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Citation for published version:

Passarelli, S, Canavan, CR, Paarlberg, R, Juma, C, Akyeampong, E, Fekadu, H, Golden, CD, Gunaratna, NS, Jaacks, LM, Kennedy, E, Madzorera, I, McCann, J, Nwanze, K, Sauerborn, R, Tang, L, Webb, P, Willett, WC & Fawzi, WW 2018, 'Harnessing University Strengths in Multisectoral Collaborations for Planetary Health', *Current developments in nutrition*, vol. 2, no. 12, pp. nzy063.
<https://doi.org/10.1093/cdn/nzy063>

Digital Object Identifier (DOI):

[10.1093/cdn/nzy063](https://doi.org/10.1093/cdn/nzy063)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

Current developments in nutrition

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Harnessing University Strengths in Multisectoral Collaborations for Planetary Health

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Abstract

Although significant achievements in human health have been made globally, progress has been made possible, in part, through unconstrained use of natural resources. As the health of our planet worsens, human health is also endangered. Scholars and policymakers from diverse disciplines highlighted complex, multisectoral approaches for addressing poor dietary intake, over- and undernutrition, and chronic diseases in sub-Saharan Africa at the *Agriculture, Nutrition, Health, and the Environment in Africa* Conference held at Harvard University on 6–7 November 2017. A planetary health approach to addressing these challenges offers a unique opportunity to advance solutions for environmental and social factors that influence agriculture, nutrition, and overall health in the larger context of rapid population growth and transitions in food systems and livelihoods. This paper outlines 3 key avenues for universities to promote science at the intersection of public health and the environment in sub-Saharan Africa. *Curr Dev Nutr* 2018;2:nzy063.

Key Messages

- Poor dietary intake, over- and undernutrition, and chronic diseases are persistent health challenges in sub-Saharan Africa.
- A planetary health approach to addressing these challenges offers a unique opportunity to advance solutions for environmental and social factors that influence agriculture, nutrition, and overall health in the larger context of rapid population growth and transitions in food systems and livelihoods.
- Three primary avenues are offered for universities to promote planetary health approaches: new research to assess complex relations between people and the environment; development of novel interventions and study designs; and the advancement of multidisciplinary training programs.

Commentary

By many measures, humans are healthier today than ever before. In fact, life expectancy has increased globally by 10 y since 1980, from 62 to 72 y of age, whereas mortality rates from neonatal and maternal complications, malaria, malnutrition, and HIV/AIDS have declined dramatically (1). Yet this progress in human health has been made possible, in part, through the unconstrained use of natural resources—and as the health of our planet worsens, human health will also be threatened through a variety of mechanisms (2). To continue our advances in health without



Keywords: planetary health, agriculture, education, sub-Saharan Africa, environment, public health

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Manuscript received April 26, 2018. Initial review completed June 12, 2018. Revision accepted July 19, 2018. Published online August 23, 2018.

The *Agriculture, Nutrition, Health, and the Environment in Africa* Conference was supported by the Harvard University Office of the Provost and the Jeffrey C. Walker Fund for Public Health Leadership Development.

Author disclosures: SP, CRC, RP, CJ, EA, HF, CDG, NSG, LMJ, EK, IM, JM, KN, RS, LT, PW, WCW, and WWF, no conflicts of interest.

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compromising the health of the planet, the principles of planetary health must be integrated into current public health thinking. According to the Rockefeller Foundation-Lancet Commission, planetary health is defined as “the achievement of the highest attainable standard of health, wellbeing, and equity worldwide through judicious attention to the human systems—political, economic, and social—that shape the future of humanity and the Earth’s natural systems that define the safe environmental limits within which humanity can flourish,” or as the Commission puts it in simpler terms, “the health of human civilization and the state of the natural systems on which it depends” (3). The principles of this scientific field can be applied to guide the agendas of health research, policy, and practice through a planetary health approach. Unlike traditional public health approaches that prioritize population health, a planetary health approach aims to jointly prioritize the health of people and the natural systems that sustain them. Through such an approach, health researchers and practitioners can link environmental and public health agendas with transdisciplinary research, and universities can provide the tools and training necessary for the complex relations particular to planetary health.

At the recent *Agriculture, Nutrition, Health, and the Environment in Africa* Conference held at Harvard University on 6–7 November 2017, scholars and policymakers from diverse disciplines highlighted multisectoral approaches for addressing poor dietary intake, over- and undernutrition, and chronic diseases in sub-Saharan Africa. A planetary health approach to addressing these challenges offers a unique opportunity to advance solutions for environmental and social factors that influence agriculture, nutrition, and overall health in the larger context of rapid population growth and transitions in food systems and livelihoods.

Two examples from this conference help to illustrate the connections between environmental changes and health. First, animal agriculture may be a boon for income and can provide a high-quality protein source, but it can also accelerate environmental change by shifting diets towards more resource-intensive food production, lead to dietary patterns with an elevated risk of obesity and chronic diseases, and increase the risk of infection owing to unsanitary animal agriculture practices (4). Second, the use of pesticides and fertilizers is important for improving food security, but improper use of synthetic chemicals also results in damage to soil, water, and human health. Resolving these challenges and others will only be possible through the type of multidisciplinary research and policies offered by a planetary health approach.

The conference highlighted 3 key avenues in science to jointly improve the health of both people and the natural environment, viewed through the lens of agriculture in sub-Saharan Africa:

- 1) Researchers should implement studies that effectively assess the complex, often lagged relations between people and the environment. This will require the establishment of long-term studies of environmental, social, economic, and health factors. Such innovative data collection methods include the use of sentinel sites (5) and the Health and Demographic Surveillance network “INDEPTH”, which has a combined population of >3.5 million people in Africa and Asia under decade-long health, nutrition, and environmental surveillance (6). Universities can lead the implementation of these initiatives by convening diverse stakeholders and, as longstanding institutions, by formally

housing such research programs. Longitudinal, interdisciplinary studies require a good deal of patience from researchers and a need for both funders and scientists to think beyond the usual 2- to 5-y research timeline.

- 2) Program evaluation approaches should better reflect the complexity of interventions that seek to improve multiple outcomes at once. Decades of focus on randomized trials in health have pushed a 1-intervention, 1-outcome approach as the gold standard in study design (7). Although evidence from such trials is critical for evaluating the effectiveness of single interventions, the future of planetary and public health research lies in the interdependence of systems and evidence from complementary quasi-experimental interventions (8). Universities have the methodologic expertise, multisector representation, and necessary research capacity to spearhead the development of novel intervention and study designs, metrics, and analytic methods appropriate for a planetary health approach (3, 5, 9).
- 3) Universities must prepare the next generation of leaders and researchers to address the complex challenges of planetary health by offering multidisciplinary training programs. Educational institutions should develop programs that bring traditionally independent fields together, encouraging them to create new, integrated approaches (10). Some efforts are underway: the Planetary Health Alliance is a consortium of universities, non-governmental organizations, and other partners designed to connect and promote collaboration and enhance training in this interdisciplinary field, and Cornell University is offering a new Planetary Health MPH program, to name 2 examples.

There is a clear and pressing need for joint efforts between universities, in collaboration with diverse stakeholders, to advance planetary health approaches through robust research programs, methods, and training. By working in concert, practitioners, evaluators, and universities can create a more comprehensive common framework for understanding and advancing human health, without compromising the health of future generations and the planet. The fate of both people and the natural environment will depend on research and policy efforts that can successfully identify and respond to the common needs of both.

Acknowledgments

The authors’ contributions were as follows—SP: drafted the manuscript; and all authors: contributed content, critically reviewed manuscript drafts, and read and approved the final manuscript.

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