

# Earth and Health: Learning Across the Boundaries of Global Governance

Soheil Shayegh<sup>\*a, b</sup> and Kyle S. Herman<sup>c, d</sup>

<sup>a</sup>*Bocconi University, Milan, Italy*

<sup>b</sup>*RFF-CMCC European Institute on Economics and the Environment, Milan, Italy*

<sup>c</sup>*Rutgers University, NJ, USA*

<sup>d</sup>*International Network for Sustainable Energy, Aarhus, Denmark*

Climate change presents the international community with a unique challenge that we argue is comparable in scope and breadth to challenges posed by global public health threats. In this discussion paper we examine the respective global roles of the World Health Organization (WHO) and the Intergovernmental Panel on Climate Change (IPCC). Despite important differences between these two organizations and their mandates, tackling both climate change and public health challenges depend on progress in few areas of governance and communication. We outline five areas for co-learning between climate change and global public health management: timely information dissemination; transparent communication; policy coherence; multi-stakeholder contributions; and, emergency response.

## 1 Who's Teaching What?

There are at least three overlapping characteristics amongst the WHO and the IPCC. First, their respective epistemic framing of the underlying problem, for example that these threats are shared by large populations of people, or all of humanity. Second, the struggle to convey a strong message to the public without compromising their scientific integrity, which has constrained the soft power of the IPCC for several decades. Third, the growing and wide range of local and global actions to address the problem, for example by encouraging local communities to take responsibility for the spread of disease or greenhouse gas emissions into the atmosphere. Although we are aware of the stark differences that exist between the WHO and the IPCC, the former can inform the latter because of the WHO's relative success in mitigating against the spread of noxious global diseases. While the mandate of the WHO is to direct and coordinate authority for solutions to global health issues, and to provide global leadership to achieve this mandate [1], the IPCC is mandated to deal with anthropocentric-caused climate change and specifically to assess scientific, technical, and socioeconomic information that is relevant in understanding human-induced climate change, its potential impacts, and options for mitigation and adaptation [2]. The latter, created in 1988<sup>1</sup>, has so far produced five climate change assessment reports that guide the world's understanding of how emissions into the atmosphere will lead to devastating impacts on the climate. Even though the mandates and processes of the WHO and the IPCC are divergent, we show how the relative success of global public health management, in contrast to the relative failure of climate change forward policy guidance, can inform the IPCC as well as the UNFCCC negotiation process. In particular, the rather immediate results that the WHO often achieves if it has successfully helped stem the spread of a disease outbreak, which further legitimizes its operations, represents one critical element the IPCC could draw upon. Of course, it is impossible to say we can reverse emissions at the same speed as we have eradicated or contained previous pandemics, however local sustainability initiatives can exemplify curing the planet one disease at time. To that end, we argue that the IPCC should develop a more collective and coherent approach by addressing

---

\*Corresponding author. Email: soheil.shayegh@unibocconi.it

<sup>1</sup>The Intergovernmental Panel on Climate Change (IPCC) was established by World Meteorological Organization and United Nations Environmental Programme (UNEP) in 1988 to assess scientific, technical, and socioeconomic information that is relevant in understanding human-induced climate change, its potential impacts, and options for mitigation and adaptation

more localized climactic issues. The IPCC's assessment reports, while important and crucial in shaping policy debate around the issue of climate change, fail to engage local actors in a scale that is needed to address the gravity of climate change problem. The IPCC reports should rather provide detailed guidance to each region, with assessments pertained to local levels, in order to stimulate a global action. We outline five areas for co-learning between climate change and global public health management: timely information dissemination; transparent communication; policy coherence; multi-stakeholder contributions; and, emergency response.

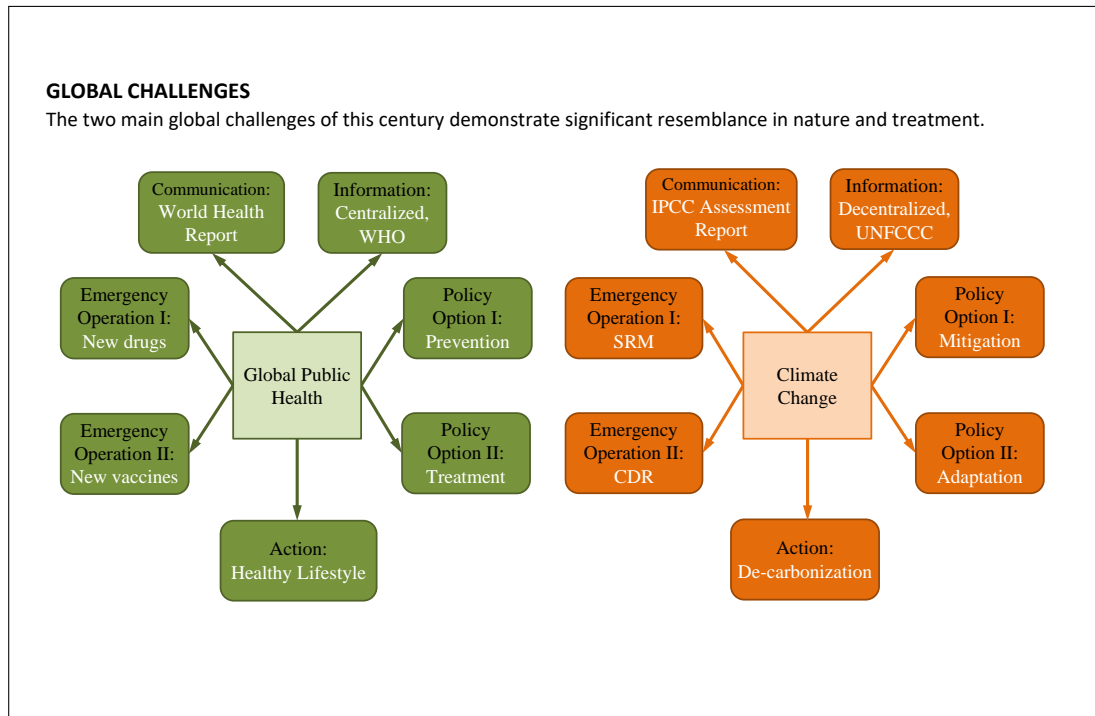
## 2 One World, Two Approaches

Almost 70 years after the formation of the WHO for dealing with major global public health crises, it is time for the international community and its climate change negotiating arm (UNFCCC) as well as its scientific arm (IPCC), to take leadership in addressing climate change challenge. Both the WHO and the IPCC are supported by world-renowned scientists and were developed under the aegis of the United Nations in response to two major global threats: global health threats and climate change. Although prescriptive policies exist within each organization, their global reports demonstrate how remarkably different their approaches are. In the "Global Challenges Report" and other annual reports, the WHO prescribes direct, actionable measures to tackle problems in global public health today or in the near future. Similarly, it calls for immediate data collection to aid scientists in understanding how effectively policies addressed their targets. This stands in stark contrast to IPCC reports, which caution global warming should stay below a certain temperature by the end of the century (e.g. the 2C marker) [3]. The latter prescription is more of an ominous warning rather than guidance, and as such falls mostly on deaf ears because it carries no actionable prescriptions and if there are, they deal with a far distant future.

Moreover, while the WHO is actively involved in shaping global public health debates and assisting member countries in developing their national health policies, the IPCC has adopted a scientific and policy neutral tone with no active intervention in domestic climate policies [4]. Similarly, due to its passive engagement with climate politics, the IPCC has become cordoned off from the rest of decision-making processes, and its messaging placed at greater risk of coercion and political backlash [5]. The main result is, unsurprisingly, a rather ineffective Global Climate Institution, at least in comparison to the Global Health Institution. The WHO has done an exceedingly better job at stemming global health threat than the IPCC or UNFCCC have done in mitigating the health of the planet.

## 3 In Search of Common Ground

The differences in reaction to global catastrophes tease out a more subtle difference between these two governance approaches. The scientific and diplomatic reactions of the WHO and the IPCC are of a different scale and magnitude. Their respective successes on the global scale also vary. Indeed, the element of time distorts perceptions of global threats and related measurement of the successful responses to such threats (e.g. climate catastrophes are not immediate and exist in the distant future, while the immediacy of health threats to human lives holds more potency). Further, while global public health threats are often experienced in the form of emerging pandemics with rapid expansion rates, climate change is an aggregated consequence of multiple interconnected natural and anthropocentric factors over long periods of time. In that sense, climate change is better conceptualized by chronic public health issues like cancer, with variety, scale, and breadth of contributing factors. Global health issues, and the data on positive or negative solutions, benefit from a shorter time frame needed to test and measure the spread of disease and inoculation against such. In comparison, a much longer time horizon seems to be required for the scientific veracity of climate solutions, the latter difficult to hypothesize and test in the short term. The scientific facts about global public health threats are often observable and testable, rendering prescriptions more apparent. Thus, testing the long-term behavior of the global climate system under different treatments is often limited to building complex computer models that simulate the earth's atmosphere for hundreds of years into the future. Such complexity beguiles inaction. Despite these important differences, tackling both climate change and public health challenges depend on progress in few areas of governance and communication. In particular, we identify five key topics where the governance lessons can be shared between these two communities.



### 3.1 Information: No panacea

Information provision is integral to both climate and health management strategies. However, the causal chain between information, belief, and action is less straightforward than commonly assumed in terms of how it is informed by and in turn informs, policies under UNFCCC, even if IPCC reports are frequently cited as evidence. First, information is seldom the only barrier to shifting attitudes, behaviors, and decisions [6]. Often, the resource endowments and incentives of individuals and institutions conspire against prudent decision-making. Widespread campaigning for healthy diets to avoid carcinogenic foods has not resulted in major shifts in consumer choices, although some are observed in wealthier localities [7]. Equally, increasing evidence about the scale and severity of climate change does not necessarily afford it higher status in governmental policy priorities due to competing interests and stakeholder demands [8]. Although effective in raising awareness and concern, information provision is not a cure-all for climate and health risks. To enable individuals and institutions to act responsibly, information needs to be provided alongside enabling measures which promote structural change, rather than, for example, constant bombardment of information on carbon emissions rates and intensity.

### 3.2 Communication: Alarms off

Communication is an important but often overlooked aspect of any global challenge management. Whilst highlighting the worst case scenarios can stress the urgency of the problem at hand, it can also hinder effective actions. First, alarmist messaging can call into question the futility of action (i.e. no solution will work) and in turn promote business-as-usual [9]. Second, public perception of issues does not necessarily reflect the level of concern expressed by the scientific community. For some, the issue of climate change has been “exaggerated” by scientists [10]. Third, alarmist messaging falls victim to the effects of mass numbering; the larger the reported impact of a problem, the less concern it attracts. Consequently, messaging around climate and health needs to be re-scaled from mass alarmism to raising awareness at an individual level [11]. Some efforts have been made in this direction, but they are curiously absent from IPCC reports. This is easier said than done, and even following the path paved by WHO offers no panacea to change the global health of the climate narrative.

### 3.3 Policy option: Triage approach

Triage, the process of sorting patients by their level of need, offers a heuristically useful tool to public health management in individual countries and globally. Triage helps promote both efficiency and equity in its treatment of patients. Given the similar urgency of the problem and uneven distribution of its impacts, a triage approach could help to guide climate change interventions. In climate change mitigation, this would involve careful evaluation and ranking of the various measures for reducing greenhouse gas emissions and avoiding dangerous climate tipping points. Earlier on a ranking, triage process was postulated at the UNFCCC negotiations in what is known as the "Brazilian Proposal" [12]. The Brazilian Proposal postulated that historical emissions would be calculated to balance equitable contributions to stem emissions going forward, in other words the developed countries would contribute significantly more resources to climate change since they are responsible for over 90 percent of historical emissions. However, this triage approach was shelved in later negotiations in favor of technologically advanced treatments (i.e. promotion of technology innovation and transfer). What would also be beneficial for climate science, drawing on the immediacy of inoculation success for health epidemics, would be focusing on solutions that result in immediately measurable results [13, 14]. In terms of adaptation, a triage approach would involve further scrutiny of climate development assistance and whether it is satisfying the needs of those most at risk from climate change [15]. At present, climate adaptation projects are rarely cross-evaluated to identify high-priority interventions. Mainstreaming triage in both health and climate management could help to allocate scarce resources most effectively and identify activities which undermine management efforts. One salient point that will certainly bring together global health and climate policy is asthma, which is seen to have significantly increased in line with global emissions rises [16, 17]. In that sense, climate mitigation policies might be coordinated with asthma prevention measures to save lives and resources.

### 3.4 Action: Vested interests

Economic growth has never been so deeply rooted in contemporary challenges of climate change and global public health as it is now. The uneven nature of economic growth has led to large inequalities within society, creating new challenges in public health management as well as growing emissions that pose dire social and environmental consequences. Three features bound economic growth with climate and health risks. First, historical expansion of the global economy has concentrated power in key sectors which currently profit from and, in many ways, perpetuate global public health problems (e.g. the food and beverage industry; the pharmaceutical industry, and the biotech industry) as well as the extraction and use of fossil-fuels (e.g. energy sector and transportation sector). Solutions to these problems are unlikely to be resolved without coordinated policy response. Second, even if we recognize the important role of the government intervention, some of these sectors (e.g. oil industry) undermine the efforts and the convening power of many individual governments, creating an immense regulatory challenge. Third, the dependency of society on these problem-sectors creates a lock-in between economic growth and climate and health risks [18]. Furthermore, determining where climate change policies can create measurable and more immediate outcomes, can help legitimizing the IPCC mandate and providing a broader social acceptability for its recommendations. Indeed, eradicating health epidemics as a result of the guidelines provided by the WHO, reinforces and legitimizes the scientific veracity and the political authority of the the WHO. The IPCC and the UNFCCC might draw upon this to tackle problems that address smaller, but no less substantial, localized climactic issues.

### 3.5 Emergency operation: Untraveled paths

As the consequences of climate change begin to accelerate, we might soon require emergency measures which prevent and respond to extreme global climate change. This will present a good opportunity for the UNFCCC and the IPCC to direct localized, immediate solutions. The health of the climate is on equal footing with the health of the planet's citizens. While data on the health of humans is of more immediate concern, and is also more readily available, data on the health of the planet needs to find ways to present more quickly in order for scientists to rapidly diagnose local solutions. After deploying these solutions, they can then measure the impacts on the ground, and review in a shorter time frame the efficacy of prescriptions for the climate. As it is a common practice in the case of emerging global health threats, some risky actions may be taken to prevent

the spread of the threat. New drugs and untested vaccines were deployed in the wake of the 2014-2015 Ebola outbreak in West Africa. Similarly, we might soon require emergency measures which prevent and respond to extreme global climate change, such as carbon sequestration. In contrast to global public health management, we are woefully unprepared to respond decisively (and at scale) to climate emergencies. Despite their importance, prevailing measures to tackle climate change (behavioral change, efficiency improvements, and energy transition) are ill-suited to the task of aggressive and deep global de-carbonization, stipulated by the Paris agreement to avoid catastrophic climate risks. Climate engineering technologies such as geoengineering including carbon dioxide removal (CDR), as well as solar radiation management (SRM), may soon become valuable medications the IPCC will need to prescribe [19]. Despite their potential and discernible role in climate mitigation efforts to meet the Paris agreement targets, these technologies have remained severely underdeveloped. The international community should recognize the potential importance of these untested technologies by allocating resources for research and development and testing these methods in small scale before the time expires on our conventional treatments of climate change.

## Acknowledgement

This project has received funding from the following sources:

- The European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 703399 for the project “Robust Policy”.
- The European Research Council under the European Community’s Programme “Ideas” - Call identifier: ERC-2013-StG / ERC grant agreement n° 336703– project RISICO “Risk and uncertainty in developing and implementing climate change policies”.

## References

- [1] Brown, T. M., Cueto, M. & Fee, E. The world health organization and the transition from “international” to “global” public health. *American journal of public health* **96**, 62–72 (2006).
- [2] Schipper, L. & Pelling, M. Disaster risk, climate change and international development: scope for, and challenges to, integration. *Disasters* **30**, 19–38 (2006).
- [3] Dupuis, J. & Biesbroek, R. Comparing apples and oranges: the dependent variable problem in comparing and evaluating climate change adaptation policies. *Global Environmental Change* **23**, 1476–1487 (2013).
- [4] Eastin, J., Grundmann, R. & Prakash, A. The two limits debates: “limits to growth” and climate change. *Futures* **43**, 16–26 (2011).
- [5] Friman, M. & Linnér, B.-o. Technology obscuring equity: historical responsibility in unfccc negotiations. *Climate Policy* **8**, 339–354 (2008).
- [6] Altizer, S., Ostfeld, R. S., Johnson, P. T., Kutz, S. & Harvell, C. D. Climate change and infectious diseases: from evidence to a predictive framework. *science* **341**, 514–519 (2013).
- [7] Drewnowski, A. & Eichelsdoerfer, P. Can low-income americans afford a healthy diet? *Nutrition today* **44**, 246 (2010).
- [8] Rose, D. C. Five ways to enhance the impact of climate science. *Nature Climate Change* **4**, 522–524 (2014).
- [9] Russill, C. & Nyssa, Z. The tipping point trend in climate change communication. *Global environmental change* **19**, 336–344 (2009).
- [10] Capstick, S., Whitmarsh, L., Poortinga, W., Pidgeon, N. & Upham, P. International trends in public perceptions of climate change over the past quarter century. *Wiley Interdisciplinary Reviews: Climate Change* **6**, 35–61 (2015).

- [11] Moorhead, S. A. *et al.* A new dimension of health care: systematic review of the uses, benefits, and limitations of social media for health communication. *Journal of medical Internet research* **15** (2013).
- [12] Müller, B., Höhne, N. & Ellermann, C. Differentiating (historic) responsibilities for climate change. *Climate Policy* **9**, 593–611 (2009).
- [13] Smith, S. J. & Mizrahi, A. Near-term climate mitigation by short-lived forcers. *Proceedings of the National Academy of Sciences* **110**, 14202–14206 (2013).
- [14] Shindell, D. *et al.* A climate policy pathway for near-and long-term benefits. *Science* **356**, 493–494 (2017).
- [15] Shayegh, S., Moreno-Cruz, J. & Caldeira, K. Adapting to rates versus amounts of climate change: a case of adaptation to sea-level rise. *Environmental Research Letters* **11**, 104007 (2016).
- [16] Beggs, P. J. & Bambrick, H. J. Is the global rise of asthma an early impact of anthropogenic climate change? *Environmental health perspectives* **113**, 915–919 (2005).
- [17] D’Amato, G. *et al.* Meteorological conditions, climate change, new emerging factors, and asthma and related allergic disorders. a statement of the world allergy organization. *World Allergy Organization Journal* **8**, 1 (2015).
- [18] Unruh, G. C. Understanding carbon lock-in. *Energy policy* **28**, 817–830 (2000).
- [19] Heutel, G., Moreno-Cruz, J. & Shayegh, S. Solar geoengineering, uncertainty, and the price of carbon. *Journal of Environmental Economics and Management* (2017).