

Environmental Evidence



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Chiwona-Karlton *et al.*

SYSTEMATIC MAP PROTOCOL

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What is the evidence that gender affects access to and use of forest assets for food security? A systematic map protocol

Linley Chiwona-Karlton^{1*} , Ngolia Kimanzu^{1,2}, Jessica Clendenning³, Johanna Bergman Lodin¹, Chad Ellingson¹, Gun Lidestav⁴, David Mkwambisi⁵, Esther Mwangi³, Isilda Nhantumbo⁶, Caroline Ochieng⁷, Gillian Petrokofsky^{3,8} and Murat Sartas¹

Abstract

Background: There is increasing awareness of the importance of gender in natural resource management. Especially for communities dependent upon forests for their livelihoods, gender roles and relations can affect access to forest resources, income and food generating activities. As a consequence, gender mediated access to forest products may lead to different food security outcomes for women, men and children. Because gender is a cross-cutting issue of importance for many development, research and state institutions, this study examines the existing evidence base related to gendered access to forest products and food security in low to middle income countries. Hence, the primary question for this study is: *what is the evidence that gender affects access to and use of forest assets for food security?* The study will systematically map the evidence in order to get a comprehensive understanding of what evidence exists in terms of type of studies, geographical distribution, length of assessment periods, methodological approaches, and document outcomes related to food security as well as identify gaps for further research.

Methods: This systematic map protocol describes the methodology that will be used to search, identify and describe the evidence on gender and access to and use of forest resources in low and middle-income countries. The searches will be conducted for the period from 1970 to 2015 using main bibliographic databases and grey literature sources. To identify relevant evidence, predefined inclusion and exclusion criteria will be used to screen the title, abstracts and full text of the secured literature. This will be followed up with a study appraisal and data mapping process describing the methods and outcomes reported in the studies. The final output will be a simple descriptive statistical narrative report and an evidence map.

Keywords: Access, Equity, Forests, Gender relations, Income, Livelihoods, Non-timber forest products

Background

Global estimates show that more than 1.6 billion people depend on forests to varying degrees for their livelihoods, and about 60 million indigenous people are almost wholly dependent on forests [1]. Moreover, the world's forests directly support nearly half of the global population who live on \$2 or less per day [2], and provide resources such as shelter, food, and fuel wood that act as

safety nets for their livelihoods [3–5]. Importantly, the World Bank's Forest Strategy states that, “Sustainable use of forests requires the participation of all rural populations, including women” [2]. Over the last two decades, a number of publications have shown that gender inequalities in access to forest resources, as well as extension, education and health services may be linked to higher levels of poverty [6–9]. Due to embedded socio-cultural practices and gendered power relations, women's needs and priorities, especially in regard to natural resources, can easily be overlooked [10, 11], which places increased

*Correspondence: Linley.chiwona.karlton@slu.se

¹ Department of Urban & Rural Development, Swedish University of Agricultural Sciences, Box 7012, 75007 Uppsala, Sweden
Full list of author information is available at the end of the article

importance on understanding the role of gender relations for development research.

In this paper, gender is defined as socially constructed, gendered norms and practices translating into different rights, opportunities and constraints across cultures, families and livelihoods. Gendered norms influence a person's ability to access, use, own goods and resources, and overall affect one's ability to exert agency over their livelihood strategies [12]. Gender relations affect power, roles and responsibilities between women and men [13]. In low-income rural areas in particular, gender relations can define how men and women access forest resources, and can place a disproportionately large burden on women to manage the household including food sourcing responsibilities, as compared to men. Other studies show that when women and men have more equal positions and bargaining power within a household, they also access and utilise forest resources in more equitable ways [14, 15]. Furthermore, a number of studies also point to the role women play in managing forest resources, even though these contributions remain largely unrecognised [12, 16, 17]. While, others highlight the important differences between the management and utilisation of forest resources for household needs by women and men's forest groups [17]. More revealing is that, these studies indicate that awareness of the power relations between men and women may influence how, when and why forest resources are used or exploited. Increasing awareness could help to inform the design of programs and policies to promote more equitable access to natural resources and facilitate development objectives [18].

Ribot and Peluso [8] argue for an understanding of access that extends well beyond property rights as previously theorised and defined by Schlager and Ostrom [19], as the right to enter a defined physical property. In this paper, we summarise access as "*the ability to benefit from things in and from the forest*". We go further and also include physical dimensions, such as distance to forests and the right to enter, in our definition of access.

Gender and non-timber forest products

Women in rural areas in low and middle-income countries are generally responsible for collecting firewood for household cooking and preparation of food [20]. Also, there are some studies that have observed that women may be more knowledgeable than men about medicinal plants and other non-timber forest products (NTFPs) [21–23]. In the study by Baland et al. [20], from rural Nepal they found that women spent substantially more time on collecting firewood than men. Similarly, a study with women in West Africa, found indications that not only do women allocate more time to collecting and preserving NTFPs, but they seemed to also be more adept

at identifying various edible species from the forest than men. For example, in some areas women were found to be more knowledgeable than men in identifying and using NTFPs, collecting fuel wood, preparing food, and feeding their families [24].

Gender, forests and food security

The definition of food security is an evolving concept and has in the past had no less than 200 definitions according to Maxwell [25]. A comparison of the definitions goes to underscore the considerable reconstruction of our thinking around food security that has occurred over the past 35 years [26]. Food security outcome studies have alluded to the important role that women play in the provisioning of nutritious diets especially with forest resources [27]. This is an aspect of particular importance during the agricultural lean or hungry season and can impact the food security trajectory of a household [1]. In this paper we use the definition of food security as agreed upon during the World Food Summit organized by the Food and Agricultural Organization (FAO) [28] and elaborated upon in the context of forests by Arnold et al. [3]. Food security exists when all people, at all times, have physical and social economic access to sufficient, safe and nutritious food to meet their dietary needs and foods preferences for an active and healthy life. Access to food is a combination of various factors, namely physical access as well as financial abilities. However, access alone is not enough as factors such as age, gender and culture may also play a role.

Depending on the type of forests, forest products make a significant contribution to the diets of communities, by: (a) providing supplemental calories as snacks or as complementary foods; (b) increasing the diversity of diets, especially during the lean season; and (c) creating employment for many rural and urban dwellers [27, 29]. Provisional on the specific combination of foods, NTFPs may contribute towards ameliorating specific nutrient and micronutrient deficiencies [30].

Furthermore, studies also support the role that wild fruits play especially in the provision of micronutrients and vitamins, in addition to generating income for many rural households. For example, in Zimbabwe wild fruit trees represent about 20% of the total woodland resources used by rural households. Women, men and children benefit from collecting, consuming and selling fruits, where the proceeds from the latter can be used to buy other foods [31]. In West and Central Africa, *Dacryodes edulis* (butter fruit) is a staple food for 3–4 months of the year, making substantial contributions to the well-being of households, with palm oil being their main cooking fat. Similar findings have been observed in West Africa as well as Southern Africa, in relation to the shea butter and amarula value chains, respectively [31].

Other factors such as land tenure ownership and active participation play important roles in women's activities and in decisions over their access and use of forests resources [6]. For example, a study from Nepal showed that while women have actively participated in community forestry, their voice and decision-making influence have been circumscribed due to the prevailing patriarchal structures in society. Though, with the out migration of men a window of opportunity seems to be opening up for more women's participation in community forestry activities [32].

Earlier studies seem to support these findings [12] and to reinforce observations that there continues to be little understanding of the role gender relations play in influencing access to and use of forest resources. This is despite the important role that forests play in the provisioning of food and ecosystem services.

There are other studies that have argued that women contribute significantly towards household food and income security because their forest activities are often directly related to resources for their families [22]. Similar studies tend to affirm that when women derive and control their own income it is more likely to be spent on food and children's needs compared to the income men control [33–35].

A study from Laos also supports observations that women were more able than men at collecting different food and medicinal products: women collected 18 different animal food species, 37 different types of food and 68 different medicinal products compared to men [15]. Similar evidence from Mali concur with these observations, showing that elder women could identify approximately 20 of 25 depicted medicinal plants and more than 20 of 25 depicted food plants during photo recognition exercises [24].

Objective of the map

The objective of this systematic map is to collate and describe the evidence base on gender mediated access to and use of forest assets for food security in low income to middle-income countries. The countries are defined according to the recent World Bank categorisation of 2014.

A stakeholder and author workshop was held from 18 to 21 February 2014 to discuss the current knowledge base on how gender mediates access to and use of forest assets, and the need for a systematic map protocol among academics and practitioners representing related disciplines of agriculture, social and human geography, economics, gender, forestry, natural resource management, nutrition, policy, public health and rural development. The workshop was hosted at the Centre for International Forestry Research (CIFOR) in Bogor, Indonesia,

and the purpose was to formulate and agree on the primary research question, the inclusion and exclusion criteria, and to discuss the available evidence on men's and women's roles in using forest resources. Participants suggested that the outcomes of food security were important as climate change, forest management programmes such as Reducing Emissions from Deforestation and Forest Degradation (REDD+) and land use changes (e.g. biofuels, cash crops, mono-cropping or large scale agro investments) are gaining increasing importance in many low and middle income countries. Specifically, the map will describe the geographic distribution of studies, the number of studies per geographical area, the outcomes (e.g. food security, income security) measured across studies, and the robustness of the study design. The map also aims to highlight what knowledge gaps exist on studies concerning gender, forest access, and food security. The primary research question is: What is the evidence that gender affects access to and use of forest assets for food security?

The sub-questions of the map are:

- (i) What is the evidence that women's access to forest resources (or assets) improves household food security compared to men?
- (ii) What does the evidence show as gender disparities in access to and use of forests?

Methods

Search strategy

An initial literature search was conducted using three major terms: "gender" AND "forests" AND "food security".

The titles and abstracts of the resources identified by the search were saved. A word frequency search based on these abstracts and titles was made by using QSR Nvivo software to construct a ranked list of frequently used relevant terms that could be included in subsequent searches. Additionally, during the author and stakeholder workshop in February 2014, the participants generated a list of relevant terms under the following categories: gender; gender disparity in access and use; forests, forest assets, and resources; and food security. These terms were tested in Web of Science (including CAB Abstracts) and Scopus. Single terms or groups of related terms were tested for their capacity to generate relevant hits, and it was found that while many terms related to access and use of forests resources could be used (i.e., mushrooms, timber, harvest, collect, farm, plant, and so forth) these general terms generated between 50,000 and 100,000 results in databases such as Scopus and Web of Knowledge, requiring the use of a more refined search. A more focused search on gender, tenure and property, forests

and related countries using the Boolean operator AND to connect subject terms produced a more sensitive and more specific search (approximately 13,000 hits in Scopus). Two members of the team using titles and abstracts made relevancy decisions about additional generated terms and continued trialling search string combinations and field codes, which is discussed in the search comprehensiveness section below. This is what resulted in the final search term combination.

Search terms and languages

Searches will be carried out using the English terms listed in Table 1. The search strategy is structured in five sections linked by Boolean operator AND: gender, NTFP, food security, forest and the population of low to middle-income economies. The search will include published and unpublished literature and be restricted to literature published in English between January 1970 and December 2015, i.e. the start of forest gender literature. To ensure transparency and repeatability, the full search string used for each bibliographic database, website, and internet search will be saved and recorded in an appendix of the systematic map.

The following lists of terms will be supplemented with other subject-specific terms and indexing codes that are used in individual databases. CAB Abstracts, for example, uses sophisticated lists of controlled vocabulary and CABI CODES that we will also use. Search strategies will be trialled against a reference list of studies that were identified by the expert group during the workshop in 2014 to include the necessary elements for inclusion (see Additional file 1: Appendix 1). The reference list will be applied to test the comprehensiveness of the search strategy. Table 1 outlines the elements of the systematic map’s question.

Exposure

- (1)(gender OR “female headed” OR “male headed” OR “sexual roles” OR “role conflicts” OR “woman’s status” OR “women’s rights” OR “man’s status” OR “men’s rights” OR “sexual discrimination” OR household* OR widow)
AND
- (2)(labor* OR “cash crop” OR tenure OR “tenure system” OR “land tenure” OR “agricultural tenure” OR “agricultural households” OR nonfarm OR property OR forag* OR “staple food” OR “land rights” OR

- asset* OR resource* OR bushmeat OR fuelwood OR firewood OR charcoal OR vegetable OR plant OR fruit OR mushroom OR timber OR honey OR access OR “forest product” OR ntfp OR participatory OR education)
AND

Outcomes

- (3)(“food security” OR income OR cash OR wealth OR poverty OR hunger OR nutriti* OR malnutrition OR vitamin* OR diet OR livelihood* OR rights OR diversity OR consumption OR equity)
AND

Subject

- (4)(forest* OR tree* OR agroforest* OR woodland OR mangrove OR savanna* OR shrub OR wood OR bush OR “rights to land” OR biodiversity)
AND
- (5)(Angola OR Afghanistan OR Albania OR Algeria OR “American Samoa” OR Angola OR Argentina OR Armenia OR Azerbaijan OR Bangladesh OR Belarus OR Belize OR Benin OR Bhutan OR Bolivia OR Bosnia OR Botswana OR Brazil OR Bulgaria OR “Burkina Faso” OR Burundi OR “Cabo Verde” OR Cambodia OR Cameroon OR “Central African Republic” OR Chad OR China OR Colombia OR Comoros OR Congo OR “Costa Rica” OR “Côte d’Ivoire” OR Cuba OR Djibouti OR Dominic* OR Ecuador OR Egypt OR Salvador OR Eritrea OR Ethiopia OR Fiji OR Gabon OR Gambia OR Georgia OR Ghana OR Grenada OR Guatemala OR Guinea OR Guyana OR Haiti OR Honduras OR Hungary OR India OR Indonesia OR Iran OR Iraq OR Jamaica OR Jordan OR Kazakhstan OR Kenya OR Kiribati OR “North Korea” OR Kosovo OR “Kyrgyz Republic” OR Lao* OR Lebanon OR Lesotho OR Liberia OR Libya OR Macedonia OR Madagascar OR Malawi OR Malaysia OR Maldives OR Mali OR “Marshall Islands” OR Mauritania OR Mauritius OR Mexico OR Micronesia OR Moldova OR Mongolia OR Montenegro OR Morocco OR Mozambique OR Myanmar OR Burma OR Namibia OR Nepal OR Nicaragua OR Niger OR Nigeria OR Pakistan OR Palau OR Panama OR Papua OR Paraguay OR Peru OR Philippines OR Romania OR Rwanda OR Samoa OR “São Tomé” OR Senegal OR Serbia OR Seychelles OR “Sierra Leone” OR

Table 1 Elements of the systematic map question

Subject	Exposure	Comparators	Outcomes
Forest resources and assets in low and middle income countries (as defined by the World Bank, 2014)	Women or female headed households who access and use forest resources and assets	Men or male-headed households who access and use forest resources and assets	Changes in food security, defined by a range of indicators

“Solomon Islands” OR Somalia OR “South Africa” OR “Sri Lanka” OR Lucia OR Grenadines OR Sudan OR Suriname OR Swaziland OR Syria* OR Tajikistan OR Tanzania OR Thailand OR Timor OR Togo OR Tonga OR Tunisia OR Turkey OR Turkmenistan OR Tuvalu OR Uganda OR Ukraine OR Uzbekistan OR Vanuatu OR Venezuela OR Vietnam OR Gaza OR Yemen OR Zambia OR Zimbabwe OR Africa OR Asia OR “South America” OR “Latin America”

Search combinations

The three main categories of terms (exposure, outcome and subject) will use the Boolean operator ‘OR’ between each search term and will use the Boolean operator ‘AND’ to combine each search string. Searches on larger databases will use codes to focus the search, such as ‘TOPIC’ and TITLE-ABS-KEY in Web of Science and Scopus, respectively. An example of the full search string is included in appendix 2, and illustrated below.

1 AND 2 AND 3 AND 4 AND 5

Nevertheless, as some search engines have limitations on search string length, the search combinations will be shortened but follow a similar combination of keywords. Google Scholar, for instance, will use key words such as:

(Gender OR household) AND (Access* OR use) AND (Forest* OR tree* OR agroforest*) AND (Asset* OR Resource* OR plant OR wood) AND (Nutriti* OR diet* OR deficienc*) AND (Food* OR Crop* OR Fish*).

All search combinations, the database and/or website will be recorded for transparency and repeatability.

Search comprehensiveness

Twenty articles of known relevance to the study were selected, to test for search comprehensiveness (Additional file 1: Appendix 1). Using the search string described above (and found in Additional file 2: Appendix 2), all 20 articles were identified in Web of Science, while 17 were identified in Scopus during searches in August 2014. The three articles not found in Scopus were due to the database not containing the articles. Google Scholar will also be used to find any studies missed from the databases, particularly for grey literature. A series of search combinations similar to the one listed above will be trialled in Google Scholar until a point of saturation (i.e., few new titles are retrieved), with the first 100 titles from each search screened for relevance. These results will be checked for duplicates and included for the screening process.

Publication databases

- AGRIS; International Information System for Agricultural Science and Technology, FAO (1974-) (<http://www.agris.fao.org>)
- JSTOR (<http://www.jstor.org>)

- ProQuest Dissertation and Theses (1995-) (<http://www.proquest.com>).
- Scopus (<http://www.scopus.com>) (1823-)
- Web of Science (<http://www.wokinfo.com>) including:
 - Web of Science Core Collection (1945-)
 - CAB Abstracts (1910-)
 - MEDLINE Opens (1950-)
 - Zoological Record (1990-)

Internet searches

- Google Scholar (<http://www.scholar.google.com>)
- Google (<http://www.google.com>)

Grey literature specialist search

- African Forest Forum (AFF) (<http://www.afforum.org>)
- African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE) (<http://www.anafeafira.org>)
- Consultative Group on International Agriculture Research Centres (<http://www.cgiar.org>)
- Bioversity International, The World Agroforestry Centre (ICRAF), Centre for International Forestry Research (CIFOR), World Fish, International Food Policy Research Institute (IFPRI), International Livestock Research Institute (ILRI)
- Food and Agriculture Organization [including old copies of Forest, Trees and People and Community Forestry Programme publications (from the 1990s)] (<http://www.fao.org>)
- Ford Foundation (<http://www.fordfoundation.org>)
- International Institute for Environment and Development (IIED) (<http://www.iied.org>)
- International Institute for Sustainable Development (IISD) (<http://www.iisd.org>)
- International Union for Conservation of Nature (IUCN) (<http://www.iucn.org>)
- International Union of Forest Research Organizations (IUFRO) (<http://www.iufro.org>)
- Southern Africa Forestry and Indigenous Resources (SAFIRE) (<http://www.safireweb.org>)
- The Centre for Forests and People (RECOFTC) (<http://www.recoftc.org>)
- The Green Belt Movement (<http://www.greenbelt-movement.org>)
- United Nations-Women (formerly UNIFEM) (<http://www.unwomen.org>)
- United Nations Development Programme (UNDP) (<http://www.undp.org>)
- United Nations Development Programme (UNDP)-Drylands Development Centre (<http://www.undp.org>)

- Women Organizing for Change in Agriculture and Natural Resource Management (WOCAN) (<http://www.wocan.org>)
- Women's Environments and Development Organization (WEDO) (<http://www.wedo.org>)
- World Farmers Organization (<http://www.wfo-oma.com>)
- World Health Organization (WHO) (<http://www.who.int>)
- WUR Centre for Tropical Agriculture (CTA) Netherlands (<http://www.wageningenur.nl>)
- YOUTH-Agriculture for Research and Development (<http://www.ypard.net>)

Article screening and study inclusion criteria

Literature retrieved will be screened sequentially for relevance at the (1) title, (2) abstract and (3) full text stages. Titles and abstracts of articles will first be downloaded to reference software (i.e., EndNote) and also saved in Microsoft Excel. Initially, the search results will be screened for duplicates and only unique entries left in the database. Then two reviewers will remove obviously irrelevant articles through an initial title screening. To ensure consistent understanding of the inclusion criteria, a random sample of at least 100 articles will be selected to compare the level of screening agreement between multiple reviewers. A Kappa score of greater than or equal to 0.6 will be used to demonstrate sufficient reviewer agreement [36]. If the Kappa score is not achieved, reviewers will repeat the screening process with a new random sample of studies. During this process reviewers will discuss any disagreements in applying the inclusion criteria and record any changes made. After title and abstract screening stages, reviewers will download the remaining articles for full text screening. In cases where full text is unavailable online or through the available library systems, the reviewers will attempt to contact the author.

Study inclusion criteria

In order to be included in the map, a study must fulfil all of the following study inclusion criteria:

Relevant subjects include: Studies that describe how men or women use or access forest resources or assets in low to middle income countries. All natural and planted forest types will be included (see exclusion criteria below).

Relevant exposures include: The study relates or links how women or female-headed households access and use the forest and its resources.

Relevant outcomes include: The study describes an effect or outcome concerning food security.

Relevant study designs include: Both qualitative and quantitative studies from peer-reviewed and unpublished sources. Primary studies that use experimental (randomized), quasi-experimental (non-random, longitudinal studies and surveys), observational, ethnographic and qualitative methods will be included. Secondary studies, such as literature reviews and systematic reviews will be considered during the contextual analysis, but will not be used in the map.

Studies will be *excluded* if they:

- Do not include forests and for example only focus on agricultural land or agroforestry.
- Do not link forest access/use/benefits to household income, food security or consumption outcomes [37].
- Are not based on primary data, for example purely conceptual, theoretical or editorial studies.

Potential effect modifiers and other reasons for heterogeneity

Factors that could influence the outcomes that this map will assess include:

- Country, region, coastal,
- Climate
- Elevation (lowland, highland)
- Types of forests (natural, planted)
- Setting (rural, peri-urban)
- Proximity to the forest
- Proximity to urban areas
- Market or road access
- Land ownership/tenure
- Climate change and or shocks and natural disasters
- Differences in the types of forest management regimes (state, private, commons, community)
- Culture (matriarchy or patriarchy)
- Education
- Project or programme implementation in a certain area

Study quality assessment and data coding strategy

There exists today a perplexing range of about 300 formal study quality assessment methods [37, 38]. This is a clear indication of the complexity of assessing study quality. Part of this complexity comes from the large number of possible study designs and the inbuilt strengths and weaknesses in each study design. In their seminal paper, Bilotta et al. [37] have suggested two quality study assessment methods for environmental evidence from environmental sciences. To assess the overall quality of a body of

evidence, they recommend the Cochrane Collaboration system developed by The Grades of Recommendation, Assessment, Development and Evaluation (GRADE) hierarchy of study designs is split into ‘randomised controlled trials’ and ‘observation studies.’ However, this creates problems for the social sciences where quasi-experimental designs are frequently employed, e.g. difference in differences, regression discontinuity and propensity score matching. We expect, in this mapping exercise that some of the studies with these quasi-experimental study designs will meet the inclusion criteria of the systematic map. We therefore, propose to use concurrently both the environmental risk of bias tool as recommended by Bilotta et al. [37] and an extensively cited hierarchy of study designs from the social sciences [39, 40].

A data extraction template that is based on the use of the two methods above will be used to assess the quality of the studies. The template will also contain a summary explanation of the assigned rating. We have designed the data extraction so that where possible, fixed answers are selected from coded dropdown lists. We tested the template using studies in the test library and have attached the table as Additional file 3: the data coding template. The categories in Table 2 will help in guiding the screening of the full texts and filling in of the Additional file 3. An end note library will be used to enter final results from the searches. Data extraction will be done by use of Microsoft Excel and at a minimum; two members of the team will test the repeatability of the data extraction and coding. Qualitative studies will be recorded as such without any further appraisal.

The data extraction strategy will record evidence across five main categories. These include the *nature of evidence* (source, type and producers of the evidence); the *coverage of evidence* (men/women, community or village

information, forest type and resource use/access information); the *types and nature of linkages between gender, access and food security outcomes*; the *types of food security outcomes* reported and the *underlying policy, institutional and governance frameworks* (at regional, national or international levels) considered in the study. All of the data will be disaggregated by gender. Table 2 further outlines these main categories. We will provide a list of articles excluded at the full text review along with the reasons for exclusion.

Study mapping and presentation

Descriptive statistics will be used to show the number of studies, general information about the type of publication, year, location, populations, households, countries and regions of where research was undertaken. Further statistics will be used to show examples of the types of forest resources used, related livelihood activities, and the gendered differences in where they are or are not reported. Forest typologies and food security outcomes, where relevant will also be presented.

Data presentation

The final output of this exercise will be a systematic map with the data presented as descriptive statistics. The data will highlight food security and socio-economic outcomes; population studied; geographical evidence base and methods employed. We anticipate a wide range of study designs will be used to measure food security, and we will use a narrative synthesis to discuss the commonalities and difficulties found in how studies capture food and income from forest resources. The discussion will explore what research and or methodological gaps exist in the gender and food security literature, providing clearer justification for areas that need further study.

Table 2 Systematic map data categories

Nature of evidence	Sources of evidence (journal types and subjects, grey literature) Types of evidence (study design, data sources, scale of analysis) Producers of evidence (location of primary authors/institutions)
Representativeness and coverage of evidence	Demographic characteristics Village/community characteristics Geographic coverage (countries, regions) Ecological coverage (forest types, habitats) Resources accessed or utilized (by men/women/girls/boys)
Types and nature of linkages between gender, access to forest resources and food security	Types of access employed (different tenure and regulatory frameworks) Types of linkage to food security
Food security outcomes	Measures of food security Measures of nutrition security Nature of impacts identified (positive, negative, neutral) and relative proportions of each type
Policy, institutions and governance	Attention paid to underlying policy, institutional and governance issues (separated by regional, national and international scales) – no’s of studies addressing key issues

Additional files

Additional file 1. Appendix 1. References for search comprehensiveness.

Additional file 2. Appendix 2. Scoping of gender review search combinations.

Additional file 3. Data coding and extraction.

Authors' contributions

This review map protocol stems from a draft review paper on gender, forests and food security by LCK, NK and EM with LCK as the team leader. The draft was discussed in stages with GP and JC, and then developed into a systematic map. MS developed a draft activity scheme for operationalising searches, eligibility checks and quality assessment including software and reporting tools. CE and MS made the initial testing of the search terms and queries with support of JC. During the authors' and stakeholder workshop, all authors listed here contributed and participated in refining the review question, and drafting the protocol. LCK, NK, JC, JBL, GL, and GP have at various stages worked on the revisions. Extensive revisions have been undertaken by LCK, NK and JC particularly responding to the reviewers' comments and approving of the final manuscript. All authors read and approved the final manuscript.

Author details

¹ Department of Urban & Rural Development, Swedish University of Agricultural Sciences, Box 7012, 75007 Uppsala, Sweden. ² Salvation Army, Box 5090, 102 42 Stockholm, Sweden. ³ Centre for International Forestry Research (CIFOR), Jalan, Bogor 16115, Indonesia. ⁴ Swedish University of Agricultural Sciences, Skogsmarksgränd, 901 83 Umeå, Sweden. ⁵ Lilongwe University of Agriculture and Natural Resources, Box 219, Lilongwe, Malawi. ⁶ International Institute for Environmental Development (IIED), 4 Hanover Street, Edinburgh EH2 2EN, Scotland, UK. ⁷ Stockholm Environmental Institute (SEI), Box 24218, 104 51 Stockholm, Sweden. ⁸ Biodiversity Institute, Oxford, The Tinbergen Building, South Parks Road, Oxford OX1 3PS, England, UK.

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Competing interests

The authors declare that they have no competing interests.

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