

One health in impact assessment for ecological resilience



Francesca Viliani¹, Catherine Machalaba², Paula Prist², Osman Dar³,

*Social Performance Principal – Community Health and Safety
Denmark*

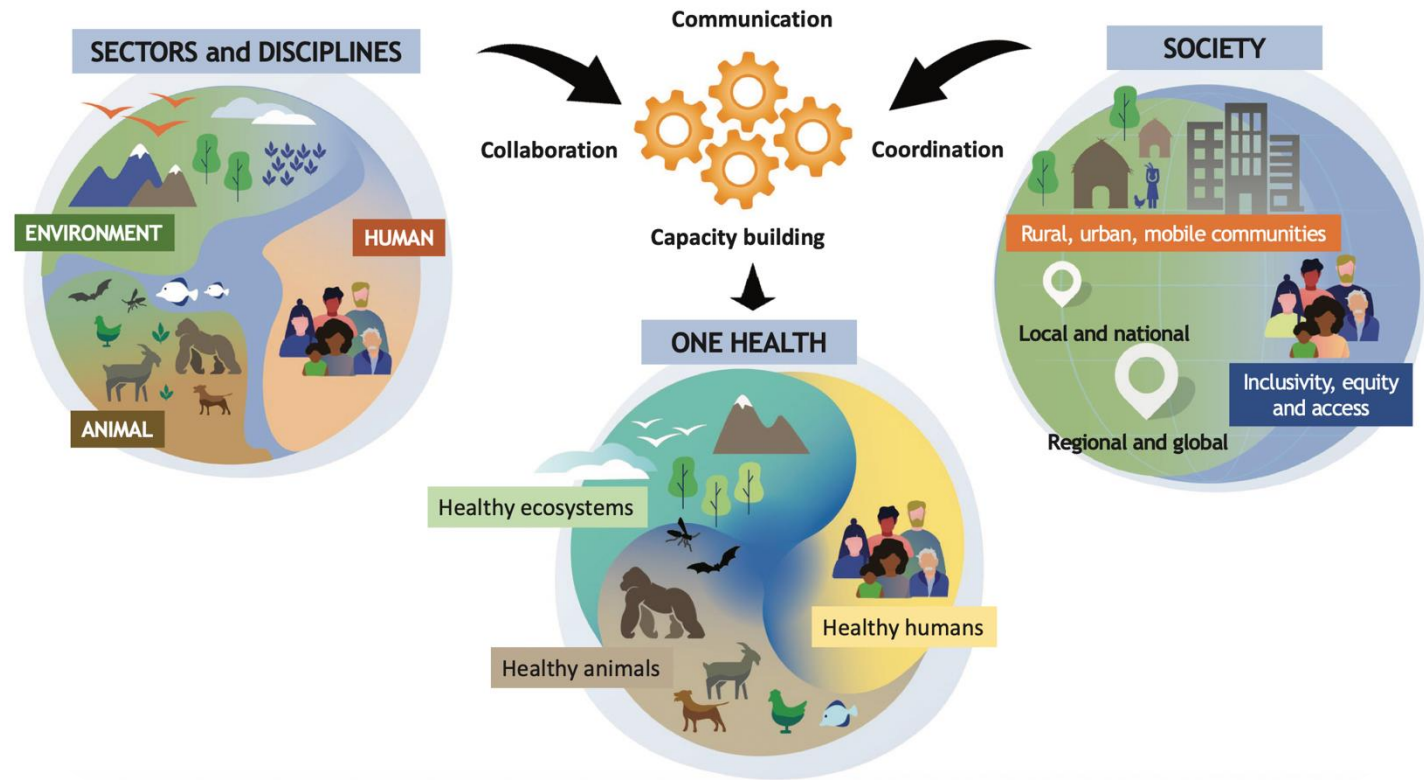
Francesca.viliani@angloamerican.com

1: Anglo American, 2: Eco Health Alliance, 3: UK Health Security Agency



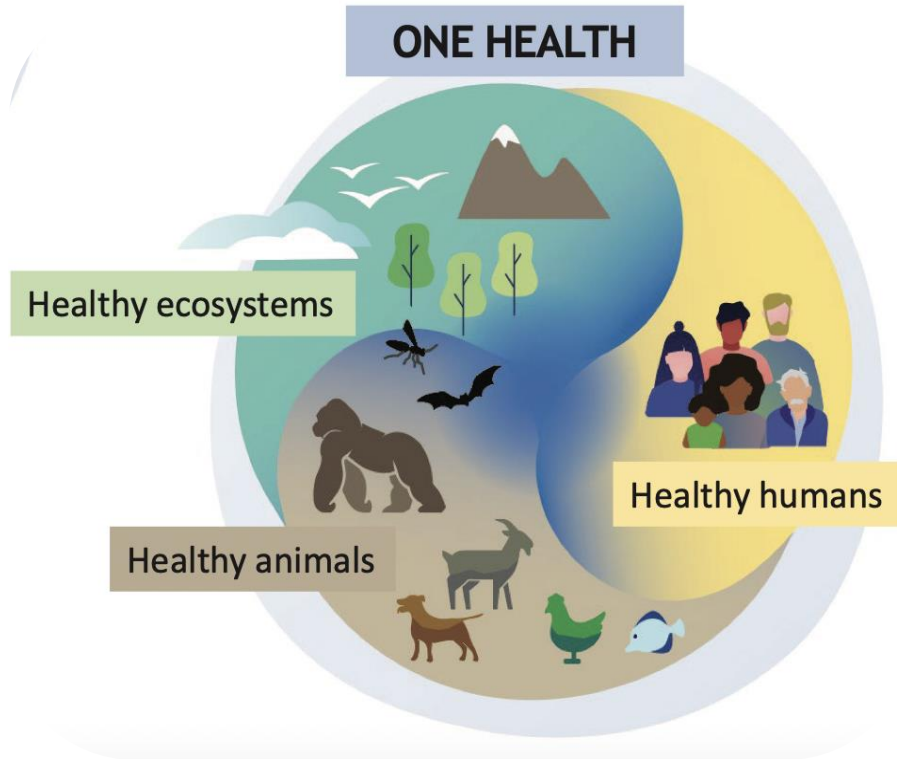
ONE HEALTH

One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent. The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development.



<https://www.who.int/news/item/01-12-2021-tripartite-and-unep-support-ohlep-s-definition-of-one-health>

Balancing Trade-Offs and Co-Benefits



Box 1. OHHLEP One Health Definition Foundational Principles

1. Equity between sectors and disciplines.
2. Sociopolitical and multicultural parity (the doctrine that all people are equal and deserve equal rights and opportunities) and inclusion and engagement of communities and marginalized voices.
3. Socio-ecological equilibrium that seeks a harmonious balance between human—animal-environment interaction and acknowledging the importance of biodiversity, access to sufficient natural space and resources, and the intrinsic value of all living things within the ecosystem.
4. Stewardship and the responsibility of humans to change behaviour and adopt sustainable solutions that recognize the importance of animal welfare and the integrity of the whole ecosystem, thus securing the well-being of current and future generations.
5. Transdisciplinarity and multisectoral collaboration which includes all relevant disciplines, both modern and traditional forms of knowledge and a broad representative array of perspectives.

Emerging Infectious diseases (EID)

60% of emerging infectious diseases are of zoonotic origins.

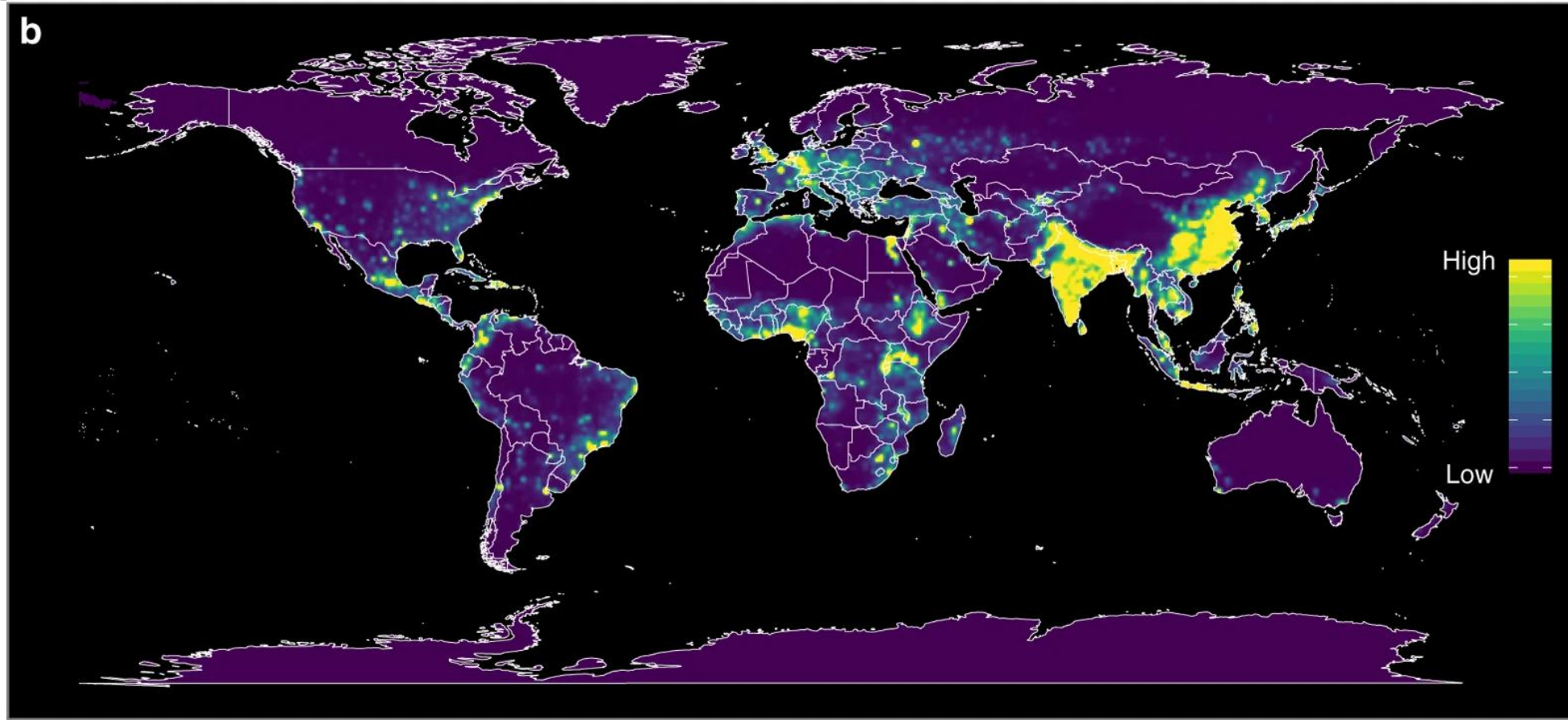
EID emerge in “hotspots”, many of which are in tropical areas favored by socio economic and environmental conditions.

These hotspots often coincide with location of infrastructure projects and new investment:

- Industry practices might cause ecosystem changes and alter the way humans, wildlife, livestock and domestic animals interact
- Often locations where healthcare and public health provision, as well as veterinary systems are limited

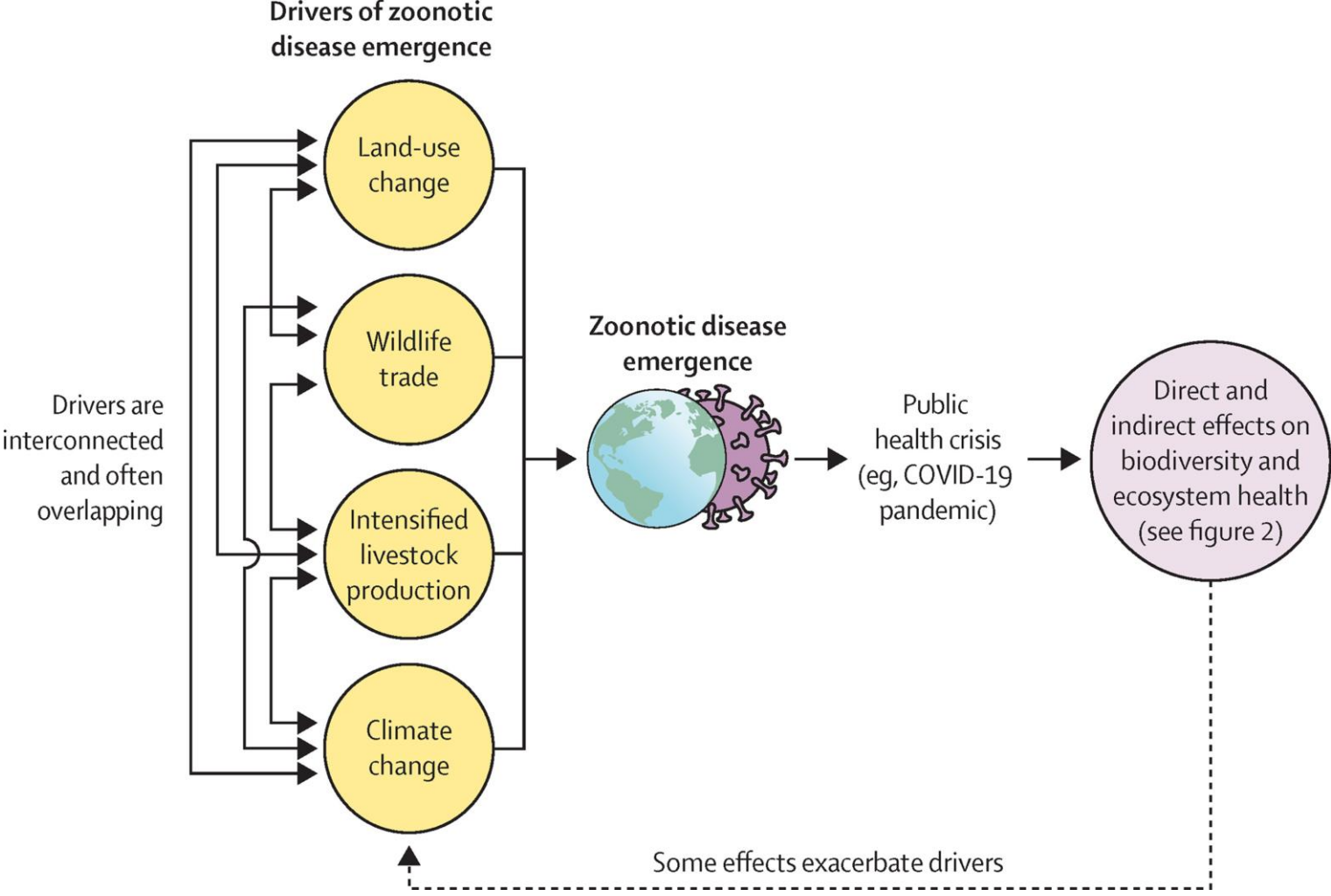


Heat maps of predicted relative risk distribution of zoonotic EID events



<https://www.nature.com/articles/s41467-017-00923-8>

RISK FACTORS



LARGE PROJECTS AND ONE HEALTH



F. Viliani et al (2012) "Comprehensive HIA of greenfield gas project in Papua New Guinea" SPE- 157446-PP

Brazil and One health actors (1/2)



Brazilian Spotted Fever (FMB)

- Capybaras = amplifier host
 - Ticks (*Amblyoma* spp.) = vector
 - Environment and health secretariat agreement
 - In order to control and reduce the risks of FMB both secretariats made mandatory the submission of the Technical Report on Vulnerability in Areas for FMB, during the licensing process of real estate developments and housing developments in the state of São Paulo (Government of São Paulo, 2016).
- Large number of cases in São Paulo state, Brazil
 - Lethality rates = 80%
 - Spatial expansion
- <https://cetesb.sp.gov.br/wp-content/uploads/2014/12/DD-167-2015-C-sem-assinaturas.pdf>

Brazil and One health actors (2/2)



http://www.mpsp.mp.br/portal/page/portal/cao_urbanismo_e_meio_ambiente/legislacao/leg_estadual/leg_est_resolucoes/Resol-Conjunta-SMA-SUCEN-1-2016_diretrizes-tecnicas-vigilancia-e-controle-FEBRE-MACULOSA-Estado-SP.pdf

- Through this document - the epidemiological assessment of the risks of the disease occurs before the installation of condominiums, subdivisions and etc., with special attention to endemic areas.
- This evaluation occurs through the collection of ticks in areas where there are reports of capybaras, horses and other animals associated with its transmission cycle.
- The report is a way to prevent spotted fever, preventing it from becoming a threat both to the employees who circulate there during the construction phase and to future residents or occupants after the project is handed over (SMA/SUCEN, 2016).

Brazil and malaria assessment

- The Ministry of Health resolution No. 1 of January 13, 2014, establishes that enterprises located in area at risk of malaria transmission or in endemic areas must conduct a Malaria Risk study.
- The goal is to assess the potential risk of malaria occurrence in areas where there will be environmental intervention - deforestation, construction, etc.
- The report identifies the drivers, the conditions for the development of the disease, as well as the most vulnerable populations
- At the end, it is possible to estimate the epidemiological risk and propose mitigation, surveillance, prevention, and control measures in the area of influence of the project.



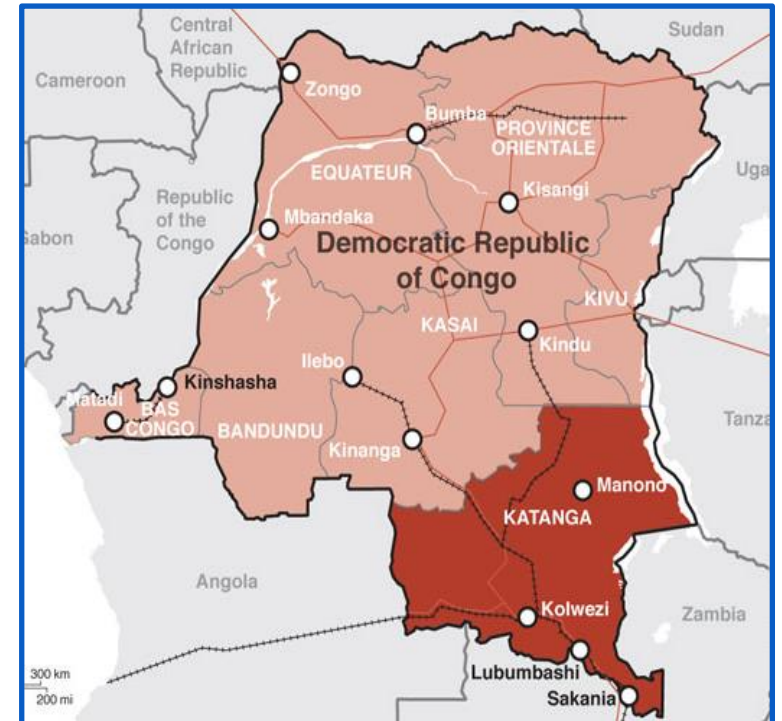
Mining sector and EID in DRC (1/2)

Four mining companies operating in Katanga were visited and assessed using the USAID Planning and Audit Tools for EID

Simulation exercises on outbreak management in a mining area for an event of unknown origin were carried out with a multi stakeholder approach

Consideration

- Companies protect the health of workers and have infection and prevention control systems in place
- Measures “inside the fence” limit contact between humans, wildlife and domestic animals
- Health programmes to promote worker and community health (“outside the fence”) driven by epidemiological profile
- However, companies were still vulnerable to disease outbreaks, mostly due to the situation “outside the fence”



Mining sector and EID in DRC (2/2)

Conclusions - Important components that address EIDs in the HIA/EIA include:

- assessment of land-use change and change in ecosystem services;
- assessment of population influx;
- assessment of the national public health system capacity to conduct surveillance, prepare and respond to outbreaks;
- community subsistence strategies and husbandry practices;
- community attitudes and practices toward infectious diseases in animals and humans.

<https://www.sciencedirect.com/science/article/pii/S2214790X16301277>



Example of One Health Solution

Safe wildlife viewing platform

Bat cave in Uganda's Maramagambo forest
(Uganda Wildlife Authority and the US CDC)

"What is the risk of pathogen spillover from a cave used for ecotourism?"

Relevant information for risk assessment (examples):

- Species present
- The type and frequency of interactions
- Pathogenicity of known and novel viruses, bacteria, fungi
- Protective factors to reduce exposure



<https://www.silverbackgorillatours.com/uganda/maramagambo-forest>



Consider risk to humans (e.g., Marburg virus) and wildlife (e.g., White Nose syndrome)

More One Health solutions:



EXAMPLE – Country level

- Some countries only have ESIA processes – a One Health approach can help ensure health of humans, animals, and ecosystems is considered
- Leverage National One Health Coordination Platforms (and subnational coordination mechanisms where relevant) to ensure multi-sector consultation for transparency, accountability, and common understanding
- Factor trade-offs and co-benefits of options into cost-benefit analyses (and consider who benefits vs. who bears negative externalities)
- Consider time horizon – some projects generate short-term revenues but leave long-term degradation that affects health long-term
- Ensure project evaluation also takes a One Health approach – learn (and improve from) failures!



Some countries, such as Liberia, have formed strong national One Health platforms

Context Matters!

A One Health Health approach can optimize Impact Assessment and risk reduction/response:

- Understanding risks more comprehensively
- Determining baseline capacity
- Identifying relevant sectors, stakeholders, and entry points
- Assessing feasibility and acceptability of solutions
- Advancing equity
- Resources optimization

Let's continue the conversation!

Post questions and comments in the IAIA23 app.



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This presentation is based on a chapter of the upcoming "Handbook on Health Impact Assessment/