

Evidence and Gap Map tutorial: Research tools, metrics and methods to measure pathways between agriculture and nutrition

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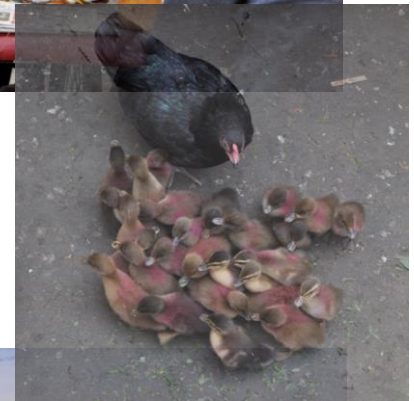
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The logo for Immuna, featuring a stylized white leaf icon above the word "immuna" in a white, lowercase, sans-serif font, all set against a blue rectangular background.

immuna

Summary

1. Rationale and overview
2. Methods
3. Using the EGM
4. Using the web interface
5. General guidance
6. Important links

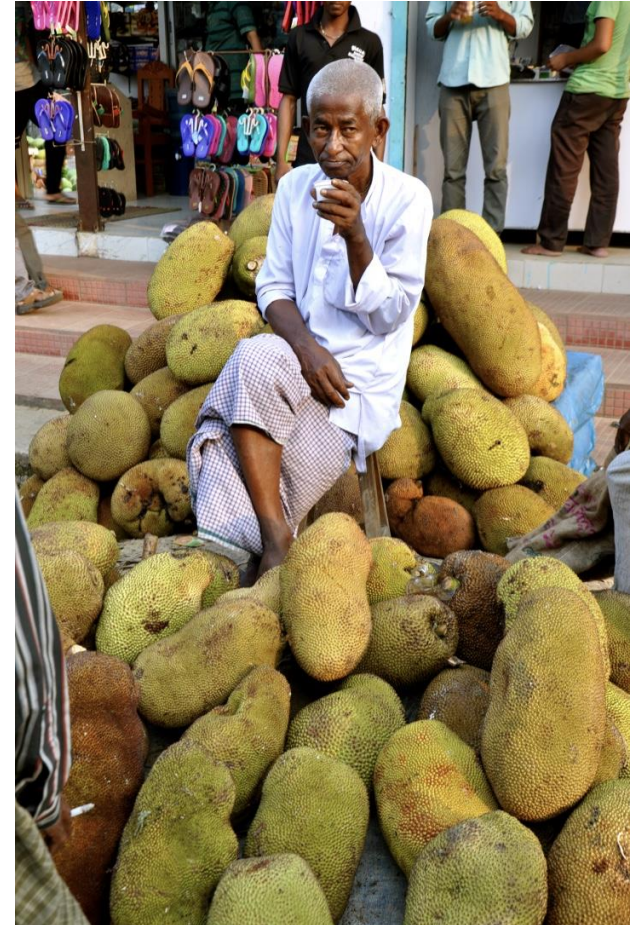


1. Rationale for the project

- Agriculture, food systems and nutrition pathways are recognized for their importance in health outcomes (human and planetary)
- Pathways are complex, dynamic and hard to measure
- New tools, metrics and methods have proliferated in the last years through renewed interest and funding in this multidisciplinary nexus
 - Projects such as: SHEFs, INDDEX, GDD, A4NH, and IMMANA
- Summary and next steps for IMMANA

1. Aims of the project

- **Objective 1:** Identify innovation in tools, metrics and methods for research on food systems and agriculture-nutrition linkages in the last ten years and map them onto existing conceptual frameworks
- **Objective 2:** Highlight opportunities for future development (address gaps and take newer developments into wide-spread use)



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1. Evidence and Gap Maps

- Type of evidence synthesis
- Aspects similar to both systematic and scoping reviews
 - Systematic search strategy but designed to be comprehensive, not necessarily exhaustive
- Highlight evidence that exists and that doesn't exist
 - Direct research priorities, policy-making and investments, usually against a conceptual framework
- Interactive framework mapping
 - Can be filtered by various categories, sub-divided and tabulated by user
 - Provides both macro and micro information on a topic
 - Does not meta-analyse or provide effect estimates

2. Methods

- Broad search strategy, but both specific and sensitive
 - Two published literature databases (CAB abstracts, Web of Science)
 - Grey literature search of key websites, project and grant databases
- Limited to last ten years (correspond to investments and keep the focus on new developments)
 - More on innovation later...
- Screened for reports on either agriculture and food systems, or with nutrition and nutrition-related health
- Using tools, metrics or methods developed or newly applied since 2008
- Data mapped across 12 thematic domains (rows) against categories of tools, methods and metrics (columns)

Figure 1: The Conceptual Framework

2.

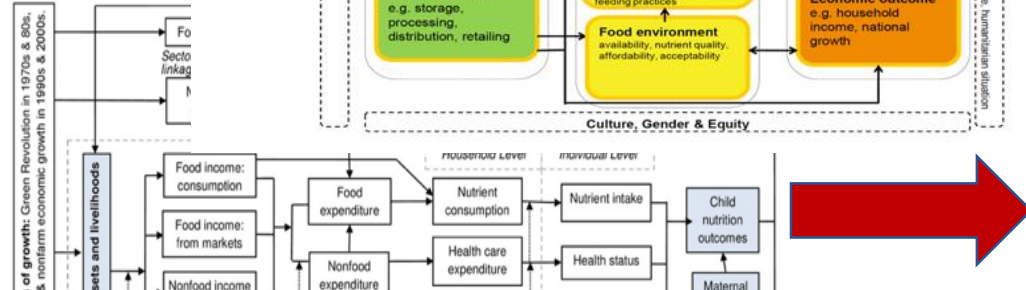
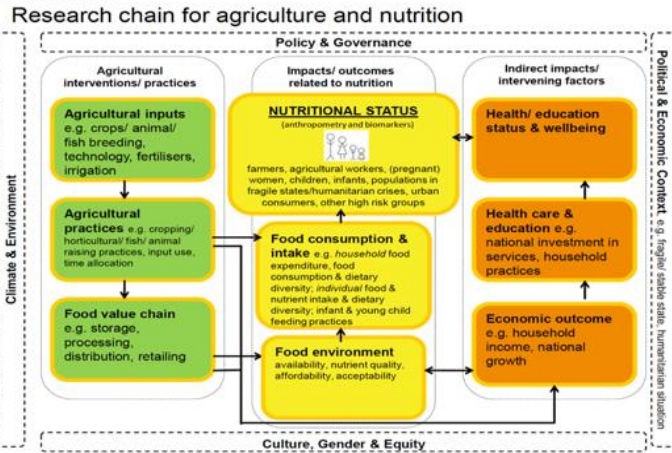
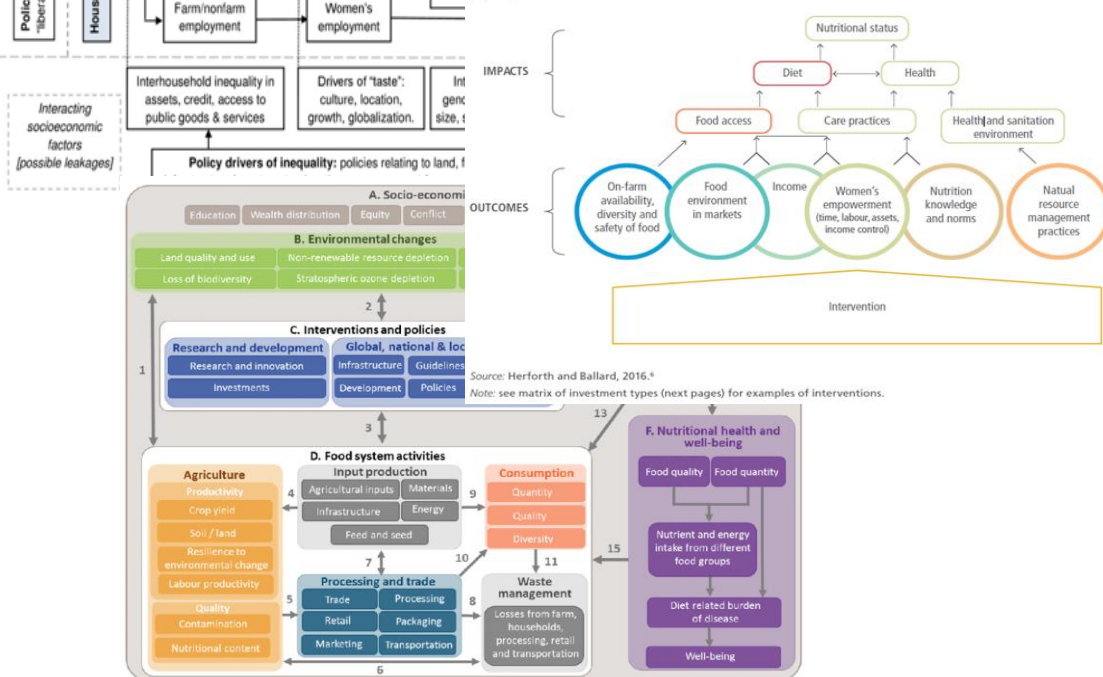


Figure 1. Simplified impact pathway framework of investment projects. This framework identifies six outcome areas that are directly affected by agriculture, rural development and food systems, and how these can influence nutrition (see glossary of terms on page 10).



12 DOMAINS

Primary food production
(growing, cultivating, raising, catching, harvesting, storing)

Value chains and food transformation

Food safety

Water, Sanitation and Hygiene

Markets

Economy

Food environments

Ecology, sustainability and environment

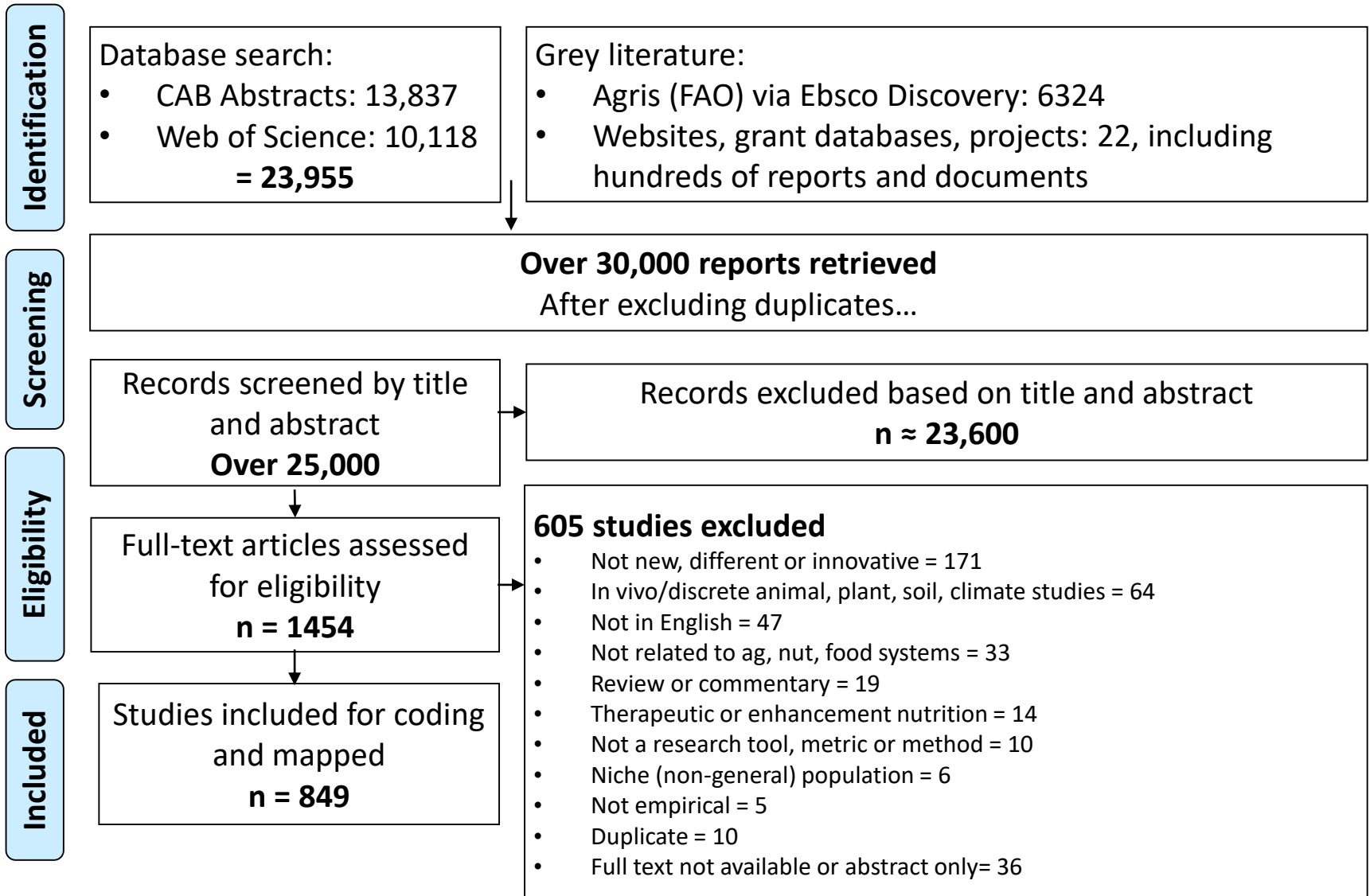
Food policy, governance, trade, MSPs

Conflict of interest

Food security

Diet, nutrition and health

2. Simplified Flowchart



3. Using the EGM

- **Rows:** thematic pathways or domains, through which nutrition and health are improved
- **Columns:** Types of tools, metrics, and methods
 - Technology or survey tools, metrics, analysis and models, or research design
- **Segmentation (bubbles) inside cells:** Stage of development
 - Blue for Stage 1: concept development and pilot
 - Green for Stage 2: Feasibility, efficacy or internal validity
 - Yellow for Stage 3: Demonstration/testing, effectiveness, external validity
 - Red for Stage 4: Adoption, generalisability and wide-spread application

3. Using the EGM

Opening cells:

- Summary by rolling over, by stage of development
- Select a cell and a list of those studies will appear by title, author, and year, with color codes for stage of development.
- By clicking on each title, publication details, available abstracts and other details of the study will appear
- Filters (on the left-hand side) can be selected or unselected to add to the bibliographic list



3. Using the EGM

- **Grey tabs in upper left-hand corner:**
 - **About:** General information
 - **Style:** four options of viewing style: bubble, heat, donut and mosaic.
 - **Filters:** selectable categories, sub-categories, and even individual tools. There are several main sections of filters. They are:
 - Measurement unit
 - Setting or geographic application
 - FILTERS:
 - IMMANA outputs
 - Dietary tools, metrics and methods
 - Food production
 - Water tools, metrics and methods
 - Etc.
 - These have 'parent' groups, and then subcategories under them. However, because of the mapping software, they cannot be nested yet. So they are listed out in order, but not nested in their categories.
- Once you select your filter, click the blue 'update' button in the upper right-hand corner of the settings tab.

4. Using the web interface

- Web interface allows users to explore and tabulate the data contained in the map in a different way
- Link: <https://eppi.ioe.ac.uk/webdatabases4/Intro.aspx?ID=18>
- Username: IMMANA; password: nutrition
- Home page gives some general guidance



4. Using the web interface

- Users can explore data by choosing various codes in the exploded 'Data extraction tool' (click the plus sign)
- Reports tab:
 - Search titles, abstracts and authors, list out the bibliographic and coding assignments for any sub-set of articles
 - Ex. "microbiome"
 - Create cross-tabulations of coding categories, additionally filtered by the categories
 - Ex. "Stage of development" by "Type of TMM", filtered by "IMMANA"
 - 'Explore' by expanding the Data extraction list, and see the number of items coded in each category. Click the number to show the list.
 - The interface will save previous searches and actions, which can then be combined with 'AND' or 'OR'.

5. General guidance

- EGM summarizes number of reports that describe new or new applications of tools, metrics and methods in the agri-health space.
- Many reports employ the same or similar methods, tools and metrics, not a listing of individual tools, metrics and methods.
- Well-populated categories do not necessarily mean that there are no gaps, as one category could be dominated by certain types of innovations.
- Similarly, gaps in this EGM could indicate that there are sufficient, older methods, metrics and tools to measure intended relationships, or it could mean that there is a need for innovation in these areas.
- When interpreting the EGM and its results, it is important not to prioritize topics and themes only based on the number of reports in any given category, but to delve into the intersections.

6. Important links

- ANH Academy: <https://www.anh-academy.org/>
 - [Evidence and Gap Map](#)
 - Tutorials and presentations
 - RFPs for [grants](#) and [fellowships](#)
- EGM protocol with full methodology:
<https://onlinelibrary.wiley.com/doi/full/10.1002/cl2.1035>
- Web portal:
<https://eppi.ioe.ac.uk/webdatabases4/Intro.aspx?ID=18>
 - Username: IMMANA
 - Password: nutrition

Thanks to...



Advisory group:

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Innovative Methods and Metrics for
Agriculture and Nutrition Actions



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