

Use of synthesis and meta-analysis in development evaluation

Speakers



Andrew Fyfe

Head, Evaluation Unit

UN Capital
Development Fund



Mark Engelbert

Evaluation Specialist

3ie Initiative for
Impact Evaluation



Carlos Tarazona

Senior Evaluation Officer

Food and Agriculture
Organisation of the UN



Food and Agriculture Organization
of the United Nations





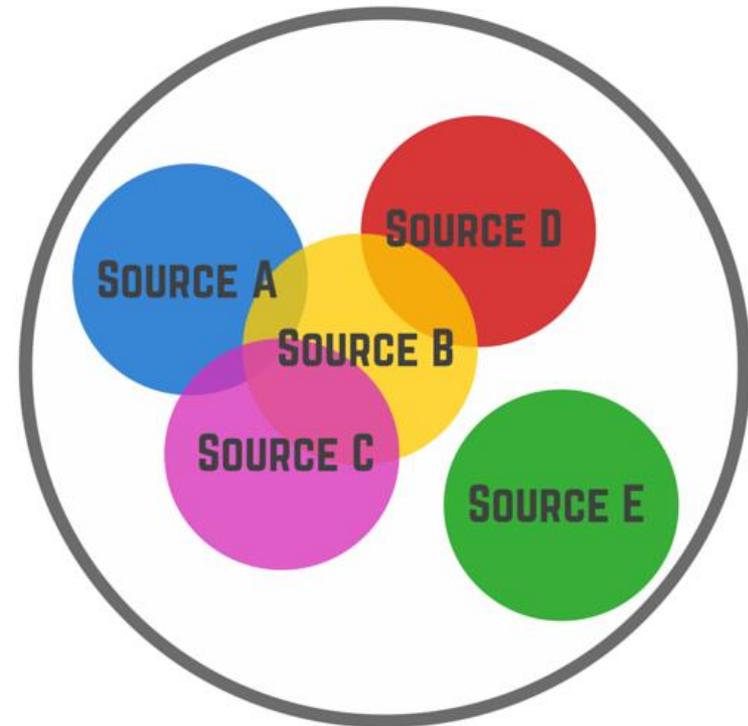
Applications of synthesis in development evaluation



Webinar UNEG / Eval-Forward
30 October 2019

Outline

- Definition
- Advantages
- Usage
- Methods overview
- Application
 - Lessons learnt
 - Best evidence synthesis
 - Systematic reviews



Definition

“Evaluation synthesis is the **integration of existing knowledge and findings** relevant to a topic.

The objective is to **increase the applicability of these findings and develop new knowledge through the integration process.**

The synthesis is promoted as an approach that addresses the challenge of "**information overload**", delivering products that ... distil relevant evidence for decision-making.”

Source: Environmental Science and Policy Journal, Volume 86, August 2018



Advantages

- Saving of direct and indirect costs (both for the evaluator and for the groups being evaluated)
- Focus on structural/common factors of success/failure, and not only on issues specific to a given intervention
- May increase perception of robustness as it builds on previous findings, instead of starting from scratch
- Useful for discussion with decision-makers and key stakeholders

Usage

1. Synthesise data from a single evaluation

Decide how data will be combined/analyzed to produce an overall judgement of merit or worth.



2. Synthesise data across evaluations

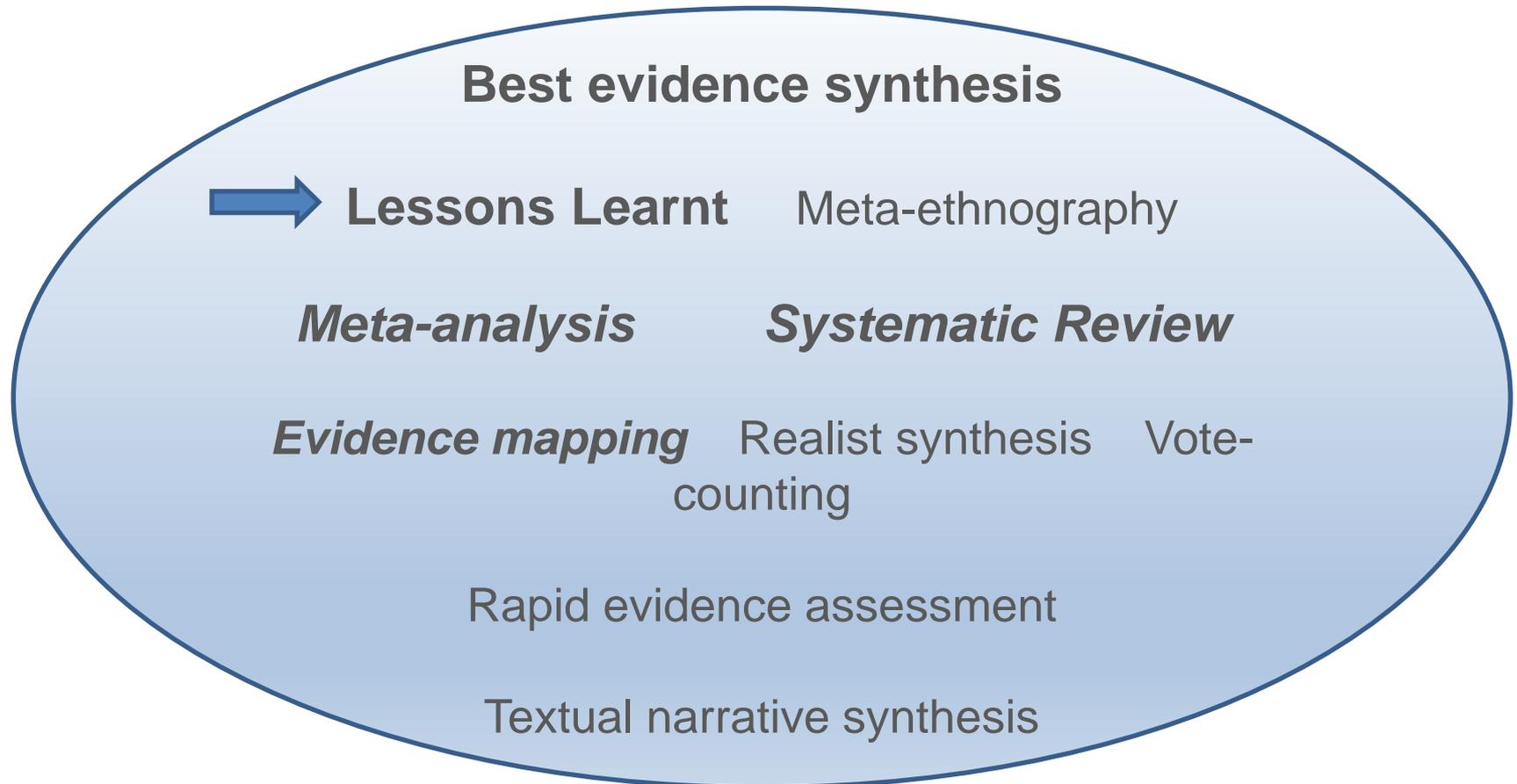
Decide how to find, extract and combine data from multiple evaluations to produce more general conclusions about 'what works' or 'what works for whom in what circumstances'.

3. Extrapolate findings

Explain how findings from an evaluation might be more generally applied to new sites and situations.

Source: BetterEvaluation's Rainbow Framework, accessed October 2019

Synthesize data across evaluations



Source: BetterEvaluation's Rainbow Framework, accessed October 2019



Lessons learnt

- Develops out of the evaluation process
- More useful/feasible when planned in advance and as input to future programme/project design (not for immediate use)
- Early planning is needed - same manager, similar evaluation team and common stakeholders
- Resources and time for data integration, analysis and presentation need to be earmarked

Synthesis of biodiversity-related project evaluations in Ecuador

- ❖ **Objective:** Support biodiversity through improved policies and programmes
- ❖ **User:** Government counterparts, FAO/GEF
- ❖ **Scope:** subnational and national



Synthesis of pesticide-related project evaluations in Africa

- 1 Prevention and Disposal of Persistent Organic Pollutants (POPs) and Obsolete Pesticides in Eritrea
- 2 Disposal of POPs and Obsolete Pesticides in Mozambique
- 3 Demonstration project for decontamination of POPs contaminated soils using non-thermal treatment methods in Botswana

Lessons learnt

Common objective

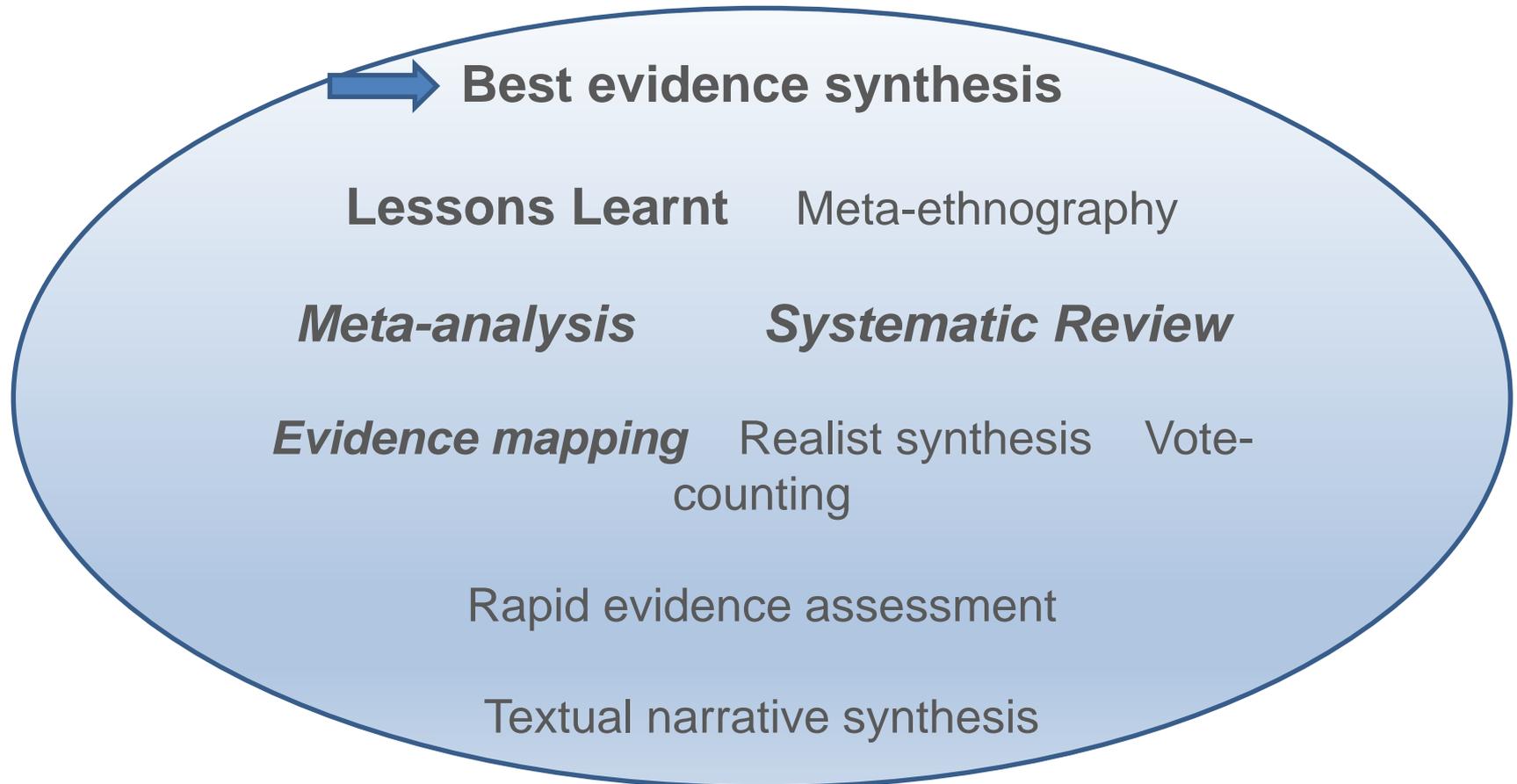
GEF-4 Strategic objective:
Reducing and eliminating production, use and releases of POPs into the broader environment

Common activities

- Risk reduction
- Capacity building
- Pesticide disposal

Common users (FAO/GEF)

Synthesize data across evaluations



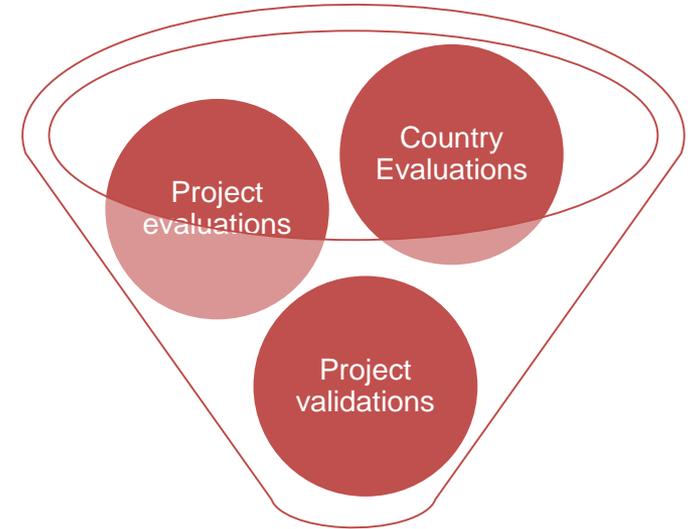


Best evidence synthesis

- Draws on a wide range of evidence and builds in an iterative, participatory approach to building and using a knowledge base
- More useful/feasible when planned in advance and as input to future policy/programme design
- Consultative stages need to be planned in advance, and take the form of debriefings and/or stakeholder workshops

IFAD's ANNUAL REPORT ON RESULTS AND IMPACT

- Annual synthesis report based on an analysis of past evaluations and their ratings.
- Provides a “systematic overview of the results and impact of IFAD’s operations, based on the evaluations undertaken each year.”
- The ARRI has two objectives:
 - (i) report on results and impacts;
 - (ii) identify lessons and systemic issues.



*Source: IFAD's ARRI Report 2019
Presentation*



Thanks for your attention!

More info at:

<http://www.fao.org/evaluation>

<https://www.evalforward.org/>



International Initiative for Impact Evaluation

Using evidence synthesis to inform evaluations

Mark Engelbert
Evaluation Specialist, 3ie

Drinking 4 Coffees a Day Is Bad for You, Study Says

Tessa Berenson @tcberenson | May 28, 2015



Less than 400 mg of caffeine per day is safe

A lot of caffeine is bad for your health, according to a new study, and many people are consuming too much of it.



Drinking three cups of coffee a day could halve the risk of liver cancer

- Coffee is proven to prevent diabetes, a known risk factor for liver cancer
- It also has beneficial effects on cirrhosis and liver enzymes

By DAILY MAIL REPORTER

PUBLISHED: 00:57 GMT, 24 October 2013 | UPDATED: 07:19 GMT, 24 October 2013

Three cups of coffee a day could reduce the risk of liver cancer by up to 50 per cent, latest research has shown.

One study found the drink reduces the risk of the most common carcinoma (HCC), by 40 per cent but separate research indicate Study author Dr Carlo La Vecchia, said 'Our research confirms p health, and particularly the liver.'

Why filter coffee is bad for you

by JAMES CHAPMAN, Daily Mail

Dropping coffee from your diet could reduce the risk of heart disease by as much as 15 per cent, according to a study.

Britons spend £850million a year on coffee. But experts suggest it can raise levels of cholesterol and homo-cysteine in the blood - both associated with heart disease and strokes.

There has been concern about the possible dangers of unfiltered coffee for some time but the more widelyconsumed filtered coffee has generally been given a clean bill of health.

The latest study suggests there may be a link between even filtered coffee and cardiovascular disease.

The team, led by Dr Benedicte Christensen of the Ulleval University Hospital in Oslo, concluded that compounds in coffee called terpenoids - which are only partially removed by filtering - were responsible for raising the heart disease risk.

Writing in the American Journal of Clinical Nutrition today, they say abstaining from average amounts of coffee may lower the concentrations of both tHcy (total homocysteine) and total cholesterol.

Dr Christensen stud-ied a group of 183 Norwegian men and women, aged 24 to 69. Cholesterol and tHcy levels went down in those subjects who abstained from coffee.

Those who usually have an average of four cups of coffee per day could reduce their cholesterol-related risk of heart disease by 15 per cent and homocysteinerelated risk by ten per cent, the scientists say.



Why Your Coffee Addiction Isn't So Bad for You

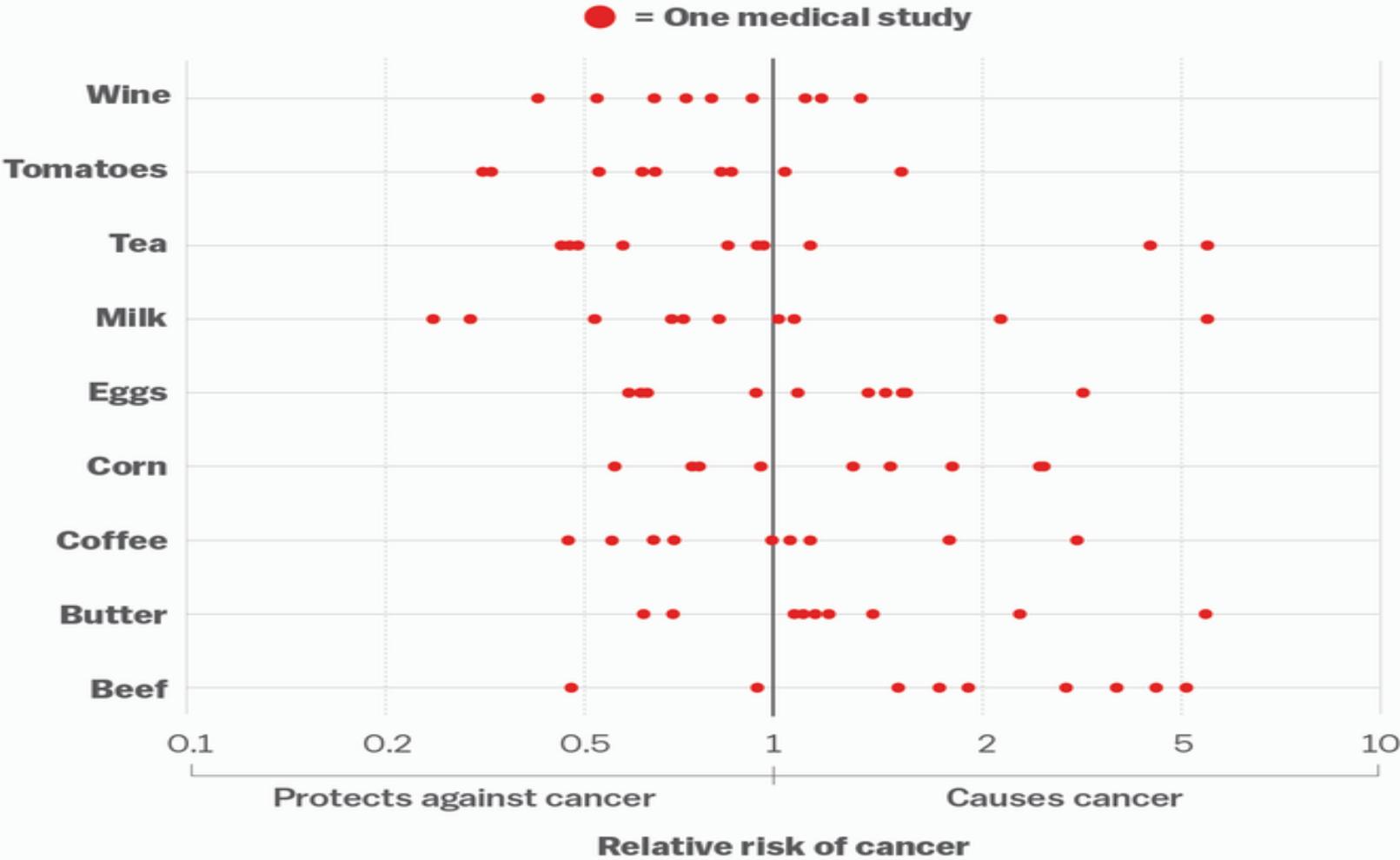
Real Simple @RealSimple | Jan. 28, 2015



Go ahead and pour yourself another cup

Knocking back a daily cup of joe (or several) delivers more than a jolt of energy. That morning brew comes with a host of health benefits, according to research. Here's how coffee can benefit your body and your brain.

Everything we eat both causes and prevents cancer



SOURCE: Schoenfeld and Ioannidis, *American Journal of Clinical Nutrition*

Different approaches to evidence synthesis

Definitions

- Systematic review
 - Uses systematic and transparent methods to collect and analyse the full literature on a topic.
- *Effectiveness* systematic review
 - A systematic review of effectiveness studies.
- Meta-analysis
 - A statistical procedure to combine results from multiple studies
- Evidence map
 - A visual representation of the state of evidence on a topic, created using systematic review methods

Outcomes

Interventions

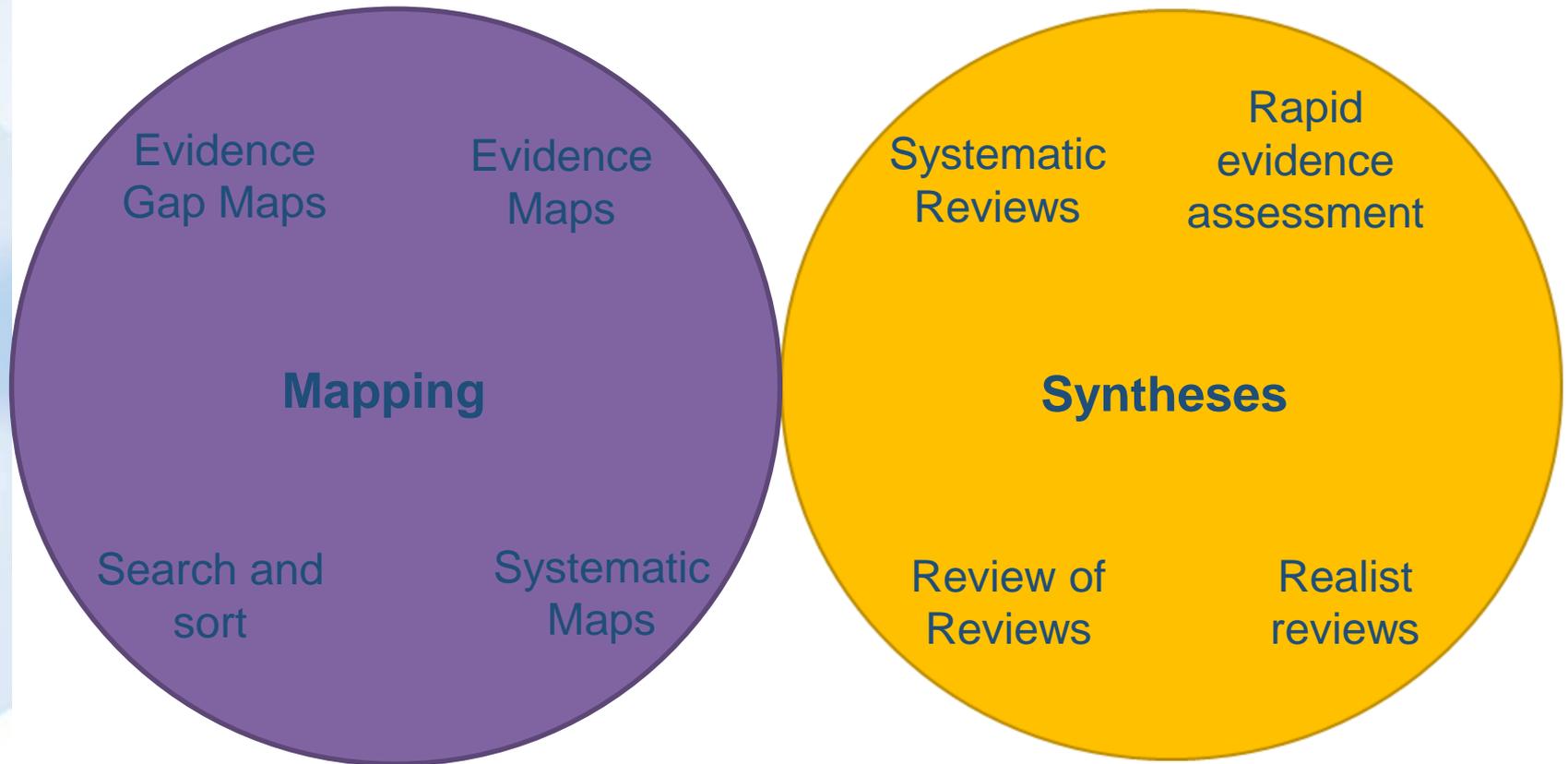
| | Knowledge and behaviour | | | Productivity | | | | | |
|---|-------------------------|---|------------------------|--------------|-----------------|--------------------------|-------------|----------------------|-----------------------|
| | Knowledge (Ag) | Adoption of inputs, practices, and financial instruments (Ag) | Spillover effects (Ag) | Yield (Ag) | Employment (Ag) | Time use/efficiency (Ag) | Income (Ag) | Farm investment (Ag) | Household assets (Ag) |
| Social networking/peer learning (Ag) | | | | | | | | | |
| Information and communication technologies (Ag) | | | | | | | | | |
| Demonstration plots and training (Ag) | ● | ● ● | ● | ● ● | ● | ● | ● | ● ● | ● |
| Transfer, credit and incentives (Ag) | ● | ● ● | ● | ● ● | ● | ● | ● | ● ● | ● |

3 Impact evaluations

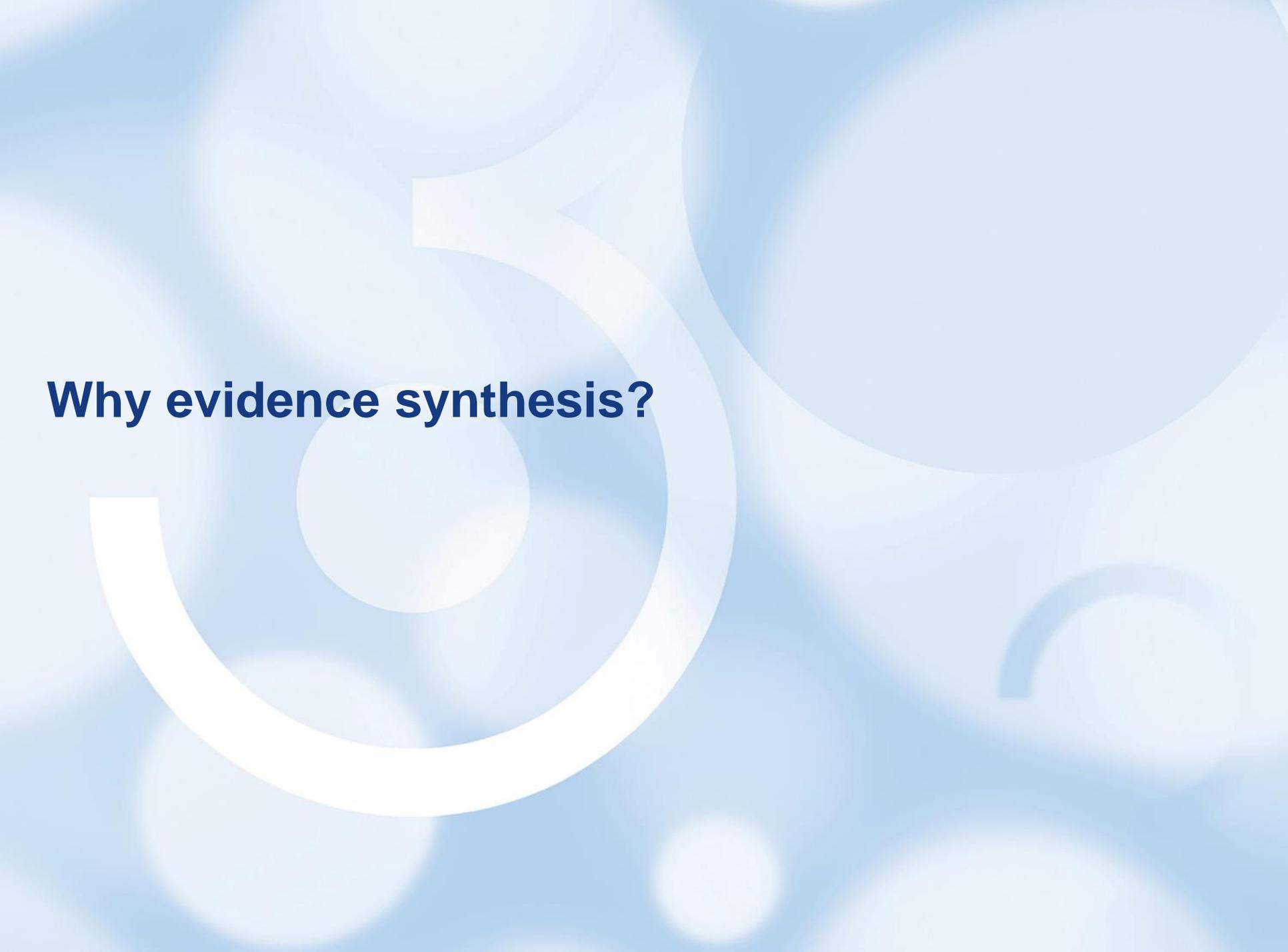
Ethiopia Productive Safety Net Programme, Gilligan et al.
 Impact of an Agricultural Value Chain Project on Smallholder Farmers, Rutherford et al.
 The Impact of Strengthening Agricultural Extension Services Evidence from Ethiopia

Dissemination

A family of evidence maps and evidence syntheses



Why evidence synthesis?

The background is a light blue gradient with several overlapping circles of varying sizes and opacities. A large, white, stylized question mark is positioned on the left side of the slide, partially overlapping the text.

Why do we do evidence synthesis?

1) Practical:

- Decision makers are busy and difficult to keep up with new information
- Evidence scattered across different journals, websites and databases
- Volume of evidence often too high to be able to see the big picture

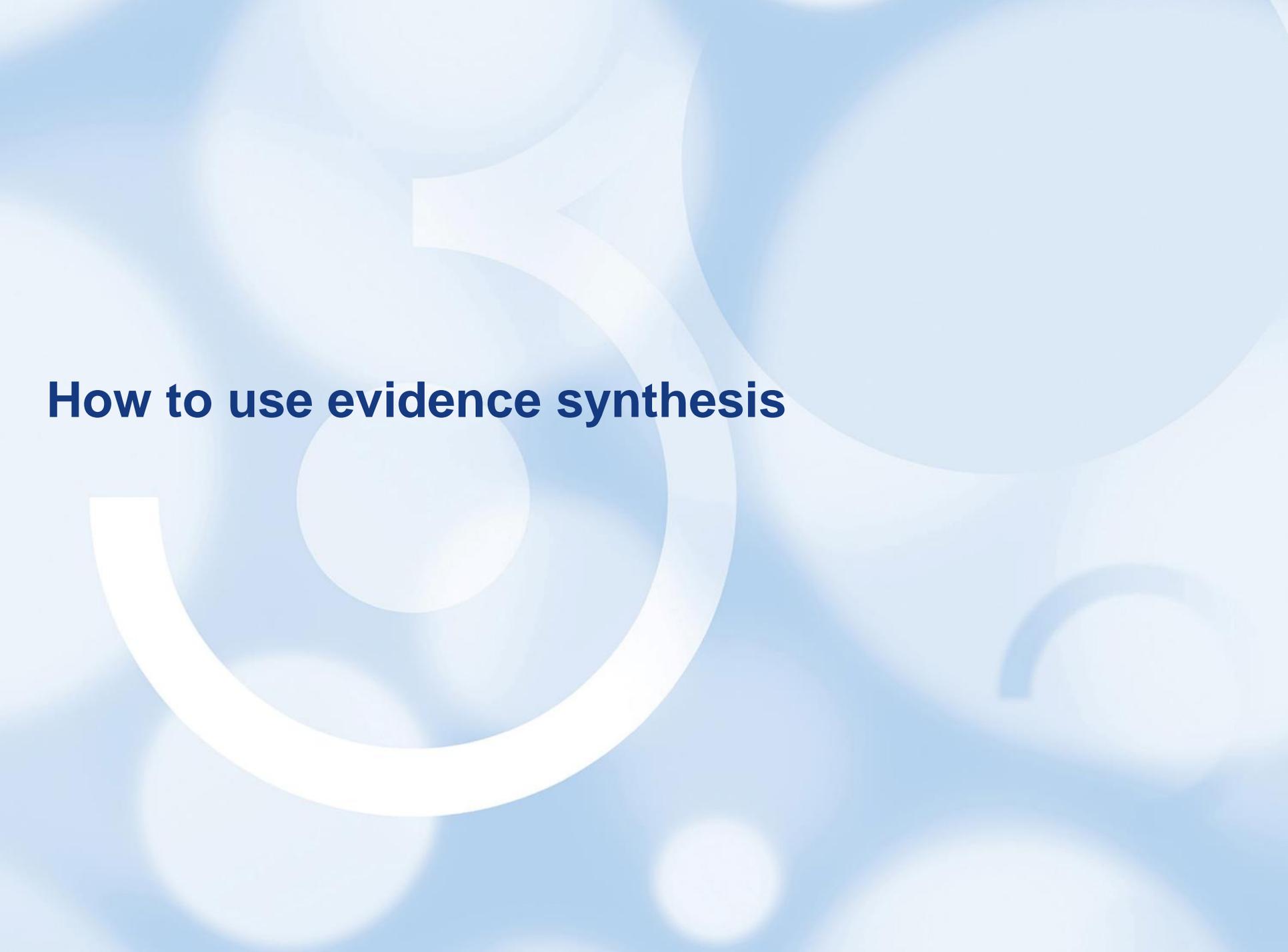
2) Methodological - Evidence more reliable if it:

- Has been subject to critical appraisal
- Is based on more than just one study
- Comes from a representative range of studies (no cherry picking), including unpublished
- Considers size, direction and confidence in effects

Why use evidence synthesis?

- Someone has already done the work for you!
- A good systematic review has:
 - Comprehensive search
 - So you don't have to look
 - Systematic screening
 - So you know where the boundaries are
 - Critical appraisal
 - So you know what to trust

How to use evidence synthesis



Finding and using evidence maps

- 3ie's evidence maps:
 - <https://www.3ieimpact.org/evidence-hub/evidence-gap-maps>
- Quick, easy-to-digest depiction of the state of evidence
- Identify gaps quickly
 - Can your evaluation fill a gap?

Resources for finding SRs

- 3ie systematic review repository:
 - SRs in international development, with summaries and critical appraisals
 - <https://www.3ieimpact.org/evidence-hub/systematic-review-repository>
- Campbell Collaboration Library:
 - SRs in social science, with plain language summaries
 - <https://onlinelibrary.wiley.com/journal/18911803>
- Cochrane Library
 - SRs in medical science
 - <https://www.cochranelibrary.com/>

Ways to use SRs in setting evaluation questions

- What is a realistic impact to expect from a programme?
 - Power calculations
- Where is there evidence? Where is evidence scarce?
- What factors seem to facilitate programme effectiveness?
 - What inhibits effectiveness?

Thank you



 3ieimpact.org

 [@3ieNews](https://twitter.com/3ieNews)

 [/3ieimpact](https://www.facebook.com/3ieimpact)

 [/3ievideos](https://www.youtube.com/3ievideos)

 [international-initiative-for-impact-evaluation](https://www.linkedin.com/company/international-initiative-for-impact-evaluation)

New Delhi London Washington, DC