



# An evidence alliance for food systems



## Our vision

A world where high-quality evidence drives better decisions for agriculture and food systems

## Farming feeds the world. We desperately need to know how to do it better

Interventions designed to improve agricultural practices often lack a solid evidence base. A new initiative could change that.



# Our mission

We provide high-quality evidence to help decision-makers address key challenges and create a more nutritious, food-secure, and climate-resilient future



**Clear, targeted  
solutions**



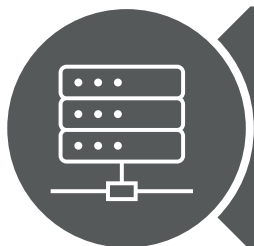
**A coordinated  
network**



**Inclusive,  
evidence-based  
decisions**

# What does Juno solve?

Evidence is not being systematically used to address societal challenges



Decision-makers and researchers can't keep **up-to-date** or **access** the huge volume of research and data



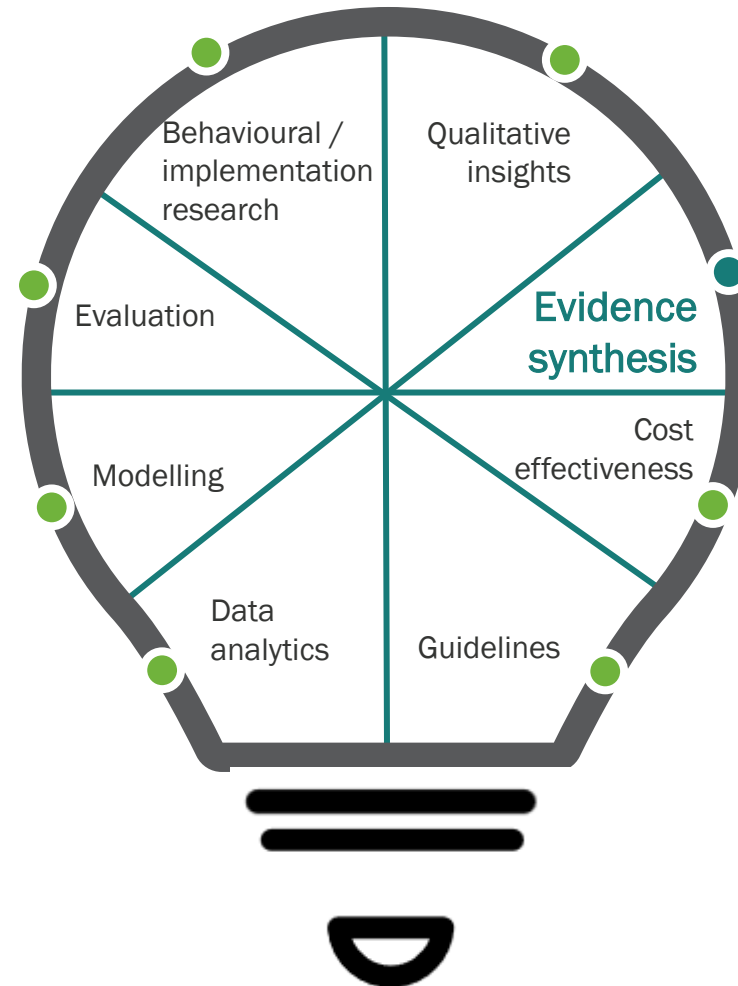
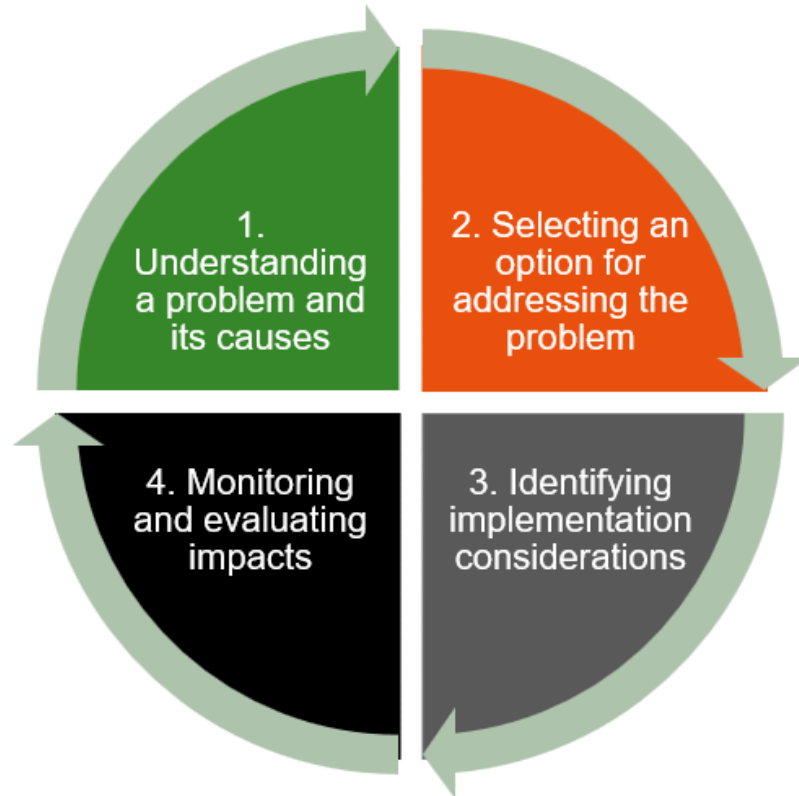
Evidence review processes are currently **expensive** and **time-consuming**



**Lack of awareness** of what best evidence is

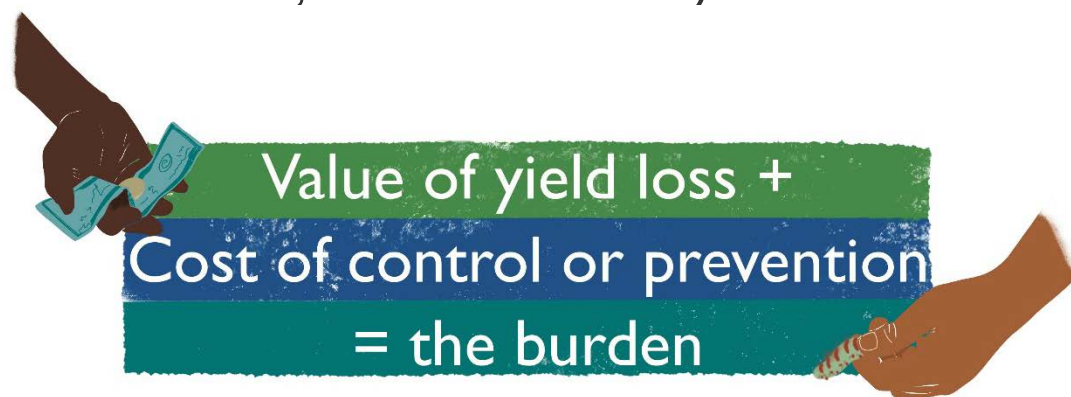
# Evidence informed decision-making

Policymakers engage in a four-step decision-making process and use 8 types of evidence



# Data analytics and modelling

- Around 40% of the world's crops are lost to pests alone.
- We are producing the evidence that decision-makers need to tackle these losses and ultimately improve food security
- Initial focus crops: maize, wheat, rice, cassava, cowpea, banana
- Country case studies in Ethiopia, Ghana, India and Kenya





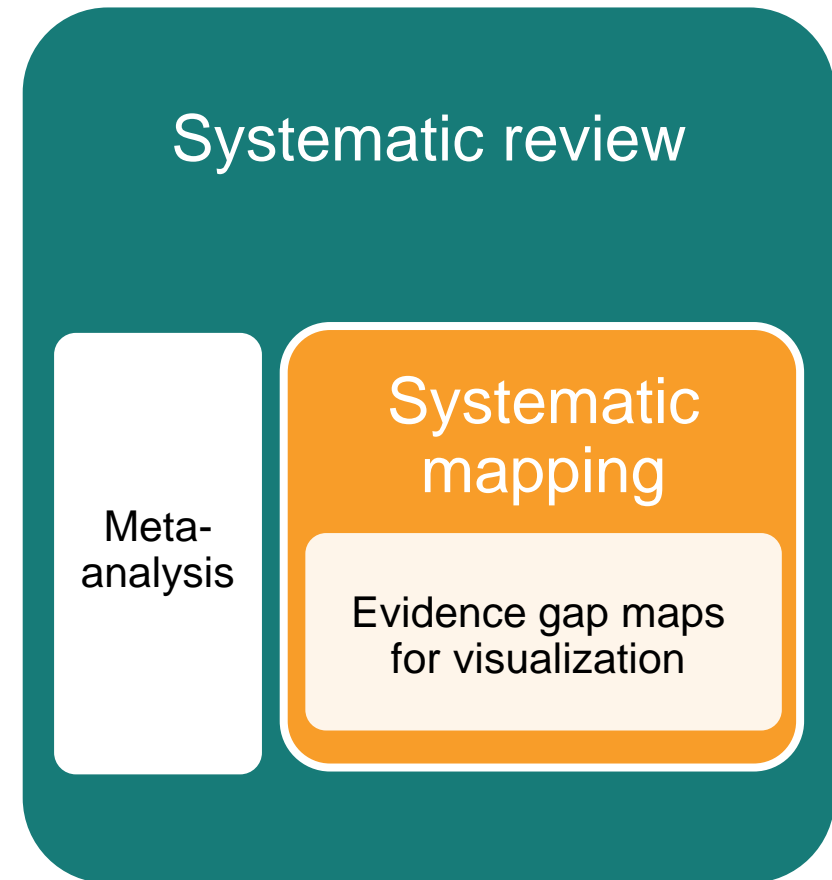
# Evidence synthesis: our primary product

Summarizes what we know and don't know based on all studies that have addressed a similar question

Multiple methods available depending on purpose

Our evidence synthesis is:

- Comprehensive
- Representative
- Transparent and reproducible
- Reliable and precise
- Timely



# Other sectors are leading the way...



Cochrane is an international network producing systematic reviews to help people make informed **health** decisions.



Campbell is the leading global source of evidence syntheses informing **economic and social** policy decisions



CEE promotes and delivers evidence syntheses on issues of greatest concern to **environmental** policy and practice



# Evidence synthesis: proven impact



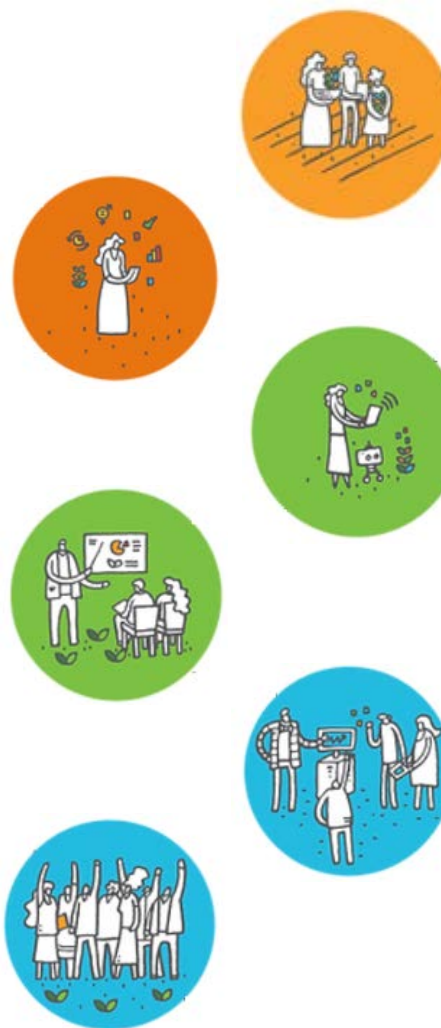
# Our solutions

## Supporting Member Countries

Equip researchers with **proven methodologies** to generate rigorous, high-quality evidence

Expand data sources and use AI to **accelerate evidence synthesis** and improve **cost-effectiveness**

Partner with **regional and local research networks**, enhancing their ability to generate and advocate for better evidence



**Identify and prioritize evidence needs** to help organizations and governments make informed policy decisions

Train researchers in **policy-relevant evidence production**, fostering a global network of collaborators

**Drive awareness and adoption** of high-quality evidence, ensuring its impact reaches diverse audiences

# Our partners and funders



Gates Foundation



# 2024 reviews on the Juno Knowledge Bank



A machine-driven bibliometric analysis of current and emerging **plant health** challenges

FCDO



Understanding critical factors for **One Health** implementation

FCDO



Sustainable agricultural practices for **gender** equity and women's empowerment

FCDO



**Best Buys:** Cost-effective interventions to **support nutrition**

FCDO



Effectiveness of **nature based solutions** for climate adaptation and mitigation

FCDO



**Crop variety** performance in **Nepal**

FCDO



**State of the Field Report** on research in agrifood systems

FCDO / Gates



**Vision for Adapted Crops and Soils** synthesis

Rockefeller



**Public interventions** contributing to sustainable agriculture and food outcomes **across Latin America and Caribbean**

USAID



**Incentives and mechanisms can support and scale climate action** across Latin America and Caribbean

USAID



Assessing the impact of **agrifood system** interventions on **resilience**

FAO



# Local policy-relevant research

## Stakeholder consultations

- Key informant interviews: 15+ organizations
- Facilitated workshop to finalize research question
- Top priorities: climate change & plant breeding



# Systematic review

Evidence informing policy

## Crop breeding in Nepal

- 40,000+ potentially relevant records
- AI narrowed these down to 81 suitable for statistical analysis of yield data
- Mapped geographic distribution of studies by crop

## THE YIELD AND EVIDENCE OF STRESS RESPONSE OF CROP VARIETIES DEVELOPED THROUGH DIFFERENT BREEDING METHODS IN NEPAL

### PROBLEM STATEMENT

Nepal's crop output has stagnated in recent years. Moreover, its food and nutritional security is under threat from an increasing reliance on food imports, exacerbated by the reduced availability of arable land and agricultural labour, and the impact of climate change. It is crucial to develop crop varieties with multiple beneficial traits to increase yields and ensure resilience to these threats.

### INTRODUCTION

The primary breeding goal for Nepal's key staple food crops is to increase crop yields while minimizing biotic (diseases, weeds, and pests) and abiotic (water deficiency, drought, and heat) stress effects. To this end, approximately 728 crop varieties have been released and registered over the last 70 years.

Our systematic review of the developed crop varieties assesses the effectiveness of different breeding methods (hybridization, introduction, and domestication) in improving crop yields and resilience to plant stressors.

### POLICY RECOMMENDATIONS

**Prioritize crop breeding research to improve farmers' access to better-performing varieties:**

Reorient Nepal's national agricultural research system to focus on developing high-yielding, climate-resilient crop varieties, mainly through hybridization.

**Invest in modern breeding techniques:** Increase investment in modern breeding to improve the research capacity of local researchers and breeders, as well as to accelerate plant variety development. This includes investing in modern tools for the rapid development of varieties through local hybridization, introducing high-quality plant genetic resources, and characterizing landraces for specific traits.





# Key recommendations

## Invest in vegetable breeding:

Limited research on potato and other vegetable crops compared to rice, maize, and wheat.

## Prioritize crop breeding research to improve farmers' access to better-performing varieties:

Reorient Nepal's national agricultural research system to focus on developing high-yielding, climate resilient crop varieties, mainly through hybridization.

## Invest in modern breeding techniques:

Increase investment to accelerate plant variety development, investing in modern tools for local hybridization, introducing high-quality plant genetic resources, and characterizing landraces for specific traits.



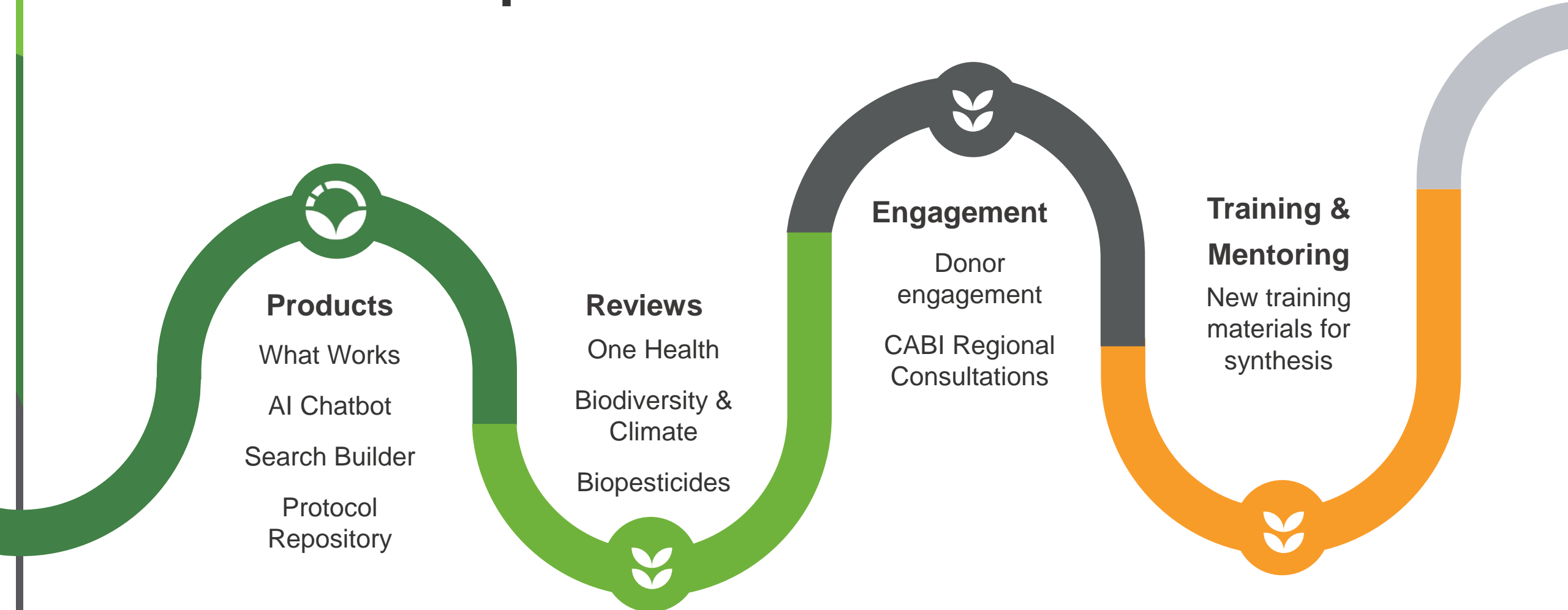


# Training Nepalese researchers

Video highlights and testimonials



# 2025 Roadmap



# New reviews to be published in 2025



Promoting **sustainability in the agricultural sector** across Latin America and Caribbean countries

IDB / USAID



**One Health** Zoonosis systematic mapping

OHH / FCDO



**One Health** Horizon scanning

OHH / FCDO



**Nutrition-sensitive agricultural interventions** that can effectively and sustainably address food security and nutrition

Gates



Identifying the links **between climate resilience, food security and nutrition** in LMICs

Competitive FCDO + BMZ



How do **local food systems and procurement** provide nutritional school meals: A systematic review focused on Honduras

Competitive proposal FCDO



The role of **feminism in management and leadership capacity** in agrifood systems in SSA

Competitive proposal FCDO



Global Opportunities and Challenges to the **Uptake of Biopesticides**: An Evidence Map

FAO & CABI



# Ask for Evidence AI

## a new AI chatbot

- AI-powered answers, grounded in a trusted dataset
- Linked to specific reviews and What Works
- Deeper insights and exploration of context and nuance behind interventions
- Includes citations, visuals, and reliability scores to support evidence use
- Paired with the What Works summaries, Juno offers a novel and complete way to review and dig into the evidence

The screenshot displays the 'Ask for Evidence AI' interface. At the top, there's a navigation bar with 'CABI Digital Library', 'Authenticated via CABI', 'Bookshop', 'Browse', and 'Login'. The main heading is 'Ask for Evidence AI', followed by the subtitle 'Summarising insights from systematic reviews and meta analysis.'.

The chatbot interface shows a user query: 'What are the most effective nutritional interventions in subsaharan africa?'. Below the query is a progress bar with six steps: 1. Preparing, 2. Searching, 3. Compiling, 4. Fetching Sources, 5. Fetching Images, and 6. Completed. The progress bar is currently at step 6.

The 'Summary' section provides a high-level overview of the findings. It states: 'To address nutritional challenges in Sub-Saharan Africa, particularly through agriculture and food systems, several interventions have shown promise, though their effectiveness can vary based on implementation and context.' The summary is followed by five numbered points:

- 1. Home Gardening:** Home gardening has been identified as a potential strategy to improve food security and nutrition in rural areas of Sub-Saharan Africa. It can provide diverse and nutrient-rich foods, which are crucial for improving dietary quality. Home gardens are adaptable to local conditions and can be a sustainable source of micronutrients. However, the success of home gardening interventions often depends on factors such as the availability of resources, knowledge, and support for implementation. Studies have shown positive impacts on dietary diversity and food security, although the effects on nutritional status, such as reducing stunting, are less consistent [4].
- 2. Nutrition-Sensitive Agriculture:** This approach integrates nutrition objectives into agricultural practices. It involves promoting the production and consumption of nutrient-rich foods, improving food access, and empowering women, which can lead to better nutrition outcomes. Nutrition-sensitive agriculture can address multiple underlying causes of undernutrition, such as food insecurity and inadequate care practices. However, its impact on nutritional status, particularly on stunting and wasting, is often limited due to short implementation periods and insufficient integration of other supportive interventions [2].
- 3. Biofortification and Fortified Foods:** Biofortification of staple crops and the use of fortified foods can help address micronutrient deficiencies. These interventions focus on increasing the nutrient content of crops through conventional breeding or genetic modification. While they have the potential to improve micronutrient intake, their success depends on factors such as crop adoption rates and consumer acceptance [1].
- 4. Lipid-Based Nutrient Supplements (LNS):** LNS are designed to provide essential nutrients, including energy, protein, and fatty acids, to vulnerable populations. They are particularly useful in resource-poor settings where diverse diets are not available. LNS can be an effective short-term intervention to prevent malnutrition, especially in children, but they are not a substitute for a diverse diet [5].
- 5. Education and Behavior Change Communication:** Education on nutrition and behavior change communication can enhance the effectiveness of agricultural interventions by promoting better dietary practices and increasing awareness about nutrition. This approach can be integrated with other interventions to maximize impact [3].

Below the summary, a paragraph states: 'While these interventions have shown varying degrees of success, their effectiveness often hinges on the specific context, including local dietary habits, agricultural practices, and socio-economic conditions. Moreover, a multisectoral approach that combines these interventions with efforts to improve health services, sanitation, and education is crucial for achieving sustainable nutrition outcomes in Sub-Saharan Africa.'

The 'References' section lists five references:

- [1] Interventions in agriculture for nutrition outcomes: A systematic review...** Market Linkages Including Storage and Post-Harvest loss. Bird 2018.
- [2] Nutrition-Sensitive Agriculture: A Systematic Review of Impact Pathways...** Market Linkages Including Storage and Post-Harvest loss. Sharma 2021.
- [3] Agricultural and nutritional education interventions for reducing aflatoxin...** Winer et al. 2020.
- [4] Home gardening in sub-Saharan Africa: A scoping review on practices and...** Homestead gardening. Haroon 2022.
- [5] Preventive lipid-based nutrient supplements given with complementary...** Nutritious food supplementation. Das et al. 2019.

A 'Help' button is located in the bottom right corner.

# What Works Agrifood

- Hub for policymakers & advisors
- Actionable, accessible, and rigorous evidence
- Organized by channels spanning agrifood systems
- Interactive dashboards give a clear snapshot of “What Works”
- **Effectiveness** and **strength** of the evidence
- Detailed Intervention Reports
- Chatbot offers Q&A functionality

## Agroforestry interventions for vulnerable rural communities and small holder farmers

### Key Findings

What is it?

Why is it important?

What are the evaluated outcomes?

What does the evidence say - How effective is it?








What does the evidence say - Where has the evidence come from?

The certainty and limitations of the evidence

How does it work?

Implementation and trade-offs considerations

Is it cost effective?

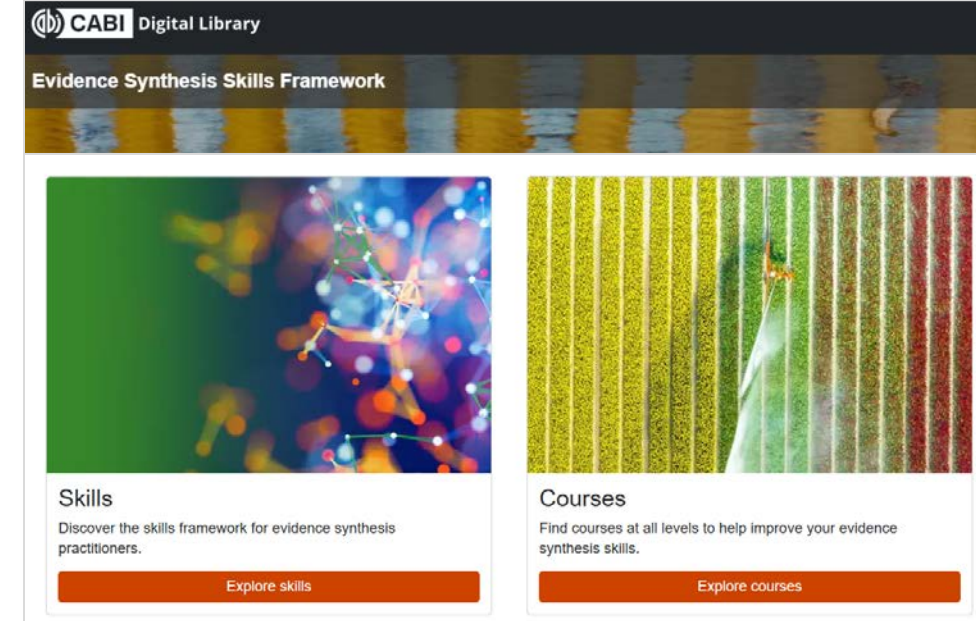
The intervention	Outcome	Effectiveness rating See scale	Strength of evidence See scale
<b>Agroforestry interventions for vulnerable rural communities and small holder farmers</b>  <i>The intentional integration of trees and shrubs into crop and livestock farming systems.</i>  Published Date:02/05/2025	Nutrition Status	No evidence	No evidence
	Diet Quality	 Effective	 Medium
	Food Security	 Effective	 Medium
	Women's Empowerment	 Mixed effect	 Low
	Productivity	 Mixed effect	 Low

### Key Findings

- Promoting agroforestry through farmer training, incentive schemes, provision of tree seedlings, community campaigns, market access facilitation, and policy reforms is associated with improvements in household dietary diversity, food availability, and productivity, particularly for smallholder farmers who lack access to conventional agricultural inputs and female-headed households.
- No evidence was found on the effectiveness of agroforestry interventions on nutrition status outcomes, such as wasting, underweight, and micronutrient deficiencies.
- However, evidence suggests that agroforestry interventions may effectively improve household

# Skills framework and training for evidence producers

- The Skills Framework for Agrifood Evidence Synthesis and associated training materials will help organisations and individuals to conduct high quality evidence synthesis.
- Helps to evaluate skills, plan curricula and training to improve the level of research professionalism within agrifood
- Training materials delivered via the CABI Academy will equip learners with the knowledge and practical skills to conduct policy-relevant evidence syntheses, from scoping a question to delivering usable products that inform decisions in agrifood systems.



- Engaging with policy and other decision-makers
- Scoping and formulating the review question
- Searching for evidence
- Screening and selecting studies
- Data extraction and coding
- Quality and risk of bias assessment
- Synthesis and analysis
- From findings to policy products and uptake

# Get involved







# Thank You

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Juno Evidence Alliance