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# Title registration for an evidence and gap map: Understanding pathways between agriculture and nutrition: a gap map of tools, metrics and methods developed and applied in the last 10 years

**Suneetha Kadiyala, Thalia M. Sparling, Howard White**

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*Submitted to the Coordinating Group of:*

Crime and Justice

Education

Disability

International Development

Nutrition

Food Security

Social Welfare

Methods

Knowledge Translation and  
Implementation

Business and Management

Other:

*Plans to co-register:*

No

Yes  Cochrane  Other

Maybe

Date submitted:

Date revision submitted:

Publication date: 18 December 2018

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## **Title of the EGM**

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Understanding pathways between agriculture and nutrition: a gap map of tools, metrics and methods developed and applied in the last 10 years

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## **Background**

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Global food price crisis in 2007-2008 sparked a new wave of interest in changing agriculture and food systems to optimise nutrition and health outcomes (Brinkman, de Pee, Sanogo, Subran, & Bloem, 2010; Webb, 2010). Amidst the enthusiasm and investment in agriculture-nutrition linkages, it was acknowledged that not only are there multiple direct and indirect pathways that are complex and interconnected, these pathways are often difficult to describe and measure (Headey & Ecker, 2012; Kadiyala, Harris, Headey, Yosef, & Gillespie, 2014; Ruel, Alderman, Maternal, & Child Nutrition Study, 2013). This led to widespread demand for better ways to capture such complex and dynamic linkages, making the nexus between agriculture and nutrition a hub of research activity around intervention, as well as innovation and new application of tools, metrics and methods (Global Panel, 2015).

The aim of the evidence and gap map is to articulate and summarize the innovations in tools, metrics and methods that have been created and applied to understand agriculture-nutrition linkages in the last ten years. The map will be organized around a combination of conceptual frameworks that include pre-defined pathways to improved nutrition (Global Panel, 2015; Hawkes, Turner, & Waage, 2012; Herforth, Nicolò, Veillerette, & Dufour, 2016; Kadiyala et al., 2014), as well as additional themes that have been identified as more research is being undertaken on this topic (Grace, 2018; Masters, 2016; SHEFs, 2018). The map will be grouped by different classifications of measurement tools (technology application and modules to capture data on a range of ag-nut topics), metrics (new indicators to aid measurement of ag-nut linkages along the pathways) and methods (study design and analytical approaches applied to ag-nut research). Furthermore, the map will summarize the stage of development or application (in place of a traditional quality assessment), geographical application, and measurement unit (individual, household, district, etc.). We will further code and categorize innovations by several thematic filters (e.g. gender, equity, economics, technology, private-sector engagement, conflict or political fragility).

The main objective of this EGM is to guide funders and researchers in the most promising areas of innovation within the study of food systems or agriculture to nutrition pathways, and demonstrate their phase of development and other thematic trends. Furthermore, we intend that this EGM will then be used to shape future investments in this field, both by pursuing opportunities to take the most promising developments to the next level, and focusing attention on where there are gaps and under-researched areas of the conceptual frameworks. A secondary objective of this EGM is to identify trends in investigation and application that would be suitable for further synthesis.

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## **Existing EGMs**

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There are no current gap maps on the topic of metrics and methods for improved nutrition through agriculture. Some mapping exercises have been undertaken on pathways between agriculture and nutrition, namely the 2012 LCIRAH “Current and planned research on agriculture for improved nutrition: a mapping and a gap analysis”, which led the way to the DFID-funded Innovative Metrics and Methods for Agriculture and Nutrition Actions (IMMANA) program (IMMANA, 2018). The FAO Compendium of nutrition-sensitive indicators also summarizes the most well-established indicators on the subject (Herforth et al., 2016), but does not fully capture innovative tools and methodologies, as well as metrics that are in development currently. Furthermore, to our knowledge, none of these synthesis projects have been systematic or published as a formal EGM, and overall there have been no gap maps of tools, metrics, methodologies or approaches to a certain subject; rather most existing gap maps focus on effectiveness studies.

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## **Suggested dimensions**

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Although the intervention-outcome framework is most common for maps on effectiveness studies, this framework will be organized differently. We will take an approach that considers tools, metrics and methods (item of application as an outcome) for agriculture-nutrition research (thematic domain as an intervention). That is the columns will have three main categories: tools, metrics and methods, each to be sub-divided into sub-categories which are as yet to be determined. The rows will be thematic domains along the agriculture or food systems to nutrition pathways, derived from several conceptual frameworks.

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## **Intervention(s) or problem**

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The problem we are considering is any domain that exists on the conceptual pathway between agriculture and/or food systems and nutrition outcomes. These domains will be grouped by broad themes around food production, food safety, value-chains, markets and food environments, food policy and governance, environment and climate, among others. All included tools, metrics or methods must explicitly relate to either agriculture/food systems, or to nutrition. Any tools, metrics and methods that are not related to either agriculture/food systems or nutrition will be excluded. Most of the domains could be measured at various levels (individual, national, global, etc.). We will not differentiate in the domains, but rather in the internal coding of each tool, metric or method innovation. As the initial searches are completed, we may refine these domains to include more appropriate categories.

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## **Population**

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This map will include tools, metrics and methods that have been applied to agriculture-nutrition pathways in any country or setting.

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## **Outcomes**

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The primary ‘outcome’, of the gap map (i.e. the columns in the map) is the innovative item (tool, metric or method) created and applied to studying and describing the broad agriculture to nutrition pathways. We will define ‘tool’ as is a vehicle or an aid to collect information and data (for example, a survey module to collect data required to compute an index or a piece of technology). ‘Metrics’ will be defined as the parameters (measures) or indices used for measurement, comparison or tracking performance (for example, disability adjusted life years; household dietary diversity score and Women’s Empowerment in Agriculture Index – WEAI). We define ‘method’ as the process and approach involved in a systematic inquiry of relationships between agriculture, nutrition and health and generally refer to study design or application of an analytical method to this topic (for example, impact evaluations using various types of counterfactuals, pathway analyses, decision analyses).

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## **Study designs**

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The gap map will include research of any design using quantitative or qualitative methods, as certain study designs may in fact be an innovative method of application to study agriculture-nutrition linkages. Application of a tool, metric or method to any type of study will be included.

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## **Stakeholder engagement**

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This gap map will be undertaken in close collaboration with the core IMMANA management and steering committees. IMMANA management committee includes experts from the Leverhulme Center on Integrative Research on Agriculture and Health (LCIRAH), the London School of Hygiene and Tropical Medicine (LSHTM) and Friedman School of Nutrition Science and Policy at Tufts University. IMMANA steering committee includes representatives from DFID, the Bill and Melinda Gates Foundation, USAID and CGAIR’s A4NH programme. The lead authors will first work with this team to develop the framework and protocol, as well as solicit grey literature and unpublished materials. After that, we will send the draft framework and protocol to a wider group of experts in the field of agriculture-nutrition research, including experts from the University of South Carolina School of Public Health, Johns Hopkins University, the Food and Agricultural Organization of the United Nations (FAO), the International Food Policy and Research Institute (IFPRI), other CGIAR institutions and IMMANA Grantees among others.

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## Evidence and gap map authors

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**Lead author:** The lead author is the person who develops and co-ordinates the EGM team, discusses and assigns roles for individual members of the map team, liaises with the editorial base and takes responsibility for the on-going updates of the map.

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Name: Suneetha Kadiyala

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Title: Associate Professor in Nutrition-Sensitive Development, IMMANA Principal Investigator

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Affiliation: London School of Hygiene and Tropical Medicine

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Address: 36 Gordon Square, G9

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City, State, Province or County: London, UK

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Country: U.K.

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Email: [Suneetha.Kadiyala@lshtm.ac.uk](mailto:Suneetha.Kadiyala@lshtm.ac.uk)

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### Co-authors:

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Name: Howard White

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Title: Chief Executive Officer

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Affiliation: The Campbell Collaboration

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City, State, Province or County: London, United Kingdom

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Post code:

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Country: United Kingdom

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Phone: [+49 \(0\) 15 207 655 357](tel:+49(0)15207655357)

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Email: [hwhite@campbellcollaboration.org](mailto:hwhite@campbellcollaboration.org)

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Name: Thalia Sparling

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Title: Postdoctoral Research Fellow

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Affiliation: IMMANA, London School of Hygiene and Tropical Medicine

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Address: 36 Gordon Square

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City, State, Province or County: London, UK

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Country: United Kingdom

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Phone: +44 774 393 3283

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Email: [thalia.sparling@uni-heidelberg.de](mailto:thalia.sparling@uni-heidelberg.de)

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## **Roles and responsibilities**

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- **Content:** The methodological and thematic framework development will be led by Suneetha Kadiyala, a leading expert in nutrition-sensitive agriculture and the Principle Investigator of the IMMANA program, supported by Thalia Sparling, a postdoctoral research fellow also working on food-based approaches to improving nutrition. Dr. Kadiyala is an assistant professor at the London School of Hygiene and Tropical Medicine (LSHTM) with decades of work focusing on nutrition. Dr. Sparling is an epidemiologist and nutrition researcher who has been working in the field of public health for over a decade.
- **EGM methods:** Howard White, CEO of the Campbell Collaboration and a veteran systematic review expert, will lead the EGM methodology and advise the content experts on framework and protocol, as well as helping train and coordinate the information retrieval.
- **Information retrieval:** Information retrieval will be done by experienced teams hired and managed by the Campbell Collaboration, in collaboration with Thalia Sparling and Suneetha Kadiyala.

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## **Funding**

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This work is funded through the IMMANA programme, which is supported by the U.K. Department for International Development (DFID). We aim to submit the gap map Title Registration Form by August 31<sup>st</sup> 2018, the Protocol by 15 October 2018 and the have a draft gap map to deliver to DFID by 15 December 2018.

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## **Potential conflicts of interest**

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None.

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## **Preliminary timeframe**

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Note, if the protocol or EGM are not submitted within six months of title registration and protocol, respectively, the review area is opened up for other authors.

- Date you plan to submit a draft protocol: 15 November 2018
- Date you plan to submit a draft EGM: 15 March 2018