, build trust, encourage interaction and so forth (see Figure 1). The following set of recommended mechanisms is made up of those that most readily lend themselves to institutionalisation and that might complement other, more informal processes such as those led by the Group of Friends for Science Action:

1. It is necessary to establish a regular **platform for science–policy exchange**, specifically related to UNGA priorities and concerns. The Science and Technology Forum under the ECOSOC provides a strong model for this, but it should be more formally connected to UNGA with the renewal of its mandate, so that its inputs are not solely confined to HLPF and ECOSOC but are also presented to the full

GA membership. A dedicated Science Technology and Innovation (STI) follow-on meeting could be held in parallel to or just in advance of the UNGA high-level segment, every year.

Such an event should aim to showcase conclusions from the STI forum to an audience of senior-level UNGA delegates; socialise and discuss policy priorities for the coming UNGA session with knowledge actors; invite expert input and commentary; and hear from knowledge actors who have been working with political actors over the previous session to understand evolving learning and to assess efficacy and impact.

While the format of such a convening is flexible, the physical proximity of knowledge actors and policy officials is crucial and, as such, it is important that it takes place within the confines of the UNGA building and is readily accessible and convenient for time-poor policy officials.

2. Although the **Scientific and Technological Community Major Group** struggles with its huge portfolio and limited recognition, it is an important institutional marker for science and knowledge actors within the UN (under the ECOSOC) and should be supported as a mechanism for change. The PGA's office should invite the **STC Major Group** to engage in UNGA proceedings wherever possible, to help identify speakers, and to organise expert panels. Relatedly, to support more effective and representative knowledge compilation, the **STC Major Group** should consider establishing **regional nodes** through which evidentiary inputs for each session could be compiled. While this happens organically at present, under the guidance of the ISC, the UN should support this more substantively to ensure a transparent evidence compilation process, which they in turn can use to source relevant information for deliberative purposes.
3. Relatedly, the **STC Major Group** and UN Department for the General Assembly should work together to establish **a roster of trusted knowledge networks** that can support evidence compilation processes. This should include groups such as ISC, SDSN and UNESCO's Local and Indigenous Knowledge Systems (LINKS).
4. Recognising the fundamental role of knowledge intermediaries or brokers (persons well versed in UNGA policy process but also sufficiently familiar and comfortable with distilling diverse evidence inputs), the Department for the General Assembly should consider appointing a standing **knowledge officer**, mandated to work with the PGA, the STC Major Group, and the UN Department of Economic and Social Affairs to oversee the parallel platforms for knowledge exchange. This appointment would not only be focused on collating evidence for GA sessions, but on ensuring regional equity and diversity of inputs, and on knowledge translation – including through 'persuasion and framing strategies appealing to the emotions and the familiar' (Cairney and Oliver 2017), such as accessible stories or narratives that can interpret science while simultaneously considering societal, political, and cultural specificities and settings (Tan et al. 2022; Lowe et al. 2019). This appointee should also work with the UN Office for the Coordination of Humanitarian Affairs, the UN High Commissioner for Human Rights, and other UN humanitarian and emergency agencies in cases of crises to quickly bring together experts and relevant expertise.

6. Conclusion: Contributions to academia and practice

This paper has shown that the history of evidence-informed policymaking within and associated with the UN General Assembly is patchy. Although there have been attempts to infuse evidence into the UNGA's political discussions, they have been hampered by the deliberative style of proceedings and the lack of any formalised entry points for scientific inputs. Today, there are four primary pathways through which external evidence is communicated to deliberators (as discussed in Section 2). These efforts suggest interest and appetite for greater engagement of knowledge actors in regular UNGA proceedings, but also an amalgam of practices that are insufficient for current needs. Above all else they demonstrate a lack of clarity over what constitutes relevant and legitimate evidence, how it should be sourced, and what mechanisms are appropriate for its transmission and exchange among policy actors.

To strengthen the UNGA's science engagement, the Group of Friends for Science Action and the broader UNGA membership need to clarify exactly what kinds of 'evidence' and/or 'science' are required to inform international policy processes, how this evidence should be collated and from what institutions, what policy questions should be put to evidence producers, and how highly technical inputs can be fed into and made relevant for international policy discussions. Central to the latter objective is to clarify the institutional arrangements, both informal (or parallel) and formal (mandated by the UNGA), that will enable science and other forms of expert knowledge to become a mainstay of UNGA deliberative practice.

This report has drawn on recent literature on evidence-informed policy and science–policy influencing, alongside a variety of case studies, to provide member states with four sets of practical considerations. The first set relate to stimulating demand for evidence among policymakers, both within their own national delegations and their preparatory work for UNGA participation, and within the formalised UNGA proceedings. In the second set of considerations, we highlighted the necessity for the UNGA membership to produce a set of guidelines on evidence categories that will establish principles for evidence generation and compilation and ensure the equity and veracity of inputs. Third, we stressed that high-level advocacy and communication will be central to generating support for institutional reform to enable greater evidence inputs. The Group of Friends for Science Action will play a pivotal role, but they should be supported by the appointment of a high-level champion for science and a UN staff-member who could help facilitate evidentiary processes. Finally, we presented a set of additional mechanisms recommended to facilitate evidence uptake and use, including the establishment of a platform for science–policy exchange in parallel to the UNGA, to encourage senior-most political participation. To build on existing processes, this platform should link to and showcase scientific discussions from the Multistakeholder Forum on Science, Technology and Innovation, but aim to continue beyond 2030 and become a regularised part of UNGA proceedings.

For those in the field of science and technology studies or evidence-informed policymaking, this paper contributes an analysis of how the latest conceptual ideas can be applied to a very specific multilateral process. It chimes with recent EIP literature, which stresses the importance of understanding the political economy and context within which evidence is being used, placing particular emphasis on the necessity of careful institutional assessment to understand the formal and informal entry points for evidence producers. Both the case studies and literature suggest such institutional entry points are crucial to overcome the pragmatic, but erratic, nature of knowledge uptake by politicians when faced with uncertainty (as per Jones 2009). Moving forward, academics looking to better understand science and knowledge uptake should go beyond hyperlocalised cases to explore hitherto understudied multilateral processes, including the Multi-Stakeholder Forum for Technology and Innovation under the Technology Facilitation Mechanism.

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