

Future Earth Health KAN: Initial Implementation Priorities

January 2017

The Future Earth global platform for sustainability and resilience research (www.futureearth.org) was launched in 2015 to provide the knowledge and support to accelerate transformations to a sustainable world (further background information on Future Earth is included on pages 4-5). Improving human health is one of eight global challenges to be addressed in Future Earth's Strategic Research Agenda. In support of this objective, the Future Earth Health Knowledge-Action Network (KAN) is a new initiative to connect and engage with the global communities of health, other research communities, policy-makers, educators, civil society (including communities affected by global environmental change), media, industry, and donors. Its aim is to advance research and build capacity for generating, sharing, and applying knowledge necessary to support developing and implementing (cost) effective technologies and policies to improve health and protect the environment.

A Development Team launched the initial phase of the Future Health Knowledge-Action Network that will last until mid to late 2017, after which a formal Steering Committee will oversee activities. The Development Team comprises a mix of social, biomedical, environmental, and public health scientists; funders; and representatives of the Future Earth Secretariat, the oneHEALTH global research project, and UN agencies. An Advisory Group will provide high-level guidance to optimize the KAN's positive impact in supporting and enabling solution-driven transdisciplinary research to improve understanding of the links between health and the environment and to develop iterative management options to increase resilience and sustainability. Members of the Development Team, Steering Committee, and Advisory Group volunteer their time.

The Development Team conducted an initial scoping process to identify initial implementation priorities; the process included a [2016 Bellagio Center meeting](#), input from UN agencies, an [online survey](#), and discussions with funders. Potential starting points for operationalizing the KAN are summarized in the table on the following page. These are not intended to represent the full spectrum of KAN activities. Implementation priorities will likely be refined or expanded by the Steering Committee and Advisory Group, and through co-design with policy makers and other stakeholders as part of the Future Earth program.

Colleagues interested in getting involved are encouraged to participate in knowledge and information sharing on the Future Earth Open Network (<http://www.futureearth.org/join-future-earth-open-network>), a recently-launched public online platform that seeks to facilitate connections and collaboration, and that serves as the main avenue for information dissemination for the Health KAN. The Open Network brings together researchers, policy makers, and the public from around the world to catalyze new connections and approaches. Updates on initial implementation of the Health KAN and calls for participation to the wider community will be posted on the Open Network.

We appreciate the interest and enthusiasm received for the Health KAN, and are actively working to develop meaningful ways to facilitate highly effective knowledge-action channels for robust and inclusive participation.

Initial implementation items proposed by the Health KAN Development Team:

Initial Implementation Item	Description
Establish Health KAN development structure	Selection of Development Team (Future Earth Secretariat-appointed; term of 9-12 months), with a hand-over to a Steering Committee by mid-late 2017. An Advisory Group will advise the KAN Steering Committee on opportunities for wider engagement and potential priorities. These appointees are expected to reach out to the wider research and policy communities, to encourage the broad participation that is essential for success. Leadership roles and governance criteria for the Steering Committee and Advisory Group are in development.
Set research priorities and start series of transdisciplinary ¹ briefs	A preliminary list of research priorities for the KAN is being developed to indicate the range of potential topics that could be addressed, with the expectation that they will be further refined based on feedback from stakeholders. Transdisciplinary briefs aim to assist in the translation of research evidence for policy and practice for a wide range of sectors and to promote co-design in research, including the evaluation of potential interventions. A more detailed review and revision of priorities will be conducted by the Steering Committee.
Identify and compile a list of relevant data sets and data linking initiatives	Compile web links to key data sets (particularly via sharing of existing initiatives aggregating and curating data, where possible) that could aid in integrated analyses of health and environmental linkages, and the evaluation of policies and interventions, with the aim of broadening their use by the research and policy communities. This would include a range of resources from remote sensing data to networks of demographic surveillance sites (see http://www.indepth-network.org/). This work will be initiated by the Development Committee and revised by the Steering Committee.
Make links to existing systematic reviews and collaborations with a view to building a repository and guidelines for systematic reviews and systems maps/pathways	<p>To improve synthesis for policy-making and identify priority research gaps, it is proposed that guidelines be developed and existing systematic literature reviews and repositories be collated (see for example²), and the same done for systems maps/pathways focused on health and environment linkages. The research community will be encouraged to use these approaches and tools to contribute to the knowledge base.</p> <p><i>Systematic literature reviews:</i> Key priorities include: 1) developing links with relevant systematic review collaborations with the ultimate aim of supporting an inventory of systematic reviews to facilitate their use and to identify possible priority gaps in research synthesis; 2) identifying/establishing best practice guidelines for conducting systematic reviews. The Health KAN will advise on these processes that are expected to be coordinated by an external institution expert in systematic</p>

¹We define transdisciplinary as processes not dominated by one specific discipline and where different specific knowledge areas are respected and integrated.

	<p>reviews.</p> <p><i>Systems Maps²/Pathways</i>: These help identify and quantify the magnitude and pattern of feedback and outcome loops across sectors under different scenarios, and thus can be useful for understanding which linkages between health and the environment are key drivers of adverse health outcomes.</p> <p>The Health KAN Development Team and subsequent Steering committee will work with Future Earth to seek funding for these activities.</p>
Extend global change scenarios to provide information to support modeling of the health risks of global change	Extend the Shared Socioeconomic Pathways or SSPs ³ to improve understanding of the possible magnitude and pattern of health burdens under different possible futures. Used in conjunction with the Representative Concentration Pathways (RCPs), these extensions will facilitate more robust projections of the implications of global environmental change for health and of the effectiveness of adaptation and mitigation policies and technologies to reduce projected risks. This activity could include a workshop to advance the review and selection of health related variables and the development of guidance for parameterizing these factors in projections.
Write concept piece to encourage system thinking around health	Building on previous efforts to promote mainstreaming of transdisciplinary science-policy approaches in health, the KAN Development Team plans to draft a concept piece on integrating systems thinking into the health sector.
Engage Future Earth global research projects and develop processes for collaboration on relevant topics with other Future Earth Knowledge-Action Networks	Members of the Development Team and Advisory Group support continued development of the interface between Future Earth global research projects and KANs. Possible pathways for engagement may include updates on global research through webinars, linking researchers with complementary interests, and other channels. The Health KAN will also liaise with the other seven KANs to promote synergies.
Use journals, social and regional media to disseminate work	Communication opportunities will be sought by the Development Team and Future Earth Secretariat to assist in information dissemination to promote broad access to and uptake of research findings.

² (Aleksandrowicz et al. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0165797> PLoS One 2016) .

³Overview of SSPs: <https://www2.cgd.ucar.edu/research/iconics>

Establish platform for communication (Future Earth Open Network)	The Future Earth Open Network (http://www.futureearth.org/join-future-earth-open-network) is intended to be a value-added resource for the global sustainability research and policy community by facilitating links between scientific disciplines (including those that may have relevance to environmental health but currently are not typically or systematically integrated into health research and policy making). The Open Network can serve as a critical tool for early-career and geographically-dispersed professionals to access resources and to expand their professional network. The Health KAN will use the Open Network to facilitate discussions, make resources available (e.g. papers, events), and catalyze new collaborations/ideas/learning to support a strong and extensive network.
Conduct wide-scale consultations	The Health KAN Development Team seeks to synthesize perspectives and priorities from diverse stakeholders (including from all sectors that influence global change and health) to ensure the KAN addresses key priorities. Input and feedback will be sought on an ongoing basis, using channels such as additional online surveys, consultations through relevant meetings, conferences, etc.
Hold webinars	Create webinars for learning and dialogue on complex challenges and possible interventions relevant to environmental health and sustainability. The Health KAN plans to host ~3-6 webinars a year, sharing best practices, ideas, and lessons learned.
Provide technical input into policy processes for sustainable development and health	Key processes identified include the Sendai Framework for Disaster Risk Reduction, Convention on Biological Diversity, United Nations Framework Convention on Climate Change, United National Environment Assembly, The New Urban Agenda, and the Sustainable Development Goals. These have clear relevance to and high priority for Future Earth, and strong engagement pathways through members of the Development Team. There are opportunities to expand on this list, including processes where health has not been considered extensively but may intersect (e.g. the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries).
Develop governance plan	Governance plans are being developed, emphasizing a stakeholder-driven model for the KAN that enables its value and supports its unique purpose. These plans will be posted online to promote transparency, clarity, and equitable engagement.

Background on Future Earth:

Future Earth is a major international research platform providing the knowledge and support to accelerate transformations to a sustainable and resilient world. Launched in 2015, Future Earth is a 10-year initiative to advance Global Sustainability Science, build capacity in this rapidly expanding area of research and provide an international research agenda to guide natural and social scientists working around the world. But it is also a platform for international engagement to ensure that knowledge is generated in partnership with society and users of science. Future Earth is closely engaged with international processes such as the United Nations' Sustainable Development Goals and climate and biodiversity agreements (United

Nations Framework Convention on Climate Change and the Convention on Biological Diversity).

Future Earth is built on many decades of international research on global environmental change carried out by projects sponsored by DIVERSITAS, the International Geosphere-Biosphere Programme (IGBP) and the International Human Dimensions Programme (IHDP). Over 20 projects, ranging from the Global Carbon Project to the Earth System Governance project, have joined Future Earth. From this intellectual base, Future Earth is launching Knowledge-Action Networks to catalyze new research and partnerships around eight key challenges to global sustainability.

Future Earth's five Global Hubs are based in Colorado, Montreal, Paris, Stockholm and Tokyo and coordinate and catalyse new research for global sustainability. Regional Centres are operational in Asia, Europe, the Middle-East and North Africa and Latin America and the Caribbean, while Regional Offices are emerging in Africa and South Asia. National Structures are also forming in countries across the planet.

Future Earth is an open network for scientists of all disciplines, natural and social, as well as the humanities and law. It aims to foster and support world-class projects, networks and institutes that can contribute to its activities. The Governing Council of Future Earth is composed of representatives of the Sustainable Development Solutions Network (SDSN), the Science and Technology in Society (STS) forum and members of the Science and Technology Alliance for Global Sustainability (which includes the International Council for Science (ICSU), the International Social Science Council (ISSC), the Belmont Forum of funding agencies, the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the United Nations Environment Programme (UNEP), the United Nations University (UNU), and the World Meteorological Organization.)

Learn more at: <http://www.futureearth.org/>