

Making Planetary Health Relevant Locally: Designing an Integrative Diagnostic Framework for Participatory, Community- and Place-Based Research and Systemic Intervention

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The concept of planetary health situates human health in the context of biospheric and Earth system processes, grounding the human condition as biological beings sharing molecular kinship with other forms of life, intertwined within complex systems of interactions and nutrient exchanges, and vulnerable to a wide range of stressors, toxins, and environmental harms. My research aims to complement the aggregative scientific approaches in the area of planetary health with a grass-root initiative in the form of community research, by developing a diagnostic framework to be used by local communities in a wide range of contexts and geographies to identify factors indicative of planetary health across six interacting domains: air, water, land/soil, life/biodiversity, human communities, and infrastructures. The research process includes the identification and development of unified metrics, in close collaboration with experts in particular areas (ecology, biogeochemistry, environmental health, ecotoxicology, law, etc.), and their integration into a diagnostic framework for reliable and comprehensive data gathering, potentially in combination with biomonitoring methods. The diagnostic framework will then be used as part of ethnographic research in collaboration with a range of local communities with distinct ecologies, but also epistemologies and ethics, that inform their understandings of planetary health, capturing the plurality of experiences and ways of knowing and relating to the world.

The diagnostic framework will form a spiderweb of six interacting domains on which the relevant indicators of planetary health will map: land/soil, water, air, life/biodiversity, human communities, and infrastructure, exploring their particular constellations in specific locations. It will integrate three distinct dimensions: (1) experiential/phenomenological, drawing on creative apperception, lived experiences and relationships to the living world; (2) planetary/biological, drawing on biological, biogeochemical, and physical processes, grounded in system thinking; and (3) global/cultural, drawing on the historical, sociocultural, economic, and political processes that drive transformations of the environment.

The community-based research process will combine approaches of participative action research and citizen science to map a wide range of indicators of planetary health relevant to specific places and ecologies. The spiderweb model of the diagnostic framework allows for different degrees of engagement, from exploring the lived experience of communities and their ways of interacting with the living world, through the identification of relevant factors in each domain, to a more detailed mapping, collection and analysis of data with unified metrics through established analytical and biomonitoring methods.

Using this diagnostic framework over extended periods of time will allow the communities to capture the temporal dynamics of ecological processes. The community-based research process will also assist communities with the identification of root causes and drivers of ecological change and provide an evidence base for the design of systemic interventions, implementation of preventative, mitigative, and restorative adaptive approaches to address aspects of the environmental crises relevant to that place and ground them for informed negotiations and advocacy. Since the impacts of the Earth crises follow socioeconomic gradients that affect vulnerability, exposure, and risk factors, environmental justice is a key factor to guide the transformation processes, and local communities are best placed to identify these and incorporate them in their strategies for strengthening planetary health in their area.