Global Commission on Evidence
to Address Societal Challenges

Draft Exbibits from the Global Commission on Evidence to Address Societal Challenges

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1.1 Desirable attributes of commissions

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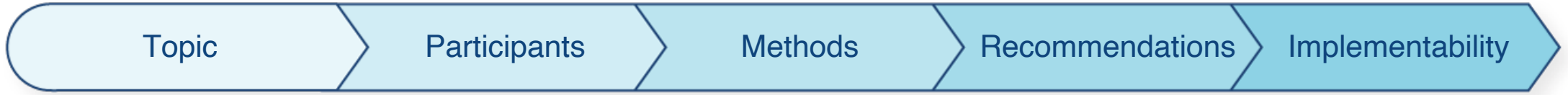

Assessment of global-commission reports against attributes:

Topic	Participants	Methods	Recommendations	Implementability
64 of 70 reports explicitly addressed one or both parts of the topic attribute, namely that the funder or convenor had the authority to act or that a strong rationale was provided for creating the commission	32/70 reports addressed the first of two participants attributes—that commissioners are chosen to capture many elements of diversity **21/70 reports explicitly addressed** the second of two participants attributes—that commissioners and secretariat staff are required to publicly report their potential **conflicts of interest** and adhere to other elements of a conflict-of-interest policy	**5/70 reports addressed the methods attribute**—that the commission's work was enabled by the use of systematic and transparent methods in each step of the process	50/70 reports addressed the recommendations attribute—that the commission's work culminated in recommendations that are actionable and likely acceptable to decision-makers and that promote equity	36/70 reports explicitly addressed the implementability attribute—that the commission report included plans for dissemination and for monitoring and evaluation.

Note: *full version available as PDF*

1.2 Commissioners (1 of 2)

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The 25 commissioners were carefully selected to bring diverse points of view to creating a report that speaks to the many different types of people who make or can influence decisions about whether and how evidence is used to address societal challenges

* *ranging across most types of societal challenges (and Sustainable Development Goals), all types of decision-makers (government policymakers, organizational leaders, professionals and citizens), and all major types of evidence*

** *(China, India, U.S., Indonesia, Pakistan, Brazil, Nigeria, Mexico, Japan and Ethiopia), as well as Australia, Austria, Canada, Chile, Germany, Trinidad and Tobago, United Arab Emirates, and U.K.*

*** *(English, Chinese, Hindi, Spanish, French and Arabic), as well as Portuguese, Indonesian and Urdu, among others*

1.2 Commissioners (2 of 2)

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Amanda Katili Niode
Talented policy advisor and non-governmental organization director advancing dialogue about environmental action, including climate action

Andrew Leigh
Seasoned politician bring economics and legal training to public-policy writing and debate

Antaryami Dash
Non-governmental organization leader bringing nutrition expertise to the development and humanitarian sector

Asma Al Mannaei
Experienced public servant leading quality improvement and stewarding research and innovation across a health system

Daniel Iberê Alves da Silva
Young Indigenous leader educating students and others about Indigenous ways of knowing

David Halpern
Trusted policy advisor bringing formal experimentation and behavioural insights into governments – first in the United Kingdom and now in many countries

Donna-Mae Knights
Career public servant, specialized in poverty reduction and development, driving policy change towards building sustainable communities

Fitsum Assefa Adela
Committed policymaker striving to bring a whole-of-government perspective to cabinet-level planning and development

Gillian Leng
Experienced executive leading a technology-assessment and guideline agency that supports health and social care decision-making by governments, services providers and patients

Gonzalo Hernández Licona
Distinguished economist bringing rigorous evaluation methods to the fields of poverty measurement and economic development

Hadiqa Bashir
Young leader advocating for girls' rights and gender equality in male-dominated environments

Howard White
Research leader supporting the use of robust evaluation and evidence synthesis in decision-making in international development and across sectors

Jan Minx
Impact-oriented scholar bringing innovative evidence-synthesis approaches to domestic policy advice and global assessments about climate action and sustainability

Jinglin He
Non-governmental organization leader engaging policymakers and stakeholders, as well as UN agencies, in advancing social-development initiatives

Julia Belluz
Respected journalist bringing rigour to reporting about what the best available science does and doesn't tell us about the major challenges of our time

Julian Elliott
Clinician researcher leveraging technology for efficiently preparing and maintaining 'living' evidence syntheses and guidelines to inform decision-making

Kenichi Tsukahara
Engineering leader supporting disaster risk management in government, a development bank, and international agency

Kerry Albright
Eternally curious international public servant bringing passion about evidence-informed decision-making, systems thinking, and helping others understand the value of evidence to international development

Larry Hedges
Applied statistician driving the use of evidence synthesis in educational policy and practice

Maureen Smith
Citizen leader championing the meaningful engagement of patients and citizens in conducting research and using it in their decision-making

Modupe Adefeso-Olateju
Non-governmental organization leader pioneering the use citizen-led assessments and public-private partnerships to improve educational outcomes for children

Neil Vora
Inter-disciplinary professional bringing planetary-health thinking to the interface between conservation efforts (such as preventing deforestation) and pandemic prevention

Petrarca Karetji
Entrepreneurial policy advisor innovating in the use of data analytics to support evidence-informed policymaking about sustainable development

Soledad Quiroz Valenzuela
Government science advisor contributing her national experiences to regional and global efforts to improve the quality of government scientific advice

Steve Kern
Foundation leader using data analytics and other forms of evidence to fight poverty, disease and inequity around the world

1.4 How the commission builds on and complements past work

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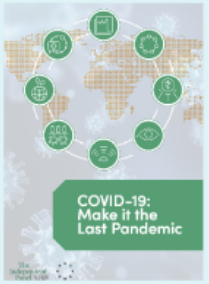
Challenges

Prepare for different types of societal challenges

VS

Focusing on single categories of challenges like pandemics *(as did the Independent Panel on Pandemic Preparedness and Response)*

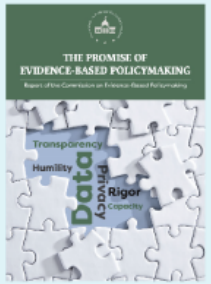


Decisions

Recognize distinct needs of different types of decision-makers

VS

Targeting single types of decision-makers like government policymakers *(as did the Commission on Evidence-based Policymaking)*



Evidence

Consider complementarities of different types of evidence

VS

Prioritizing single evidence sources like data analytics *(as did the G7 Science Academies)*

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1.5 Connection to COVID-END (1 of 2)

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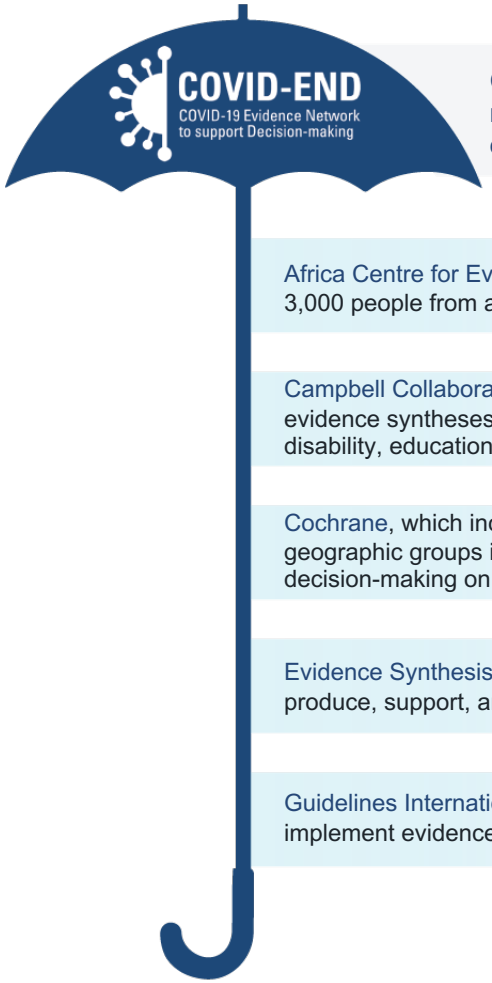

COVID-END acts as 'umbrella' for these partners in the time-limited evidence response to COVID-19, and many of them in turn act as an umbrella for many other partners in addressing a broad range of societal challenges, such as:

Africa Centre for Evidence, which supports the Africa Evidence Network in bringing together more than 3,000 people from across Africa to support evidence-informed decision-making

Campbell Collaboration, which supports teams around the world to prepare and support the use of evidence syntheses in areas like business and management, climate solutions, crime and justice, disability, education, international development, and social welfare

Cochrane, which includes review groups around the world that prepare evidence syntheses and geographic groups in 45 countries and thematic networks in 13 domains that support evidence-informed decision-making on health-related topics

Evidence Synthesis International, which supports evidence-synthesis organizations around the world that produce, support, and use evidence syntheses

Guidelines International Network, which supports 130 organizations around the world that develop and implement evidence-based guidelines

Building from the *COVID-19 Evidence Network to support Decision-making* (COVID-END), a partnership of 57 partners, world-leading evidence synthesis, technology assessment and guideline groups.

***Note:** full version available as PDF*

1.5 Connection to COVID-END (2 of 2)

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1.6 Timeline of key developments in using evidence to address societal challenges

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Examples of key developments in…

... how societal challenges are viewed in multi-lateral organizations

- First global mechanism to periodically achieve agreement among leading climate scientists (with the sixth global assessment being released in 2021-22) and consensus from participating governments: Intergovernmental panel on climate change (1988)
- First OECD-level commitment to time-bound targets to achieve key goals: International development targets (1996-2015)
- Second global commitment to time-bound targets to achieve key goals: Sustainable development goals (2016-30)

… how using evidence to support decision-making is viewed in multilateral organizations

- First World Bank report dedicated to the topic: World development report: Knowledge for development (1998-99)
- First UN body to transition from relying on expert opinion to using more rigorous approaches in developing recommendations: Guidelines for guidelines (2003)
- First UN strategy to nurture the capabilities and foster the enablers for data-driven action: UN secretary-general's data strategy (2020)

… how best evidence is produced to support decision-making

- Early double-blind randomized controlled trials (1943 and 1948)
- Landmark book on data visualization (1983)
- Cochrane and Campbell Collaborations established (1993 and 2000)

Note: *full version available as PDF*

1.7 Equity considerations

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One way to identify groups warranting particular attention is to use PROGRESS-Plus

- **P** Place of residence (e.g., rural and remote populations)
- **R** Race, ethnicity, culture and language (e.g., Indigenous peoples and minority ethnic, cultural and linguistic groups within a country)
- **O** Occupation and labour-market experiences more generally (e.g., those in informal or precarious work arrangements)
- **G** Gender and sex
- **R** Religion (e.g., Christianity, Islam and their respective denominations)
- **E** Educational level (e.g., numeric literacy)
- **S** Socio-economic status (e.g., economically disadvantaged populations)
- **S** Social capital/social exclusion

Plus

- **+** personal characteristics associated with discrimination (e.g., age and disability)
- **+** features of relationships (e.g., smoking parents and school expulsions)
- **+** time-dependent relationships (e.g., leaving the hospital and other instances where a person may be temporarily at a disadvantage)

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2.1 Ways of looking at challenges

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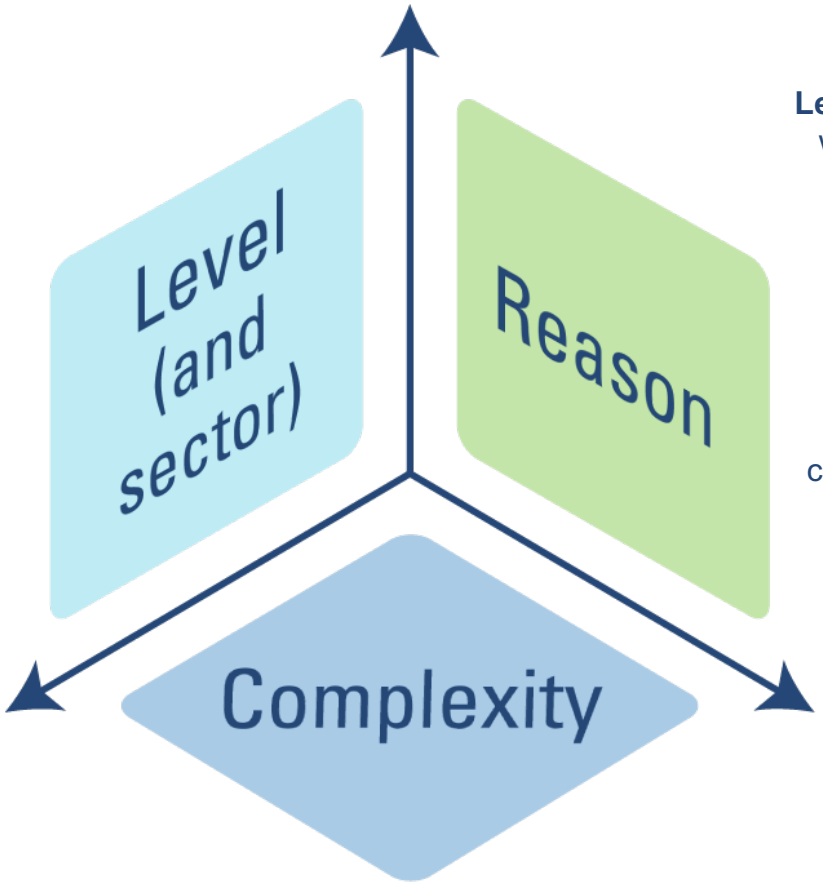

Level (and sector) at which a challenge is typically addressed

Domestic sectoral	Domestic cross-sectoral	Global (or regional) coordination
• Health systems failing to improve health outcomes and care experiences • Schools struggling with virtual instruction • Declining living standards • Terrorism	• Antimicrobial resistance • Gender-based violence • Growing levels of inequality • Lack of trust in institutions • Missed targets for the Sustainable Development Goals	• Inequitable patterns in COVID-19 vaccination • Climate change

Reason to label a challenge a problem worth paying attention to

Values	Past	Other groups within jurisdiction	Other jurisdictions	Other framing
"This problem does not reflect who we are as a society"	"This problem is getting much worse"	"This group is doing much worse than any other"	"This country is doing much worse than others like it"	"This is not an issue of insufficient numbers or an inequitable distribution of workers, but a problem of mis-aligned financial incentives"

Complexity of the underlying problem

Simple	Complicated	Complex	Complexity[3] / Wicked
Cause and effect can be easily identified and the solution can involve a single action	Causes can be identified and the solution can involve rules and processes	Some causes can be identified, others are hidden, and some may be consequences of other causes, and the solution is multi-faceted and may need to be adjusted as it is implemented	Causes are even more complex because symptoms can become causes and because feedback loops operate, so solutions are highly context specific and wrong or mistimed solutions can make the problem worse

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2.3 Ways of addressing challenges

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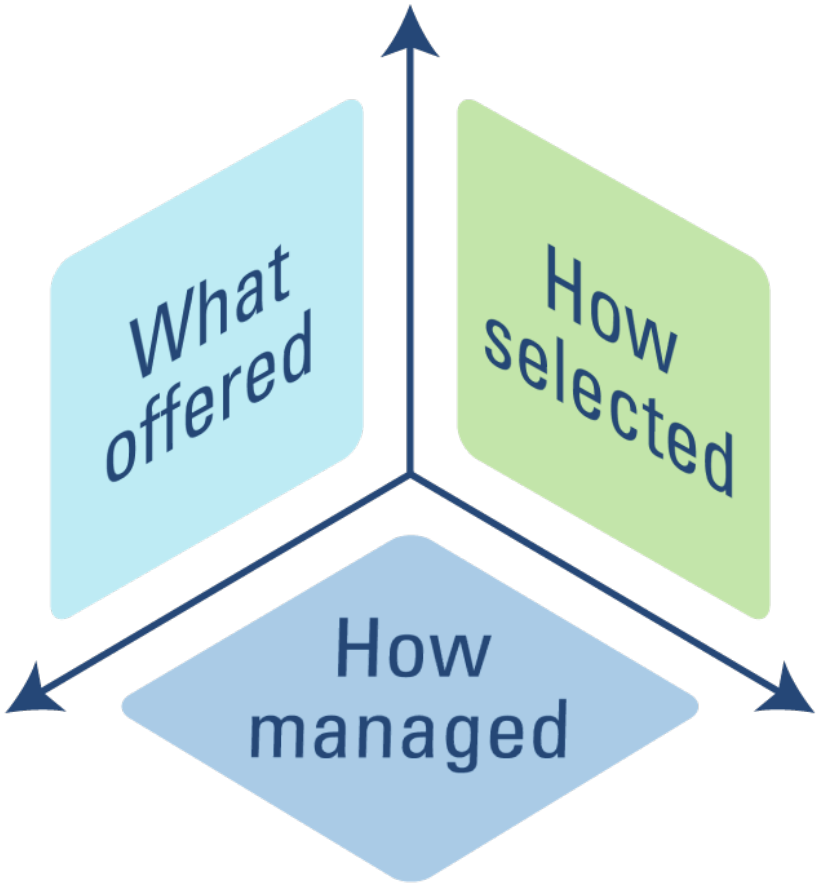

Ways of addressing challenges		Descriptions
What is being offered	Single intervention	An intervention (e.g., a policy, a program, service or product) is selected based on the certainty of the evidence that benefits outweigh harms and that the intervention is affordable to those who will pay for it and acceptable to those who receive it
	Package (or bundle) of interventions	An optimal package of interventions is selected based on the interventions that will give the greatest improvement in outcomes within a fixed budget
	Synergistic combination of interventions	An optimal combination of interventions is selected based on the likelihood that some interventions will interact with other interventions in ways that the 'whole is greater than the sum of the parts' or that they simultaneously achieve multiple targets
How it is selected or developed	Evidence-based intervention selected	An intervention is selected from among interventions that have been shown to 'work' for the same problem being experienced locally
	New intervention developed	An intervention is designed by researchers, innovators and others
	Co-designed intervention	An intervention is co-developed by those who will receive it and/or those who will offer it as well as researchers, innovators and others
	Community-led action	An intervention is developed by representatives of the community who recognized the need for the intervention and who will receive it
How it is managed over time	Portfolio management	An optimal portfolio is selected that achieves strategic objectives, reflects capacity to deliver, and balances the implementation of change initiatives and the maintenance of business-as usual while optimizing return on investment
	Systems thinking	Interventions are combined, adapted and replaced based on an understanding of patterns in their interrelationships and interactions within complex adaptive systems that are themselves constantly changing in unpredictable ways

***Note:** full version available as PDF*

2.4 Examples of approaches to prioritizing challenges to address

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Focus	Broad societal challenges operating over the long term	Mid-range challenges operating over the short term	Specific research questions where new primary research is needed now	Specific research questions where a synthesis of the best evidence globally is needed now	Specific decisions where locally contextualized evidence is needed, typically on very short timelines now
Examples	Global Priorities Institute approach to setting a research agenda	Approaches to allocating resources, such as program budgeting and marginal analysis, technology assessment, and multiple-criteria value assessment*	James Lind Alliance approach to engaging patients, caregivers and professionals in prioritizing the top 10 unanswered questions (or evidence uncertainties) on a specific topic	SPARK tool for engaging government policymakers and stakeholders in prioritizing questions for evidence syntheses about the health-system arrangements and implementation strategies needed to get the right mix of products and services to those who need them	COVID-END approach to prioritizing urgent requests from national and sub-national policymakers for rapid evidence syntheses to be prepared in 1-10 days and funded out of a common pool over a one-year period
Pros	Attention to the very long term, including the many generations that will come after us, and to existential risk, such as the extinction of the human species	Attention to how financial and human resources can best be allocated within a sector to achieve the greatest value for money	Research priorities being set by those who need to use the resulting evidence and with a check that best evidence doesn't already exist for each potential priority	Same as previous, as well as the focus on evidence synthesis to complement primary research	Use of proxy indicators for likelihood of impact (high-level request and interest from multiple jurisdictions), a check that best evidence doesn't already exist or isn't already being synthesized, and checks that the work can be completed in the timeline requested and within bi-monthly spending targets

Note: *full version available as PDF*

2.5 Global commission reports by challenge type

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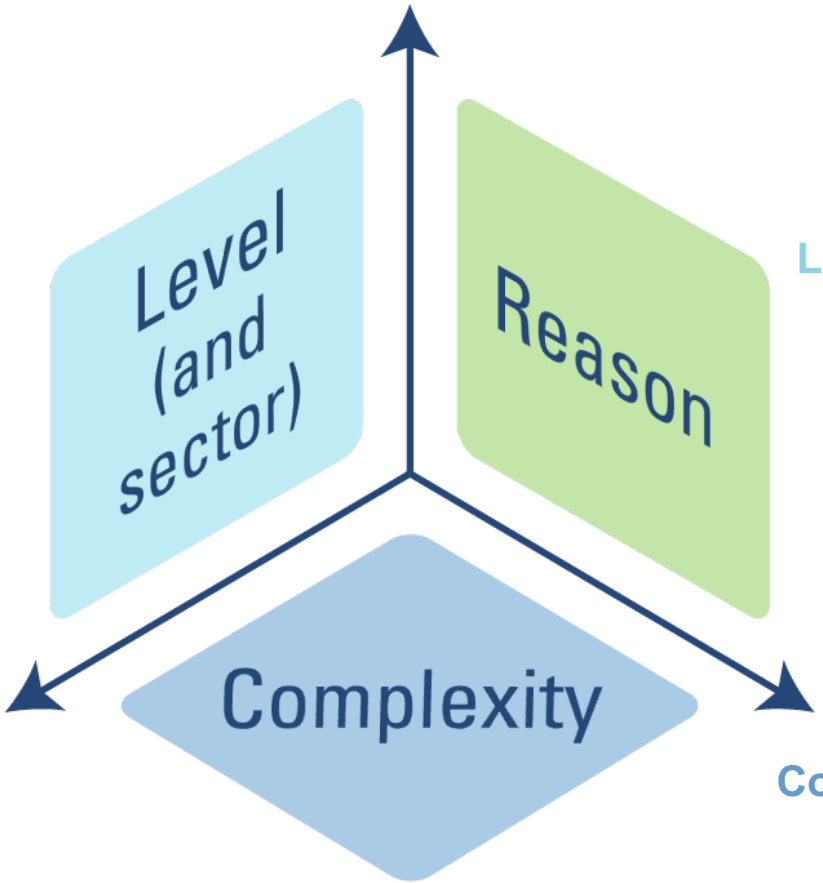

Findings from our analysis of the 70 commission reports published since January 2016

Level (and sector)

- Most commission reports (47) address both domestic and global levels
- Only three sectors have been the focus of more than seven commission reports, namely health, public safety and justice, and food safety and security, with 23, 17 and 12 reports, respectively
- Only four Sustainable Development Goals (SDGs) have been the focus of more than six commission reports, namely 3 - Good health and well-being, 16 - Peace, justice and strong institutions, 2 - Zero hunger, and 8 - Decent work and economic growth with 26, 16, 10 and 7 reports, respectively

Reasons

- Most commission reports (43) propose a package (or bundle) of interventions, albeit not with the rigour of a report like Disease Control Priorities 3, but don't speak to how the interventions were developed or how they should be managed over time

Complexity

- Nearly half of the commission reports (33) labeled the problem they were addressing as complex and none used the labels simple, complicated or wicked
- The most common reason used to justify labelling a challenge a problem worth paying attention to were values (60) and comparisons to the past (52)
- Most challenges were framed positively as goals or targets (39) rather than negatively as problems (31)

Note that a commission report can address more than one sector and SDG so the numbers do not match the number of reports.

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3.1 Steps in deciding whether and how to take action

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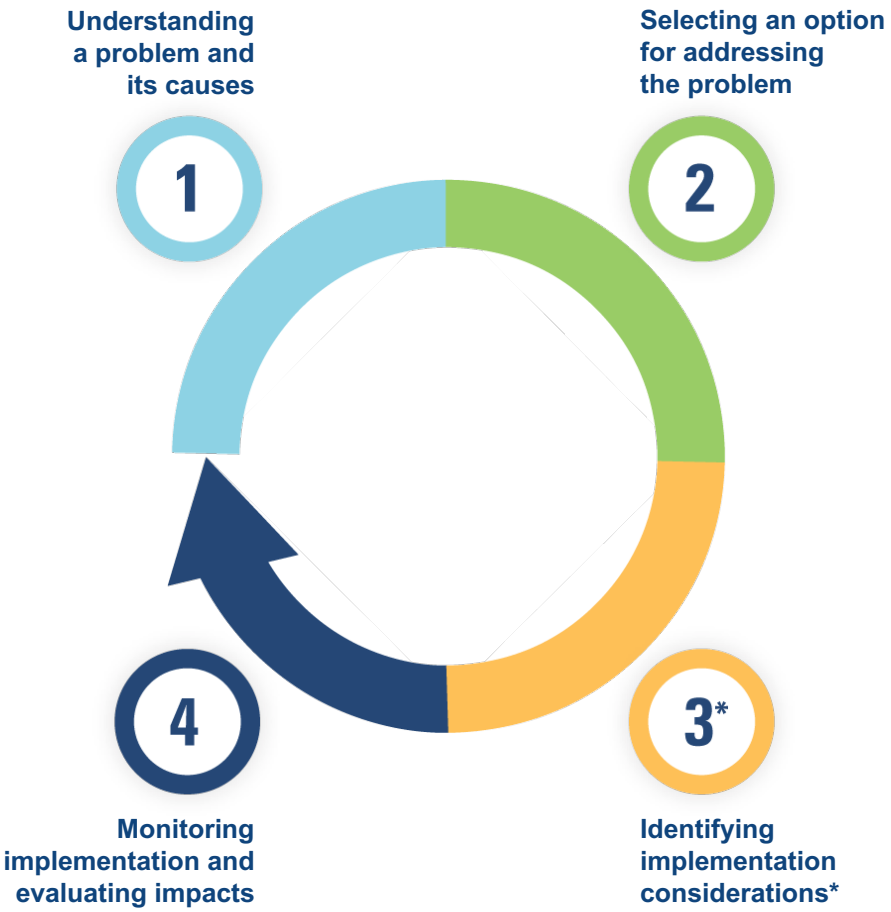

*or ensuring the chosen option makes an optimal impact at acceptable cost

Steps	Related questions	Decision for a government policymaker	Decision for a citizen or community leader
1	How big is the problem? Is the problem getting worse or is it bigger here than elsewhere? How do different people describe or experience the problem and its causes?	Should we pay attention to this problem given all the others we face as a government?	Should I pay attention to this problem given all the others that the people and community I care about face?
2	What good might come of it? What could go wrong? Does one option achieve more for the same investment? Can we adapt something that worked elsewhere while still getting the benefits? Which groups support which option?	Should we take any action to address this problem and, if yes, which option should we select?	Should I take any action to address this problem and, if yes, what action (e.g., talk to others about changing their behaviour, work with fellow community members on local solutions, or contact elected officials)?
3	What will get in the way or help us in reaching and achieving desired impacts among the right people? What strategies should we use to reach and achieve desired impacts among the right people?	Should we take any additional steps to increase the chance that the selected option does what we intend it to do?	Should I work with fellow community members and encourage elected officials to take steps to ensure the selected option reaches the people and community I care about?
4	Is the chosen option reaching those who can benefit from it? Is the chosen option achieving desired impacts?	Should we take any additional steps to give us the numbers we need to tell a success story or to correct our course if need be?	[As above]… to ensure we have the numbers we need to know whether we're succeeding or failing?

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3.2 Four types of decision-maker and how each may approach decisions

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Government policymakers

Need to be convinced there's a compelling problem, a viable policy and conducive politics

Organizational leaders

(e.g., business and non-governmental organization leaders)
Need a business case to offer goods and services

Professionals

(e.g., doctors, engineers, police officers, social workers and teachers)
Need the opportunity, motivation and capability to make a professional decision or to work with individual clients to make shared decisions

Citizens

(e.g., patients, service users, voters and community leaders)
Need the opportunity, motivation and capability to make a personal decision, take local action or build a social movement

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3.3 Government policymakers and the context for their use of evidence

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Questions	Prompts
What types of decisions do they make?	• Domestic sectoral, domestic cross-sectoral or global (e.g., as a member state in the UN system) • Routinized vs ad hoc (e.g., adding a product or service to an existing benefits package using established procedures vs creating a new benefits package) • Products and services vs the governance, financial and delivery arrangements that determine whether the right mix of products and services get to those who need them • One policy instrument vs another (see **exhibit 7.1** for examples of information/education, voluntary, economic and legal policy instruments)
Where and how are decisions made?	• National, provincial/state or local level of government • Executive, legislative or judicial branch of government • If executive: cabinet or other cross-government entity, minister or secretary (and their political staff), and public servants in central agencies, ministries or departments, government agencies, and regulatory bodies • Personal decision (command), consult, consensus or vote • Time constraint
What factors may influence decision-making?	• Need a compelling problem, a viable policy and conducive politics to get an issue onto the decision agenda • Make decisions within institutional constraints (e.g., veto points and legacies of past polies), contending with interest-group pressure (e.g., support or opposition from those who will gain or lose a lot), considering both 'what is' (e.g., data analytics) and 'what should be' (values), and in light of external events (e.g., economic crisis)
What 'structures' may provide a way in for evidence (and for institutionalizing evidence support)	• Internal evidence-support coordination unit and contributing data-analytics, evaluation, behavioural-insights and other units • Internal decision-support units • Internal government science advisor units • External decision support from advisory groups, assessment panels, independent commissions, monitoring boards, review committees, and technical task forces • Internal units for budgeting and planning, monitoring and auditing • External support from management-consulting firms • External support from normative-guidance and technical-assistance units in the UN system and other multilateral organizations • External support from global public-good producers
What 'processes' may provide a way in for evidence?	• Budgeting, planning and monitoring • Policies, procedures, handbooks and other tools to support workflows • Hiring criteria, performance-review criteria, promotion criteria, turn-over rate, and professional development for policy, program, technical and library staff • Stakeholder, public and media engagement • Legislative debate and committee meetings • Elections and political party platforms • Global and regional programs of action and accountability frameworks

***Note:** full version available as PDF*

3.7 Ways that evidence can be used in decision-making

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Ways that evidence can be used	Explanation	Examples drawn from the COVID-19 pandemic and one other sector
Conceptual or enlightenment	Evidence changes the way we think about a problem, option(s) and/or implementation consideration(s)	• Ten different types of 'indirect'* evidence were marshalled to collectively support the hypothesis that SARS-CoV-2 is transmitted primarily by the airborne route rather than by large respiratory droplets (the problem) and hence that additional options (like ventilation systems) need to be pursued to reduce the spread of COVID-19
Instrumental	Evidence directly informs a specific decision about a problem, option or implementation consideration	• The findings from the RECOVERY randomized controlled trial, alongside six other smaller trials analyzed in an evidence synthesis, led to the widespread prescribing of dexamethasone in COVID-19 patients needing oxygen or ventilation, and an estimated saving of 1 million lives worldwide within nine months
Symbolic	Evidence is selectively cited (or 'cherry picked') or new research is selectively commissioned to justify a decision made for reasons other than that evidence**	• The U.S. government's purchase and stockpiling of 29 million hydroxychloroquine pills was justified using a single non-randomized study involving only 26 hospitalized patients (six of whom were lost during follow-up) and the 'gut instinct' of a U.S. president
Tactical	Lack of evidence is used to justify action or inaction	• Lack of evidence about the transmission of SARS-CoV-2 by aerosols (as opposed to heavier droplets) was used by event organizers to argue that they could continue convening crowded indoor events without limiting the number of attendees or mandating the wearing of masks (rather than heeding the precautionary principle**)

And reasons why evidence is not used:

- no evidence on the topic yet exists (although this can only be known after searching in the right places for it)
- decision-makers aren't aware of the available evidence
- decision-makers don't consider it to be of high quality or to have implications for their context
- decision-makers have made a decision for other reasons (e.g., government policymakers may have faced institutional constraints, interest-group pressure, competing values within the governing party or their constituents)

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3.8 Global commission reports by decision-maker type

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Government policymakers were the most frequent target audience, commission members, and focus of broader engagement (citizens were the least frequent)

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4.1 Forms in which evidence is typically encountered in decision-making

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4.2 Definitions of forms in which evidence is typically encountered

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Forms of evidence	Definitions	Steps where it add the greatest value			
Data analytics	Systematic analysis of raw data in order to make conclusions about that information	1			4
Modelling	Use of mathematical equations to simulate real-world scenarios (i.e., what is likely to happen if we don't intervene) and options (i.e., what happens if we intervene) in a virtual environment	1	2		
Evaluation	Systematic assessment of the implementation (monitoring) and impacts (evaluation) of an initiative for the purposes of learning or decision-making				4
Behavioural / implementation research	Study of methods to promote the systematic uptake of effective approaches into routine practices at the personal, professional, organization and government levels (implementation research) Systematic examination of what people (citizens and professionals) do, what drives them to do it, and what can sustain or change what they do (behavioural research)			3	
Qualitative insights	Study of (typically non-numerical) data — obtained from interviews, focus groups, open-ended questionnaires, first -hand observation, participant-observation, recordings made in natural settings, documents, and artifacts — to understand how individuals and groups view and experience problems, options, implementation considerations (barriers, facilitators and strategies), and metrics.	1	2	3	4
Evidence synthesis	Systematic process of identifying, selecting, appraising and synthesizing the findings from all studies that have addressed the same question in order to arrive at an overall understanding of what is known, including how this may vary by groups (i.e., racialized communities) and contexts (i.e., low socio-economic neighbourhoods)	1	2*	3	4
Technology assessment/ cost-effectiveness analysis	Assessment of all relevant aspects of a 'technology,' including safety, effectiveness, and economic, social and ethical implications (technology assessment), with an evidence synthesis often contributing to the assessment of effectiveness Comparison of the relative outcomes (effectiveness) and costs of two or more options, again with an evidence synthesis often contributing to the assessment of effectiveness		2*	3	4
Guidelines	Systematically developed statements that recommend a particular course of action, often for citizens and professional and sometimes for organizations and governments, with one or more evidence syntheses contributing to the assessment of effectiveness, values and preferences, and other factors		2		

*Adds the greatest value in this step but can add value in other steps

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4.3 Matching decision-related questions to forms of evidence

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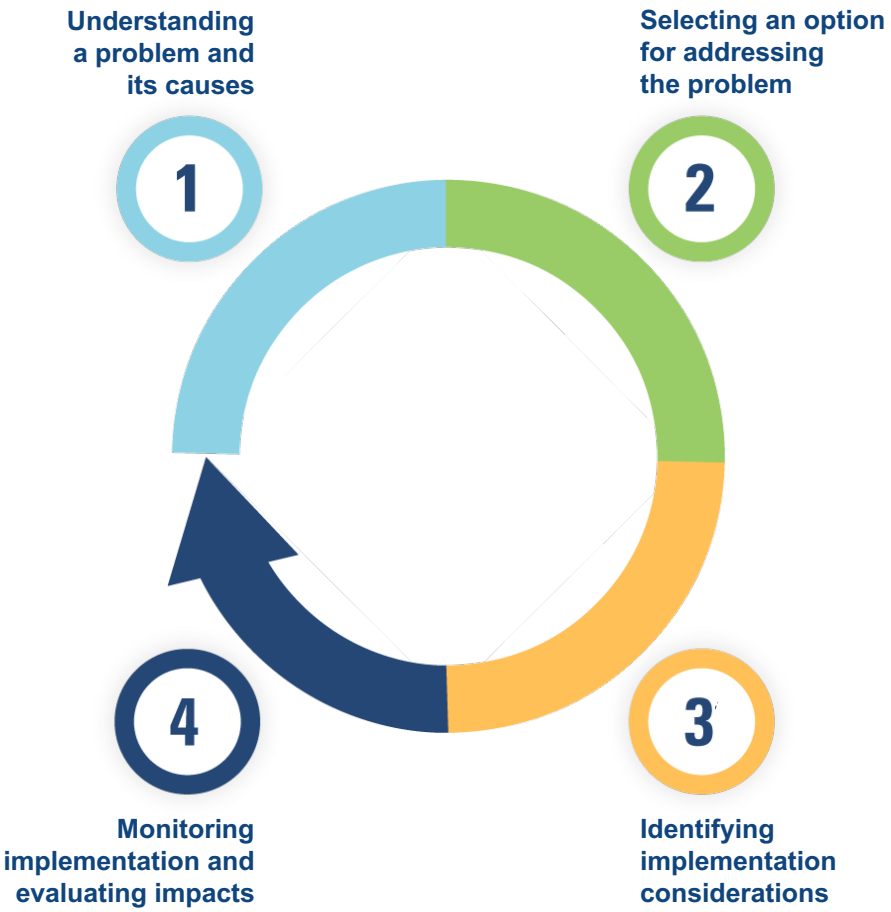

Steps	Related questions	Examples of helpful forms of evidence
1	**Indicators** – How big is the problem?	Data analytics
	Comparisons – Is the problem getting worse or is it bigger here than elsewhere?	Data analytics *(e.g., using administrative databases or community surveys)*
	Framing – How do different people describe or experience the problem?	Qualitative studies *(e.g., using interviews and focus groups)*
2	**Benefits** – What good might come of it?	Evaluations *(e.g., effectiveness studies like randomized controlled trials)*
	Harms – What could go wrong?	Evaluations *(e.g., observational studies)*
	Cost-effectiveness – Does one option achieve more for the same investment?	Technology assessment / cost-effectiveness evaluation
	Adaptations – Can we adapt something that worked elsewhere while still getting the benefits?	Evaluations *(e.g., process evaluations that examine how and why an option worked)*
	Stakeholders' views and experiences – Which groups support which option?	Qualitative studies *(e.g., using interviews and focus groups to understand what is important to citizens)*
3	**Barriers and facilitators** – What (and who) will get in the way or help us in reaching and achieving desired impacts among the right people?	Qualitative studies *(e.g., using interviews and focus groups to understand what is important to citizens)*
	Benefits, harms, cost-effectiveness, etc. of implementation strategies – What strategies should we use to reach and achieve desired impacts among the right people?	See 'selecting an option'
4	Is the chosen option reaching those who can benefit from it?	Data analytics
	Is the chosen option achieving desired impacts at sufficient scale?	Evaluation

***Note:** full version available as PDF*

4.4 Interplay of local (national or subnational) evidence and syntheses of global evidence

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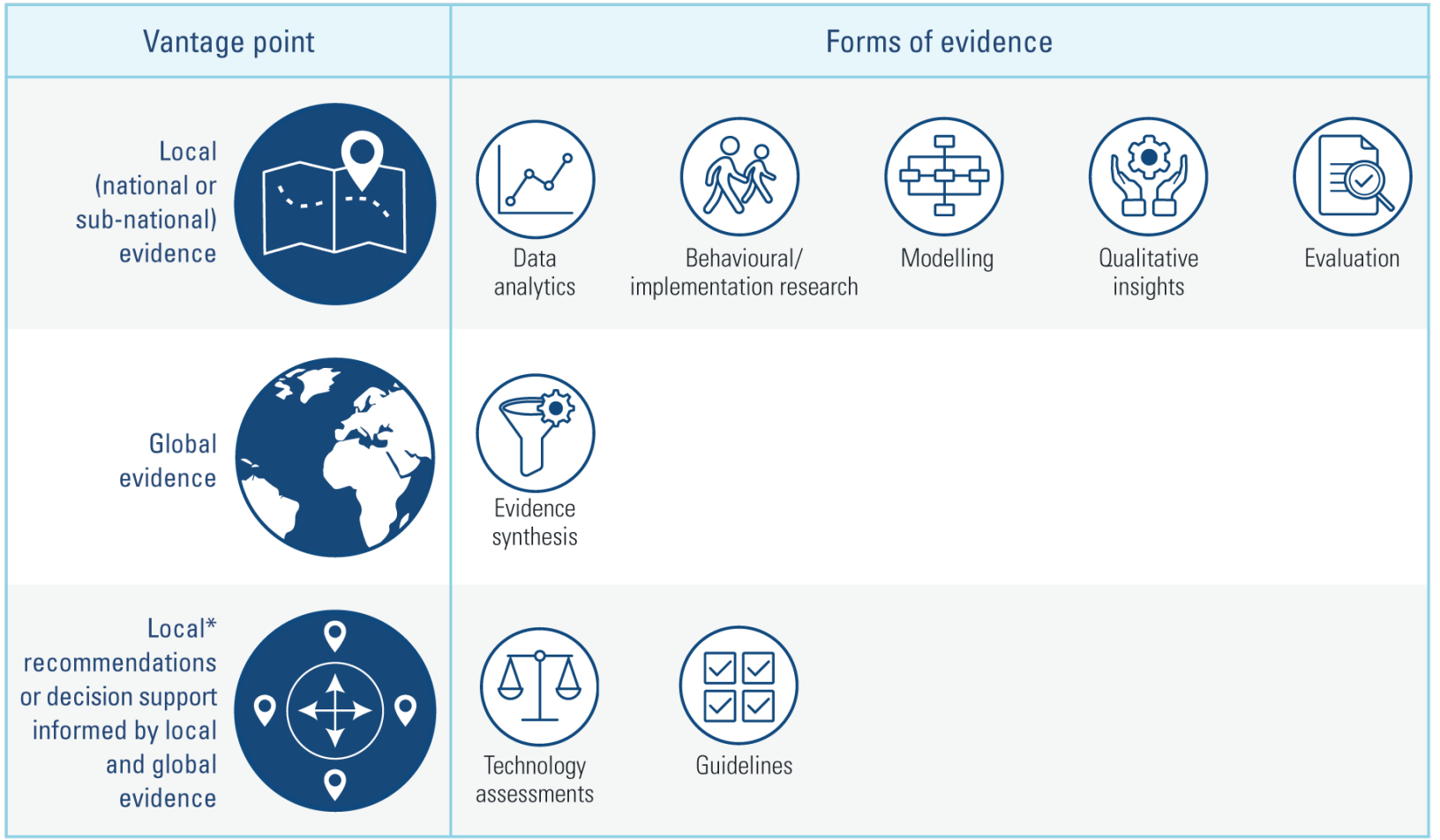
Decision-makers need both local evidence (i.e., what has been learned in their own country or state) and global evidence (i.e., what has been learned around the world, including how it varies by groups and contexts)

Decision-makers may be provided with recommendations that draw on both local and global evidence



Other forms of analysis – policy, systems and political analysis – can inform and complement these types of evidence

Note: *full version available as PDF*

4.5 Distinguishing high from low quality evidence

Global Commission on Evidence to Address Societal Challenges

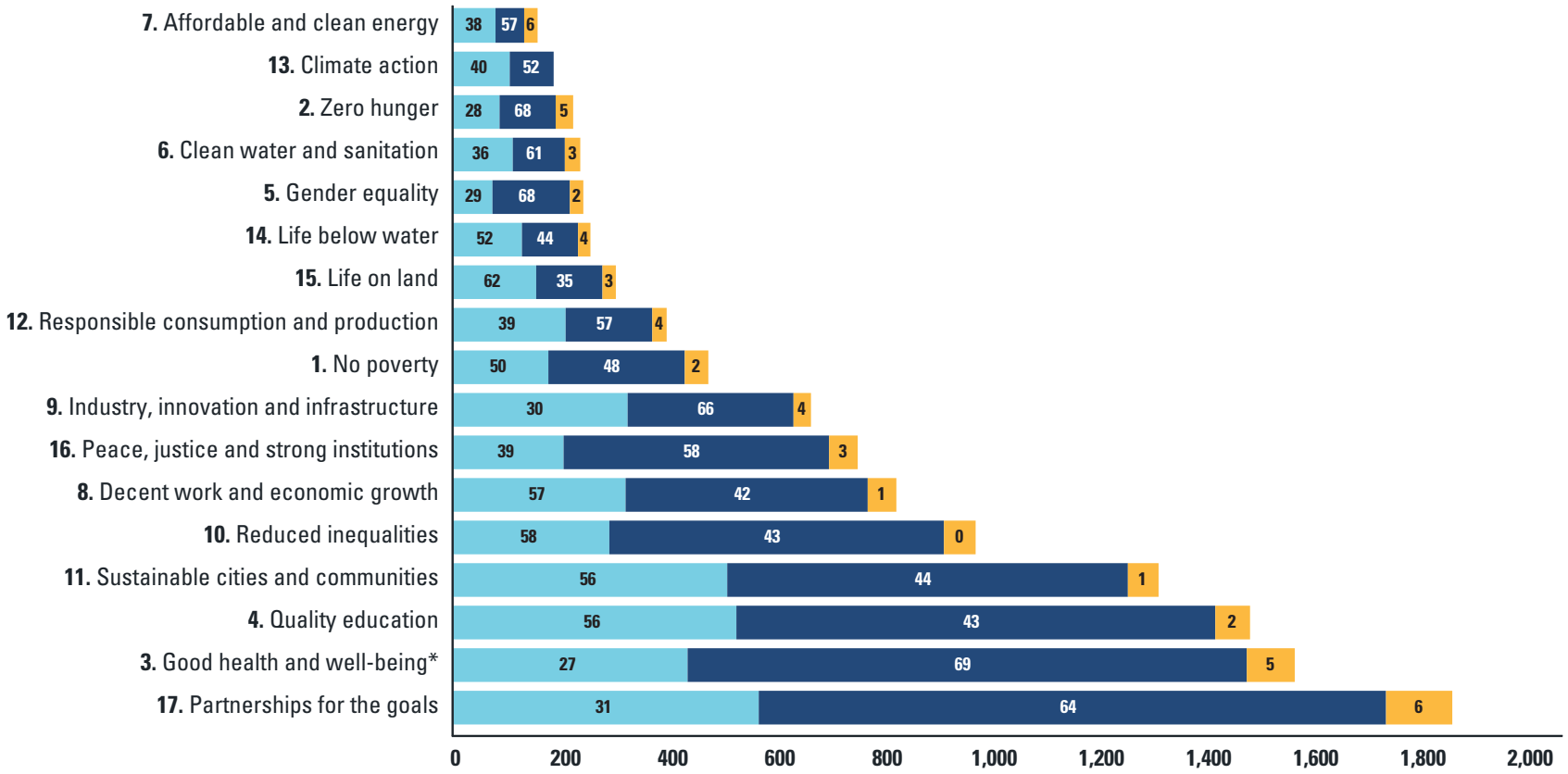
Issue	Response
Studies (and guidelines) vary in their quality (or trustworthiness)	• Quality-assessment (or critical-appraisal) tools have been developed for specific study designs (e.g., randomized controlled trial), for broad categories of study designs (e.g., observational study, qualitative research, and evidence synthesis), and for guidelines – see the table in the appendix for examples (RoB2, ROBINS-I, JBI checklist, AMSTAR, and AGREE II) • Tools may yield a summary judgement (e.g., low risk of bias using RoB2 or ROBINS-I), a score that some group into ranges (e.g., high quality using AMSTAR), a set of scores (e.g., six domains using AGREE II), or a set of considerations that can inform a summary judgement (e.g., JBI checklist)
Bodies of evidence vary in their certainty (or the confidence you can place in them)	• Certainty-assessment tools have been developed for a body of evidence addressing the same question (e.g., effect of an intervention on a specific outcome or the meaning that citizens attach to a particular phenomenon) – see the table in the appendix for two examples (GRADE and GRADE CERQual) • Tools may yield a summary judgement about confidence that the true effect is similar to the estimated effect (e.g., high certainty with GRADE) or that the phenomenon of interest is well represented by a qualitative study finding (with GRADE CERQual) • A summary judgement about the certainty of an effect estimate is more helpful than a test of statistical significance demonstrating that an intervention 'works' or 'doesn't work' (which will happen by chance one in 20 times if statistical significance is set at the 0.05 level)
Recommendations vary in their strength	• Strength-assessment tools have been developed for guideline recommendations (e.g., GRADE) – see the table in the appendix for an example (a different aspect of GRADE than the one noted above) • Tools may yield a summary judgement about whether most decision-makers would choose to proceed with an intervention (e.g., strong with GRADE) or whether most would need to carefully weigh the pros and cons of an intervention

Some sources of (or approaches used to generate) evidence can be hard to judge	• No widely accepted tools exist to assess how much confidence can be placed in:
	  • An expert (which we return to later in this chapter and, in the case of expert opinion about model parameters, in the appendix), although examples like The Good Judgement Project do exist for forecasting
	  • Models used in generating some types of evidence (which we address in the appendix and which we addressed in exhibit 4.4 when talking about climate-change models)
	  • An artificial-intelligence algorithm used in generating some types of evidence, although examples like TRIPOD are starting to emerge

***Note:** full version available as PDF*

4.6 Coverage, quality and recency of evidence syntheses (1 of 2)

LEGEND
- Light blue = low quality
- Dark blue = medium quality
- Gold = high quality



**partially covered*

Of the 4,131 SDG-related evidence syntheses included in Social Systems Evidence as of 12 August 2021:

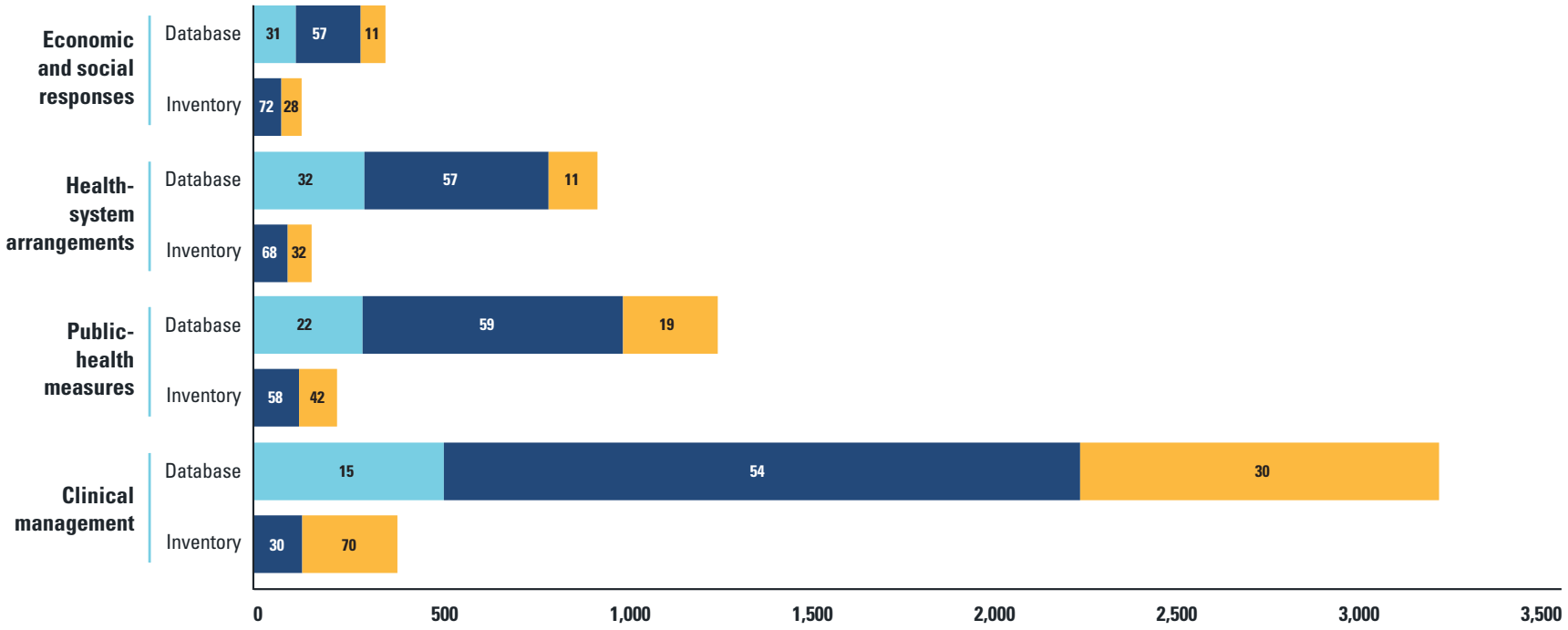
- coverage was uneven, with seven SDGs addressed by only 263 syntheses
- quality was uneven, with seven SDGs addressed by a stock of evidence synthesis in which at least half are of low quality
- all SDGs have a median year of last search that is five or six years ago (2016 or 2017)
- only between one in 10 and one in 20 evidence synthesis about most SDGs included at least one study from a low- and middle-income country

Note that the count for SDG 17 is likely an overcount and the count for SDG 3 is a significant undercount

***Note:** full version available as PDF*

4.6 Coverage, quality and recency of evidence syntheses (2 of 2)

LEGEND
- Light blue = low quality
- Dark blue = medium quality
- Gold = high quality



Of the 4,256 and 562 COVID-19-related evidence syntheses included in the full COVID-19 database and the COVID-END inventory of best evidence syntheses, respectively, as of 1 August 2021:

- coverage was uneven, with only 237 evidence syntheses addressing economic and social responses to COVID-19
- quality was uneven, with roughly one quarter of COVID-19 evidence synthesis being low quality and over half medium quality
- three of the four COVID-19 response categories have a median date of last search that is within 4.5 months of WHO declaring a pandemic

Note that the much more recent median search date for clinical management – 12 months after the pandemic declaration and 4.5 months before the analysis was completed – was driven by the large number of drug-treatment comparisons from a single source

Note: *full version available as PDF*

4.7 Living evidence products

Global Commission on Evidence to Address Societal Challenges

Type of evidence	Examples of living versions
Data analytics 	• Public Health England maintained a set of data analytics about COVID-19 in the UK, while Opportunity Insights' Economic Tracker maintained a set of data analytics about COVID-19 impacts on the economic prospects of people, businesses and communities in the US • The Organization for Economic Co-operation and Development (OECD) maintains a set of data analytics about economic activity for most OECD and G20 countries
Modelling 	• European COVID-19 Forecast Hub presented every week a forecast of cases and deaths per week per 100,000 people – both overall and by country – based on an ensemble of models, while the Institute for Health Metrics and Evaluation updated every week a model of projected deaths from COVID-19, both those reported as COVID-19 and those attributed to COVID-19, that could be used to explore a range of scenarios (e.g., about mask use and vaccine uptake) in specific countries • Intergovernmental Panel on Climate Change presents every five-to-seven years an assessment report that draws on modeling of human-induced climate change, its impacts, and possible response options, although strictly speaking this is a synthesis of findings from models (which may or may not be living) informed by a robust process of intermodel comparisons (which is undertaken by different scientists for each assessment report)
Evidence syntheses 	• COVID-NMA updated every week evidence syntheses about all drug treatments for COVID-19 (and later added preventive therapies and vaccines) • Global Carbon Project updates annually – based on modeling and empirical studies – estimates of the five major components of the global carbon budget (anthropogenic carbon-dioxide emissions and their redistribution among the atmosphere, ocean, and terrestrial biosphere in a changing climate) and their associated uncertainties
Guidelines 	• National COVID-19 Clinical Evidence Task Force updated every two weeks evidence-based COVID-19 guidelines for Australian clinicians

***Note:** full version available as PDF*

4.8 Best evidence vs other things (and how to get the most of other things)

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If presented with…	…which bring with it a risk of…	…then…	…or better yet…
Single study *(including preprint)* 	'Hubcap chasing,' or giving attention to each study that is actively promoted by the authors, their media-relations office or others (as happened with the high-risk-of-bias study about hydroxychloroquine discussed in exhibit 3.7 and the now retracted study about a link between vaccines and autism)	Ask for a critical appraisal of the study using widely accepted quality criteria (to understand the risk of bias) and recognize that a statistically significant finding (at the 0.05 level) will be found in 1 in 20 studies (to understand the play of chance)	Add the study to a 'living' evidence synthesis where it can be understood alongside other studies addressing the same question (or consider it as one of many types of local evidence to be put alongside the best global evidence)
Expert opinion 	'Squeaky wheel getting the grease' or giving attention to those who command the greatest attention by virtue of reputation, persistence or other factors (as happened with widely viewed documentaries about the Scared Straight program even after systematic reviews had found evidence of harm and no evidence of benefit)	Ask the expert to share the evidence (ideally evidence syntheses) on which the opinion is based, as well as the methods used to identify, assess, select and synthesize it	Engage the expert in working through what specific evidence syntheses mean for a specific jurisdiction
Expert panel 	GOBSATT, or 'good old boys sitting around the table' offering their personal opinion (as happened with a WHO guideline panel recommending mass de-worming programs even after systematic reviews found them to have little to no effect on key outcomes)	Ask the panel members to share the evidence (ideally evidence syntheses) on which their input and recommendations are based, as well as the methods used to identify, assess, select and synthesize it	Add methods experts to the panel (or secretariat), pre-circulate the best local and global evidence, support robust deliberation, and make explicit which recommendations are based on what strength of evidence
Jurisdictional scan 	'Group think,' or people in many jurisdictions relying on people in one jurisdiction who are willing to share their experiences and innovations but haven't yet evaluated them	Ask or look for any available supporting evidence or plans for generating it	

Note: *full version available as PDF*

4.12 Weaknesses in a health-research system

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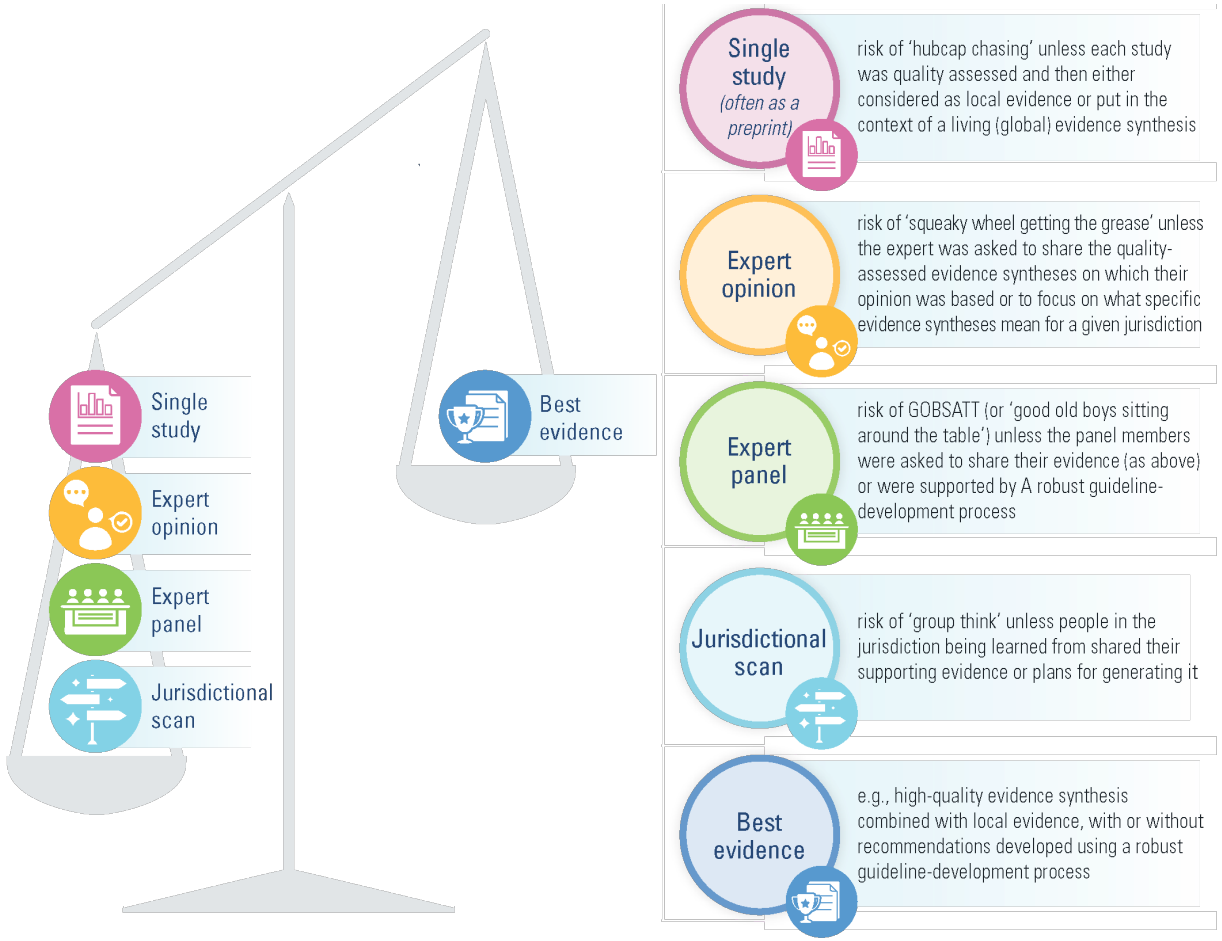
- Lack of **global coordination** of evidence communities, with each ideally addressing a globally prioritized challenge using systematic and transparent methods and a full array of data sources (e.g., study registries, regulatory agencies, and administrative databases)
- Lack of focus of evidence communities on maintaining **living evidence syntheses** that examine all interventions addressing a prioritized challenge (i.e., a network meta-analysis rather than pairwise comparisons only)
- Lack of focus of evidence communities on identifying **harms** arising from interventions as well as benefits (and more generally including a broader array of study designs and types of data)
- Lack of sharing of **individual participant data** and its use to examine how findings vary by type of participant, setting or other factors and hence how interventions can be better personalized or contextualized
- Lack of **inclusion** in evidence communities of representatives from all relevant evidence groups (e.g., researchers conducting primary studies like trials, evidence synthesizers and guideline developers), all relevant types of decision-makers, and all relevant types of evidence intermediaries
- Lack of use by evidence communities of a range of **new approaches** to become more efficient and timely in their work (e.g., machine learning and crowd-sourcing contributions to their work)
- Lack of **reporting** about the gaps in and quality and transparency of primary studies (including conflicts of interest) as part of a feedback loop meant to support learning and improvement

Note: *full version available as PDF*

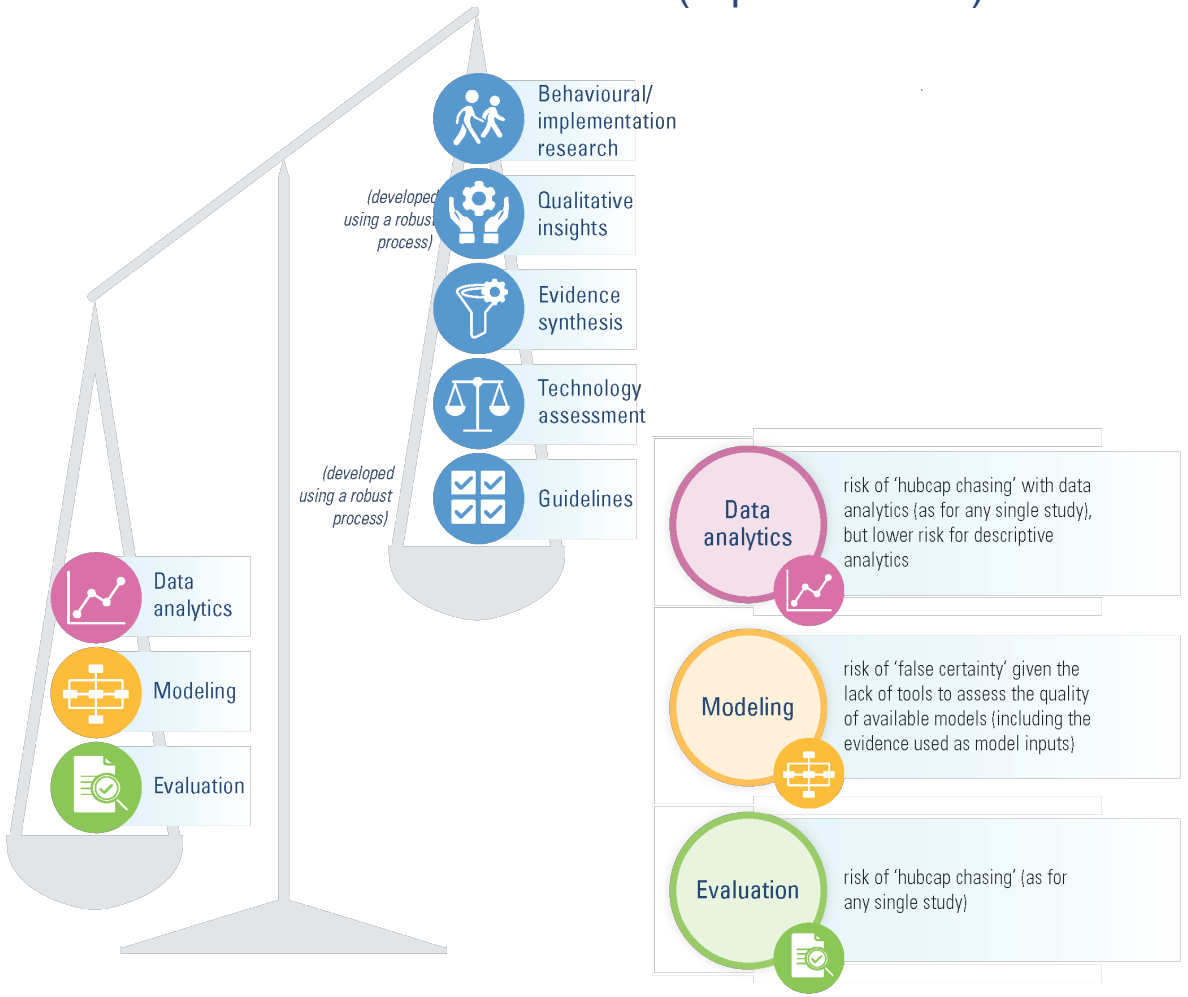
4.13 Weaknesses in many COVID-19 evidence-support systems

Global Commission on Evidence to Address Societal Challenges

'Other things' than best evidence that were more typically encountered by COVID-19 decision-makers (& potential risk)



Forms evidence that were more typically encountered by COVID-19 decision-makers (& potential risk)



4.14 Features of an ideal national evidence infrastructure

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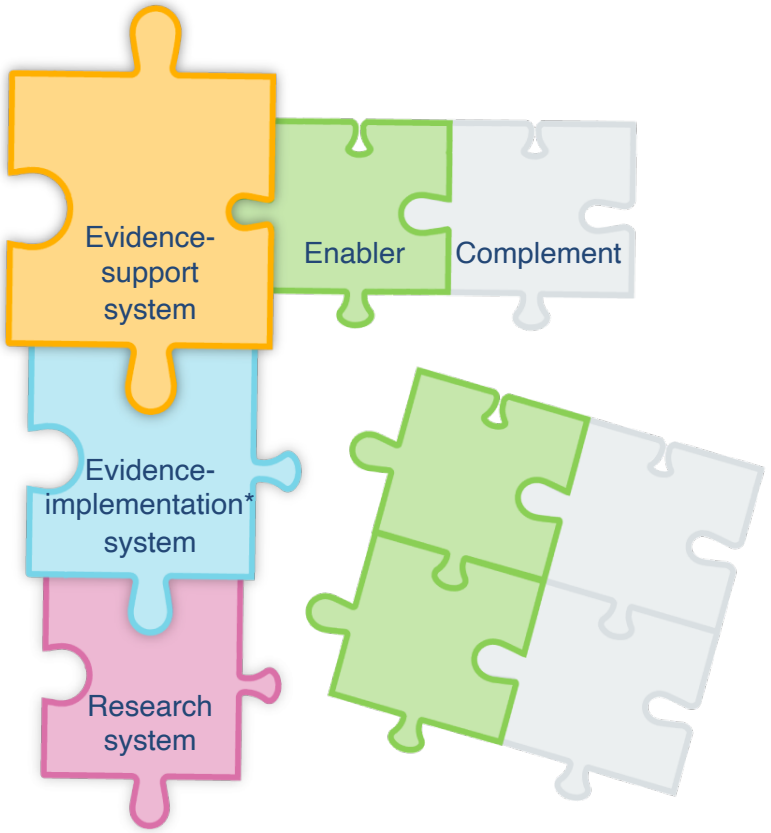
Giving much greater attention to the evidence-support system, and ongoing attention to the evidence-implementation system, will be key to future efforts to use evidence in addressing societal challenges



Evidence-support system - Grounded in an understanding of a local context (including time constraints), demand-driven, and focused on contextualizing the evidence for a given decision in an equity-sensitive way – examples of infrastructure:

- evidence-support coordination office (for all of government, with or without additional offices in key departments or ministries)
- evidence units with expertise in each of eight forms of evidence (e.g., behavioural-insights unit)
- processes to elicit and prioritize evidence needs, find and package evidence that meets these needs within set time constraints, build capacity for evidence use (e.g., evidence-use workshops and handbook), prompt evidence use (e.g., cabinet-submission checklist), and document evidence use (e.g., evidence-use metrics)

While such infrastructure is most relevant to government policymakers and the leaders of very large organization, similar types of infrastructure can be tailored to the leaders of smaller organizations, as well as professionals and citizens

Enabler - Enabled in systematic and transparent ways both by those within government and through strategic partnerships with evidence intermediaries and producers outside government, such as domestic evidence intermediaries and global purveyors of global public goods and technical assistance

Complement - Complemented by those operating other parts of what the UN calls its 'quintet of change,' namely foresight and innovations.

Evidence-implementation* system - Grounded in an understanding of evidence-related processes, driven by a mix of demand and supply considerations, and focused on cycles of synthesizing evidence, developing recommendations, disseminating them to decision-makers, implementing them, evaluating their impacts, and incorporating lessons learned in the next cycle – examples of infrastructure:

- evidence-synthesis, guideline and implementation units
- processes to build evidence into existing workflows (e.g., electronic client records, digital decision-support systems, web portals, and quality-improvement initiatives) and share it across them

While such infrastructure is most relevant to professionals and citizens, similar types of infrastructure can be tailored to government policymakers and organizational leaders

Research system - Grounded in an understanding of disciplinary perspectives and research methods, driven by supply considerations like curiosity, and focused in conducting research that may or may not aim to contribute to the evidence taken up in the evidence-support evidence-implementation systems

- university departments and units
- processes to reward activities (e.g., peer-reviewed grants and publications), which could be expanded to activities with a greater likelihood of achieving impacts (e.g., engagement with and responsiveness to decision-makers)

Such infrastructure is most relevant to researchers

**We use the term evidence-implementation system to distinguish it from the evidence-support system. Some recent descriptions of what we mean by an evidence-implementation system have called this an evidence ecosystem. We have avoided this term both because it confuses those who are used to the literal meaning of an ecosystem and because it does not capture this system's focus on implementation.*

***Note:** full version available as PDF*

4.15 Global commission reports by form of evidence

Global Commission on Evidence to Address Societal Challenges

Many reports made general recommendations about data collection and sharing, but they did not make specific recommendations about harnessing data analytics to support decision-making

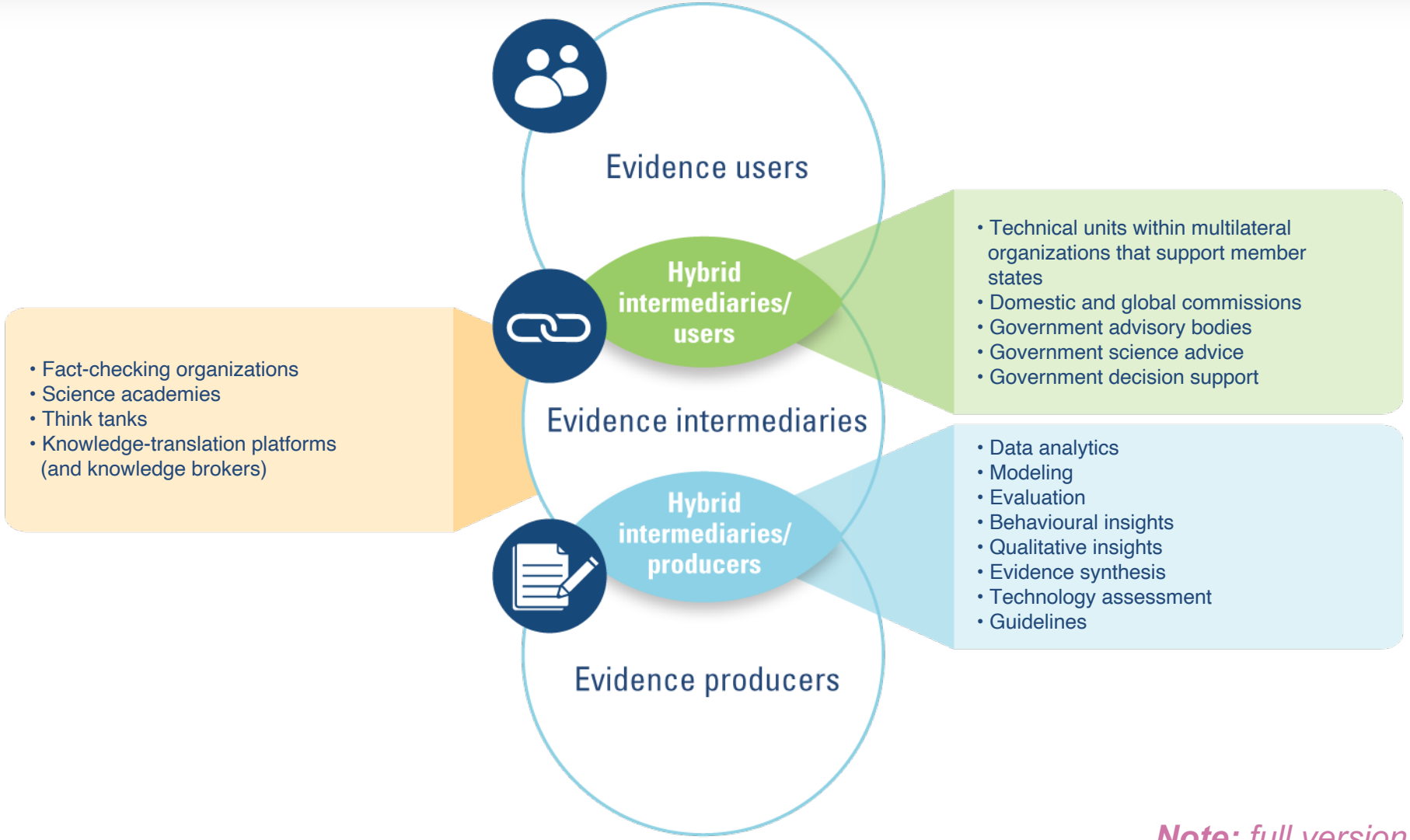
Modeling was the most frequent form drawn upon

Evidence types		Number of commission reports
Basis for describing the expertise of members of the commission (not including their individual bios)	Technology assessment / cost-effectiveness analysis	1
	All other forms of evidence	0
	Not explicitly reported	69
Source of evidence drawn upon	Data analytics	3
	Modeling	13
	Evaluation	2
	Behavioural/implementation research	1
	Qualitative insights	1
	Evidence synthesis	6
	Technology assessment / cost-effectiveness analysis	5
	Guidelines	2
	Not explicitly reported	49
Focus of recommendations	Modeling	1
	Evaluation	1
	Qualitative insights	1
	Technology assessment / cost-effectiveness analysis	1
	Guidelines	1
	All other forms of evidence	0
	Not explicitly reported	66

Note: *full version available as PDF*

5.1: Types of evidence intermediaries

Global Commission on Evidence to Address Societal Challenges



Note: *full version available as PDF*

5.2 Characteristics of evidence intermediaries

Global Commission on Evidence to Address Societal Challenges

Characteristics	Specific focus (or type)
Challenges focused upon	• Domestic sectoral (e.g., education) • Domestic cross-sectoral (e.g., economic and social policy) • Global coordination (e.g., international relations)
Decision-makers targeted	• Government policymakers (e.g., to influence executive-branch regulation and legislative voting) • Organizational leaders (e.g., to influence organizational strategy and operations) • Professionals (e.g., to influence professional practices) • Citizens (e.g., to influence public opinion and voting)
Sources of motivating ideas	• Evidence • Values • Interests (public or private)
Alignments that may influence motivating ideas	• Political parties • Business or unions • Professional groups • Social movements • Not applicable (independent)
Funding sources that may influence motivating ideas	• Endowments • Foundations • Governments • Corporations • Individuals

Characteristics	Specific focus (or type)
Revenue streams	• Service contracts (e.g., 12 evidence products per year) • Licencing and subscription fees • Sales and events
Time horizons	• Short-term (e.g., responding to urgent needs for evidence) • Medium-term (e.g., preparing for next election or place to retreat when political party loses election and political appointment ends) • Long-term (e.g., undertaking a decade-long programmatic initiative to shape thinking on an emergent policy priority)
Agenda setters	• Funders • Entity leaders • Individual staff
Strategies emphasized	• Evidence production and support, which is the focus of **exhibit 5.3** • Consulting • Advocacy
Locations	• Universities • Independent non-governmental organizations and for-profit entities • Governments • Multi-lateral organizations (e.g., UN specialized agencies and OECD, the latter of which effectively competes for funds with many domestic and international entities)

***Note:** full version available as PDF*

5.3 Strategies used by evidence intermediaries

Global Commission on Evidence to Address Societal Challenges

Strategies	Descriptions
Improving climate for evidence use	• Sharing examples of outcomes and impacts achieved using best evidence and of missed opportunities from failing to use best evidence • Demonstrating how to distinguish high from low quality evidence (see **exhibit 4.7**), how to distinguish best evidence from 'other things' (**exhibit 4.8**), and and how to get more out of 'other things' (**exhibit 4.8**) • 'Auditing' decision-making and advisory structures, processes and outputs, as well as the incentives influence them, to identify opportunities to systematize evidence use (e.g., Sense About Science's assessment of government policy proposals • Comparing a local evidence-support system to a high-functioning evidence-support system (using prompts like the ones below)
Prioritizing and co-producing evidence	• Engaging in listening (e.g., rapid response) and foresight activities (e.g., horizon scanning) to identify emerging issues, make sense of them, prioritize those requiring evidence support, and commissioning or undertaking the evidence support • Co-producing – with decision-makers – new local evidence specific to the jurisdiction of focus (data analytics, modelling, evaluations, behavioural / implementation science, qualitative insights), synthesizing the best evidence globally (evidence synthesis), and translating global and local evidence into local decision support specific to the jurisdiction (technology assessments and guidelines, as well as modelling if it is undertaken with this intent) • Co-developing and maintaining living evidence products (data analytics, modelling, evidence syntheses, and guidelines)

Packaging evidence for, and 'pushing' it to, decision-makers	• Packaging evidence in ways that are understandable to decision-makers (and communicating or disseminating it to those who can use it)
	  • e.g., making data analytics more understandable using data-visualization approaches (e.g., bar/pie chart, box-and-whisker plots, scatter plots, and networks)
	  • e.g., making evidence syntheses more understandable using plain-language summaries that are translated into multiple languages
	• Using evidence to combat mis- and dis-information online, in fact-checking, and in other efforts to counter claims that are not based on evidence
	• Integrating different forms of evidence into innovative types of evidence products (e.g., data analytics to clarify a problem and its causes, evidence synthesis to describe the likely benefits and harms of an option to address a problem, and behavioural science to develop an implementation plan)
	• Embedding evidence in decision-support tools already being used by decision-makers (e.g., decision-support systems used by professionals like physicians, which are increasingly powered by artificial intelligence; dashboards for organizational leaders; and briefing notes for government policymakers) or in decision-related documents that could be used by decision-makers (e.g., model legislation)

Facilitating pull by decision-makers	• Maintaining one-stop evidence shops that optimized for decision-makers' needs (e.g., Education Endowment Foundation (UK) and What Works Clearinghouse (US) for educators and Evidence Aid for humanitarian-aid providers) • Maintaining a rapid-evidence service that can respond with best (available) evidence to decision-maker requests for evidence on short timelines (e.g., 1-30 business days • Building capacity among decision-makers to acquire, assess, adapt and apply evidence
Exchanging with decision-makers	• Convening deliberative dialogues to work through – based on both best evidence and all of the other factors that may influence decision-making – a problem and its causes, options to address it, key implementation considerations, and next steps for different constituencies (e.g., stakeholder dialogues that are informed by pre-circulated evidence briefs and citizen panels that are informed by pre-circulated citizen briefs)

5.5 UN-system entities' use of evidence synthesis in their work

Global Commission on Evidence to Address Societal Challenges

Intermediary	UNICEF Office of Research – Innocenti	World Bank Group	UN Department of Economic and Social Affairs (DESA)	Sustainable Development Solutions Network (SDSN)	Center for Sustainable Development (CSD), Columbia University	Evidence for Governance and Politics (EGAP)
Citations of evidence syntheses as a percentage of all citations in key documents	**Mean:** 17.0% **Range:** 2.3%-100% *Based on 12 documents*	**Mean:** 9.0% **Range:** 0% - 40.0% *Based on 18 documents*	**Mean:** 0.5% **Range:** 0%-3.1% *Based on 12 documents*	**Mean:** 2.5% **Range:** 0%-25.0% *Based on 21 documents*	**Mean:** 2.2% **Range:** 0%-6.8% *Based on 9 documents*	**Mean:** 1.8% **Range:** 0%-4.8% *Based on 6 documents*

***Note:** full version available as PDF*

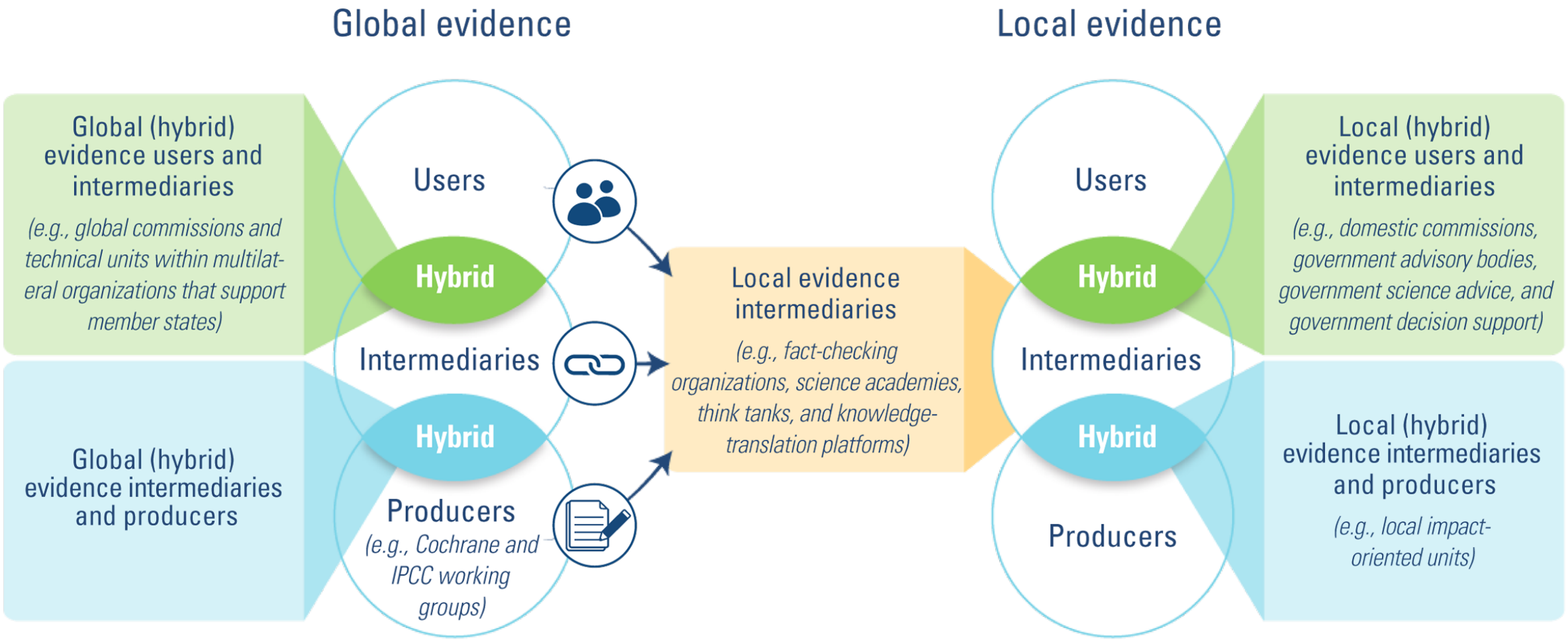
6.1 Global public goods needed to support evidence use

Global Commission on Evidence
to Address Societal Challenges

Note: *full version available as PDF*

6.2 Equitably distributed capacities needed to support evidence use

Global Commission on Evidence to Address Societal Challenges



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7.1 Insights from an analysis of global-commission recommendations

Global Commission on Evidence to Address Societal Challenges

1,460 recommendations were made, many of which spoke to the 'levers' required to bring about change	• These levers include a global summit-endorsed strategic framework and an accompanying programme of action, voluntary measures such as guidelines, monitoring and improvement approaches, planning and funding mechanisms, technical and financial assistance, new focal points within or involving existing institutions, and legally binding treaties
242 recommendations spoke to evidence supply (chapter 4)	• Most of these recommendations called for increasing data collection and sharing, which are a foundation for (but not the same as) data analytics as a form of evidence • When other forms of evidence were addressed, recommendations tended to call for increasing the flow of new evidence, such as new evaluations, and not improving the noise-to-signal ratio in the flow of such evidence, better using the stock of existing evidence, or combining multiple forms of evidence
94 recommendations described the context in which government officials, organizational leaders, professionals and citizens make decisions (chapter 3)	• Only rarely did any of these recommendations address how any of these decision-makers can or should use evidence in addressing societal challenges
50 recommendations addressed evidence intermediaries (chapter 5)	• These recommendations often called for the UN system to better harness its normative role (e.g., guidelines) and its advisory role (e.g., technical assistance to its member states) • Evidence was rarely made explicit as a necessary underpinning of such roles
28 recommendations addressed global public goods and distributed capacities (chapter 6)	• Some global commissions called for a strengthening of the role played by World Bank in supporting global public goods • There were almost no mentions of evidence-related public goods or an appropriate division of labour across the levels (e.g., in the UN system) where capacity for evidence use is needed
10 recommendations spoke to how we understand the nature of societal challenges and approaches to addressing them (chapter 2)	• The few recommendations spoke to ways of framing a societal challenge so it is more likely to generate action and to ways of addressing societal challenges so the actions are more likely to generate impacts

Note: *full version available as PDF*

7.2 Evidence Commission recommendations

Global Commission on Evidence to Address Societal Challenges

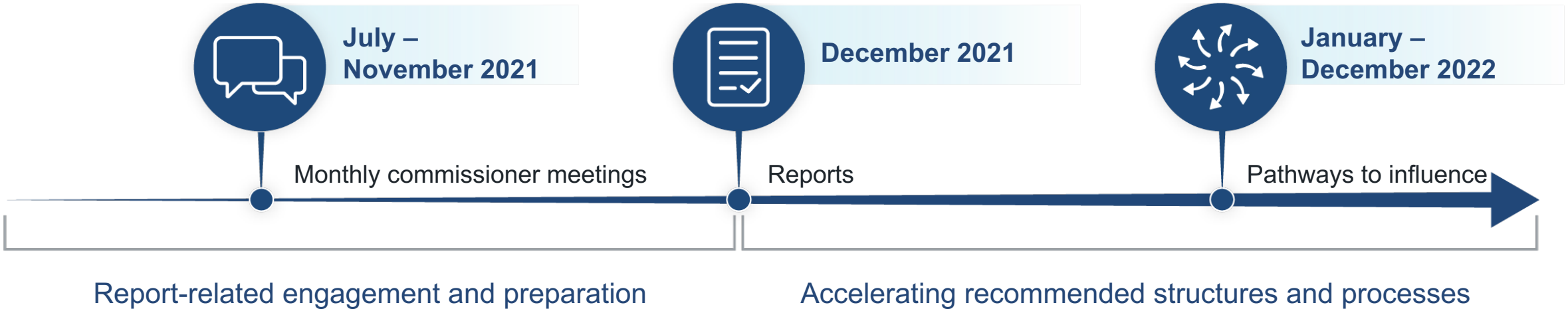
All who can take action	• **Two** recommendations, with one a wake-up call and the second a proposed new minimum standard for responding any time a claim is made
Multilateral organizations	• **Two** recommendations, with one a UN resolution and the second a landmark report
Government policymakers	• **Seven** recommendations, with: ○ four calling for fit-for-purpose government structures and processes (that match the features of an ideal evidence-support system), decision-support staff and infrastructure, government science advisors, and advisory bodies ○ one calling for moving beyond data collection and sharing to data analytics that can inform decision-making ○ two calling for mandating open science and regulating artificial intelligence
Associations of organizational leaders, professionals and citizens	• **One** recommendation calling for associations to review their evidence-related structures and processes against the features of an ideal evidence-support system, fill the gaps both internally and through strategic partnerships, and report to their members on their progress
Evidence intermediaries	• **Three** recommendations, with ○ one addressed specifically to journalists and fact checkers, and another addressed to dedicated evidence intermediaries ○ one more generally calling for the timely and responsive matching of best evidence to the question asked
Evidence producers	• **Seven** recommendations, with: ○ Five addressing their roles in: 1) filling gaps and adhering to standards: 2) responding, referring or working with others; 3) learning from evidence groups in other sectors; 4) being prepared to pivot for global emergencies; and 5) making evidence understandable ○ one addressed specifically to academic institutions, and another addressed to journals
Funders	• **One** recommendation calling for spending 'smarter,' and ideally more, on evidence support, particularly on each country's evidence-support system

Note: *full version available as PDF*

8.7 Timeline

Global Commission on Evidence to Address Societal Challenges

Abbreviated timeline



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8.7 Timeline (continued)

Global Commission on Evidence to Address Societal Challenges

Past and upcoming events

- Cochrane Convenes (14 October) – recordings available here
- Engaging Evidence 2021 (9 November, 5 pm EST) – register here
- Bat-Sheba de Rothschild Webinar (9 November, 11 am EST) – register here
- Global Evidence to Policy Summit (15-17 November) – register here
- Evidence for Policymakers 2021 (1-2 December) – register here
- International Society for Evidence-based Health Care (2 December) – registration details will be available here

- Window is closing for feedback on draft exhibits (given the many editing and formatting steps ahead) → **please send comments ASAP** to evidencecommission@mcmaster.ca
- Report will finalized around 10 December and embargoed until the new year while we proceed with translation
- Report will be launched in six languages around mid-January, with further details to follow