



## Climate Change prevention through community actions and empowerment: a Scoping Review Protocol

## Prevenção das alterações climáticas através de ações comunitárias e de empoderamento: um protocolo de revisão scoping

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### ABSTRACT

The world has finally realized that involving stakeholders is key in Health Promotion and Environmental Health, and Community Health nurses seem to play a significant role in the implementation of actions aimed to empower communities in optimising their health. Despite the existing and extensive body of literature on Climate Change worldwide, this review specifically intends to map community



actions led or implemented so far, aimed for community empowerment in preventing climate change, a topic which is yet to be explored.

The review will include quantitative, qualitative, mixed methods studies from 2005 onwards. Also, systematic reviews, text, opinion papers and grey literature in English and Portuguese will be considered.

The present protocol follows the Joanna Briggs Institute (JBI) methodological framework. Databases to be searched include MEDLINE, CINAHL, Scopus, Embase, Web of Science, SciELO (Scientific Electronic Library Online, Google Scholar, Repositório Científico de Acesso Aberto de Portugal (RCAAP). Hand searched references will also be used and considered for inclusion.

This review will identify the type of community empowerment actions led or implemented so far to prevent climate change, including the characteristics of this, as well as the key stakeholders involved. The results will be presented in tabular format alongside a narrative summary.

**Keywords:** community health nursing, community empowerment, community actions, stakeholders, health promotion, climate change, environmental health.

## RESUMO

O mundo finalmente compreendeu que envolver *stakeholders* é fundamental na Promoção da Saúde e da Saúde Ambiental, e os enfermeiros de Saúde Comunitária parecem desempenhar um papel significativo na implementação de ações destinadas a capacitar as comunidades na otimização da sua saúde. Apesar da existência e extensão de literatura sobre alterações climáticas em todo o mundo, esta revisão pretende especificamente mapear as ações comunitárias lideradas ou implementadas até o momento, visando o empoderamento da comunidade na prevenção das alterações climáticas, um tema ainda a ser explorado.

A revisão irá incluir estudos quantitativos, qualitativos, métodos mistos, desde 2005. Também serão consideradas revisões sistemáticas, textos, artigos de opinião e literatura cinzenta em inglês e português. O presente protocolo segue o referencial metodológico do Joanna Briggs Institute (JBI). As bases de dados a serem pesquisadas incluem MEDLINE, CINAHL, Scopus, Embase, Web of Science, SciELO (Scientific Electronic Library Online, Google Scholar, Repositório Científico de Acesso Aberto de Portugal (RCAAP). Referências pesquisadas manualmente também serão usadas e consideradas para inclusão. Esta revisão identificará o tipo de ações de empoderamento comunitário conduzidas ou implementadas até agora para prevenir as alterações climáticas, incluindo as suas características, bem como os principais *stakeholders* envolvidos. Os resultados serão apresentados em formato tabular e narrativo.

**Palavras-chave:** enfermagem de saúde comunitária, empoderamento comunitário, ações comunitárias, *stakeholders*, promoção da saúde, alterações climáticas, saúde ambiental.



## 1 INTRODUCTION

Climate can be acknowledged as “the finite distribution over time under a certain regime of varying external conditions” (WENDL, 2016, p. 357). Therefore, considering the mean and variability of the surface variables within the last 200 years, the term “*climate change*” started to make sense, in view of its impact on public health with the rise in both average global temperature and in sea level (ZAVALETA, 2016).

The impact caused worldwide has put Climate Change in the political agenda in the 1970s, involving mainly activists demanding that the environmental crisis should be addressed on a global scale. However, it was not until the 1980s that James Hansen testified before the United States Congress declaring the risks and problems posed by global warming (BESEL, 2013).

In 1972 in Stockholm, Sweden, the United Nations (UN) First Earth Summit, referred to the preservation and enhancement of the human environment, raising the issue of climate change for the very first time (UNITED NATIONS, 2021a).

Nevertheless, it was not until the Kyoto Protocol in Japan, in 1997, that the United Nations Framework Convention on Climate Change (UNFCCC) (UNITED NATIONS, 1998), achieved international agreement among 160 countries. This agreement established the greenhouse gas reduction targets on industrialised countries' overall emissions of carbon dioxide and other greenhouse gases. The agreement came into force in 2005.

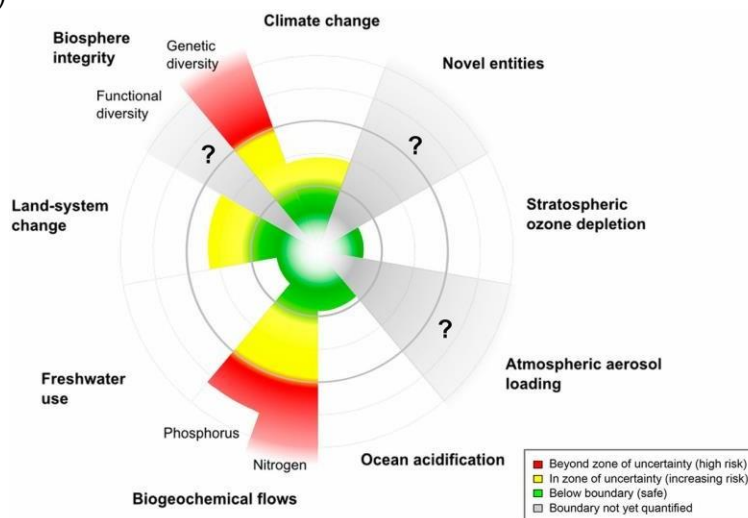
Ever since, several climate prevention declarations have been ratified up until the Paris Agreement that entered into force in 2016 with the goal of limiting global warming by 1.5°C (UNITED NATIONS, 2015).

According to STEFFEN, RICHARDSON, ROCKSTROM et al (2015), at least three of the Planetary boundaries' framework presented by the Stockholm Resilience Centre borders have already been surpassed since 2009: climate change, loss of biodiversity and nitrogen use.

These authors also claim that, as of 2015, society's activities have pushed beyond these boundaries into further areas: climate change, shifts in nutrient cycles and land use (see illustrating Figure 1 for common sources) (STEFFEN et al., 2015).



Figure 1. Planetary boundaries: guiding human development on a changing planet (STEFFEN et al., 2015, p. 736)



In the last two decades, the world, and the United States of America (USA) in particular, has experienced more catastrophes when compared with previous years. Hurricanes Katrina, Sandy, Maria, Irma and Harvey showed a relation between extreme climate conditions and rising temperatures. In Australia, and according to CONNAKER, McAfee, WINSTON et al (2020), forest fires in 2019 have caused the death of a billion animals, resulting in the extinction of several species.

Similarly, forest fires in Mediterranean countries such as Portugal have been a concern. Since 1980, three-fifths of the Portuguese forested surface has burned, and July and August alone are now accountable for 71% of all fire events (PEREIRA et al., 2013). This means that rising temperatures throughout summertime represent a trigger for forest fires in these countries, which is a factor contributing to climate change.

These last years, the hottest in history, also resulted in a disease- friendly environment worldwide. For instance, Vector-borne diseases such as Zika are now starting to spread in cooler northern regions, and Covid 19, the current pandemic, has also taken advantage of a planet where climate change has not been properly acknowledged (CONNAKER et al., 2020).

Facing this level of climate threats, governmental institutions and private sectors have the duty to align themselves with the Paris Agreement and the world's most urgent mission that of Carbon neutrality by 2050 (GUTERRES, 2020)



Both mitigation and adaptation strategies should help society, industries, managers, communities, and citizens to tackle climate change. All interested parties, meaning stakeholders, should obtain adequate guidance to lead companies, organizations, employees and ultimately consumers and citizens to adapt new behaviours and implement appropriate actions and protect global environment (CONNAKER et al., 2020).

The Alma Ata Declaration in 1978 introduced an idea comparable to the concept of “*Community Empowerment*” where a global commitment was made to achieve Health for all by the year 2020 (DE VOS et al., 2009) . This was then followed by the Ottawa Charter on Health Promotion, in 1986 in Canada, and other international conferences on Health Promotion in Adelaide (1988), Sundsvall (1991), Jakarta (1997), Mexico (2000), Bangkok (2005), Nairobi (2009) and Helsinki (2013), used the term “*community capacity* (WORLD HEALTH ORGANIZATION, 1986)”. The term “*individual empowerment*” was then introduced with the Jakarta Declaration (1997) (WORLD HEALTH ORGANIZATION, 1997). In 2016 the Government of China and the World Health Organization carried out the “Health Promotion in the Sustainable Development Goals” conference to assess how health promotion can contribute not only to health equity, but also to achieve the Sustainable Development Goals in 15 years’ time (WORLD HEALTH ORGANIZATION, 2016).

More recently, the Paris Agreement in 2015 brought new challenges to the 196 parties involved and has enhanced partnership and support among countries, empowering communities in preventing climate change (UNITED NATIONS, 2015).

Empowering a community includes active engagement of all individuals in achieving shared goals (ISRAEL et al., 1994). However, its main purpose is to achieve socio-political change (LAVERACK, 2004), meaning initiating efforts to improve the community, providing opportunities for citizens to participate, and in taking control of their own lives and health (ZIMMERMAN, 2000).

Community empowerment is key in Health Promotion actions (LAVERACK, 2001) and health practitioners within the community empower people on health literacy (LAVERACK, 2006). Nurses, for instance, are key in community environment awareness and may plan their actions according to a new model for





clinical decision. The Community Assessment, Intervention and Empowerment Model (MAIEC) assesses and enables actions to empower individuals and to optimise their health (MELO, 2020).

It is acknowledged that top-down interventions implemented by public health organizations, which were key back in 2008, have now been replaced by a hybrid approach (MELO, 2020) and several parties can now lead or implement diverse health planning methodologies. This means that health care professionals such as specialist nurses in Community Health Nursing have been leading and managing community programs where they may determine its characteristics as well as the stages of the decision process. By inspiring, educating or raising awareness on consumers' behaviour, they lead communities to actions on reducing their negative environmental impact (UNITED NATIONS, 2021b). Ideally, and according to recent studies, these actions need to both *“prevent climate change or soften its effects (mitigation) and (...) address and deal with effects that are already occurring (adaptation)”* (RIECKMANN; HOFF; BOKOP, 2021, p.1).

A preliminary search on PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews and the JBI Evidence Synthesis was conducted and no current or in-progress systematic reviews, or scoping reviews were found that map the evidence on community actions to empower the community in preventing climate change.

EBI; SEMENZA (2008) have partially approached the topic, but they do not provide any mapping of evidence on such community actions, and this is the reason why the authors are conducting the present scoping review with the objective to map published and unpublished research on this emergent field of intervention.

## 1.1 REVIEW QUESTIONS

- Which community empowerment actions have been implemented so far to prevent climate change?
- What are the characteristics of these community actions to prevent and address climate change using both adaptation and mitigation approaches?
- Which stakeholders led or implemented these community actions?



## 1.2 INCLUSION CRITERIA

### 1.2.1 Participants

This review will consider all studies involving stakeholders such as leaders, organisations, governments, managers, health professionals and others who lead on or implement community actions in preventing climate change.

### 1.2.2 Concept

This review will consider all documents exploring or describing community actions aimed at empowering the community in the prevention of climate change.

### 1.2.3 Context

This review will consider all studies that include community actions led or implemented in any community environment. All community settings such as houses, institutions, cities, nature, and others will be considered.

## 1.3 TYPE OF STUDIES

Quantitative, qualitative, mixed methods studies will be included, texts, and opinion papers and other grey literature such as dissertations, theses, whether published or unpublished. Relevant documents and reports through the authors' professional networks, social media and newsletters will also be considered.

Only articles published since 2005 in English and Portuguese will be considered, the year in which the Kyoto Protocol (UNITED NATIONS, 1997) came into force. The Kyoto Protocol is the first international legally binding agreement on climate change and is the reason why the authors considered this period to be key regarding community actions led or implemented by stakeholders internationally. For the clarification of concepts, please see Table 1 below:



Table 1. Glossary of Terms

| Term                         | Definition   |
|------------------------------|--|
| <b>Climate Change</b>        | “Means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods” (UNITED NATIONS, 1992).  |
| <b>Community Empowerment</b> | Improves participation, develops local leadership, increases problem assessment capacities, enhances the ability to ‘ask why’, builds empowering organisational structures, improves resource mobilisation, strengthen links to other organisations and people, creates an equitable relationship with outside agents and increases control over programme management (LAVERACK, 2006).  |
| <b>Community Actions</b>     | Activities that contribute to “increase the understanding, engagement and empowerment of communities in the design and delivery of local services to achieve community resilience and prevention of risks” (GOV.UK, 2020).   |
| <b>Stakeholders</b>          | The term can be labelled according to its categories and role definitions:<br>1. Invested stakeholder (who has control of the activity).<br>2. Primary stakeholder/contributing (whose participation is required to sustain the activity).<br>3. Secondary stakeholder/observer (whose compliance is required to sustain the activity).<br>4. Tertiary stakeholder/end user (uses the output of the service)<br>5. Customer (who receives some value/outcome/output from an activity) (HARRISON; FREEMAN; CAVALCANTI SA DE ABREU, 2015). |

## 2 MATERIALS AND METHODS

### 2.1 SEARCH STRATEGY

This review will follow the JBI methodology for scoping reviews and is in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist (TRICCO et al., 2018).

Using a three-step approach, a preliminary search has been initially conducted on PROSPERO, MEDLINE, the Cochrane Database of Systematic





Reviews and the JBI Evidence Synthesis to identify articles on the topic. This was the first step in the Scoping Review (Appendix I).

A full search will follow using search terms (Appendix II), keywords and MeSH descriptors (Appendix III), where titles, abstracts, and full texts of relevant and appropriate articles on the topic will be considered. This is the second step in the Scoping Review.

The third step will be the screening of all references lists from the articles to add further relevant studies that would have been missed otherwise (Snowballing Sampling) as snowballing represents a “purposive method of data collection in qualitative research” (NADERIFAR; GOLI; GHALJAIE, 2017, p. 1).

### 2.1.1 Information Sources

The full search will be conducted on the following databases: MEDLINE, CINAHL, Scopus, Embase, Web of Science, SciELO (Scientific Electronic Library Online), Google Scholar. Unpublished studies and grey literature will include Repositório Científico de Acesso Aberto de Portugal, RCAAP (Open Access Scientific Repository of Portugal) and others. Hand searched references will be used and considered for inclusion.

## 2.2 STUDY SELECTION

Following the search, all relevant studies will be identified from 2005 onwards, since the Kyoto Protocol was implemented, enclosing the first legally binding greenhouse gas reduction targets to lower the industrialised countries' overall gas emissions.

Following a pilot test, the titles, abstracts, and full texts will then be assessed in detail by two independent reviewers against the inclusion criteria for the review. Potentially relevant papers will be retrieved in full, and their citation details imported into the JBI System for the Unified Management, Assessment, and Review of Information (JBI SUMARI; JBI, Adelaide, Australia) (AROMATARIS; MUNN, 2020). Following the search, all identified records will be collated and uploaded into Endnote X9 (Clarivate analytics, PA, USA). A free online version of Endnote was used to manage all selected results, removing duplicates, and acknowledging the inclusion criteria, which has been pre-defined.



Reasons for exclusion of full-text papers that do not meet the inclusion criteria will be recorded and reported in the scoping review. Any disagreements that arise between the reviewers at each stage of the selection process will be resolved through discussion or by including a third reviewer to help gain resolution.

The results of the search will be reported in full in the final scoping review and presented in a Preferred Reporting Items for systematic Reviews and Meta-Analysis (PRISMA) checklist (TRICCO et al., 2018), which will clarify the process.

### 2.3 DATA EXTRACTION

Data will be extracted from papers included in the scoping review by two independent reviewers using a data extraction tool developed by the reviewers. The data extracted will include specific details about stakeholders involved and the characteristics of the community empowered actions identified that may be relevant to prevent climate change in our planet.

A draft data extraction tool aligned with the objectives and the aim of the review questions containing key aspects of the selected studies is provided below (please see Appendix IV) and will be completed to support this review.

The draft data extraction tool will be modified and revised as necessary during the process of extracting data from each included paper. Modifications will be detailed in the full scoping review. Authors of papers will be contacted to request missing or additional data, if required.

### 3 RESULTS AND DATA PRESENTATION

The review will be presented in narrative review format alongside with a Data Analysis Table to clarify main findings.

The evidence presented will directly respond to the review objectives and questions. The data is commonly presented graphically or in diagrammatic or tabular form, reflecting the information collected with the data extraction tool.

Preparation of the review protocol is the opportunity for the authors to pilot and determine how to best present their data or map and provide detailed description for the reader.



The narrative synthesis of the results will be used for the purpose of the presentation of results and will accompany the tabulated or charted results, describing how the results relate to the review's objective and questions.

For review question 1, this will include: i) the authors, year of publication, country (where the study was conducted); ii) study details (e.g., aims, study design, study population, sample size, diagnosis); iii) study setting; and iv) type of community actions (please see Appendix IV). For review question 2, a draft form has been developed that includes detailed key information about each community action led or implemented. For review question 3, this will include i) the authors, year of publication, country (where the study was conducted); ii) study details (e.g., aims, study design, study population, sample size, diagnosis); iii) study setting; and iv) identification of stakeholders. A narrative summary will accompany the tabulated or charted results and will describe how the results relate to the review questions.

### **AUTHOR CONTRIBUTIONS**

Conceptualization, MJC, RS and PM; Methodology, MJC, RS, VM and PM; Validation, RS and PM; Investigation, MJC; Resources, MJC and VM; Visualization, MJC; Project administration, PM; Funding Acquisition, PM; Writing—original draft preparation, MJC and RS; Writing—review and editing, MJC, RS, VM and PM.

All authors have read and agreed to the published version of the manuscript.

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### CONFLICTS OF INTEREST

The authors declare no conflict of interest.



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**Appendix A: Preliminary search conducted in September 2021**

| Database                       | Keywords and search words  | Records retrieved (N) |
|--------------------------------|--|-----------------------|
| PubMed                         | (stakeholders [Title/Abstract]) OR<br>(organisations[Title/Abstract])) OR<br>(leaders[Title/Abstract])) OR<br>(actors[Title/Abstract])) AND<br>(community[Title/Abstract])) AND<br>(empowerment[Title/Abstract])) AND (climate<br>change[Title/Abstract])) OR (climate<br>mitigation[Title/Abstract])) OR (climate<br>risk[Title/Abstract])) | 470                   |
| EBSCOhost                      | Txt (Empowerment) AND (climate change)<br>AND (health promotion)   | 572                   |
| Snowballing & Hand<br>searched | N/A  | 6                     |
| RCAAP                          | Txt (Empoderamento) e (Alterações<br>Climáticas) e (Promoção de Saúde)   | 17                    |

**Appendix B: Search Terms**

| Portuguese   | English   |
|--|---|
| Participantes<br>Partes interessadas<br>Empresas<br>Governos<br>Sociedade<br>Chefias<br>Acionistas<br>Organizações<br>Indústrias<br>Líderes<br>Atores          | Participants<br>Stakeholders<br>Companies<br>Governments<br>Society<br>Managers<br>Shareholders<br>Organisations<br>Industries<br>Leaders<br>Actors |
| Comunidade<br>Cidadãos<br>Público<br>População<br>Indivíduos   | Community<br>Citizens<br>Public<br>Population<br>Individuals  |
| Empoderamento<br>Empoderamento comunitário<br>Capacitação comunitária<br>Competência comunitária<br>Coesão Comunitária<br>Empoderamento do cidadão<br>Formação | Empowerment<br>Community Empowerment<br>Community capacity<br>Community competence<br>Community cohesiveness<br>Citizen Empowerment<br>Training     |
| Alterações Climáticas<br>Mitigação climática<br>Risco climático<br>Adaptação<br>Capacitação associada ao clima   | Climate Change<br>Climate mitigation<br>Climate risk<br>Adaptation<br>Climate-related capacity building   |



|  |   |
|--|---|
| Promoção da Saúde<br>Saúde Pública<br>Educação para a saúde<br>Política de Saúde<br>Prevenção<br>Cuidados de Saúde Primários | Health Promotion<br>Public Health<br>Health Education<br>Health policy<br>Prevention<br>Primary Health Care |
|--|---|

#### Appendix C: Keywords and MeSH descriptors

| Keywords                        | Descriptors MeSH  |
|---------------------------------|---|
| <b>Community Empowerment</b>    | Community Healthcare, Ecological Community, Empowerment, Community Care network, Community services, Community Health Education, Community Health Systems, Patient Empowerment, Community Development   |
| <b>Climate Changes</b>          | Climate Changes, Climate Process, Climate control   |
| <b>Community Health Nursing</b> | Health visitors, home nurses, Community healthcare, health services, community Health education, community health systems, community health networks, Home Health Care, Health centres  |
| <b>Public Health Nursing</b>    | Public Health schools<br>Public Health students<br>Community Health<br>Preventive Medicine and Public Health Environment<br>Public Health Service<br>Home Nurses<br>Public Health Education for professionals<br>Community Health<br>Public Health Practice |

#### Appendix D: Data extraction instrument

| Scoping Review details              |  |
|-------------------------------------|--|
| <b>Scoping Review title</b>         | Climate Change prevention through Community actions and empowerment - A Scoping Review   |
| <b>Review Objectives</b>            | To map community actions aimed for community empowerment in preventing climate change in any environmental setting.  |
| <b>Review Questions</b>             | <ol style="list-style-type: none"> <li>1. Which community empowerment actions have been implemented to prevent climate change?</li> <li>2. What are the characteristics of these actions to prevent/reduce climate change?</li> <li>3. Which stakeholders led or implemented these actions?</li> </ol> |
| <b>Inclusion/Exclusion criteria</b> |  |
| Population                          |  |
| Concept                             |  |



|   |  |
|---|--|
| Context   |  |
| Types of evidence source  |  |
| <b>Evidence Source details and characteristics</b>  |  |
| Citation details (Author, date, title, journal, volume, issue, pages)                       |  |
| Country of origin   |  |
| Methods   |  |
| Aim of the study  |  |
| Participants (age, sex, number)   |  |
| Study setting   |  |
| <b>Results extracted from source of evidence (in relation to the concept of the review)</b> |  |
| Number of items in tool   |  |
| Type of community actions   |  |
| Characteristics of community actions  |  |
| Stakeholders involved in leading or implementing community actions                          |  |