



CESAB
CENTRE DE SYNTHÈSE ET D'ANALYSE
SUR LA BIODIVERSITÉ

Involving stakeholders, and formulating review questions

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Groups involved in the SR

- **The Review Team** – the group that conducts the review; the authors of the review report.
- **The User Group** – policy or practice groups that identify the need for evidence and might use the outcome of the review in the context of their work.
- **The Stakeholder Group** – all individuals and organisations that might have a stake in the outcome of the review

Stakeholder engagement and systematic methods

- Stakeholder engagement may provide several key benefits to environmental management research projects:
 - **Improving the evidence base** (Reed et al., 2008; <https://doi.org/10.1890/07-0519.1>)
 - **Greater public acceptance** (Richards et al., 2004; SERP policy brief no. 1)
 - **Higher likelihood of intervention success** (Dougill et al., 2006; <https://doi.org/10.1111/j.1477-9552.2006.00051.x>)
 - **Wider communication of findings** (Reed and Dougill, 2009; <https://doi.org/10.1016/j.jaridenv.2009.06.016>)
 - **Increased likelihood of impact on decision-making** (Deverka et al., 2012; <https://doi.org/10.2217/cer.12.7>).

Defining the stakeholder group

« Any group or individual who is affected by or can affect the achievement of an organisation's objectives » (Freeman, 1984)

In reviews, use of term is synonymous to:

- « review commissioner »
- « end-user »

Definition(s)
The client. The commissioner.
People who are either affected by the issue or those who may be able to influence the issue : NGOs, Local authorities, governments.
Anyone with an interest in the particular subject, or anyone likely to be affected by an eventual decision.
Those that have a stake in the question e.g. policy-makers, academics, educators, NGOs...
....

Defining the stakeholder groups

Actors

Advocacy groups
Business
Citizens
Decision-enforcers
Decision-makers
Publishers
Research funders
Researchers



Roles

Editors/peer-reviewers
Endorsers
Evidence holders
Funders
Publishers
Communicators
Question askers
Reviewers
Scope influencers
Service providers
Service users
Users of the review



Actions

Suggest sources of literature
Submit articles
Undertake the review
Endorse the review
Facilitate access to the review
Read the review
Share the review
Integrate findings into decisions
Set the review's methodological standards
Provide funding and/or in-kind contributions
Share knowledge and experience for scope and context

Examples

Concerned citizen



Uses a review on the impacts of plastics on marine biota



Integrate review findings in decisions about whether to purchase plastic water bottles or not

Research council



Funds a review on the efficacy of crayfish conservation in UK



Provides money for the review, integrates findings of evidence gaps into funding primary research

Fig. 1 Conceptual model of stakeholders, identified by the actors, their roles and their actions

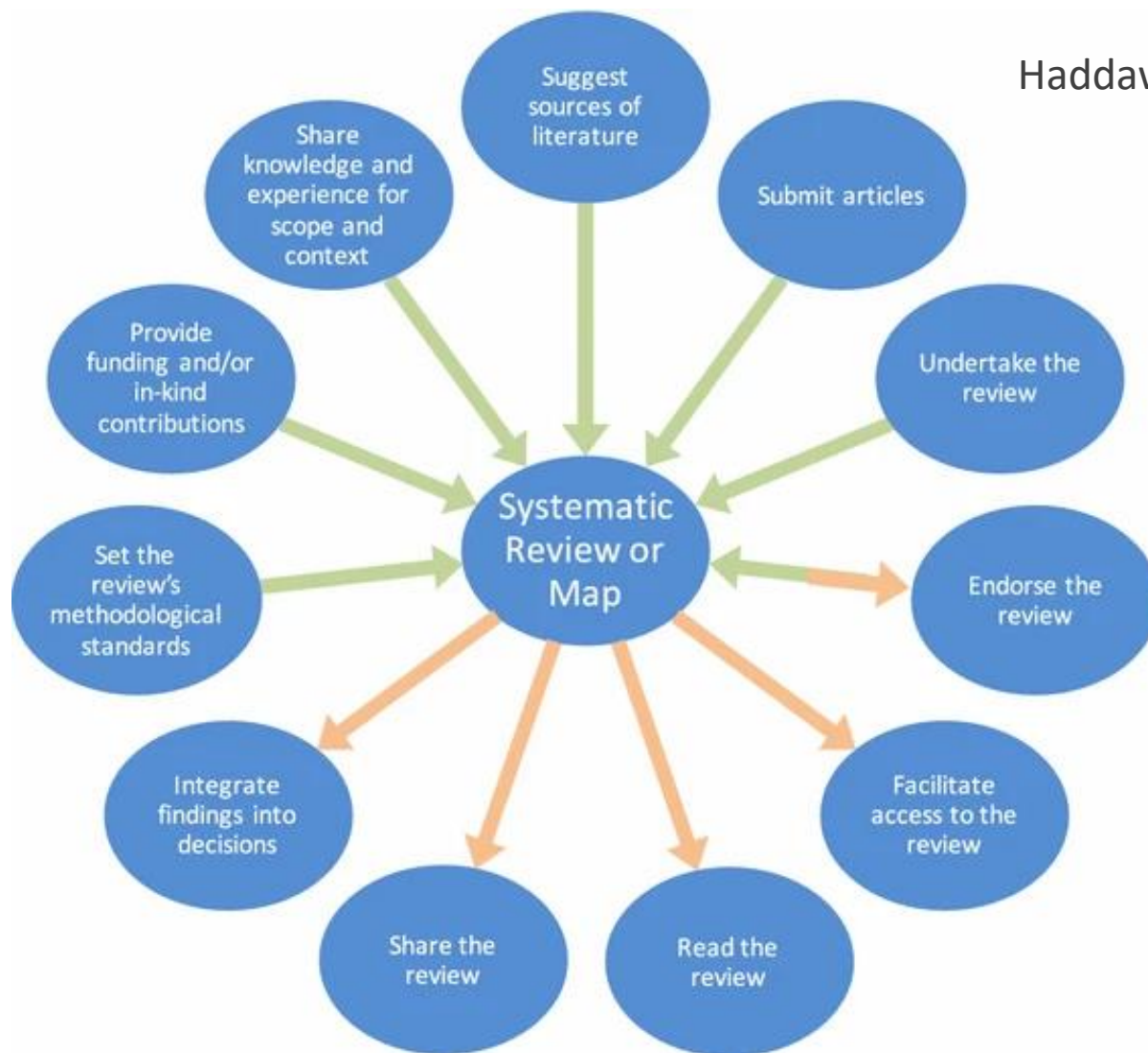
Why engage stakeholders ?

- i. to set the scope and definitions of the review;
- ii. to ensure the relevance of the review from a broader society perspective;
- iii. to prioritise review questions;
- iv. to suggest and locate relevant evidence;
- v. to interpret the review findings or set them in context;
- vi. to improve the clarity and readability of the review report;
- vii. to increase the communication and impact of the review results;
- viii. to endorse the review.



Why engage stakeholders ?

Haddaway et al., 2017



Systematic review processes and stages with stakeholders

<i>Process</i>	<i>Stage</i>
Question formulation	Early
Protocol	Early
Searching	Mid
Article screening	Mid
Data extraction	Mid
Critical appraisal	Mid
Synthesis	Mid
Final review	Final
Communication	Final
Decision-making	Post



Why invest time in question-setting?

Framing and prioritising review questions

- Decide on the question that is of **greatest interest** (stakeholders, policymakers etc.)
- Maximise **cost effectiveness** - efficient use of time and resources
- Minimise **confusion** caused by inappropriate/vague phrasing
 - ❖ A poorly formulated question may cause problems down the track.

Guidelines and Standards for Evidence Synthesis in Environmental Management



Section 2

Identifying the need for evidence, determining the Evidence Synthesis type, and establishing a Review Team

<https://environmentalevidence.org/information-for-authors/2-need-for-evidence-synthesis-type-and-review-team/>

Establishing the specific scope

IN PRACTICE :

- Screening of identified topics, framing and prioritisation of review questions by review experts and key stakeholders,
- Review-specific stakeholder identification.
- **Open dialogue** with participants to **share views** and help **refine the scope** and **focus** of the review by specifying preferred PICO/PECO elements of the review question.

OUTPUT:

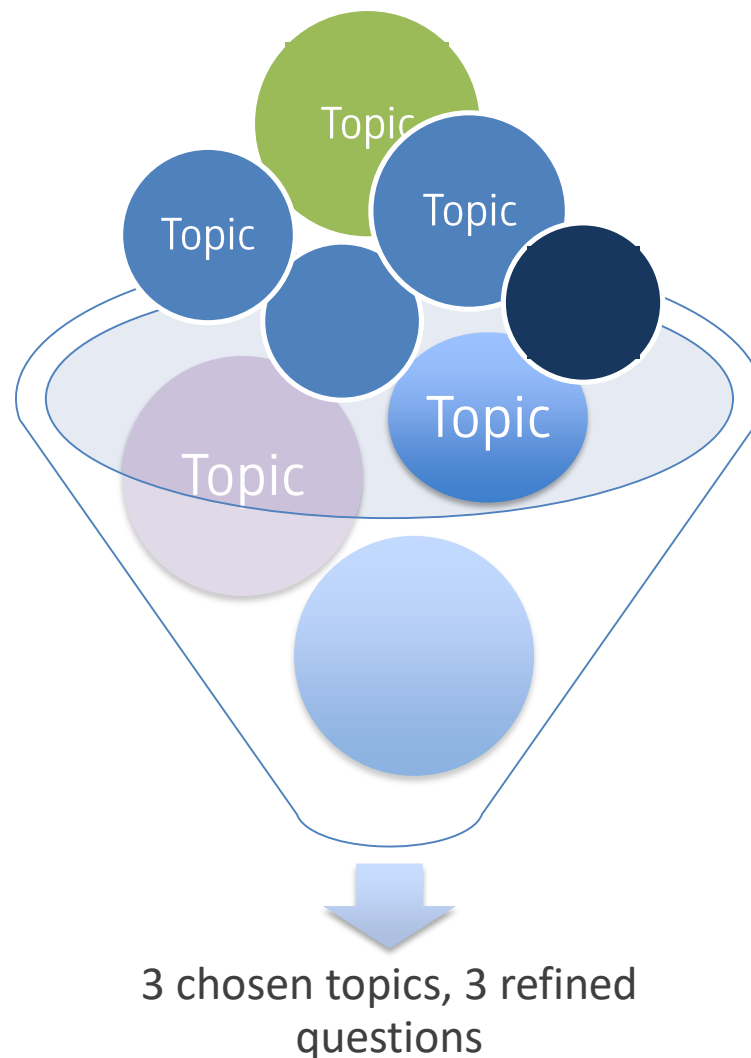
- Scoping-type study with list of prioritised review questions.

dialogue and meetings:

RNF, The Natural History Museum (MNHN), and reserve managers.

a workshop:

MNHN and reserve managers to select, among all propositions put forward, those that would be chosen for evidence synthesis.



Prioritisation of “SR-able” questions

When appropriate ?

When there is a need :

- to provide an **objective answer (minimize bias)** and **enhance precision** by including all the relevant evidence.
- to address contradictory or controversy across the evidence.
- when it is unclear which factors influence effectiveness of action/reliability of the evidence (effect modifiers, confounding variables, bias).

When not appropriate ?

When the question is :

- poorly defined or too complex.
- too simple (e.g. has species x been recorded in region y).
- not attractive to stakeholders.
- lacking quality evidence and exposure of a knowledge gaps will not be valued.

Question formulation

How to formulate a review question?

Common question types

From health questions primarily concerned with “**How effective is**” to environmental questions resembling :

- “What are the impacts of” ...
- “What is the evidence on” ...
- “What are the barriers” ...
- “What factors” ...
- “What is the importance of” ...
- “What are the effects of”

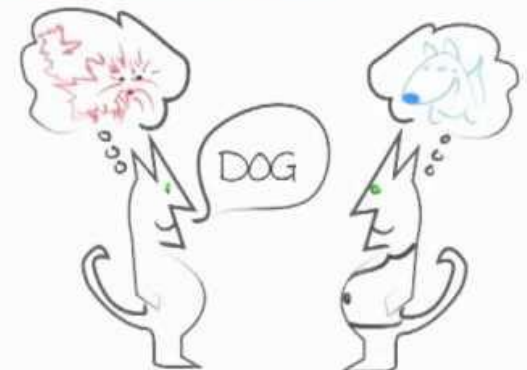
How to formulate a review question?

Correctly framing the question helps to :

- Clarify the semantics, minimize misunderstandings
- Clarify the perimeter of the study (scope, scale)
- Ensure transparency
- Establish the “foundation” elements of the entire systematic review.

Semantics – the study of meaning

Creating common
meanings helps
everyone
understand each
other



How to formulate a review question?

When you formulate a review question in ecology, you are effectively creating a **formula** that does several things:

- Focus the review question by identifying the different components or concepts.
- Define the concepts that will be used when performing a complex literature search.
- Ascertain which articles in a search retrieval best address the question.
- Determine if primary studies found address the components of the overriding question.

Guidelines and Standards for Evidence Synthesis in Environmental Management



Section 3

Planning a CEE Evidence Synthesis

<https://environmentalevidence.org/information-for-authors/3-planning-a-cee-evidence-synthesis/>

How to formulate a review question?

PICO and PECO framework :

Table 1 : definition of the question elements	
Question element	Definition
Population	This refers to the study unit i.e., the subject(s) of the review/map (e.g. a species, a species group, a habitat/ecosystem)
Intervention	The act or action of intervening . This can be a proposed management regime, policy action, etc.
Exposure	The fact or condition of being exposed (e.g., an anthropogenic activity/pressure to which the subject population is exposed).
Comparator	A comparator is needed to deduce an effect. This refers to a control with no intervention/exposure or an alternative intervention or a counterfactual scenario.
Outcomes	All relevant measures i.e., indicators, metrics (e.g., species richness, abundance, biomass, etc.) of the <i>study population</i> from which the effect of the <i>intervention</i> or <i>exposure</i> can be reliably demonstrated.

How to formulate a review question?

Table 2: applying the PICO/PECO formulation

	...for an intervention approach	...for an exposition approach
Population (P)	<i>The study unit</i> on which we measure the effect/impact of the intervention.	<i>The study unit</i> on which we measure the effect/impact of the exposure.
Intervention ou Exposition (I/E)	The practiced <i>Intervention</i> itself having an effect on the population.	What the population is exposed to.
Comparator (C)	What is the effect of the intervention being compared to (control vs. intervention)?	What are we comparing the effect of the exposure (control) to?
Outcomes (O)	What indicator/metric is being measured in order to demonstrate an effect.	What indicator/metric is being measured in order to demonstrate an effect.
Context (C /T)	In what context (geographical and/or temporal)?	In what context (geographical and/or temporal)?

How to formulate a review question?

Question types – PICO / PECO :

Effect of intervention/exposure:

- Often a quantitative approach

P - population

I/E – intervention / exposure

C – comparator

O - outcome(s)

e.g. Q1 : What are the effects of even-aged and uneven-aged forest management on forest biodiversity ?

How to formulate a review question?

Question types - PO

Descriptive questions on prevalence/occurrence/incidence:

- Often a qualitative approach

P – population

O - outcome(s)

e.g. What is the prevalence (ppm) of neonicotinoid pesticides in fresh water ecosystems ?

How to formulate a review question?

Question types – PIO / C

P – population

I – intervention

O - outcome(s)

C- Context

e.g. What is the existing evidence on **the outcomes** of **wildlife conservation-translocations** in **protected areas** ?

Langridge et al. *Environ Evid* (2021) 10:29
<https://doi.org/10.1186/s13750-021-00236-w>

Environmental Evidence

SYSTEMATIC MAP

Open Access

Existing evidence on the outcomes
of wildlife translocations in protected areas:
a systematic map

Joseph Langridge, Romain Sordello* and Yorick Reyjol



Exercise : formulating review questions from problems



Problem :

**Do forest set-asides
preserve biodiversity in a
production system ?**

Source: photo by J. Vorčák

Exercise : formulating review questions from problems

- Step 2: your turn !

Table 1 : definition of the question elements	
Question element	Definition
Population	What is the population ?
Intervention	What is the intervention ?
Comparator	What are we comparing ?
Outcomes	What metrics to measure the effect of the intervention ?