**Collaboration for Environmental Evidence Database of Evidence Reviews (CEEDER): Methods**

Methods as at June 2020. Methods are constantly under review as we develop the evidence service further.

# **Screening strategy**

Records retrieved by the searches are evaluated at two stages: title and abstract; and full text.

## **Deduplication**

Duplicate removal is conducted in CADIMA (www.cadima.info) using the automatic duplicate removal function (based on title). We run duplicate script each week as new records are added to CADIMA.

## **Consistency checking**

Consistency check at title and abstract is conducted using 100 random records, and any disagreements are resolved by discussion. Consistency check at full text is conducted using 10 random records, and any disagreements resolved by discussion.

## **Inclusion criteria**

The following inclusion criteria are applied by screeners:

* *Population (P)*—any population (biological and/or statistical) of relevance to environmental management;
* *Intervention (I) or Exposure (E)*—either an intervention that is imposed to provide an environmental outcome ORa factor to which a population (biological and/or statistical) is exposed;
* *Comparator (C)*—an appropriate comparator to enable an estimate of an absolute or relative effect to be measured;
* *Outcome (O)*—any change in the population that has a relevance to environmental management; and
* *Study type*—the article type should be a review and/or synthesis (e.g. meta-analysis) of primary research where the objective is stated as providing an answer to a question or test of a hypothesis
* *Subject scope*—the specific question or topic of the review should be relevant to environmental management and have recommendations for policy or practice. We specifically exclude the following subject areas except where a clear link is made to environmental management:
	+ Animal vet science
	+ Animal nutrition
	+ Plant nutrition, improvement and growth regulation
	+ Engineering and construction
	+ Biotechnology and bioengineering
	+ Animal behaviour
	+ Human health and wellbeing
	+ Education
	+ Social welfare and social justice
	+ Toxicology
	+ Species distribution

## **Reasons for exclusion**

Reasons for exclusion at full texts are recorded in screening sheet.

# **Meta-data extraction and coding strategy**

To display evidence reviews in the CEEDER website, the following information of eligible evidence reviews is currently extracted.

* Title
* Authors
* Abstract
* Keywords
* Digital Object Identifier (DOI)
* Year of records made available
* Article source (e.g., journal title)
* Intent to measure (PICO or PECO)
* Review question elements (PICO or PECO elements)
* Review question addressed (see below)

## **Review question addressed**

Many review articles address multiple questions of impact or effect, some of which may not be eligible for CEEDER. Additionally, in some review article titles (and even abstracts), the eligible review questions are not clear. To help users find and compare evidence review questions, all of the eligible questions addressed in a review article are coded in a standard format in addition to their source review article title, with two templates currently developed (**Box 1**). These explicitly formulated review questions are displayed in the website for helping evidence users easily identify relevant evidence reviews.

**Box 1.** Templates for standardising review questions addressed in review articles.

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| **Template 1 (for exposure or mixture of exposure and intervention questions)**: *What (is OR are) the effect(s) of EXPOSURE/INTERVENTION on OUTCOME?***Worked example**:Original review article title: *Performance of green supply chain management: A systematic review and meta analysis* (Fang and Zhang, 2018)CEEDER standardised review question: *What is the effect of adopting green supply chain management on company performance?***Template 2 (for intervention questions)**: *How effective (is OR are) INTERVENTION for OUTCOME?***Worked example:**Original review article title: *Do crop sensors promote improved nitrogen management in grain crops?* (Colaço and Bramley, 2018)CEEDER standardised review question: *How effective are crop sensing technologies for improving nitrogen management in grain crops?* |

## **Approaches to missing data**

Missing data may be collected using web-based search engines.

# **Assessment strategy**

Collaboration for Environmental Evidence Synthesis Assessment Tool version 2 (CEESAT v2) will be used to assess evidence reviews (see main text). CEEDER Editorial Team allocates eligible evidence reviews to CEEDER Review College. Multiple members from CEEDER Editorial Team and CEEDER Review College rate evidence reviews. All members of Review College are trained in the application of CEESAT v2 by experienced mentors.

## **Consistency checking**

To provide consistent reliability ratings in CEEDER, at least two members from the Editorial Team/Review College independently assess each evidence review with disagreements checked and, if necessary, resolved by the Editorial Team.

# **References**

Colaço, A.F., Bramley, R.G.V., 2018. Do crop sensors promote improved nitrogen management in grain crops? F. Crop. Res. 218, 126–140. https://doi.org/10.1016/J.FCR.2018.01.007

Fang, C., Zhang, J., 2018. Performance of green supply chain management: A systematic review and meta analysis. J. Clean. Prod. 183, 1064–1081. https://doi.org/10.1016/j.jclepro.2018.02.171