Lessons learnt from other scientific panels on, or related to, human health

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Contents

Introduction

High-level science-policy interface panels aim to synthesize, assess, and clarify multidisciplinary knowledge and play a critical role in bridging the gap between complex evidence and actionable policy. However, they are often embedded in traditional notions of expertise as neutral or consensus-driven, yet there is increasing acknowledgement that these are more usefully conceived as contested arenas where knowledge and power intersect to shape policy responses under uncertainty (Straßheim, 2024). Despite their growing importance, they are not an elixir in themselves (Turnhout et al., 2021) , and there remains a paucity of systematic analysis of how such panels are organized, financed, governed, and sustained, particularly in the health sector (Hobeika et al., 2023).

Pressing global challenges are increasingly framed as either 'global public goods' or 'multisectoral nexus' issues. The former highlights transboundary benefits that depend on collective action and cross-institutional cooperation, while the latter focuses on the interconnectedness of systems, where actions in one domain affect others, requiring integrated governance. Examples include the governance of; water–energy–food-climate–health–biodiversity. These challenges share common characteristics such as high uncertainty, trade-offs, and transboundary tensions, and in recent years, have prompted the emergence of and growth in actors and institutional arrangements in an attempt to address the issues in these fields, now associated with fragmentation and unclear authority (Straßheim, 2024).

The knowledge gap resulting from the dearth of systematic analyses is especially salient as the global community prepares to launch such a panel: the Independent Panel for Evidence for Action against Antimicrobial Resistance (IPEA), designed as the fourth and final component of the emerging global governance arrangements, proposed nearly a decade ago by the Interagency Coordination Group (IACG) on antimicrobial resistance (AMR) (United Nations Interagency Coordination Group on Antimicrobial Resistance, 2019), to address the pressing global challenge presented by growing AMR. To be effective, IPEA must navigate a dense and complex landscape to secure institutional legitimacy, scientific rigor, financial sustainability, and equitable global participation. In a period of global transition and governance adaptation that is particularly and currently acute in global health.

While environmental and climate sciences have long benefited from robust scientific advisory bodies (e.g., the IPBES and IPCC), precedent in the health sector remains more limited**.** Health panels often emerge through different institutional pathways (e.g., resolutions vs. agency mandates), face more direct geopolitical and equity-related pressures, and typically operate with fewer resources. This paper conducts a mapping and comparative analysis of panels and similar science-policy interface initiatives to distill key strengths and limitations in their design. By examining selected independent panels across diverse health and health-related contexts, it aims to provide actionable insights to inform the effective structuring and establishment of the forthcoming IPEA on AMR, highlighting what works, what doesn't, and how to avoid common pitfalls.

Summary and Recommendations

The IPEA's success may hinge less on internal structural nuances, as there is limited variation across panels addressing pandemics, One Health, climate, radiation, and pollution. Instead, its success likely hinges more on strategic positioning within the AMR governance and broader global health ecosystem. To be effective, the IPEA must adopt a dynamic model – one that is independent, yet inter-governmentally anchored to ensure legitimacy, while proactively coordinating with existing bodies to avoid both duplication and isolation. Building and maintaining the IPEA's credibility and relevance will require: (a) leveraging high-impact scientific outputs and innovative data tools to capture alternative data forms, (b) addressing knowledge weaknesses and gaps and rapidly synthesizing knowledge, and (c) integrating inclusive, globally representative knowledge and expertise from the outset. Considerations for the formation of the IPEA, across seven categories, based on the six health panels reviewed, are summarized below:

Governance

IPEA's success will hinge on clear governance arrangements. A critical decision is whether its executive will be embedded within the GLG, QJS, or biennial Ministerial structure, or function as a fully independent intergovernmental body, as exemplified by the IPPR. Regardless of the model, transparency, clear lines of accountability, and an effective secretariat will be essential. A three-tier structure—executive, expert, and secretariat—should be adopted, with safeguards to preserve scientific integrity and operational autonomy.

Independence

Independence must go beyond scientific autonomy to encompass governance and financing. IPEA should be structurally autonomous or, at a minimum, operate with decision-making authority that is shielded from political interference. Safeguards should be built into its founding documents, selection processes, and procedures to protect against conflicts of interest and ensure global inclusivity and credibility.

Mandate

IPEA must have a clearly defined and focused mandate that positions it meaningfully along the science–policy continuum. Its scope should be sufficiently strategically articulated to ensure actionable impact but broad enough to remain relevant across AMR's multisectoral dimensions. Initially, tying its priorities to an updated Global Action Plan on AMR could help align efforts and clarify downstream policy and implementation pathways.

Funding

Long-term success will depend on securing sustainable and diversified funding from the outset. Relying solely on core UN agency contributions or a narrow donor base, as seen in other panels, risks fiscal instability. IPEA should establish a dedicated funding mechanism (e.g., a trust fund) and pursue a comprehensive resource mobilization strategy that includes government, philanthropic, and in-kind support, while ensuring equity for LMIC stakeholders.

Knowledge Handling

IPEA must integrate diverse forms of knowledge, including traditional, local, and emerging evidence sources while leveraging high-impact scientific outputs and using innovative data tools to fill knowledge gaps. Latest methods and technology should be employed to ensure the breadth of knowledge inclusion does not compromise the rapidity or rigorousness of synthesis. Clear and transparent procedures for scoping, synthesis, peer review, and conflict resolution should be published and regularly reviewed.

Adaptability

To maintain relevance over time, IPEA must build in mechanisms for self-assessment, monitoring, and continuous improvement. A mid-term strategic review process and embedded M&E frameworks should be planned from the outset. Long-term relevance and resilience will require a proactive set-up, enabling it to preempt shifting political, scientific, and governance landscapes without compromising its mission.

Outputs

IPEA's outputs should go beyond traditional reports. A diverse portfolio of tools—including databases, policy briefs, and interactive platforms—will increase usability and reach. A centralized, publicly accessible "evidence for action" repository could enhance transparency, democratize access to synthesized knowledge, and serve as a global reference point for AMR policy and implementation efforts.

Methods

1) **Initial Scoping**: A diverse range of sources and methodologies was employed to identify potential health panels, resulting in an initial list of approximately 30 panels, commissions, or similar entities.

Inclusion Criteria (descending order of weighting)	**Exclusion Criteria**
○ **Field -** Health Focus; direct or indirect relevance ○ **Form** – representation across the spectrum from fully intergovernmental (IG) to independent (IP) ○ **Operational Duration** – varying levels of maturity to ensure an evidence base for assessment. ○ *[1]**Function** – proximity to, and clarity of location along, the Science-Policy Interface (meeting at least one criterion) – see Figure 1 (below)	○ Fixed, short-term, temporary mandates (*<2 years)* ○ Overly narrow focus or technical mandate or pre-specified concrete outcome ○ Not international i.e., regional or national ○ Entirely institutionally separate

2) **Screening Process**: An initial screening eliminated around a dozen panels based on predefined exclusion criteria (see table). Most excluded panels had a narrow technical focus, lacked global scope, or operated under a very time-limited mandate. A long-list – of 17 panels – underwent further research, screening, and characterization to ensure the final selection represented diversity across three key inclusion criteria: Field, Form, and Functions.

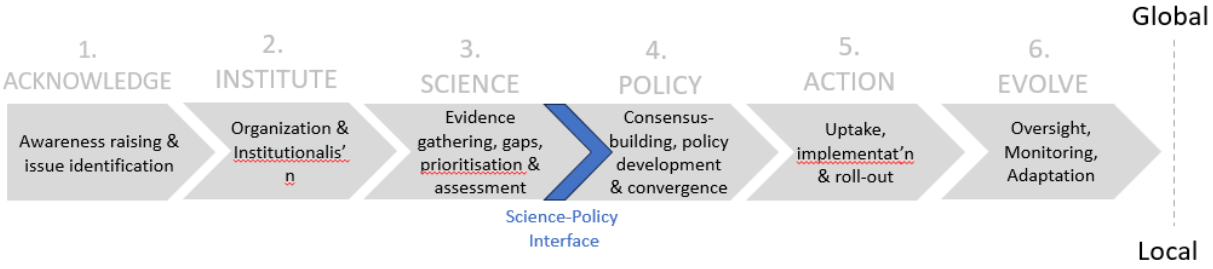


Figure 1*. Conceptualization of the stages ('issue life-cycle') in mounting a global response to a challenge.*

4) **Data Extraction:** This process identified six panels as the analytical foundation. Data collection combined academic databases (Web of Science, PubMed, Google Scholar) and grey literature (Google, Perplexity [AI engines]) using terms like governance, evaluation, and assessment. Internal documents (reports, websites) were subsequently reviewed. Extracted data was organized into a framework along the seven analytical categories. **Analysis & Synthesis:** The extracted data for the six panels were analyzed by comparing patterns across the seven categories: governance, independence, mandate, funding, knowledge handling, adaptability, and outputs. A summary of the panels across the categories can be found in **Table 1.** Synthesis focused on identifying commonalities, strengths, weaknesses, and notable practices.

[1]*For older, larger, panels; cost-benefit for inclusion was considered specifically if there was an unclear governance target for the Sci-Pol. function*

Results

Summary profiles of the six shortlisted health panels can be found in **Table 1**, providing an overview of their governance, independence, mandate, funding, knowledge handling, adaptability, and outputs.

Governance

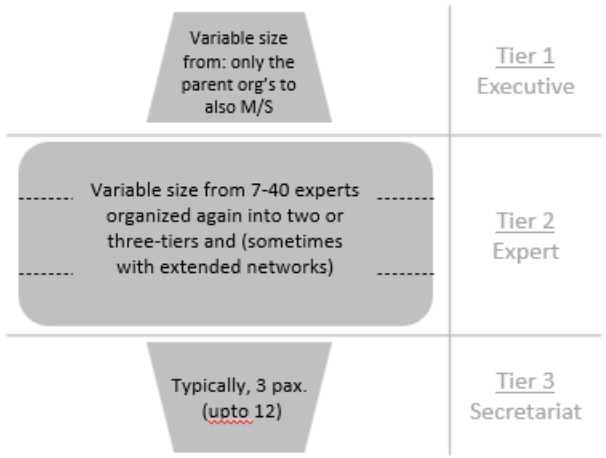


***Figure 2**. Conceptualisation of the 'typical' panel organizational structure & tiering*

Similar to high-profile panels outside the health domain (IPCC, IPBES) and mature health panels (FCTC, CAC) not shortlisted for this paper despite their roles as effective models for addressing transnational public health challenges[2], five of the 6 panels observe the common three [or four]-tier governance structure with distinct executive, expert, and secretariat components (Figure 2). The executive is often named the steering committee, executive council, or similar, and typically comprises a relatively small number of senior representatives from the parent organizations. The exception to this is the IRP, which is chaired by its parent organizations but includes around 25 member states. Similarly small in their composition is the secretariat function that supports and facilitates the work of the Tiers above. Although for many (HLPE, IRP, OHHLEP) of the panels of 'institutional origin', the secretariat and the executive function often sit within the same entity, it is not always clear what the safeguards are. Two secretariat exceptions are notable, the first was that of the IPPR, which had a larger and operationally independent secretariat (although it was based on-site at WHO), the second is the OHHLEP, whose secretariat rotates between its four parent organizations[3]. The Science Policy Interface (''expert'' function), the focus of his paper, is sandwiched in between and summarized in **Appendix 1.**

Focusing on the 'expert function,' we see similarities in organization across our pool, structured either as two-tier (IRP, OHHLEP) or three-tier (HLPSE, ICNIRP, IPPR) systems for conducting core scientific/policy synthesis. Two key aspects are notable: 1) The breadth of the base of expertise incorporated into the panel's central work varies significantly; 2) The upper tier of the three-tier panels, compared to two-tier panels, tends to be smaller, potentially more senior, and not always directly engaged in the work. In contrast, the larger two-tier panels are more likely to undertake the work directly, with a greater emphasis on scientific profiles of their members than the broader and more 'high-level' skill sets of the latter. Significant to the IPEA will be these considerations of acknowledging the importance of 'science

[2] Thee WHO Framework Convention on Tabacco Control (FCTC) and the Codex Alimentarius Commission (CAC) did not meet the inclusion criteria of being 'proximate to the science-policy interface' or having a clear governance target for the science-policy function

[3] Recent indications are that OHHLEP's rotating secretariat model is still maturing, and clarity has recently been sought – from the panel – on how the overlapping mandates and responsibilities will be managed among Quadripartite agencies.

translation' and uptake, and the trade-off between 'seniority' & 'availability'[4]. Who fills which roles across the governance structure is one of the critical and pressing issues for the IPEA. One option for the IPEA would be to leverage existing bodies such as the for the Global Leaders Group (GLG) to serve as the executive, however, should this be the case it would ideally adopt, publish and apply stringent rules and criteria for selecting the panel – something with very little precedent across the six health panels of this study. HLPE-FSN, ICNIRP, and IPR's documented selection process details that panel members are largely (or in ICNIRP and IPPR's case exclusively) proposed or recommended by the Chairs or from within the executives or steering groups. For the IPR, this is preceded by a 'scoping' conducted by the secretariat and followed by a 'call for interest'. OHHLEP also employs a '[public] call for interest' (although it is through 'quadripartite discussion' that the selection is made). The use of a comprehensive exercise for scoping, [widely disseminated] public calls for interest and rolling reviews [now IRP practice] – or perhaps even proactive scouting and outreach to candidates who would not necessarily put themselves forward would help broaden the pool of candidates considered and safeguard against entrenching biases, established power/professional networks and 'group think'.

The second observation is that, across the board, the more recent rounds of panel selections have adopted much broader, more inclusive profiles of both individual experts and the panel in its totality, comprising a more diverse and globally representative pool of experts. These shifts have occurred reactively; IPEA could do so proactively. On the composition of the panels, all of them – since their founding – have included various 'intents' (shall reflect, consideration will be given, concerning an [appropriate balance], attention shall be paid) within their foundational documents with regards to geographic representation, technical expertise, and gender balance. Many have subsequently publicly acknowledged that despite this, their panels have historically had an overly narrow composition; implicitly, the OHHLEP also acknowledged this between its first two terms. This was particularly a finding of the evaluations that happened in 2017/8 for HLPE and IRP. Since then, some interesting practices and trends have emerged, for example, the IRP now specifies the underrepresented constituencies that it wants to fill. A recent advertisement (Meiattini, 2025) for the SC of the HLPE subordinates traditional scientific competencies to skills such as strong experience in managing groups or networks of experts, extensive communication and interpersonal skills, leadership skills, capacity to attract and draw expert networks, drawing from their international recognition by peers. The IRP, in its latest work plan strongly indicates not only the need to 'involve social scientists (as opposed to other natural science disciplines') and more 'generalists' able to cross-fertilize across groups through their broader skills base but also that the expertise itself needs to be ''better matched'' to a specific task or deliverable. Overall, a more considered approach to the diversity of knowledge and skills required to optimize these panels in a way that represents more of how the real world functions.

[4] Common across panels is the provision that experts are unpaid and participate in their 'individual' and not professional capacity

Table 1 – Overview of the shortlisted panels focusing on the seven key parameters analyzed in this paper

Name	Governance	Mandate	Independence	Funding	Knowledge handling	Adaptability	Outputs
HLPE-FSN (High-Level Panel of Experts on Food Security and Nutrition)	CFS (hosted by FAO, WFP, IFAD)	Broad, evolving scope on food security; synthesizes evidence to inform CFS policy	Low structural independence; governed within CFS	UN agency core funding + voluntary gov & NGO contributions	Transparent, inclusive procedures; draws on over 2,000 multidisciplinary experts; uses non-traditional	Continuous but slow adaptation; evaluation found underutilized potential	Formal reports shape CFS policy convergence (e.g., land tenure, nutrition)
IRP (International Resource Panel)	UNEP	Initially focused on science; now spans policy engagement and tool development in environmental resource	Moderate; UNEP-led but consultative governance	UNEP + diverse donor funding (some private), with explicit caps	Structured planning and peer-reviewed outputs; strong prioritization and workstreams	Proactive adaptation since 2018; introduced strategic planning and performance reviews	Global Material Flows Database, SCP-HAT, referenced in EU Green Deal
ICNIRP (International Commission on Non-Ionizing Radiation Protection)	IRPA (independent NGO), aligned with WHO/IARC	Narrow, focused: scientific guidelines for EMF exposure	High operational autonomy, but under scrutiny for industry links	Public donations only (controversy on transparency)	Documented processes, but criticized for lack of inclusion and alleged data cherry-picking	Minimal evolution; faces criticism and has a competing panel (ICBE-EMF)	Guidelines adopted by 100+ countries; used by WHO/EU
OHHLEP (One Health High-Level Expert Panel)	Quadripartite (WHO, FAO, WOAH, UNEP)	Evolving; aims to shape One Health governance across health-environment domains	Advisory only; embedded within Quadripartite	UN agency-led; unclear if independent vehicle exists	Broad interdisciplinary membership; moderate transparency; flexible working groups	Modest adaptation between Terms I & II; unclear long-term trajectory	Definition of "One Health" globally adopted; influence still emerging
ECHO (European Climate & Health Observatory)	EC (DG CLIMA, SANTE) + EEA	Regional aggregator: links climate indicators to health risks	Not independent; embedded within EU	EC core; conditional in-kind partner contributions	Aggregates existing datasets; limited primary synthesis	Biennial work program shifts; still too early to assess long-term evolution	Public portal of indicators, case studies, vulnerability maps
IPPR (Independent Panel for Pandemic Preparedness and Response)	WHO (secretariat), created by WHA resolution	Time-bound mandate: post-COVID assessment & reform recommendations	Highest structural independence of panels reviewed	Solely WHO core funding; large temporary secretariat	Highly consultative, rapid synthesis from evidence base; town-halls, submissions	Too short-term for institutional evolution; risks non-uptake of recommendations	Influenced WHO reform debates, equity, accountability framing

Independence

The IPPR is the only health panel in our sample that is structurally autonomous. It stands apart in explicitly embedding independence in its founding mandate – something mandated also to the forthcoming IPEA. The UNGA determined that the IPEA should be established as an independent panel of experts, not as a high-level or intergovernmental body. This means the IPEA must endeavor to remain institutionally and operationally independent, even if its broader governance includes existing AMR governance structures.

In contrast, all other panels reviewed are ultimately accountable to, and/or with a mandate to serve or strengthen parent organizations, often while trying to achieve independence of their science as a core value. Their founding, therefore, weakens their structural independence and limits their ability to claim a high-level, autonomous position in the global governance architecture. While many panels implement safeguards such as governance transparency, conflict of interest safeguards, stakeholder engagement, and transparent disclosure and accountability practices, these efforts tend to emphasize scientific independence, rather than full structural or decision-making autonomy. Therefore, for the IPEA to meet its mandate and maintain legitimacy, its independence must be defined and upheld across its scientific work, governance arrangements, and financing mechanisms from the outset. Indeed, the ability of the IPEA to navigate the conundrum of its science needing to be close (policy relevant) yet not too close (to risk politicization) (De Donà & and Linke, 2023) will be a critical determinant of its success.

IIPEA's independence will also be determined by the extent to which it can determine its priorities and focus areas. Presently, many of the health panels in this paper largely receive their tasks in a largely top-down manner with little autonomy of scope and focus (see later section). Furthermore, as the scientific knowledge around AMR grows, so too does the complexity of the governance landscape. Coordination, both within multilateral systems and beyond, is increasingly essential. This has been acknowledged – and guardrails set – at the founding of many panels, particularly the more recently created ones. Similar to the IPCC, the HPLE-FSN and OHHLEP the IPEA are not mandated to undertake new research (United Nations General Assembly, 2024) and have been cautioned against duplicating efforts. However, experience from panels like HLPE-FSN and IRP indicates that the risk for the IPEA lies less in duplication, more in insufficient engagement beyond parent institutions.

For IPEA, the goal should be to achieve both non-duplication and sustained and meaningful collaboration across the AMR ecosystem. Engagement should extend beyond the Quadripartite and traditional multilateral channels to include existing intergovernmental fora, national stakeholders, civil society, and regional actors. An interesting and inclusive model is from ECHO, which has 'Skin in the Game' conditions for partners, i.e., the requirement for the partner organizations to propose and commit to delivering actions (via in-kind contributions) that are part of the workplans and that contribute to the strategic objectives. Evaluations of the HLPE-FSN and IRP underscore this need. HLPE's 2017 review found a limited visibility beyond the Rome-based agricultural organizations (including the CFS), and in 2018, the IRP initiated reforms to enhance its reach and impact. Similarly, while OHHELP acknowledged the importance of broader collaboration, it lacks a clear mandate and mechanism for engaging beyond the

Quadripartite. A 2023 study (Hobeika et al., 2023) highlighted precisely this risk and warned that its value would be diminished if it remained siloed.

Mandate

Among the basket of panels covered here, no health panel has been created from a UN General Assembly (UNGA) Resolution - a formal voted decision under the UN Charter - as an independent intergovernmental body in the way the IPBES was nor via a Treaty-based (legally enshrined supranational decision-making mechanism origin of the Conference of the Parties of the FCTC. However, the forthcoming IPEA was catalyzed into creation via an IACG recommendation that subsequently became a UNGA Political Declaration[5] – a consensus-driven statement - reflecting collective priorities[6] of UN member states, and the IPPR was created from a World Health Assembly Resolution – a non-legally binding but formal decision or declaration adopted by the decision-making body of the WHO.

Level 1	UNGA Resolution	e.g., IPEA
Level 2	Treaty Between UN M/S	e.g., FCTC
Level 3	Resolution of the M/S assembly of a UN agency	
Level 4	Agreement between UN agencies/org's	e.g., QJS
Level 5	Decision within a UN member organization	e.g., IPPRR
Level 6	Effort outside of the UN system	e.g., OHHLEP

***Figure 3**. Authority levels at inception of various health panels*

All the other included health panels (**Appendix 6**) HLPE-FSN, IRS, ICNIRP, ECHO & OHHLEP were developed as specialized initiatives by their respective founding bodies to address specific mandates – a more similar inception to the IPCC which was done so by World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) and only subsequently endorsed [in contrast to the others in this 'inception category'] by a UN resolution (Resolution 43/53 1988). So, while the mode of inception alone is an insufficient stamp of authority, it is certainly a foot up the ladder for legitimacy and long-term standing.

In addition to considerations on the provenance of the origins of a panel, three of the panels examined had a particularly clear and concrete mandate, which helps stakeholders understand their role and supports the panels to focus limited resources to deliver for maximum impact while meeting external expectations. For ICNIRP, this focus was defined by having a primary output: the development of scientific guidelines. IPPR's scope was set but significantly limited by its time-bound nature. ECHO's mandate is a concrete preceding step in the science policy continuum. In contrast, the remaining three panels—HLPE, IRP, and OHHLEP—have shown an evolving scope, mandate, and role over time. Insights from how these three panels have navigated and meaningfully defined and anchored themselves, creating a viable mandate amidst the huge breadth of the fields in which they operate and the 'demand-based' nature of their work, which may be particularly illustrative for the IPEA.

[5]2024 United Nations General Assembly Political Declaration on Antimicrobial Resistance (adopted on 26 September 2024).
[6]Adopted by consensus during the High-Level Meeting on AMR, meaning all 193 UN Member States implicitly endorsed it unless they formally dissented

Key questions here are the extent that the strategic prioritization of the IPEA will be based on the [forthcoming update to] the 2015 Global Action Plan on AMR (GAP-AMR)[7] and who determines its scope and priorities? The GAP continuum (**Figure 1**).

Panels vary widely in how their priorities are set. Most follow formalized, top-down, and demand-driven processes. For instance, HLPE-FSN operates under a strategic framework determined by the CFS, with multi-year planning and structured reviews that ensure strong institutional alignment. Similarly, since 2018, the IRP has employed a rigorous prioritization process, structuring its work into defined streams with clear objectives, engagement strategies, and deliberate panel composition. In contrast, OHHLEP initially adopted a reactive, needs-driven model without a long-term strategy. While it has since introduced some structure, its scope remains broad and loosely defined, perhaps reflecting the inherently complex and evolving nature of One Health governance. These variations raise a central question for IPEA: Should its workstreams be determined through formal intergovernmental processes (as in the IPCC or HLPE-FSN) with outlines approved years in advance, or should the panel retain greater autonomy to set its own agenda?

Panels also differ in their positioning along the science–policy continuum. HLPE provides scientific inputs to inform CFS-led policy processes. The IRP, lacking a direct policy counterpart, has expanded from upstream science to a more comprehensive role spanning science, policy translation, and implementation. OHHLEP's role is less defined, situated between advisory and coordination functions, but without a clear policy uptake mechanism, highlighting the risks of ambiguity when institutional interfaces are vague.

For IPEA, ensuring a clear science-policy continuum positioning, strategic clarity, and a defined interface for policy influence will be essential. This is critical not only for impact but for preserving the integrity of its scientific mission in a politically complex and resource-constrained environment. IPEA's scope must reflect its positioning within the global AMR architecture, avoid duplication, and ensure it adds clear value. A spectrum of strategic options exists for defining its scope, from a narrow focus on evidence synthesis and horizon scanning, through a broader role, encompassing coordination, policy analysis, and to a more phased approach, starting narrow and expanding. Anchoring its mandate to a five-year strategy, co-developed through a consultative process, may offer a way to balance flexibility with focus. Its workstreams should be aligned to anticipated policy uptake pathways, and its outputs tailored to the decision-making needs of various stakeholders—global, regional, and national.

Funding

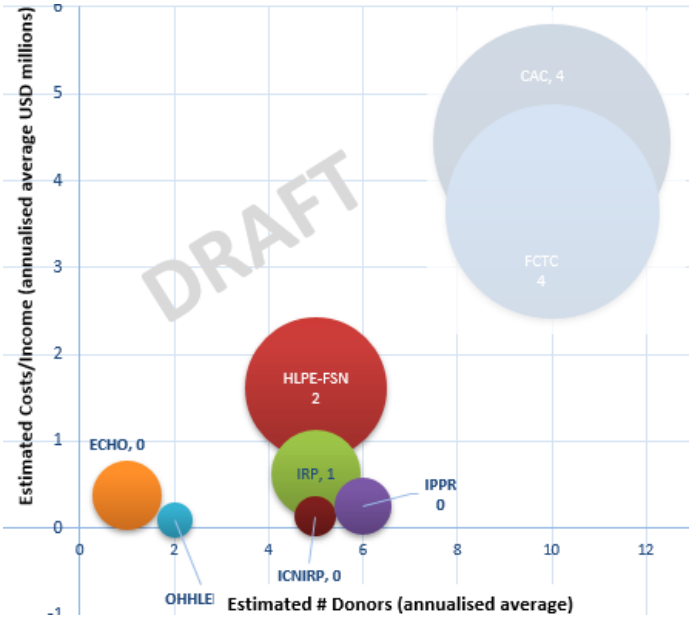
A key theme that should not be overlooked is the widespread financing and sustainability challenges faced by all health and health-related panels (**Figure 2**). This issue is particularly evident in larger, long-standing panels, all of which—those over five years old—formally acknowledge financial difficulties. This suggests that sustaining funding becomes harder after the initial momentum of a panel's launch fades. Outside of the reliance on core UN agency contributions (voluntary or mandatory), a further and

[7] 2024 UNGA Political Declaration tasked the Quadripartite with updating & aligning the GAP by 2026

common limitation across all panels is a narrow funding base for additional contributions. To address funding shortfalls, panels adopt varied strategies with differing degrees of assertiveness—from 'encouragements' to 'formal requirements', remaining unclear whether stricter approaches yield better results. **Table 2** summarizes the limited publicly available data on panel finances, including the two more mature health panels (CAC and FCTC) for comparison. Overall, transparency is poor, and while most are likely not considered separate legal entities, greater transparency should be considered valuable.

However, achieving sustainability is not solely about increasing and diversifying income. Equally important is the prudent management of available resources. Efficiency should be embedded in IPEA's architecture from the beginning, guiding decisions around partnerships, structure, and convening; a precondition for this will be far greater transparency than we traditionally have precedent for. First, in addition to its mandate, it will also be enlightened self-interest for the IPEA to avoid duplication the efforts of existing AMR initiatives. Instead, it should position itself to draw from, coordinate with, and amplify these efforts. Integration, rather than redundancy, is key to cost-efficiency and added value. Second, the question of secretariat hosting offers an opportunity to optimize for operational efficiency. Rather than defaulting to a single institutional host or adapting to a rotating host, IPEA could select a secretariat through an open, transparent, competitive, or invitation-based process. This would facilitate identification of the host best equipped to deliver administrative and technical support efficiently and cost-effectively. In addition to the previously mentioned benefits from leveraging existing governance structures for its oversight would be the resulting efficiency gains.

Finally – and in the same operational efficiency light – the IPEA could adopt a pragmatic approach to its convening model as it has no existing obligations in this regard. It could consider leveraging one or more existing AMR convening fora, and coupling this with virtual collaboration and asynchronous consultations should be the norm, minimizing travel-related expenditures while enhancing accessibility and participation from underrepresented regions.



Returning to 'income' from expenditure, only two current panels (IRP and HLPE-FSN), along with CAC and FCTC, accept non-governmental (NG) contributions. This trend may reflect a necessary trend to become more open to diverse funding sources. Notably, all but one of these four older panels have a dedicated funding mechanism, suggesting this may be a prerequisite for establishing a broader donor base. Beyond increasing government contributions, some success and more innovation have been seen in attracting NG funding and in-kind support. A few panels have explicitly made certain activities dependent on securing new funds, and some have made "resource mobilization" a central function of their secretariat.

From the outset, the IPEA must prioritize securing sustainable, diversified financing at a scale aligned with its ambition and scope, reducing reliance on the same limited donor pools seen in other health panels (**Figure 2**). Given global public and multilateral fiscal constraints, innovation and, as a minimum, a dedicated funding vehicle will be critical.

Figure 4. *Estimated annualised costs/incomes (USD m) by the known number of core or additional funders*

Adaptability

Despite the criticality of a clear role and position, since panels often span multiple decades, their ability to evolve and adapt, both to shifting external expectations and internal (institutional and field-specific) changes, is essential for maintaining relevance and authority. Interestingly, one key tool for supporting such adaptation—internal evaluation—is often absent or only conducted reactively, typically following a crisis once a decade or so. **Appendix 7** attempts to rank the panels on this parameter. For many of the longer-standing ones, it is difficult to assess the full extent of their evolution since inception, as few have updated foundational documents such as statutes, rules of procedure, or terms of reference. The 'adaptability and responsivity assessment' starts with IRP as the most, followed by HLPE, OHHLEP, ECHO and IPPR (although as so new this parameter is less relevant for the latter three), yet insightful insights on how these panels have adapted – albeit often reactively – can be found in the appendix. For the HLPE-FSN, a shift toward greater inclusivity around 2018 is argued to have compromised effectiveness, as its slow, consensus-based model attracted criticisms for limiting its speed (report topics are defined 5 years ahead), efficiency, and responsivity, demonstrating the tricky practical balances here. Still, it appears that the end of the last decade marked an inflection point for many, triggering a new trajectory. These shifts, however, seem largely reactive and are only now slowly starting to be underpinned by embedded M&E mechanisms that enable regular, proactive, and incremental adaptation.

To take just one parameter where we have seen some of the strongest adaptations over the decades, is panel composition. All of them – since their founding – have included various 'intents' (shall reflect, consideration will be given, with regard to an [appropriate balance], attention shall be paid) within their foundational documents regarding geographic representation, technical expertise, and gender balance. Many have subsequently publicly acknowledged that despite this, their panels have historically had an overly narrow composition; implicitly, the OHHLEP also acknowledged this between its first two terms. This was particularly a finding of the evaluations that happened in 2017/8 for HLPE and IRP. Since then, some interesting practices and trends have emerged, for example, the IRP now specifies the underrepresented constituencies that it wants to fill. A recent advertisement (Meiattini, 2025) for the SC of the HLPE subordinates traditional scientific competencies to skills such as strong experience in managing groups or networks of experts, extensive communication and interpersonal skills, leadership skills, capacity to attract and draw expert networks, drawing from their international recognition by peers. The IRP, in its latest work plan strongly indicates not only the need to 'involve social scientists (as opposed to other natural science disciplines') and more 'generalists' able to cross-fertilize across groups through their broader skills base but also that the expertise itself needs to be ''better matched'' to a specific task or deliverable. Overall, a more considered approach to the diversity of knowledge and skills required to optimize these panels in a way that represents more of how the real world functions.

Knowledge handling

Starting with knowledge inputs**,** most panels draw on both quantitative (e.g., statistical analyses, datasets) and qualitative (e.g., academic literature, stakeholder insights) evidence. Many also maintain an extended network of experts. For example, HLPE-FSN engages over 2,000 experts (although laudable, this is still ten times less than IPCC) across constituencies and incorporates non-traditional knowledge through local consultations and case studies. In comparison, ICNIRP has been criticized for excluding emerging or even peer-reviewed evidence. Panels differ in how they address data gaps and diversity. A key challenge for the IPEA will be ensuring that: 1) the absence of evidence is not mistaken for the absence of effect; and 2) dispersed and diverse sources of knowledge, including those outside traditional and academic channels, are meaningfully incorporated[8] (High Level Panel of Experts on Food Security and Nutrition, 2010, 2025; International Resource Panel, 2026).

Regarding knowledge synthesis, or the scientific method, most panels, on paper, adhere to robust, transparent standards for ensuring scientific quality. HLPE-FSN, IRP, and OHHLEP outline detailed processes for evidence synthesis, peer review, and managing scientific disagreement. HPLE-FSN includes open consultations at two stages of its report cycle, while IRP requires a structured scoping, terms of reference, and planning process before work begins.[9] Notably, HLPE-FSN is the only panel to have made visible the link (and risk) between resource constraints and its potential to undermine performing 'comprehensive analysis'.

However, the extensive presence of strong procedures does not necessarily equate to credible practice. For example, despite formal processes, ICNIRP has faced criticism for perceived bias, data exclusion, and failure to meet scientific quality standards (Nordhagen & Flydal, 2023; Nyberg et al., 2024). This highlights that both adherence to procedure and external perception of credibility are critical.

For the IPEA, a central design challenge will be balancing inclusive, high-quality evidence gathering with the need for timely, actionable synthesis – a tension that panels like HPLE-FSN have struggled to resolve effectively.

Panels differ widely in how outputs are selected and delivered. At the IPCC, reports are commissioned by governments, ensuring alignment with policy priorities but limiting scientific autonomy. This is similar to the HLPE-FSN, which remains constrained, limited to producing reports for the CFS that are similarly defined many years in advance. While this ensures alignment, it restricts responsiveness and innovation. In contrast, panels like the IRP and OHHLEP have greater freedom to set their agendas (Food and Agriculture Organization et al., 2023), allowing them to respond more flexibly to emerging issues. The IRP, by comparison, has expanded from reports to practical tools such as the Global Material Flows Database and SCP-HAT, supporting broader policy and implementation efforts. ECHO curates diverse

[8] For example; socio-economic insights (e.g., behavioral sciences, health impacts, economics, equity disparities), and local knowledge, policy frameworks, emerging tools like big data analytics and scenario modeling project future risks and solutions.
[9] Aligns with its strategic workplan and requires comprehensive details on purpose, scope, urgency, complexity, policy relevance, expertise, beneficiaries, lead authors, resource needs, timelines, and outreach strategies.

outputs, such as indicators, country profiles, and case studies, into a centralized and user-friendly evidence portal that policymakers access directly.

Again, for the IPEA, a hybrid model could have merit. The executive could request specific reports to support its longer-term strategic vision, ensuring policy relevance, while the panel retains the ability to pursue additional work independently, particularly that which may arise from horizon scanning efforts, and therefore be able to initiate work more responsively based on emerging trends and needs. This balance would support both credibility and responsiveness. IPEA could also move beyond traditional reports by establishing a publicly accessible "evidence for action" repository. Such a platform could centralize tools and curated knowledge, improving transparency and global reach without duplicating existing efforts.

Outputs

Monitoring and evaluation (M&E) are gradually gaining prominence. The IRP was the first among the reviewed panels to incorporate M&E into its formal workplan (2022), suggesting a shift toward more systematic tracking of influence and effectiveness (UN Environment Programme & International Resource Panel). Panel impact can span multiple domains: Scientific ('clarification of the evidence base, filling gaps, synthesizing and bringing data forward); Policy (formulation, acceleration and convergence); Anticipatory Governance (horizon scanning, scenario modelling); Political (awareness raising, harm reduction, coordination/collaboration), and Stakeholder Trust and public awareness.

Examples from the panels illustrate these pathways. The IPPR played a critical role during the post-COVID period, framing reforms around accountability and equity. The ICNIRP helped harmonize exposure standards globally, with its guidelines adopted by over 100 countries. OHHLEP had early success with the global uptake of its "One Health" definition. The HLPE-FSN directly influenced policy convergence in areas such as responsible agricultural investment, with countries like Senegal incorporating recommendations into national strategies. Meanwhile, the IRP has had a broad impact through accessible, high-profile tools and assessments, such as the *Global Resources Outlook* and the *Global Material Flows Database*, cited widely in the European Green Deal, UNEA, G7, and G20 policy discussions.

Conclusions

The forthcoming IPEA on AMR represents a critical opportunity for strengthening global coordination and accelerating progress against AMR. Lessons from existing high-level panels—spanning pandemics, One Health, climate, and pollution—highlight both best practices and pitfalls in governance, funding, knowledge handling, and impact. As many of these panels undergo reorientation in response to shifting global dynamics, their experiences offer valuable insights for designing a panel that is not only independent and credible but also inclusive, adaptable, and action-oriented from the outset. Appendix 1 distills these lessons to inform IPEA's foundational choices, which must balance scientific autonomy with intergovernmental relevance, and avoid duplication while fostering deep, sustained collaboration across the AMR ecosystem.

Key initial questions for the IPEA to address based on the experience of prior Health Panels:

1. Who fills which roles, and through which selection procedures, across the governance structure? Who will fill the oversight or executive role? How will transparency, accountability, and safeguards be ensured?
2. What is the understanding of independence (in terms of autonomy or specific to certain functions, i.e., institutional, operational, scientific)? How will the IPEA be structured for independence, even if its broader governance leverages existing AMR governance structures?
3. Through what concrete mechanisms does the IPEA optimally position itself along the Science-Policy interface continuum and within the existing AMR architecture? Balancing the simultaneous achievement of both non-duplication and sustained and meaningful collaboration across the AMR ecosystem while ensuring a clear partner or pathway for policy translation. Could a consultative 5-year strategic vision support external clarity of its role and prioritization of its resources?
4. What is the optimal panel composition and 'more proactive, inclusive and considered' approach to panel members selection and matching from the outset, that draws learnings from recent health panel innovations? How will equity and the trade-off between 'seniority' & 'availability' be achieved?
5. What transparency mechanisms, resource mobilization strategy, and funding vehicles should be established now (e.g., trust fund)? How can we leverage the learnings to optimally embed "skin-in-the-game" principles and enablers for LMIC participation?
6. 'How can a 'for tomorrow, not for yesterday' approach to knowledge incorporation and synthesis be instilled from the outset. What would be an M&E framework and independent evaluation rhythm that would optimally support 'adaptation and adjustment' for enduring relevance?

Table 2. Draft considerations & options for the IPEA

Dimension	Design Options	Considerations
Governance	**A.** Independent body with its own oversight mechanism **B.** Reports to existing executive structure (i.e., GLG, QJS, Ministerial) **C.** Hybrid model: anchored in one body, coordinated with others	How to ensure legitimacy, coordination, and accountability without political capture or duplication
Independence	**A.** Structural and financial independence (IPPR model) **B.** Scientific autonomy within intergovernmental governance (IRP model) **C.** Joint ownership model with safeguards	What mechanisms will protect evidence integrity while ensuring uptake?
Mandate	**A.** Narrow scope aligned with GAP-AMR **B.** Broader cross-sectoral mandate across science–policy continuum **C.** Phased approach: focused launch, gradual expansion	What scope is achievable and relevant in the short vs. long term?
Funding	**A.** Trust fund with multi-donor and philanthropic contributions **B.** Core UN agency funding plus in-kind/partner support **C.** Lean model with shared hosting by existing institutions	How can funding be diversified, transparent, and sustainable from the start?
Knowledge Handling	**A.** Traditional peer-reviewed reports **B.** Dynamic toolkit (dashboards, briefs, horizon scans, rapid syntheses) **C.** Central "Evidence for Action" repository (ECHO-style)	How can the IPEA maximize credibility, accessibility, and actionability of its outputs?
Adaptability	**A.** 5-year strategic vision with shorter-term workplans and periodic review **B.** Built-in M&E system to guide course corrections **C.** More flexible, demand-based model responsive to urgent issues	How structured should planning be to remain agile but not directionless?
Outputs & Agenda-Setting	**A.** Reports commissioned by the executive **B.** Panel-driven agenda-setting with freedom to initiate work **C.** Mixed model: executive to determine the 5-year stategic vision through broad consultation, complemented by self-initiated outputs	Who decides what the panel works on, and how are reports used?

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Appendices

Appendix 1 – Summary of the positive and negative learnings for each of the included panels

Panel Name Health [-related] panel & ABB	**Positive Learnings** (could be taken-forward by IPEA)	**Negative Learnings** (to be safeguarded by IPEA)
HLPE-FSN High Level Panel of Experts on Food Security and Nutrition	1. Similar to IPEA not mandated to **conduct new research'** tasked with synthesizing 2. Rules of Procedure doc, quite **detailed/ transparent for Scientific process** and scenario's…i.e., works well at level of the 'doing'… 3. **Inclusive, broad participation:** pluralism, equitable participation, and inclusion of diverse forms of knowledge cannot be ensured, a new platform could do more harm than good. operates by consensus, negotiating policy documents line by line — until everyone agrees.	1. **Hierarchy**- Questionable independence from hosts (FAO webpage; not evaluated). Possibly weak 'panel selection/review mechanisms' (small pool of countries, becoming more diverse but not v. high-level) 2. Limited visibility globally nor '**downstream effectiveness'** i.e., efforts/ability to follow-through (uptake) 3. **Adapt or Die**; perhaps has not overcome constraints sufficiently 4. Limited 'types' of outputs 5. Resource constraints
IRP International Resource Panel	1. **'Resonant Breadth & Problem Statement'** for the AMR IPEA; lack of understanding; lack of clear, accessible, and actionable scientific information as a basis for developing policy and Policy Incoherence. 2. **1 yr probation period**...(not a problem with the members but there 'availability to contribute in a very substantive manner to the pro-bono work of the Panel'.)	1. **Adapting & Evolving**: McKinsey strategic approach working on its prioritization (HIPA's) and impact (Engagement strategy); refining selection procedures to overcome shortfalls and composition ('matching' & non-Sci skills); M&E just added 2. **Highly consultative strategic process** (albeit in lieu of evaluations) 3. **Kick-ass permanent products / outputs**, able to leverage from 1st decade

	3. Still struggling to **diversify $$** from limited pool despite 'Expected' financial contributions from OECD and 'strived' from other (implicit that LMICs are underrepresented)	
ICNIRP International Commission on Non-Ionizing Radiation Protection	1. **Political Success:** Must have been effective [although maybe that was WHO unit] in the early years at fostering global dialogue and forging global standards convergence. They never claimed to be 'Policy interface' the were only ever a 'Scientific Commission' (Trojan Horse)…. 2. **Output success*:*** In addition to convergence. Guidelines & Recommendations found around the world – still in place in EU and WHO… 3. **'Activity clause'. ..** utmost importance that all members are actively involved in the work of the Commission. Therefore, a membership may be terminated before the end of the term upon a vote by the Commission at any commission meeting if a member fails, without an excuse, to participate in two consecutive commission activities (such as commission and standing committee meetings, document preparations, etc.) .	1. **Difficulties of ensuring against conflicts of interest**. All the docs, procedures etc. seem to be [and have always been] in place. Yet… 2. **Need to ensure Scientific Integrity**… 3. **Too slow to evolve** (yes to the science but EVEN MORE SO to a changing world and governance expectations).
OHHLEP One Health High-Level Expert Panel	1. **Expertise diversity:** Term II – extreme/impressive cross-disciplinarity/ diversity of expertise, till a relatively small pool of experts globally…. 2. **'Active [& min.] participation clause'** (albeit quite weak – only meeting participation) in ToRs (III Membership/ Terms of office and selection Art. 13 & 17 at least two-thirds of the Experts should be present at a session. 3. **Started small and concrete**.	1. **Vague Positioning –**exchange of information between OHHLEP and these AMR bodies – note Anderson on overlapping Res. Agendas. 2. **Unclear mandate along the Sci-Pol interface,** 3. **Risk of Being ST/Tactical vs. LT strategic.** Terms are quite short (2 yrs) and focus is on Work Plans – could consider a longer-term strategic framework (like IRP).
ECHO	1. **Broad country participation** (>38?) despite being 'regional' > '**Skin in the Game'** condition for partners: requirement for the	1. Quite some shifts in priorities between WP's

European Climate & Health Observatory	partner organizations is to provide concrete in-kind contributions and activities that contribute to the strategic objectives (propose actions/commit to deliver them). 2. **Clear benefits for National** (sub-national) stakeholders… 3. **Valuable examples of effectively leveraging partnerships** 4. **Strategy and Vision articulated**: 5. **Central Data Portal/Resource Catalogue**:	**2.** Relatively limited learnings across the other parameters assessed due to the slightly different focus, structure an mandate
IPPR Independent Panel for Pandemic Preparedness & Response	1. The **most 'independent'** of the panels included and seemed to have full autonomy in practice 2. **Impressively inclusive and consultative** for such a short-lived panel – leveraged innovative mechanisms to achieve this 3. Likely helped by having the **support of a secretariat twice the size** of the next largest secretariat of the panels included in this study 4. **Enabled across the full cycle**>supported keeping rec's on the agenda 5. Must have **effectively leveraged the existing evidence base** (assumption)	**1.** Undoubtedly **the most 'high-level' of the panels** included but the relatively limited uptake and action (from its own monitoring reports/assessments) may indicate a risk of 'high-level' policy people being **too far removed from or lacking authority with the current practitioners?** 2.

Appendix 2. Summary of the financial information in the public domain - including the two more mature health panels (CAC and FCTC) for comparison

	Funding model & Contributors	Transparency around financials	Dedicated funding mechanism	Identified funding from non-HIC's	Acknowle $$ struggles	Res mobilisn strategy/ Invetigating new sources	**Notable Practices / Models**
HLPE-FSN	UN agencies (esp FAO) & voluntary government contributions & non-government via dedicated vehicle	No (integrated into FAO/CFS)	YES: Multidonor voluntary trust fund	2 listed over 15 years	YES	Weak; at level of CFS	''Encouraged contributions''
IRP	UN agencies (UNEP) Government, Partner & Private contributions (annual cap with private not allowed to exceed public).	YES	No	'Somewhat limited' (and in-kind?)'	YES	YES – previously over 50% dependence on one donor (EU)	''Required contributions'' (OECD) and ''Strived for contributions (non-OECD) esp. in-kind (strategic partners)
ICNIRP	Direct public & g'ment donations only *(NB: some controversy around private sector conflict of interest).*	YES	No	No	No – deficits yes	No	Questions have been raised over if the achievements could have been possible on only the disclosed data.
OHHLEP	UN agencies (QUAD) plus possible additional governmental contributions	No	No	N/A	No	No	(Public acknowledgement (report) visibility to 'in kind' contributions
ECHO	Core funding from EC – mostly [conditional & concrete] in-kind from partner org's	Limited	No (existing vehicles)	N/A	No	No	To be a partner one must propose actions in the Observatory's 2-year workplans & commit to deliver
IPPR	Solely relied on UN agency (WHO) core funding	No	No	N/A	No	In-kind or other funding was prohibited	

Indicative inclusion for comparison:							
CAC	UN agencies, Government & partner contrib'ns via	Limited	YES: Codex Trust Fund,	14 x LMIC's (matched	YES	No	Employs formal expressions of gratitude &
FCTC	UN assessed & voluntary contrib, ODA &	Limited	NEW FCTC Investment	3 x LMICs direct	YES[10]	YES	FCTC Article 5.6 ''calls on Parties to 'cooperate to

[10] https://tobaccocontrol.bmj.com/content/31/2/335

Appendix 3 – Overview of the Structures of the Panels

HLPE-FSN	Created by UN Resolution (A/RES/63/235) to serve [bring scientific evidence to inform…] the Committee on World Food Security (CFS) 1: **Governed by** – CFS Plenary, Bureau & Advisory Grp. 2: **Steering Committee** (SC), 10-15 world experts; 2 yrs mandate (renewal once), open-nomination but selection by a small-grp of Rome-based org's: FAO, WFP, IFAD, CGIAR/Biodiversity and from a CSO/NGO 3: **Expert project teams** (PT's) 4: Secretariat: FAO-hosted secretariat of 4 x pax.
IRP McKinsied Impressive attempts to evolve in last 7 yrs	The **International Resource Panel (IRP)** and the forthcoming **Science-Policy Panel (SPP)**, both initiated by UNEP, share roots in addressing global environmental challenges but differ in scope and level of influence. The former was initiated in 2006 (launched in 2007) during the World Science Forum in Budapest to serve as a science-policy platform focused on sustainable resource management. But in 2019 (UNEA 4) identified a need to create a Science-Policy Panel (SPP); at the level of the IPCC/IPBES then mandated in 2022 by the United Nations Environment Assembly (UNEA) Resolution 5/8 (2022). IRP's Scope is Broader but will be less High-Level than the Forthcoming panel. 1. Reports to/Accountable to the UNEP 2. The **Steering Committee** is the governing body providing administrative oversight, strategic policy guidance to enhance policy relevance and national impact chaired by the EC and UNEP with 20-30 UN M/S 3. The **Panel** provides scientific oversight; 35-40 eminent scientists serve 4-year terms (renewable twice – up to 12 yrs) – scientists; not skills. Work done by Panel… 4. The small **Secretariat** hosted by UNEP administrative support to the Panel and SC. Its role includes ensuring the effective implementation of the WP & compliance
ICNIRP	Non-state NGO (similar to Drug Commission) that evolved from the International Non-Ionizing Radiation Committee (INIRC) of the International Radiation Protection Association (IRPA) in 1992. A competing Commission established in 2022 the 'International Commission on the Biological Effects of Electromagnetic Fields (ICBE-EMF) operating as a multidisciplinary consortium of scientists 1) **Executive Council** (Chair [maintain close liaison and working relationship with the Executive Council of IRPA, fin/legal matters], vice-Chair, Sci secretary) external representation 2) **Main Commission**: not less than 7, up to 14 independent experts (Chair, Vice-Chair, and members) who must meet once a year 3) **Scientific Expert Group** (SEG) organized into **project groups** (PGs) - currently 7 x listed for the 2020-2024 WP...(pg 2 2023 ann report) PG comprise 8-15 experts (listed on website only https://www.icnirp.org/en/about-icnirp/project-groups/index.html) Composition: Project Group (PG) consists of members of the Commission and the SEG when additional expertise is

	needed. PG members are selected by the Commission members. Project Groups are set up to assist ICNIRP in performing its projects as per its work plan i.e., preparation of the ICNIRP draft documents or the organization of a workshop. Upon completion of the task assigned, the PG is dissolved. 4) **Scientific secretaria** (used interchangeably with 'Secretariat? Only 2 people?): responsible for the daily management of the Commission all comms, member of the Executive Board but has no voting rights in the Commission voting procedures. nominated by the Commission members for four year renewable. Work is on a voluntary basis.
OHHLEP	Post-COVID the OHHLEP was formally initiated by the Quadripartite organizations—WHO, WOAH, FAO, and UNEP—May 2021, following a proposal by the French and German governments during the Paris Peace Forum on Nov. 2020. 1) **Governed by the Quadripartite Secretariat for One Health;** senior representatives from each organization, such as Directors General or their deputies, who meet annually in person and as needed via teleconferences to discuss strategic issues plus technical staff and liaison officers form working groups. Ensures direct communication among the four agencies between executive-level meetings, addressing technical and policy issues of mutual concern throughout the year. Its mandate includes supporting decision-making at the executive level, facilitating coordination on One Health activities, and maintaining alignment with strategic priorities. Also supports other initiatives, such as antimicrobial resistance (AMR) efforts through its specialized Quadripartite Joint Secretariat (QJS) on AMR. Both Secretariats Secretariats draw on staff from the same organizations and utilize shared governance arrangements (e.g., liaison officers and senior management groups), their operational focus distinguishes them. OHHLEP ToR's says it shall operate' independently' from the QJS… 2) **Panel Membership:** OHHLEP has an advisory role to the Quadripartite and is expected to provide advice to the Quadripartite to support their provision of evidence-based scientific and policy advice to address the challenges at the interface. Serve for a period of two (2) years and shall be eligible for reappointment. The panel is composed of 26 international experts from 21 countries (increased to a more diverse group of 30 for Term II) initially organized four working groups with dedicated participation of specific OHHLEP members that were later transformed into thematic groups open to all interested panelists (controversial vs. deliverables) – amended for TII 3) **Secretariat** rotates between Quad members (unspecified freq). Currently administratively hosted by WHO (possibly unclear role also between the quad itself?). how the designated Secretariat will manage and share responsibilities.
ECHO **IPPR**	

Appendix 4 - Deep-dive on the 'expert' function of the governance of the health panels.

HLPE-FSN	Three-tier: Comprises a Steering Committee (SC), multiple issue-based Project Teams (PTs), and a broad expert network (over 2,000 multidisciplinary experts across diverse stakeholder groups). The SC, composed of 10–15 global experts with two-year mandates (renewable once), holds full responsibility and flexibility to establish and manage PTs, methodologies, and work plans. Each PT is led by a Team Leader (who may or may not be an SC member) overseeing the drafting
IRP	At most two-tier. The Panel, 35-40 eminent scientists serve 4-year terms (renewable twice – up to 12 yrs), conduct scientific studies and assessments directly based-on organization into Working Groups, external peer-review utilized. Broader network of expertise drawn-on not for the technical work but, since 2018, but to input 4-yearly highly consultative Strategic Planning Exercise/thorough, impact-driven, and inclusive consultation process of around 180+
ICNIRP	Three-tier: the Main Commission (C), the Scientific Expert Group (SEG), and Project Groups (PGs). The C is the central governance body consisting of at least 7 and up to 14 independent experts serving 4-year renewable terms. The SEG functions as a broader pool of specialized experts appointed by the C to provide additional expertise as required. From this pool, the C forms temporary PG's (7 x listed for the 2022-2024 work plan), composed of 8-15 experts to do
OHHLEP	At most two-tier. Up to 30 Experts with expertise in at least one of the three pathways of change, serve for a period of 2-years and shall be eligible for reappointment. They conduct the work themselves Chair is limited to 2 x terms. Initially (term I) organized 4 x working groups (WGs) with dedicated participation of specific OHHLEP members; later transformed into thematic groups open to all interested panelists. The second tier appears to be an *ad hoc* possibility to draw-on others for support, either: the Quadripartite itself, external individuals (in the form of "Observers") or external experts or stakeholders for specialized knowledge or
IPPR	Three-tier but smaller, looser & more transient structure due to limited-duration including a much larger (11-12 pax) secretariat than seen above. The two co-Chairs at the head of the Independent Panel of 13 members that drew-on broader expertise and knowledge through by participation in open town-hall 'Exchange' meetings. 100+ submissions received through web

Appendix 6 - Context, history, inception mode and characterization of the panels

Panel/ Characterization	History	Current Immediate Governance Context	Parent, Host, Executive.	Nature of initiation
HLPE-FSN ***Scientific Advisory***	CFS est. in 1974 after the first World Food Conference. UN GA Resolution A/RES/63/235 (2008) as part of post-2008 food crisis reforms.	Present institutional arrangements inc; CFS, the scientific bodies of the Rio Conventions and the CGIAR system	FAO, WFP, IFAD >CFS	HLPE created in 2009 as part of the reform of the CFS when it transitioned from UN intergovernmental body to a multi-stakeholder platform
IRP ***From Science to Science-Policy Panel***	Need growing the 1992 United Nations Conference on Environment and Development; the growing evidence base was the more recent catalyst with org's like OECD, UN & EC lamenting no unified sci. body to consolidate global knowledge	IPCC, IPCC for Land (proposed) IPBES, MA, GEO, POPRC, and TEEB*[11]	UNEPS	Launched at the WSF in 2007 by UNEPS supported by EC & at least 3 x nat. champs
ICNIRP ***Science-Based Guideline Develop.***	Emerged from a decades-long evolution within IRPA. From WG (1974) then committee (INIRC 1977) & finally indep. ICNIRP since '92.	WHO (EMF Project), IARC, IRPA & the newly created Int. Commission on the Biological Effects of Electromagnetic Fields (ICBE-EMF)	IRPA	IRPA ratified the creation of ICNIRP as an independent scientific body during the 8th IRPA International Congress (Montreal 1992).
OHHLEP ***Advisory Body***	COVID-19 catalysed an anyway growing move to strengthen zoonotic spillover and pandemic preparedness and One Health governance.	Space in flux, with talk of an independent panel being created & uncertainty if Pandemic Treaty (via WHO Art.19 powers)/accord & fund. Other actors include OHHLEP, IPPR & GPMB.	UN quadripartite organizations: FAO, WHO, WOAH (OIE), UNEP	A proposal by FRA & DEU at the Paris Peace Forum in 2020 endorsed by Quadripartite (FAO, UNEP, WHO, WOAH) leadership which created the OHHLEP in May 2021
ECHO ***Knowledge Aggregator & Sharing Platform***	European Environment and Health Task Force (EHTF) and the Lancet Countdown (2016) collaborative IPCC-aligned research initiative were forerunners of sorts. Lancet Countdown Europe (2021) cooperates with ECHO (providing indicators to ECHO's tools inc; early warning systems and health vulnerability assessments.	A GAP on Climate Change & Health (draft under WHA consideration) aligned with WHO's 2025–2028 WP. COP28 ('23) Declaration on Climate & Health lacks binding targets. Advocacy continues for a Global Health Threats Council (IPPR 2021 proposal).	Partnership framework lead by: EC (DG CLIMA, SANTE) & the EU Environment Agency (EEA)	ECHO was established in 2021 as part of the EU Adaptation Strategy (*Forging a Climate-Resilient Europe by 2050*) adopted by the EC. Launched under the existing European Climate Adaptation Platform (Climate-ADAPT) to centralize data on climate-health linkages.
IPPR ***Evidence-Based Actions***	Periodic investigations of previous outbreaks particularly (SARS 2003, ebola 2014) with broader or longer-term initiatives i.e, GOARN, IHR Review Committees, GPMB	IPPR itself is central (recs, assessments, structural reform advocacy) to shaping the evolving landscape of global PR	Funded and supported by WHO, operated independentl, with authority	Member states, led by the EU, during the 73rd World Health Assembly Resolution 73.1 (May 2021) mandated an independent evaluation of the global pandemic response, leading to the creation of the IPPR.

[11] In contrast the SPP, was mandated in 2022 by the United Nations Environment Assembly (UNEA) Resolution 5/8

Appendix 7 Ranking of panels by perceived responsivity and adaptability to change

More	***IRP;*** *impressive attempts since 2018 to adapt/evolve/address shortcomings and become more focused (to be verified[12]) but maybe too late as alternative higher-level panel being created amidst broader flux in its' governance context. IRP is the only one who has feedback to the panel whereby the composition of the panel is now evolved to the needs and requests.* ***HLPE;*** *An incremental but continuous process of adaptation displayed over the years but perhaps an 'over correction' to inclusivity around 2018 that has is argued has undermined its effectiveness through its slow and consensus-based model that determines five years ahead the topics of its reports. 2017 evaluation indicate the 'potential of the panel was not fully exploited' despite '' effectively bridge[d] the gap between science and policy, thereby enhancing the legitimacy of CFS policy recommendations' also now amidst broader flux in its' governance context.* ***OHHLEP****; Despite being new, already see quite some changes and evolutions between term I & term II in a number of aspects (particularly scope of work and diversity of members) does not seem much more clarity on mandate.* ***ECHO****; While coherent strategy laid out – quite some shifts between biennium Work Programmes in the thematic priorities and key actions. Too little info to assess organizational shifts.* ***ICNIRP;*** *the slowest to adapt to changing expectations and stakeholder misgivings such that a competing panel now created*
Less	

**Relatively new to see much 'adaption' / IPPR to short-term to assess*

[12]Needs verifying by interview to confirm what is seen from desk research is reflected in reality