The Global Health and Climate Research Nexus

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Current context

How can climate services remain relevant in the global health sector, which is driven by MDs, often focused on disease outbreaks (emergencies) and pharma fixes (e.g., vaccine development),

> *As soon as there is an epidemic, like ebola, climate falls off the global health agenda.*

The GH people I work with have openly admitted that climate is not on the GH agenda. There is movement in that direction, but it is nascent. Until we can partner with the private sector (pharma), PATH, and the Gates Foundation, it may be difficult to get people's attention.

> *Example – specifically in the context of phase III dengue clinical trials. How can climate services provide value added?*

The good news is that there are institutional mandates to incorporate climate as a transversal theme (Joy). What we lack is HOW to operationally bring climate to the GH and PH decision making processes.

This group needs to articulate their utility to the GH and PH sector, and figure out how to partner with the private sector (pharma).

Examples of climate services

The PH sector need the climate services group to be able to move quickly, to generate simple products that can be easily taken up (e.g., excel spreadsheet).

- How can climate services contribute quickly in an epidemic setting? (e.g., weather forecasts of heavy rainfall events, hurricanes)
- How can climate services contribute to **annual** planning cycles? e.g., seasonal climate forecasts to determine how and where to mobilize resources.

  Predictions from Early Warning Systems need to provide sufficient lead time so that the PH sector can to mobilize resources and to intervene effectively reduce the burden of disease, e.g., reduce vector populations). An EWS can operate at different temporal scales.
- How can climate services contribute to **mid-range (5-10 years)** planning cycles for public health? Decadal (or longer) forecasts can identify areas of likely future risk to increase surveillance efforts (e.g., mosquitoes moving up the mountainside)

Are longer planning cycles and climate projections relevant?

Funding

The global health funding architecture is driven by Gates Foundation, Global Fund for Malaria/TB/HIV-AIDS, the U.S. DoD, pharma for diagnostics and vaccine development.

From the U.S. side, climate and health research falls between NSF and NIH. NSF doesn't want to fund health, and NIH doesn't want to fund climate/ environmental research. There is only 1 major funding program (EEID), that is highly competitive with low funding rates.

However, there is a lot of funding in the global health and climate sectors. The general feeling is that the health sector is lagging behind sectors like agriculture and energy in the climate world. The climate sector can leverage additional funding through the global health channels and vice versa.

People from the GH world don't know the funding channels available in the climate sector and vice versa. We are working with a small group of GH experts who have identified this as a critical gap.

Entry points

We have found traction with funders by including climate components in the context of disease surveillance, through coupled climate-disease surveillance to generate predictions of disease outbreaks and risk/vulnerability maps (e.g., ecological niche modeling and Vector Map by the entomology group of the DoD).

Another potential entry point is to incorporate climate into epidemiological surveillance studies that support large-scale vaccine trials (e.g., Phase III dengue vaccine trials).

Less traction when we talk about **climate change** effects on health, because of the annual planning cycle.

Less traction when we frame climate as **THE** driver of disease outbreaks. Needs to be framed as one important trigger in the broader disease ecology. It is a **predictable** trigger and the data are already being gathered globally (e.g., remotely sensed imagery, global climate products) and locally through the met services. Other triggers, like the introduction of a new virus serotype, are much harder to predict.