

Pathways between agriculture and nutrition: An evidence and gap map of research tools, metrics and methods

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Nutrition Innovation Lab 2019

immana

Innovative Methods and Metrics for
Agriculture and Nutrition Actions



Campbell
Collaboration



UKaid
from the British people

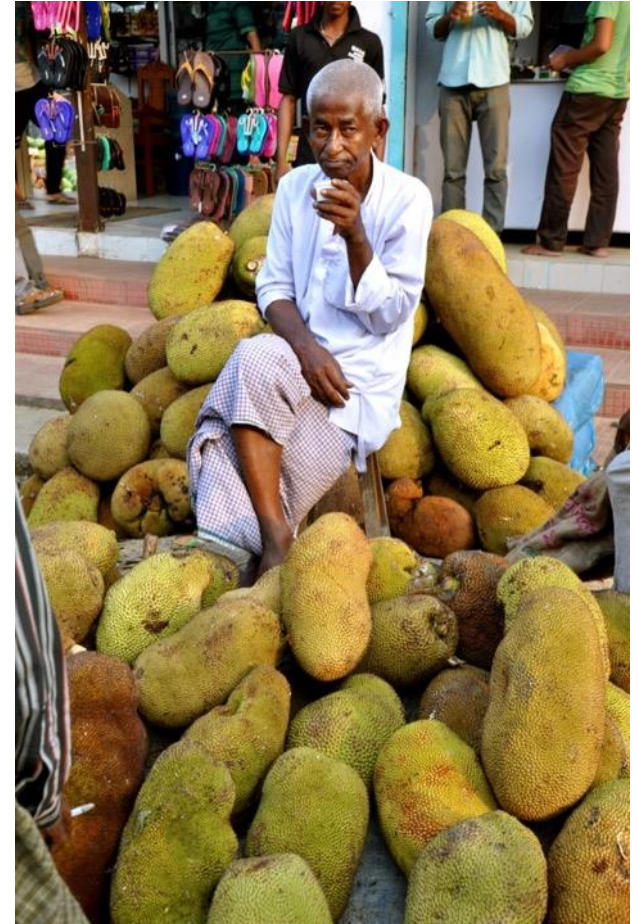
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Rationale for the project

- Agriculture, food systems and nutrition pathways important for health outcomes (human and planetary)
 - But pathways complex, dynamic and hard to measure
- New tools, metrics and methods proliferated last decade via renewed interest and funding in multidisciplinary nexus
 - Projects such as: SHEFs, INDDEX, GDD, A4NH, and IMMANA

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



Evidence and Gap Maps

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

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 decade
 - Corresponds to investments, keeps focus on new developments
 - More on innovation later...
- Reports on agriculture and food systems OR on nutrition and nutrition-related health
 - Why not both?
- Using tools, metrics or methods developed or newly applied
- Reports mapped across 12 thematic domains (rows) against categories of tools, methods and metrics (columns)

Figure 1: The Conceptual Framework

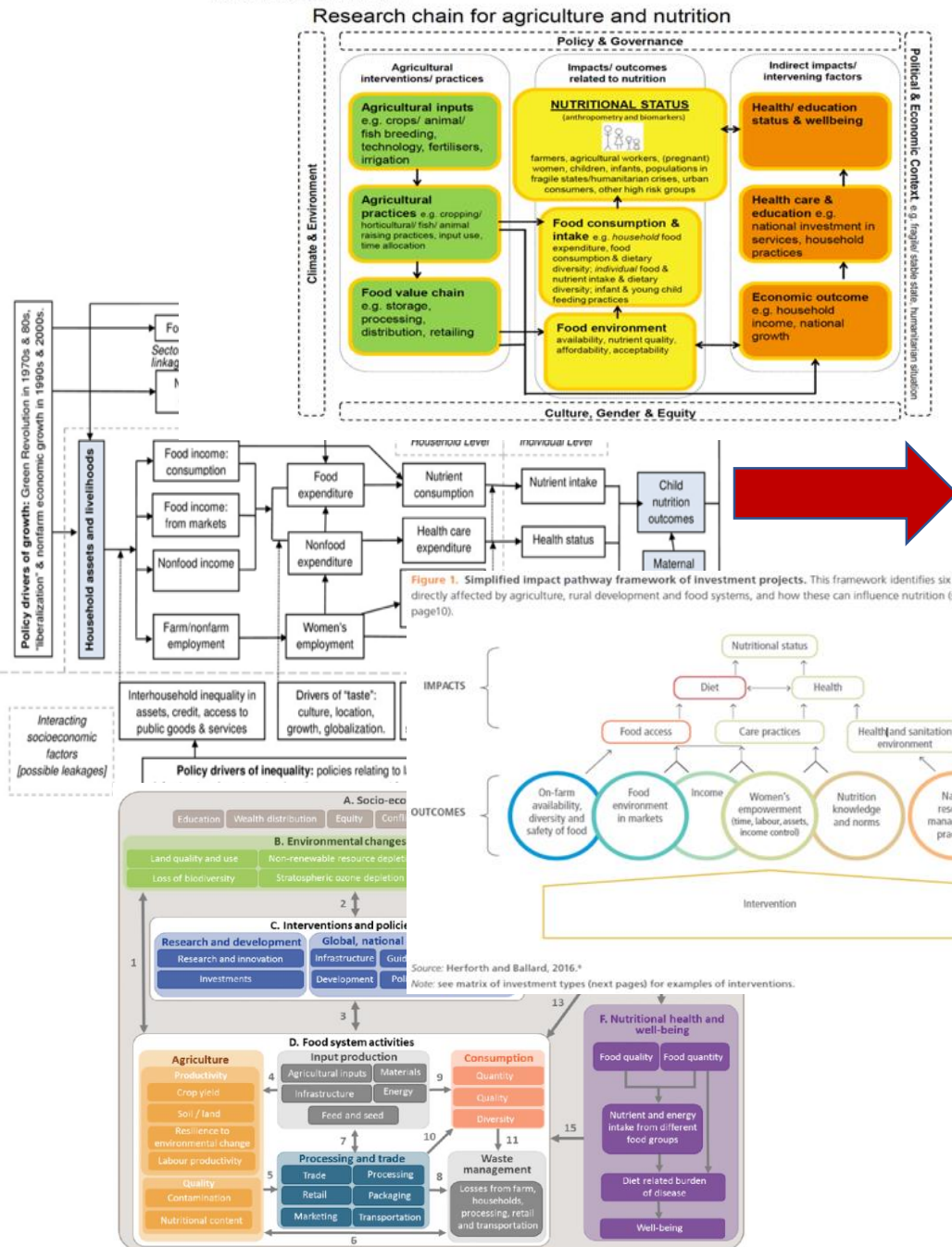
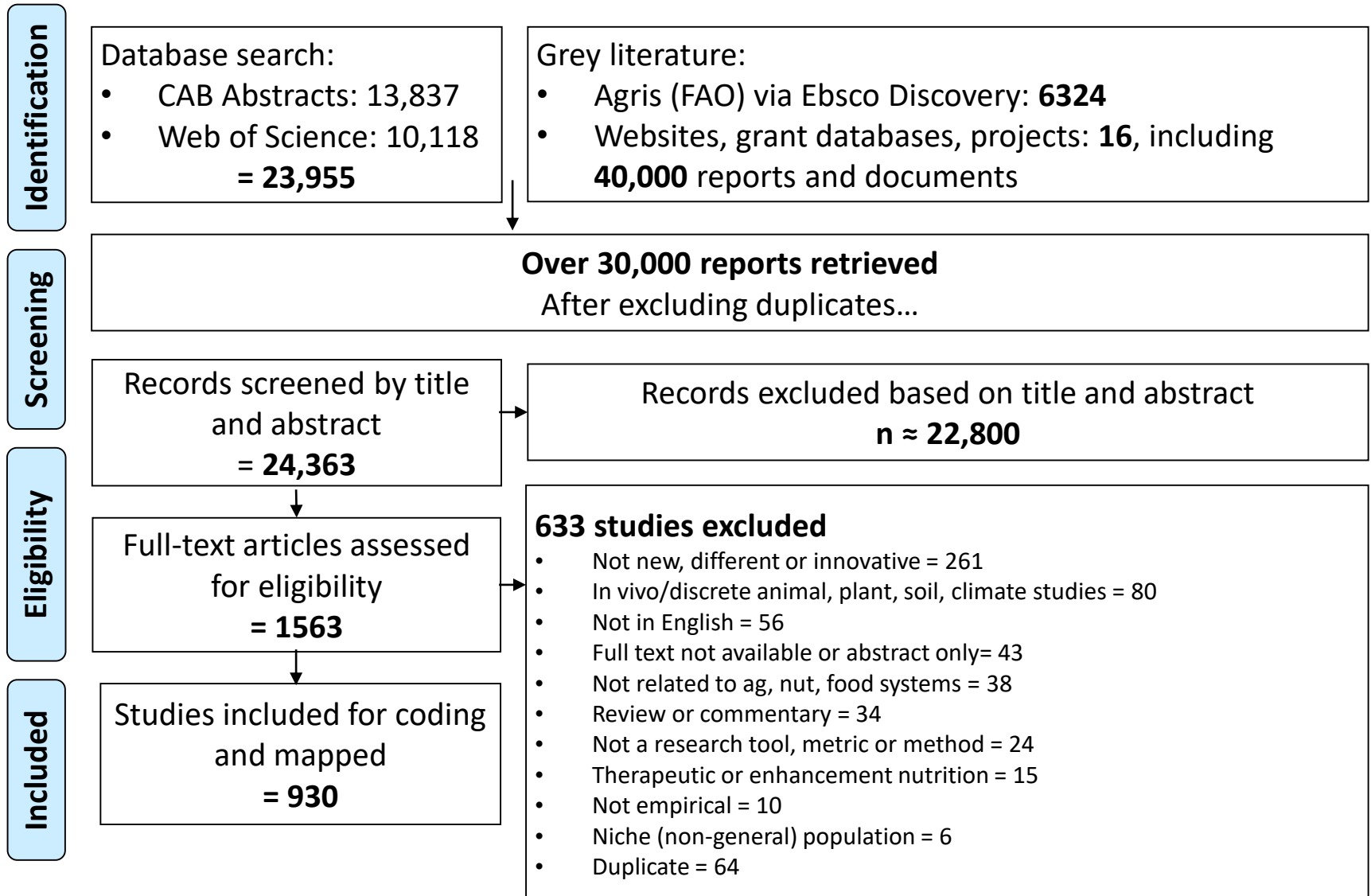


Figure 1. Simplified impact pathway framework of investment projects. This framework identifies six outcome areas that are directly affected by agriculture, rural development and food systems, and how these can influence nutrition (see glossary of terms, page10).

- ## 12 DOMAINS
- Primary food production (growing, cultivating, raising, catching, harvesting, storing)
 - Value chains and food transformation
 - Food safety
 - Economy
 - Markets
 - Food environments
 - Water, Sanitation and Hygiene
 - Ecology, sustainability and environment
 - Food policy, governance, trade, MSPs
 - Conflict of interest
 - Food security
 - Diet, nutrition and health

Simplified Flowchart



USING THE MAP AND DATA

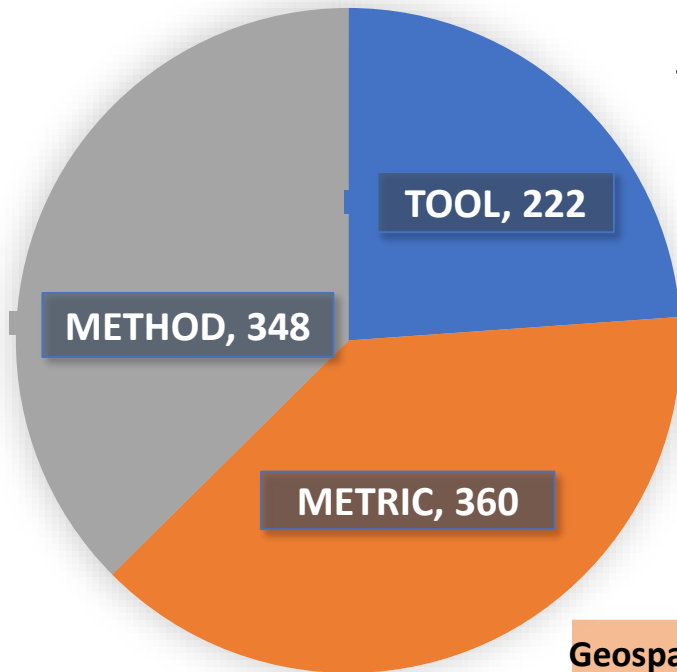
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Tools, metrics and methods

Methods:

Analysis and models: 337

Research design: 11

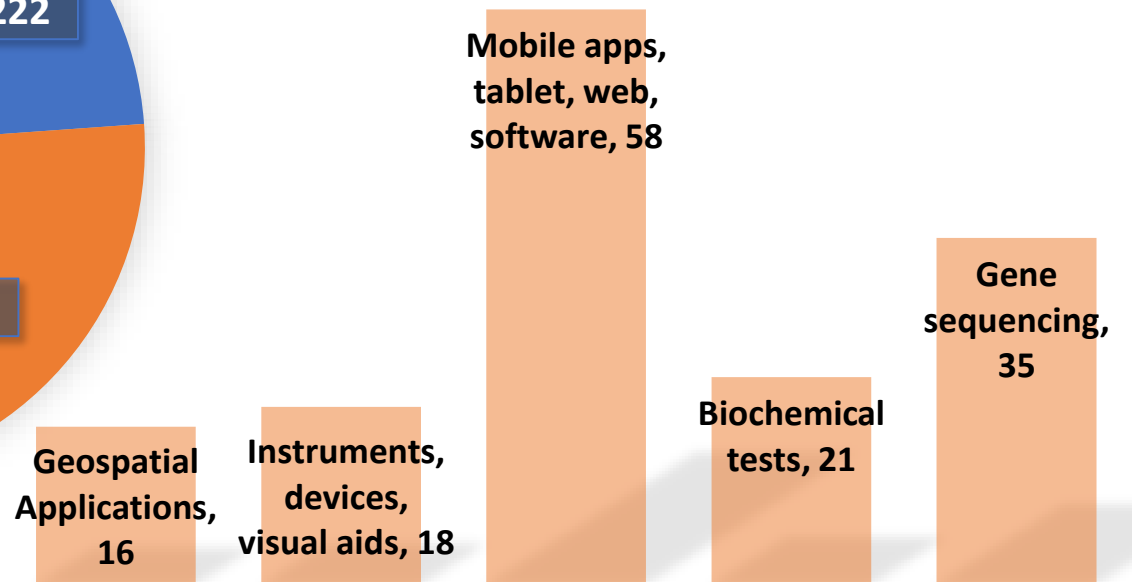


Tools:

Technology measures/applications: 160

Survey, instruments and research tools: 60*

**Only 10 of these are qualitative tools*

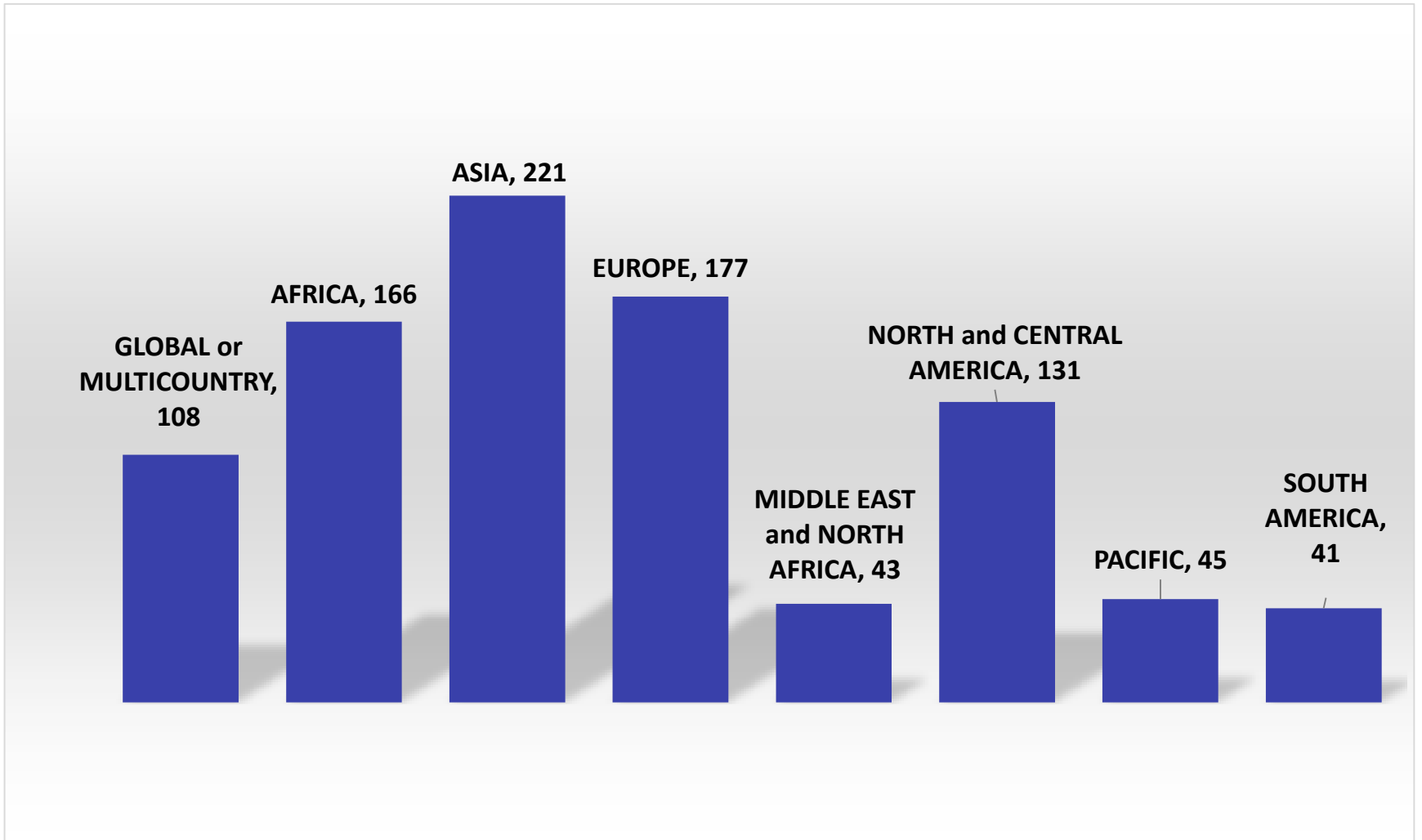


Domains

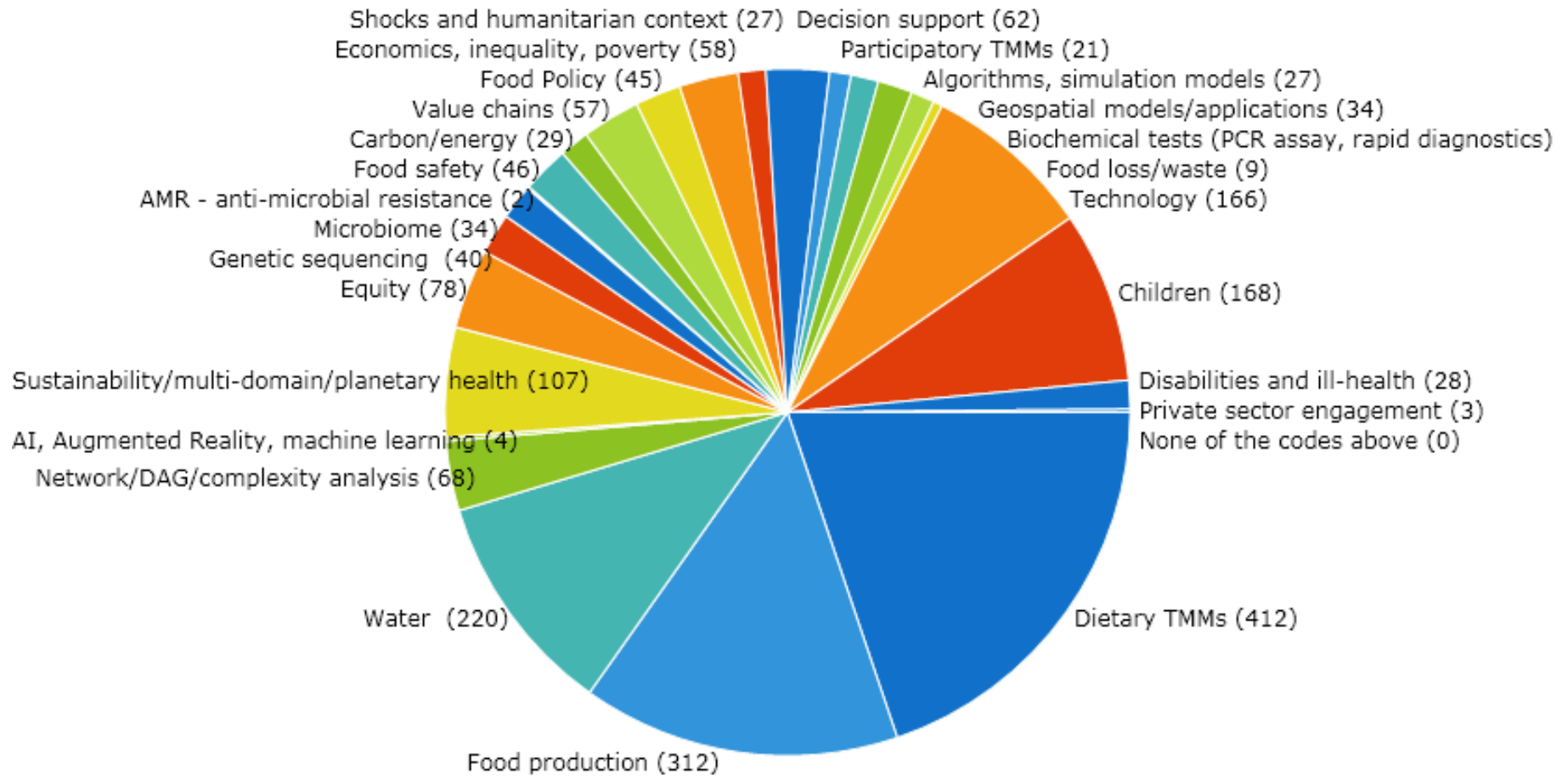


12 DOMAINS	#
Primary food production (growing, cultivating, raising, catching, harvesting, storing)	339
Value chains and food transformation	58
Food safety	44
Economy	51
Markets	30
Food environments	18
Water, Sanitation and Hygiene	208
Ecology, sustainability and environment	178
Food policy, governance, trade, MSPs	63
Conflict of interest	8
Food security	49
Diet, nutrition and health	385

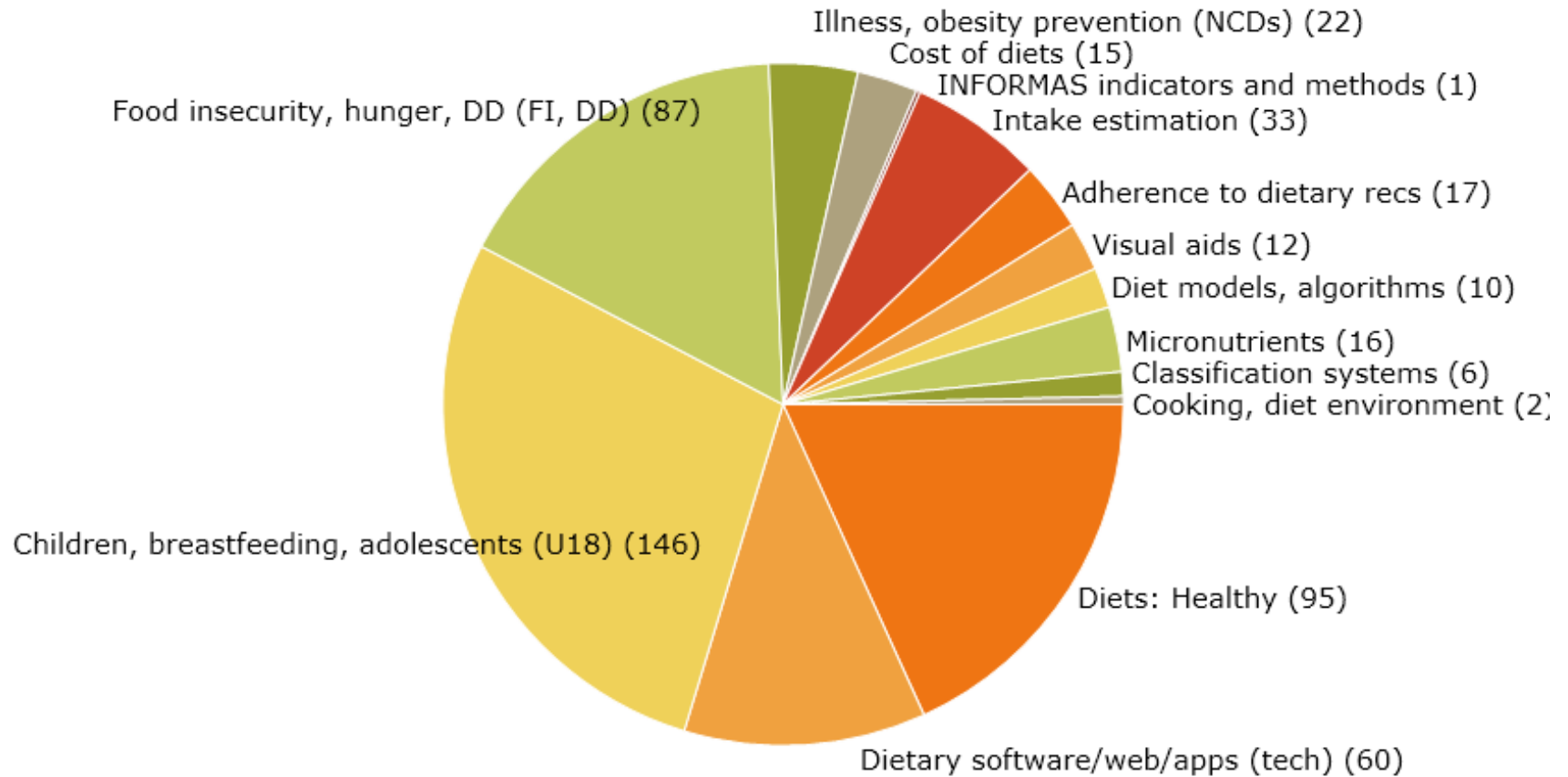
Geographic application



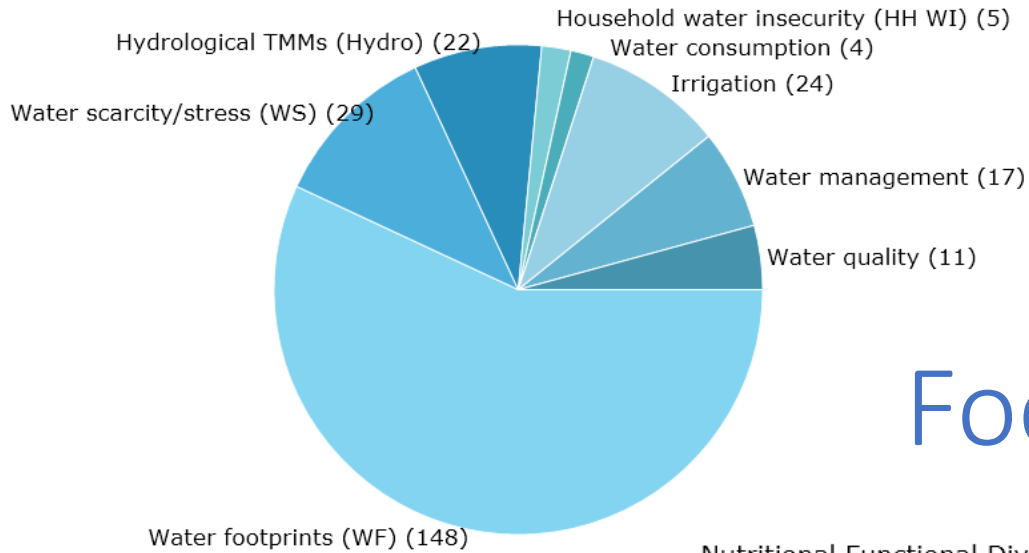
Classification and sub-categories



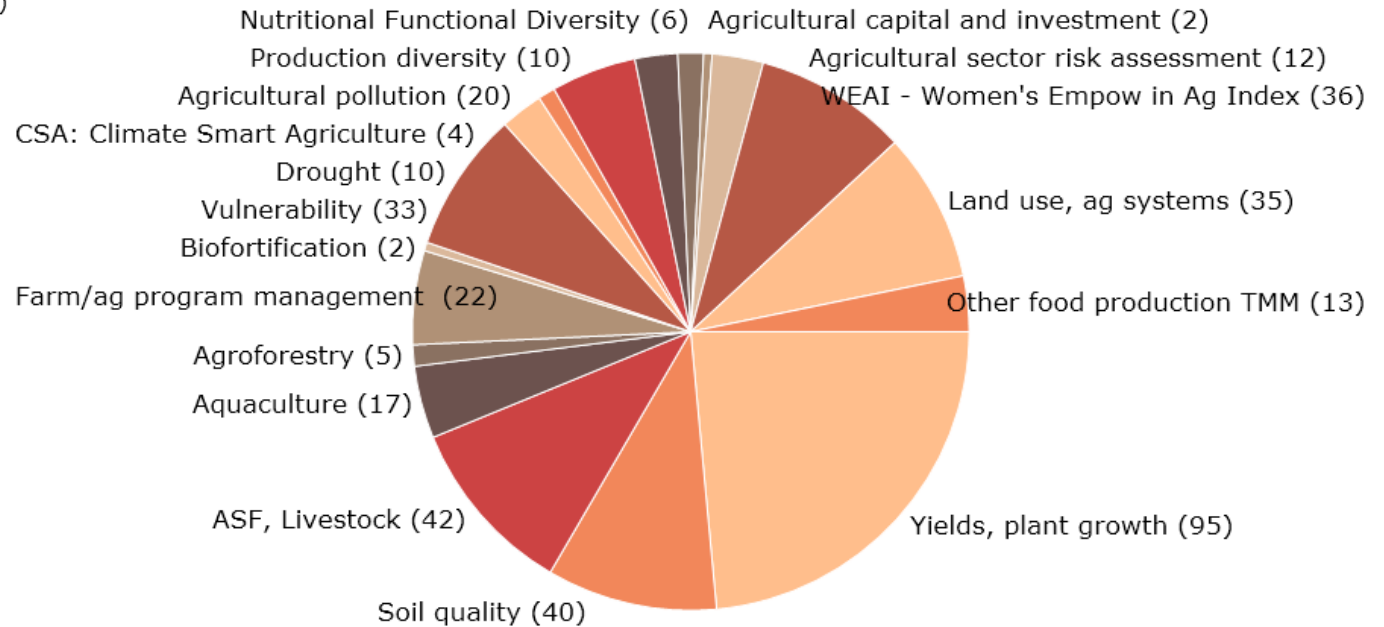
Diets



Water



Food production



Trends

Thematic domain trends:

- Dietary tools, metrics and methods
- Food production (many of which also water-related)
- Water footprint assessments
- Ecology, climate change, environment



Type of innovation trends:

- Metrics
- Technology applications
- Bayesian network analysis
- New forms of modeling and analysis

Gaps



Gaps in type of innovation:

- Qualitative methods
- Study design
- Co-production of research
- Instruments and devices (with the exception of mobile applications)
- System-level tools, metrics and methods
- Dynamic, surveillance, ongoing, real-time research innovation

Thematic domain gaps:

- Conflicts of interest/power in food system, food industry, corporate engagement
- Short-term shocks, humanitarian contexts, emergencies
- Long-term vulnerability, migration, fragile states
- Food environments, food choice and eating behaviour
- Food systems and governance
- Trade, markets and value chains for nutrition and health outcomes
- Linking agriculture KAP with nutrition and health KAP
- Equity and inclusion, especially types other than gender

Thoughts on the map...



- An interactive resource
 - Needs input and interaction from users
 - Can be tailored to many themes and specific interests
 - Should be used to prioritize further developments, undertake systematic reviews and better use what others have already done
- Will be updated periodically through IMMANA 2
 - EGMs can be a living, growing resource
 - Publicly available and specific to program, policy and investment purposes

Thanks to...

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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 general guidance



Important links

- ANH Academy: <https://www.anh-academy.org/evidence-gap-map>
 - 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

General guidance

- EGM summarizes **number of reports** that describe new or new applications of tools, metrics and methods in agri-health space
- Many reports **employ same or similar methods, tools and metrics**, not a listing of individual tools, metrics and methods
- **Well-populated categories don't mean that there are no gaps**
 - Gaps in EGM = sufficient, older methods, metrics and tools? Or need for innovation in these areas?
- Delve into the data at intersections, don't just go by number of reports in any given category