THE LANCET
Global Health

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Hobeika A, Stauffer MHT, Dub T, et al. The values and risks of an Intergovernmental Panel for One Health to strengthen pandemic prevention, preparedness, and response. *Lancet Glob Health* 2023; **11:** e1301–07.

Supplementary material

Contents

Existing proposals for intergovernmental science-policy platforms to tackle pandemic risk and related policy issues

Reference	Topic of concern	Arguments why a science-policy platform is needed	What the science-policy platform would do
Oppenheim et al., 2021[1]	Pandemic risk	● Research on pandemics is fragmented and episodic as a function of philanthropic priorities ● Rate of change of pandemic factors is continuously evolving ● Short termism of political institutions	● Sustained analysis of pandemic risk ● Scientific consensus on drivers of pandemic risk ● Evidence assessment of pandemic PPR strategies ● Keep pandemics on the global agenda ● Shield scientific assessment from political pressure
Vinuales et al., 2021[2]	Pandemic risk	● Large room for improvement in pandemic PPR ● International law remains underused ● A science-policy interface could inform a global pandemic treaty and its implementation	● Pre-emptive identification of certain categories of pathogens ● Evidence assessment of pandemic PPR strategies ● Mapping outbreak hotspots
Phelan and Carlson, 2022[3]	Pandemic risk	● Trust in international and multilateral collaboration is dwindling ● Independent and multidisciplinary scientific committees are needed to advise policymaking bodies of international treaties	● Integration of multidisciplinary evidences and synthesis ● Independent review and assessment of scientific literature ● Advice policymaking bodies of the "pandemic treaty"
Ruckert et al., 2021[4]	Pandemic risk	● Need for further implement the OH approach, especially in a pandemic treaty ● A science-policy interface could inform a global pandemic treaty and its implementation	● Provide technical and scientific support for OH implementation ● Policy recommendations, guidelines, capacity building, evaluation of OH capacities
Le Moli et al., 2022[5]	One Health	● One Health is endorsed but has only resulted in soft norms ● Need for proactive One Health approaches to remedy limitations of e.g. International Health Regulations ● Need to address the risk of emerging and re-emerging infectious diseases, but also climate change, antimicrobial resistance (AMR), and food insecurity	● Oversight and provision of technical and scientific support; review and resolution of policy issues ● Contribution to current and forthcoming pandemic protocol and guideline negotiations ● Collaboration with existing structures
IPBES, 2020[6]	One Health	● Need a coordination mechanism for international organisations and countries to unify their efforts across commonly agreed targets ● Lack of policy-relevant scientific information taking a multisectoral perspective	● Provision of policy-relevant scientific information ● Prediction of risky areas ● Evaluation of economic impacts ● Coordination of monitoring according to a One Health framework
Turnhout et al., 2021[7]	Food systems	● Need of knowledge on multi-dimensional policy problems ● Lack of mechanisms to translate knowledge into governance processes ● Need to remedy risk of naive approaches ● Need to ensure equity and justice in the inclusion of scientific knowledge ● Need better coordination and integration of disciplines	● Organisation of rigorous, independent, and expert-led synthesis and assessment of knowledge without a priori privileging science ● Engagement of diverse actors ● Enhancement of legitimacy and actionability of interventions ● Incentives to produce policy-relevant research ● A coordination between disciplines ● Legitimization of knowledge production

Woolhouse et al., 2015[8]	Antimicrobial resistance	• AMR as a cross-sectoral problem requiring interdisciplinary knowledge – not only clinical and veterinary medicine, epidemiology, microbiology and pharmacology, but also health economics, international law, and social science; need for coordinated response from governments, industry and international agencies as well as scientists • Lack of agreed targets for reductions in antimicrobial usage	• Marshal scientific evidence and inform policymaking on both problems and solutions • Production of evidence-based targets for reductions in antimicrobial usage

Table S1. Overview of proposals for the creation of an intergovernmental panel related to One Health and pandemic risk

Review of existing IPs

Box S1. The Intergovernmental Panel for Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

Intergovernmental science-policy panels and platforms gained popularity in the last three decades – with the IPCC (est. 1988) and the IPBES (est. 2012) as main examples(16). They are mandated to conduct knowledge assessments to inform agenda-setting, e.g., by the Conferences of the Parties (CoP) to the relevant multilateral environmental agreements, and improve policy and research uptake.

The IPCC focuses on the global temperature and its interactions with the elements of the climate system such as the atmosphere, oceans, ice caps, sea, ice, and biosphere, and draws from both natural and social sciences. Its contributions stem mostly from experts in high-income countries. Assessments prioritise consensual, well-established scientific truths. It has been criticised for its narrow focus of quantitative science, limited inclusion of scientists of Low- and Middle-Income Countries (LMICs), and difficulties to provide guidance on possible solutions(17).

The IPBES defines its subject, biodiversity, as a broad scope of issues. In contrast to the IPCC, it has worked since its inception to include the knowledge of indigenous peoples and local communities, works at the global, regional, and national scales, its assessments also focus on the impacts of possible technologies and policy measures, and its mandate includes capacity-building(18).

We searched Google Scholar for evaluation and review reports of IPCC and IPBES. We used queries on Google Scholar that can be summarised as "(IPCC OR IPBES) AND (review OR assessment OR criticism OR sociology)" and selected documents based on their title and abstract. We identified the most authoritative texts, by the publisher of concern, and collected additional references from their reference lists, that we selected based on their title and abstract. By this procedure, 42 documents were identified, and read in full-text. A final seven key references were selected for data extraction, with relevant information organised according to the framework used in Table S2 (8–15).

The achievements and limitations of the IPCC and IPBES can be classified along the functions these Panels cover as international organisations, which are divided in four categories (Table S2)(8). The core mandates of the IPCC and IPBES are focused on knowledge synthesis and awareness raising. However, the debates about their achievements and limitations are not restricted to these areas, since their missions can evolve. For instance, since the 2015 Paris agreement, the IPCC is expected to provide more assessment of policy measures.

Overall, both the IPCC and IPBES are seen as successful in producing wide-ranging assessments with both scientific and political legitimacy. The panels are also credited in having a significant impact in terms of agenda-setting, establishing the ideas of a climate emergency against climate change denial (IPCC), and an emergency about biodiversity loss and mass extinction of species (IPBES). The IPCC has faced criticism regarding the scope of what it includes as relevant knowledge, favouring mathematical modelling and institutional science, but has demonstrated some capacity to learn and evolve. Its effectiveness has also been questioned for choosing to not produce policy-prescriptive

assessments, and having limited inclusion mechanisms of the knowledge of indigenous peoples and local communities until now. The IPBES is criticised for having too broad a mandate to have a political impact, but a mitigating factor may be that it is significantly more recent than the IPCC. Both are seen as having a weak capacity in having their findings translated into policies to solve the problems they describe and in disseminating their findings at the national and local levels.

	IPCC	**IPBES**
Knowledge production and synthesis	+ Successfully synthesised multi-sectoral knowledge and evidence + Involved academic communities + Global scientific legitimacy + Capacity to adapt to criticism and evolve - Debated focus on scientific consensus - Slow process, heavy procedures - Dominance of rich countries - Dominance of mathematical modelling	+ Successfully synthesised knowledge + Involved academic communities + Global scientific legitimacy + Comprehensive work + Capacity to adapt to criticism and evolve + Involves indigenous communities in knowledge production - Debated focus on scientific consensus - Slow process, heavy procedures
Agenda-setting	+ Informed UNFCCC CoP + Raised awareness through imposition of a notion of emergency + Successful fight against discourses of denial + Capacity building of civil servants	+ Informed UNCBD CoP + Raised awareness through imposition of a notion of emergency + Successful fight against discourses of denial + Capacity building of civil servants - Limited agenda-setting success
Policy design and implementation	+ Continued political legitimacy + Formal attachment to UNFCCC + Formal affiliation to UNEP and WMO - Lack of policy-prescriptive assessments - Being slow, and having heavy processes - Limited disseminating findings at national and local scales	+ Continued political legitimacy + Formal attachment to UNCBD + Formal affiliation to UNEP+UNESCO+FAO+UNDP - Lack of policy-prescriptive assessments - Being slow, and having heavy processes - Limited disseminating findings at national and local scales - Provided capacity-building but only in a limited manner and with limited reach
Ecosystem engagement and coordination	+ Fostering engagement of governments into negotiations + Was set up early and thus filled gap in ecosystem - Weak impact on resource allocation for public action	+ Fostering engagement of governments into negotiations + Involved indigenous communities, local communities, and social sciences - Weak impact on resource allocation for public action

Table S2. The successes and drawbacks of the IPCC and IPBES in (1) knowledge production and synthesis, (2) agenda-setting, (3) policy design and implementation, and(4) ecosystem engagement and coordination

Acknowledgments

We thank the participants who attended the expert workshop on a science-policy interface for One Health, organised by the Geneva Science-Policy Interface and the MOOD project during the Geneva Health Forum on the 3 May 2022, listed in the below in alphabetical order. Participants contributed to thematic discussions feeding into the content of the paper. This study was partially funded by EU grant 874850 MOOD and is catalogued as MOOD055. The contents of this publication are the sole responsibility of the authors and do not necessarily reflect the views of the workshop participants not listed as authors, the European Commission, nor any other institution.

Bernadette Abela-Ridder, World Health Organization, Geneva, Switzerland
Luciá Aguirre Sánchez, Swiss School of Public Health, Università della Swizzera Italiana, Lugano, Switzerland
Martin Beniston, University of Geneva, Geneva, Switzerland
Isabelle Bolon, Global Health Institute, University of Geneva, Geneva, Switzerland
Salome Bukachi, Institute of Anthropology, University of Nairobi, Nairobi, Kenya
Gian Luca Burci, Graduate Institute of International and Development Studies, Geneva, Switzerland
Philippe Chamaret, Institute Ecocitoyen, Fos-Sur-Mer, France
Lisa Crump, Swiss Tropical and Public Health Institute, Alschwill, Switzerland
Nitish Debnath, DAI Global, Bangladesh
Peter Ben Embarek, World Health Organization, Geneva, Switzerland
Margaret Khaitsa, Mississippi State University, USA
Abdi Rahman Mahamud, World Health Organization, Geneva, Switzerland
Keith Martin, Consortium of Universities for Global Health, Washington, USA
Ludovico Pasquale Sepe, German Federal Institute for Risk Assessment (BfR), Berlin, Germany/One Health European Joint Programme, funded by the European Union Horizon 2020 Research and Innovation Program under Grant Agreement No 773830.
Erika Placella, Swiss Agency for Development and Cooperation, Bern, Switzerland
Benjamin Roche, Research Institute for Development (IRD), PREZODE (Preventing Zoonotic disease emergence) Initiative, Montpellier, France
Raphael Ruiz de Castaneda, Global Health Institute, University of Geneva, Geneva, Switzerland
Jolene Skordis, University College London, London, United Kingdom

References

1. Oppenheim B, Brown K, Waldman R. The world needs an intergovernmental panel on pandemic risk. Nature Medicine. 2021 Jun;27(6):934.

2. Vinuales J, Moon S, Moli GL, Burci GL. A global pandemic treaty should aim for deep prevention. The Lancet. 2021 May 15;397(10287):1791–2.

3. Phelan AL, Carlson CJ. A treaty to break the pandemic cycle. Science. 2022 Jul 29;377(6605):475–7.

4. Ruckert A, Gonçalo das Neves C, Amuasi J, Hindmarch S, Brux C, AS Winkler AS, Carabin H, 'One Health as a Pillar for a transformative pandemic treaty', (2021) Global Health Centre, 18, 13

5. Le Moli GL, Viñuales JE, Burci GL, Strobeyko A, Moon S. The deep prevention of future pandemics through a One Health approach: what role for a pandemic instrument? :25.

6. Intergovernmental Science-Policy Platform On Biodiversity And Ecosystem Services (IPBES). Workshop Report on Biodiversity and Pandemics of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) [Internet]. Zenodo; 2020 Oct [cited 2022 Sep 27]. Available from: https://zenodo.org/record/4147317

7. Turnhout E, Duncan J, Candel J, Maas TY, Roodhof AM, DeClerck F, et al. Do we need a new science-policy interface for food systems? Science. 2021 Sep 3;373(6559):1093–5.

8. Woolhouse M, Ward M, van Bunnik B, Farrar J. Antimicrobial resistance in humans, livestock and the wider environment. Philos Trans R Soc B Biol Sci. 2015 Jun 5;370(1670):20140083.

9. Pryck KD, Hulme M. A Critical Assessment of the Intergovernmental Panel on Climate Change.

10. Ruckelshaus MH, Jackson ST, Mooney HA, Jacobs KL, Kassam KAS, Arroyo MTK, et al. The IPBES Global Assessment: Pathways to Action. Trends Ecol Evol. 2020 May;35(5):407–14.

11. Löfmarck E, Lidskog R. Bumping against the boundary: IPBES and the knowledge divide. Environ Sci Policy. 2017 Mar;69:22–8.

12. McElwee P, Fernández-Llamazares Á, Aumeeruddy-Thomas Y, Babai D, Bates P, Galvin K, et al. Working with Indigenous and local knowledge (ILK) in large-scale ecological assessments: Reviewing the experience of the IPBES Global Assessment. J Appl Ecol. 2020;57(9):1666–76.

13. Vadrot ABM, Rankovic A, Lapeyre R, Aubert PM, Laurans Y. Why are social sciences and humanities needed in the works of IPBES? A systematic review of the literature. Innov Eur J Soc Sci Res. 2018 Mar 30;31(sup1):S78–100.

14. Vardy M, Oppenheimer M, Dubash NK, O'Reilly J, Jamieson D. The Intergovernmental Panel on Climate Change: Challenges and Opportunities. Annu Rev Environ Resour. 2017;42(1):55–75.

15.Beck S, Borie M, Chilvers J, Esguerra A, Heubach K, Hulme M, et al. Towards a Reflexive Turn in the Governance of Global Environmental Expertise. The Cases of the IPCC and the IPBES. GAIA - Ecol Perspect Sci Soc. 2014 May 30;23(2):80–7.

16. Borie M, Mahony M, Obermeister N, Hulme M. Knowing like a global expert organization: Comparative insights from the IPCC and IPBES. Glob Environ Change. 2021 May;68:102261.

17.Hulme M. A Critical Assessment of the Intergovernmental Panel on Climate Change [Internet]. 1st ed. De Pryck K, editor. Cambridge University Press; 2022 [cited 2023 Mar 15]. Available from: https://www.cambridge.org/core/product/identifier/9781009082099/type/book

18. Vadrot ABM. Building authority and relevance in the early history of IPBES. Environ Sci Policy. 2020 Nov;113:14–20.