



**Asian Development Bank - International Initiative for Impact Evaluation**

**Video Lecture Series**

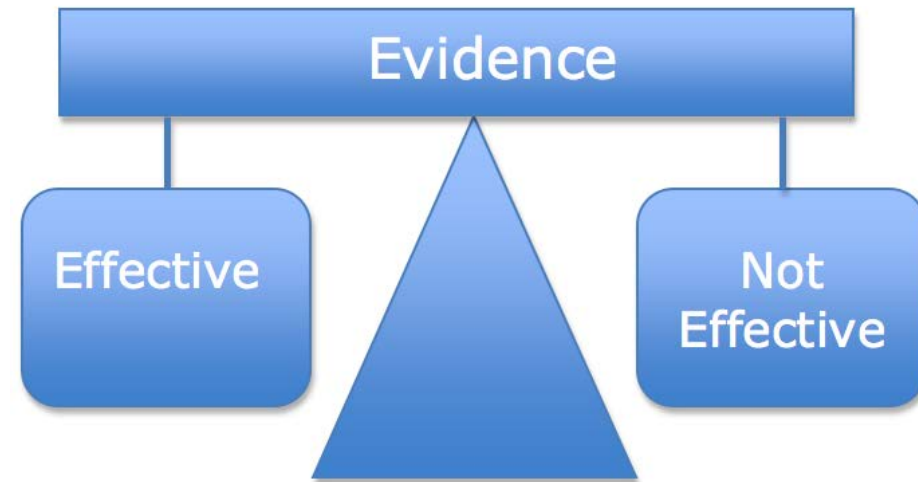
# **Systematic Reviews**

Philip Davies

# What Are Systematic Reviews?



- A way of establishing the *overall balance of empirical evidence* on a topic or policy



- And separating *higher quality* from lower quality evidence
- A way of identifying what is *generalisable* and what is *context specific*

# Why Do We Need Systematic Reviews?



Sheer amount of available evidence

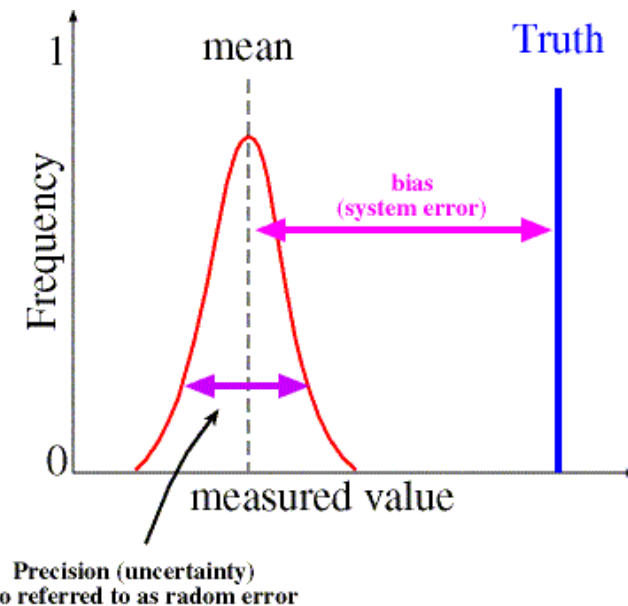
“Beyond the capacity of the human mind”



# Why Do We Need Systematic Reviews?



- Single studies can:
  - Misrepresent the *balance* of research evidence
  - Illuminate only one part of a policy issue
  - Be sample-specific, time-specific, context-specific
  - Often be of poor quality
  - Consequently, give a biased view of the overall evidence



# What Makes a Review Systematic?

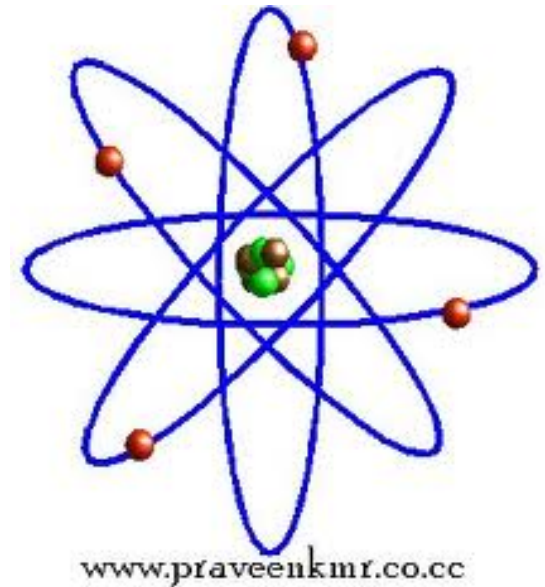


- Systematic searching for studies
- Systematic critical appraisal of identified studies – separating the wheat from the chaff
- Systematic and transparent inclusion/exclusion of studies for final review
- Systematic and transparent extraction of data
- Systematic statistical testing and analysis
- Systematic reporting of findings

# Searching for Evidence



- Statistical Meta-Analyses
- Narrative Systematic Reviews
- Rapid Evidence Assessments
- Qualitative Systematic Reviews



- Involves data-pooling and statistical synthesis of independent studies
- And aggregating/cumulating samples and findings
- Seeks to measure and control bias
- Requires included studies to be as similar (*homogeneous*) as possible





Similarity of:

- **P**opulation (or sub-groups)
- **I**ntervention
- **C**omparator
- **O**utcome

Overlapping confidence intervals

## FFS Pesticide Use For FFS Participants And Neighbours

Study

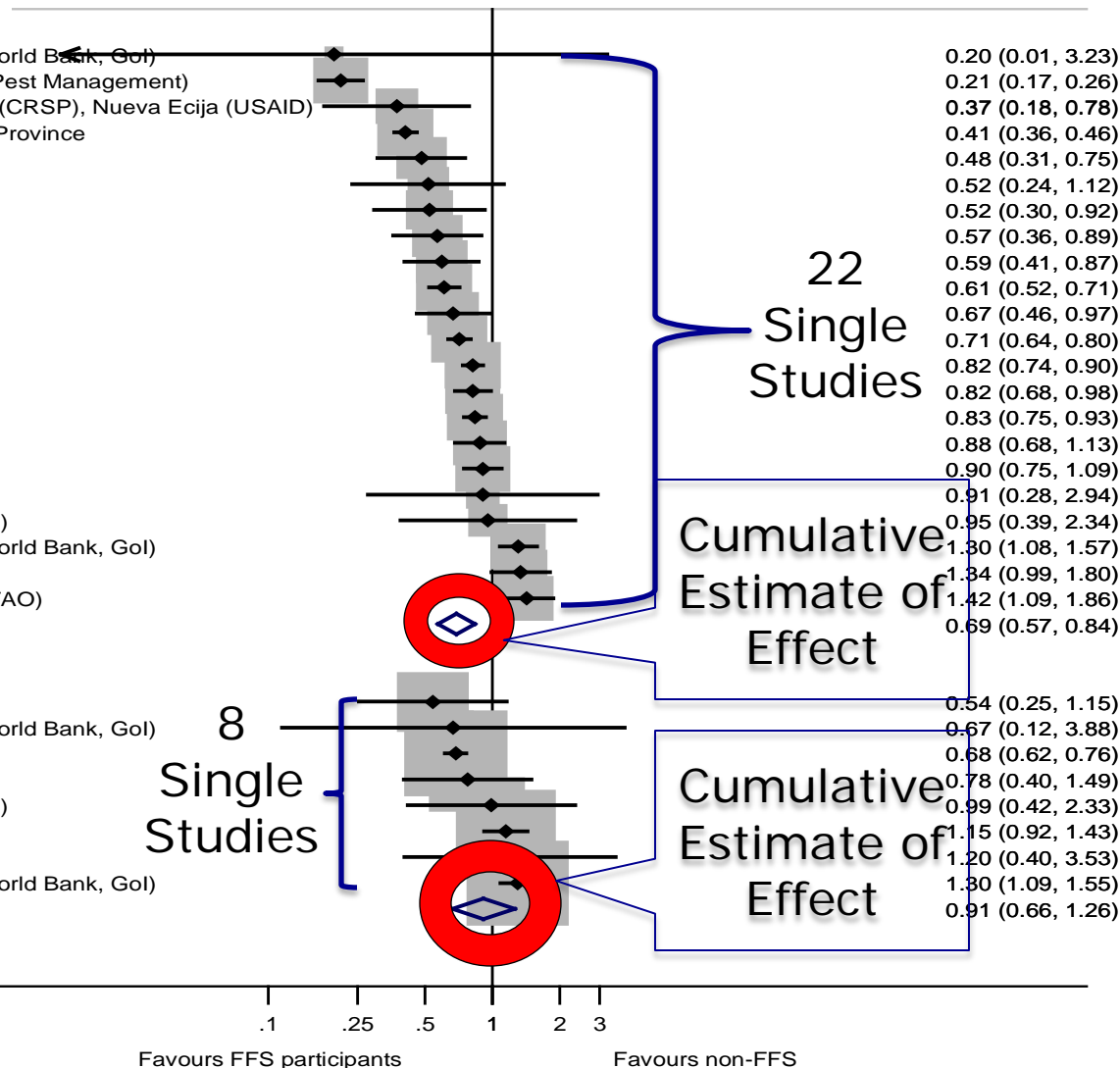
Response ratio  
ES (95% CI)

### FFS Participants

Indonesia: National IPM Training Project Phase II (FAO, World Bank, GoI)  
 India: Maharashtra project (National Centre for Integrated Pest Management)  
 Philippines: IPM Collaborative Research Support Program (CRSP), Nueva Ecija (USAID)  
 China: FAO/EU IPM Programme for Cotton in Asia, Hubei Province  
 Sudan: Gezira Scheme, FAO IPM in Vegetables  
 Vietnam: FAO Programme for Community IPM in Asia  
 India: FAO/EU IPM Programme for Cotton in Asia  
 Zimbabwe: Cotton IPM-FFS, Sanyati district  
 Pakistan: FAO/EU IPM Programme for Cotton in Asia  
 Kenya: Cotton IPM project (EU & PAN-UK)  
 India: FAO/EU IPM Programme for Cotton in Asia  
 China: FAO/EU IPM Programme for Cotton in Asia  
 Sri Lanka: IPVM Project (FAO, UNEP)  
 Thailand: FAO/EU IPM Programme for Cotton in Asia  
 Vietnam: FAO National IPM Program, Nam Dinh  
 Ecuador: EcoSalud  
 Pakistan: Cotton IPM programme (FAO, EU, GoP)  
 Pakistan: National IPM Programme, Khairpur  
 Nicaragua: Project for IPM in Central America (PROMIPAC)  
 Indonesia: National IPM Training Project Phase II (FAO, World Bank, GoI)  
 Ecuador: Plataformas Program (FAO)  
 Uganda: East African Sub-regional Pilot Project Phase II (FAO)  
 Subtotal (I-squared = 93.7%, p = 0.000)

### FFS Neighbours

Indonesia: National IPM Training Project Phase II (FAO, World Bank, GoI)  
 China: FAO/EU IPM Programme for Cotton in Asia  
 Pakistan: FAO/EU IPM Programme for Cotton in Asia  
 Nicaragua: Project for IPM in Central America (PROMIPAC)  
 Thailand: FAO/EU IPM Programme for Cotton in Asia  
 Pakistan: National IPM Programme, Khairpur  
 Indonesia: National IPM Training Project Phase II (FAO, World Bank, GoI)  
 Subtotal (I-squared = 85.2%, p = 0.000)



- Provide a descriptive account of what the evidence tells us
- Provide descriptive and inferential statistics
- But on each included study individually, *not cumulatively*
- Provide a summary analysis of what the evidence suggests
- Provide the 'Signal' and 'Noise' of evidence



# Rapid Evidence Assessments – What Are They?



- Scaled down systematic reviews of existing evidence
- Timed to meet the needs of policy makers/practitioners (1-3 months)
- Strategically using the 'three arms' of systematic searching, but less exhaustively
- Critical appraisal of identified studies is included
- Summary of findings, with caveats and qualifications



- Not a comprehensive or exhaustive as systematic reviews;
- Hence, REAs are more likely to be subject to statistical bias than a full systematic review
- We must, therefore proceed with *greater caution* with REAs



# Qualitative Systematic Reviews



- Synthesise qualitative and ethnographic evidence
- In-depth interviews, focus groups, observational studies, documentary analysis, case studies
- Seek common themes, concepts and principles across different studies
- Detailed attention to context/contextual specificity
- And stakeholders' views
- Do not seek generalisations



## Systematic reviews:

- Provide the balance of evidence on a topic
- Avoid the limitations of single studies alone
- Can provide generalisable statistical meta-analysis of the available evidence
- Or narrative/descriptive analysis of context
- Can be done rapidly (as REAs)
- Are also undertaken on qualitative evidence

Thank you

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