



Alliance



RESEARCH
PROGRAM ON
Policies,
Institutions,
and Markets

Indicators for gender equality and the empowerment of **women:** from concept to practice



The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT) delivers research-based solutions that address the global crises of malnutrition, climate change, biodiversity loss, and environmental degradation.

The Alliance focuses on the nexus of agriculture, environment, and nutrition. We work with local, national, and multinational partners across Africa, Asia, and Latin America and the Caribbean, and with the public and private sectors and civil society. With novel partnerships, the Alliance generates evidence and mainstreams innovations to transform food systems and landscapes so that they sustain the planet, drive prosperity, and nourish people in a climate crisis.

The Alliance is part of CGIAR, the world's largest agricultural research and innovation partnership for a food-secure future, dedicated to reducing poverty, enhancing food and nutrition security, and improving natural resources.

alliancebioversityciat.org

www.bioversityinternational.org

www.ciat.cgiar.org

www.cgiar.org

Citation:

Chavarro MJ; Moreno M; Muriel J; Twyman J. 2020. Indicators for gender equality and the empowerment of women: from concept to practice. Working paper 505. International Center for Tropical Agriculture (CIAT), Cali, Colombia. 29 p.

This working paper is also available in Spanish as "Indicadores de género y empoderamiento de la mujer en la agricultura: del concepto a la práctica." Permanent link: <https://hdl.handle.net/10568/110248>

Cover photo: © CIAT/N. Palmer

Design and layout: Ximena Hiles

Copyright © CIAT 2020. Some Rights Reserved.

Some Rights Reserved. This work is licensed under a Creative Commons Attribution NonCommercial 4.0 International License (CC-BY-NC) <https://creativecommons.org/licenses/by-nc/4.0/>

This publication has not gone through the standard peer-review procedures of IFPRI or the Alliance of Bioversity and CIAT. The opinions expressed here are those of the authors and do not necessarily reflect those of PIM, IFPRI, the Alliance or CGIAR.

CIAT Publication No. 505
November 2020

Mónica Juliana Chavarro
Manuel Moreno
Juliana Muriel
Jennifer Twyman

Alliance



RESEARCH
PROGRAM ON
Policies,
Institutions,
and Markets

Indicators for gender equality and the empowerment of **women:** from concept to practice



Acknowledgements

This study was conducted as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) with support from the International Food Policy Research Institute (IFPRI). PIM in turn is supported by these funders: <http://pim.cgiar.org/about/funders/>



Contents

| | |
|--|----|
| Abstract | 3 |
| Introduction | 4 |
| Methodology | 5 |
| Results..... | 7 |
| Article selection..... | 7 |
| Location where articles were mostly concentrated..... | 8 |
| Year in which the articles were published | 9 |
| Methodologies implemented..... | 10 |
| Gender and empowerment: conceptualization and operationalization | 12 |
| Discussion and conclusions | 20 |
| References..... | 22 |
| Annexes | 25 |

Tables

| | |
|---|---|
| Table 1 Subject and search terms used for the systematic literature review | 6 |
| Table 2 Inclusion and exclusion criteria | 6 |

Graphics

| | |
|--|----|
| Graph 1 Article selection process..... | 8 |
| Graph 2 Location of the studies presented in reviewed articles..... | 9 |
| Graph 3 Number of articles published per year | 9 |
| Graph 4 Number of selected articles according to the methodology used | 10 |
| Graph 5 Data collection and analysis techniques used by type of methodology | 11 |
| Graph 6 Number of articles discussing different aspects of empowerment by methodology | 18 |



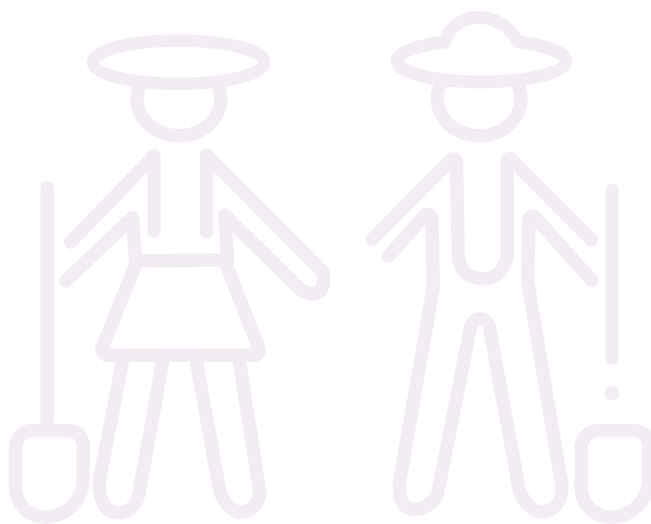


Abstract

As part of the project “Developing Gender Indicators in Agriculture,” we conducted a literature review in order to understand how research and agricultural development projects in Latin America measure women’s empowerment and gender inequalities. The research allowed us to conduct a close examination of the theoretical concepts and the methodologies employed, and the way in which both of these are linked, in practice. In the study, we uncovered similarities in the theoretical definitions of women’s empowerment and gender inequality used, but differences in the way in which each study operationalizes these concepts. These different operationalizations were found in turn to be connected with the methodological approaches that guided each research study or program. We also found discrepancies in the theoretical frameworks used and the results presented, with many of the reviewed studies basing their theoretical frameworks on the concept of empowerment, but framing their results in terms of reaching or benefiting women, but not necessarily in terms of women’s empowerment.

KEYWORDS

Gender, Agriculture, Empowerment,
Literature Review, Latin America.



Introduction

Incorporating gender in agricultural development projects is a requirement for governments, cooperating countries, NGOs, project implementers, and donors, mainly due to the agreement of countries to work towards gender equality, which is one of the Sustainable Development Goals. However, the mere inclusion of gender in development projects or programs does not ensure their success in reducing inequalities, since the theoretical concepts of gender, empowerment, and equality are not always linked with what is being implemented in practice. Often it is difficult to fully capture the various dimensions of empowerment and/or gender with indicators, thus resulting in a dissociation between theory and practice (or conceptualization and operationalization).¹ As such, these projects may face challenges demonstrating progress towards meeting their goals related to gender; and in some cases, they may even increase the existing inequalities between men and women.

There is a lack of guidelines on what to measure in terms of gender and how to do it in a way that links theory to practice, by using or adapting indicators in the formulation, implementation, and evaluation of development projects in agriculture. That is why in this study, we intend to present evidence of the gender indicators used in agricultural development research or projects in Latin America, as well as the purpose of their implementation. The main objective is to understand how agricultural development research studies and projects in Latin America measure empowerment and gender inequality. The specific research questions are: What are the main theoretical concepts used in projects? How have those concepts been operationalized? What are the measures used by projects? What aspects are taken into account to measure gender equality? What are the methodologies used by projects?

To achieve this, we adapted the Systematic Literature Review methodology proposed by

PRISMA² (Welch et al., 2012) to a social study and we searched for articles that would consider five main subjects: *gender*, *indicators*, *agriculture*, *development*, and *Latin America*. We identified a total of 87 articles for review; we analyzed their theoretical concepts and methodologies to understand how gender related concepts are being measured in practice. Some of them focused their attention on gender gaps or measuring empowerment, while others focused on the implications of the roles of men and women in agriculture or explored the role of society and institutions in the systematic exclusion of women from the agricultural sector.

In the second section of this document, we present the methodological procedures to collect and analyze information, as well as the initial results of the literature search. Then we present the findings related to places where studies are mostly concentrated, the units of analysis, year of publication, and methodologies used in the studies. Next, we present the results in terms of the concepts and the operationalization of gender equality and empowerment, as well as in terms of the research approach: qualitative, quantitative, or mixed. Finally, we conclude with a discussion on the results obtained.

² PRISMA = Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

¹ This is understood as a process that enables the disaggregation of the theoretical concept guiding the research (in this paper, on gender and empowerment), while identifying empirical evidence (variables) that will help recognize it in reality.



Methodology

To conduct this study, we based our work on the parameters set forth in the PRISMA² guidelines (Welch et al., 2012), which describe the stages in which a Systematic Literature Review should be undertaken. This methodology consists of the identification and analysis of all studies and research relevant to a specific topic. However, since it has been specifically designed for health sciences, we had to adapt some criteria, as they were not relevant to a social study. In Annex 1, we show the stages carried out with their corresponding steps, actions, and outputs.

In this way, we were able to write an objective and accessible summary on the understanding and use of gender indicators in agriculture by research studies and development projects in Latin America. At the same time, we were able to identify the context of such indicators among policy- and decision-makers.

Through this study, we want to understand the way in which research and development project implementers measure gender and how they

implement it, because there seems to be a gap between what gender indicators say in theory and how this connects with practice, by adapting indicators in project planning and evaluation. While nowadays most development projects try to include a gender perspective, there are still gaps regarding how to measure gender related outcomes. One of the main contributions of applying this methodology is the contextualized comparison that recognizes the variability of ethnic, educational, socioeconomic, and geographic contexts facing different projects and interventions working on gender in agriculture.

For the literature search, we focused on identifying the articles published in indexed journals found in the following electronic databases: Web of Science (WOS), Scopus, and Google Scholar. This search was carried out taking into consideration five subjects selected in terms of their relevance to the problem identified: *gender, indicators, agriculture, development, and Latin America*, giving a strong preference to observational studies, case reports, and intervention studies.



Credit: © CIAT

Table 1 shows the combinations and the terms related to the subjects we took into consideration to complete our search.

Table 1: Subject and search terms used for the systematic literature review

| SUBJECT | INDICATORS | | AGRICULTURE | GENDER | DEVELOPMENT |
|--------------|---|-----------------------------|-----------------------------|-----------------------|----------------------------|
| | QUANTITATIVE | QUALITATIVE | | | |
| Search terms | indicators/ indicadores | qualitative/ cualitativo | agriculture/ agricultura | gender/ género | development/ desarrollo |
| | quantitative/ cuantitativo | domains/ dominios | rural/ rural | woman/en/ mujer/es | |
| | synthetic index/ índice sintético | dimensions/ dimensiones | | | |
| | synthetic indicator/ indicador sintético | | | | |
| | related measures/ medidas asociadas | | | | |

Furthermore, to define or filter the selected studies, we formulated inclusion and exclusion criteria adapting the PRISMA parameters (Shamseer, 2015), which are shown in Table 2.

Table 2: Inclusion and exclusion criteria

| PARAMETERS | INCLUSION CRITERIA | EXCLUSION CRITERIA |
|---------------------|--|---|
| Population | Men and women farmers in Latin America | Men and women farmers from urban communities Men and women farmers outside of Latin America Rural men and women non-farmers |
| Approach | Studies with some kind of qualitative or quantitative measures related to gender | Qualitative or quantitative studies without any kind of measures related to gender |
| Research Design | Articles published in indexed journals | Books, book chapters, theses, working papers, and other documents |
| Language | English Spanish Portuguese | Articles in other language apart from English, Spanish, or Portuguese |
| Year of Publication | From 1980 to present | Before 1980 |

Within such criteria, the choice of languages corresponds to the closest affinity to Latin America. Regarding the year of publication, the perception was that articles referring to this topic would start appearing after the publication of the works by Magdalena León and Carmen Diana Deere in the eighties (León and Deere, 1977 and 1980; Deere and León, 1982³), since these were the studies that marked the beginning of research on gender and agriculture in Latin America.

3 Both authors have been widely cited in the articles selected in the review.



Credit: © Bioversity International/A. Camacho

After selecting the articles, we conducted a thorough review that allowed the extraction of information related to location, year of publication, main objective, theoretical considerations (empowerment, gender, equity, others), the methodology implemented, the aspects on which the approach on those theoretical considerations was based, and the main conclusions. Once we had organized all the data in the “information extraction matrix”, we proceeded to its analysis, which consisted of comparing qualitative, quantitative, and mixed research studies, starting from the way they approached the theoretical considerations and how they formulated their measurement aspects or criteria.

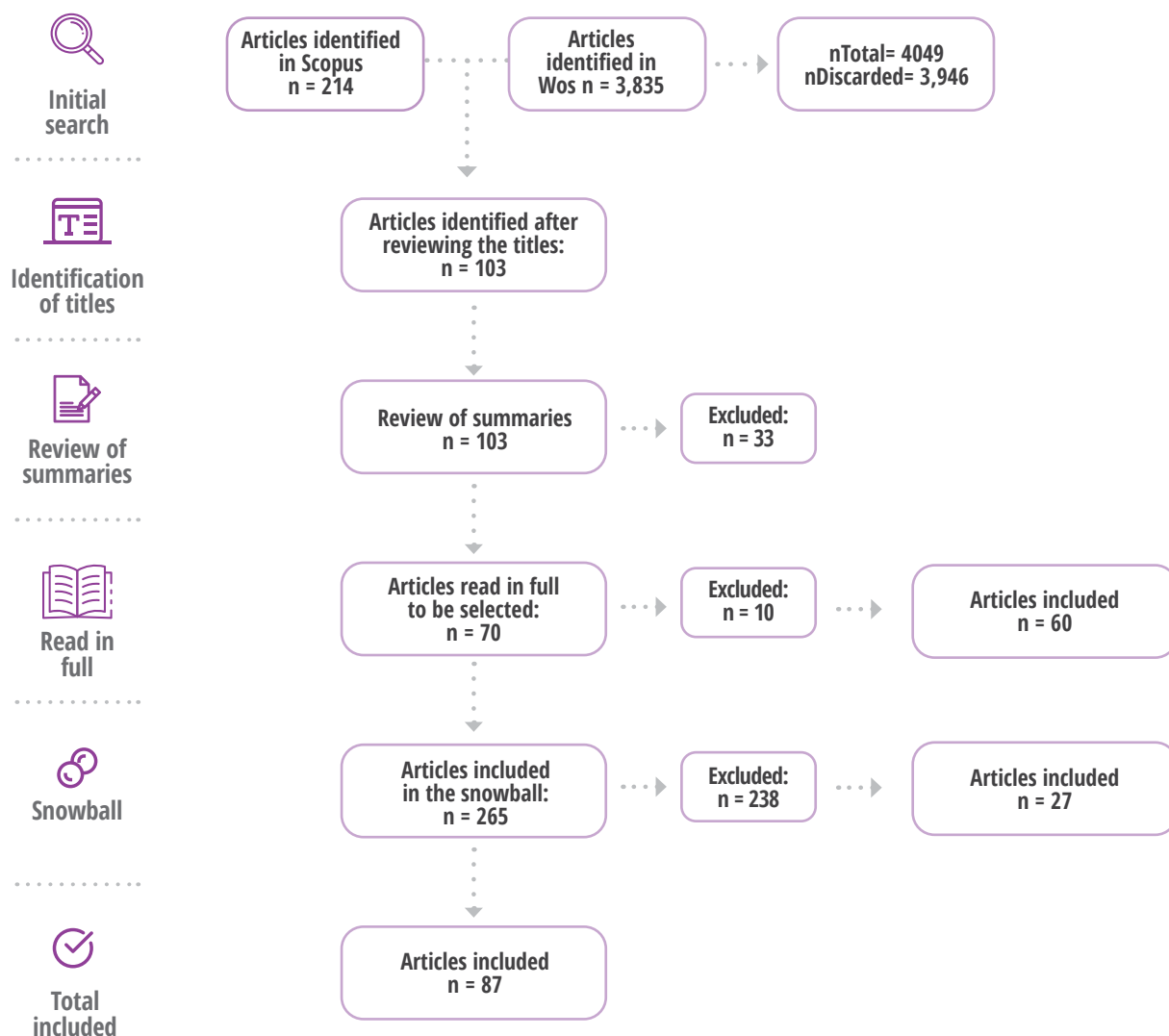
Results

This section presents some of the findings of this research, starting with those related to the article selection process, followed by general aspects, such as: location, units of analysis, year of publication, and methodologies implemented. Finally, we present the findings related to the gender and empowerment theories addressed and their operationalization regarding the

formulation of indicators (quantitative and mixed methods), and the approach on the aspects to consider when working on gender (qualitative).

Article selection

The initial search found 4,049 results. After reviewing the titles, following the inclusion and exclusion criteria, 103 articles were selected. The next step entailed reviewing the abstracts of all 103 studies. Through this review, 33 articles were discarded and 70 continued in the process, and they were fully read. From these, 60 were selected, as shown in Graph 1. We then conducted a snowball search in the papers cited in the references of the selected articles and we recovered a total of 265 titles meeting the inclusion and exclusion criteria. We carried out the same procedure with these 265 titles (abstract review and reading the text in full). Once we had completed this procedure, we obtained 27 new articles, which in addition to the 60 initially identified, made up the total number of articles (87) on which we conducted this research. The discarded articles were excluded, because they did not meet our criteria regarding population, approach, design, language, or year.



Graph 1: Article selection process

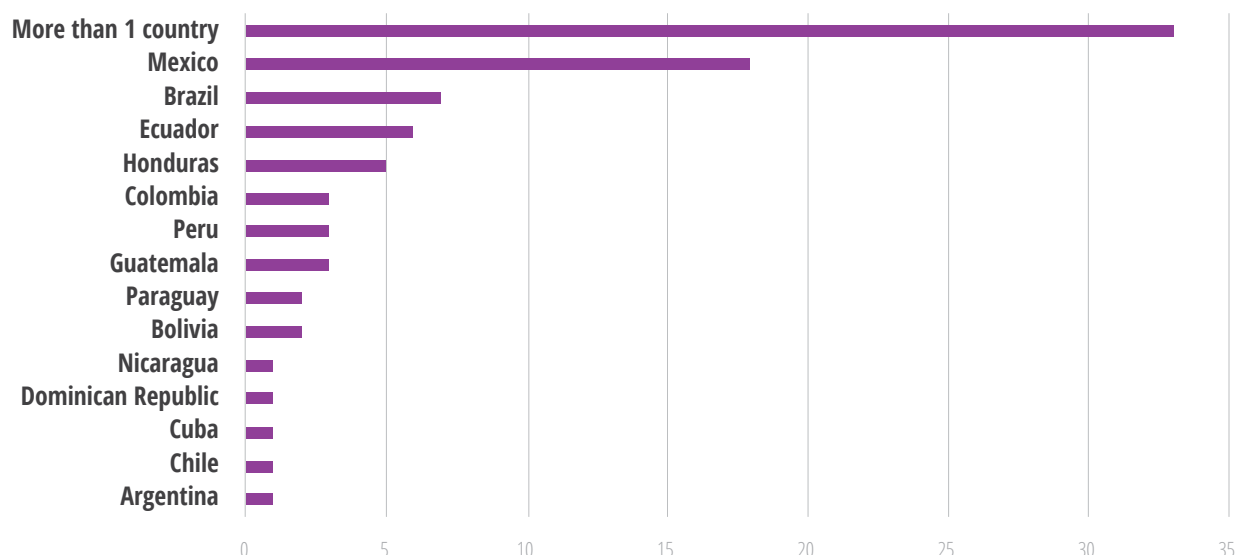


Credit: © CIAT/M. Koningstein

Location where studies were mostly concentrated

Out of the 87 studies that met the inclusion criteria, 33 were concentrated in more than one Latin American country⁴ or they have general studies relevant to this research; 18 were located in Mexico, seven in Brazil, six in Ecuador, five in Honduras, three in Colombia, Peru, and Guatemala, and the rest are distributed across Latin America, as shown in Graph 2. It is striking that countries like Uruguay, Venezuela, Costa Rica, El Salvador, and others did not show up in the review undertaken.

⁴ The countries in which they concentrate correspond to those shown in Graph 2.

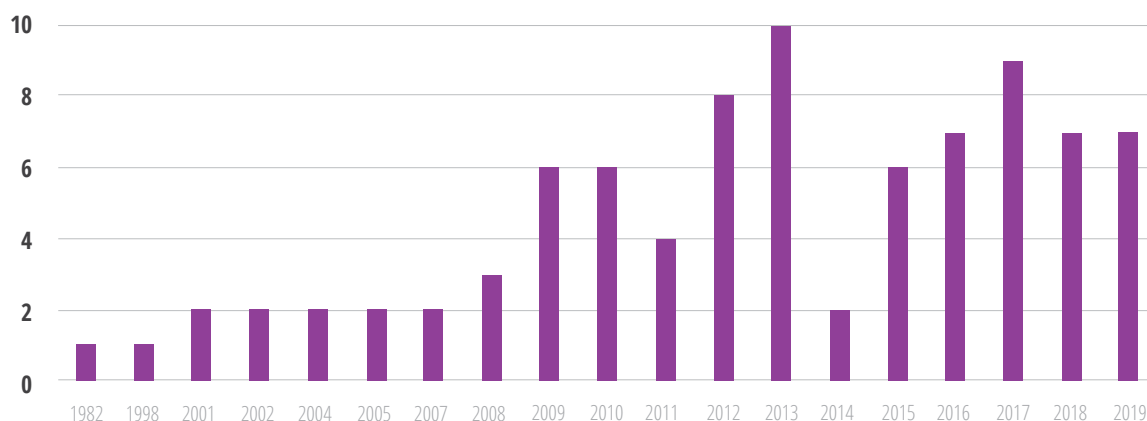


Graph 2: Location of the studies presented in reviewed articles

Year in which the articles were published

The articles selected for review range from the year 1982 to 2019. We expected to find articles related to gender from the 1980s; however, the review uncovered articles starting in 2002⁵, with an increase in the number of research studies conducted from 2010 onwards. Considering that development projects are linked with the guidelines promoted by international agencies, such as the United Nations (UN), specifically the Food and Agriculture Organization (FAO), it is reasonable to think that there is a direct correlation between the number of articles published and the promulgation of the

Millennium Development Goals (MDGs), as well as the report issued by FAO in 2011⁶ on The State of Food and Agriculture “Women in Agriculture: closing the gender gap for development,” since, on the one hand, MDG 3 was focused on *promoting gender equality and empowering women* and, on the other, in a complementary fashion, the FAO report promotes a public policy approach that takes into account rural women and the difficulties they face. Finally, the launch of the Sustainable Development Goals (SDGs) in 2015 gives a fresh impulse to the work of development projects in terms of empowering girls and women, which is reflected in the publications issued from 2015 onwards, as shown in Graph 3.



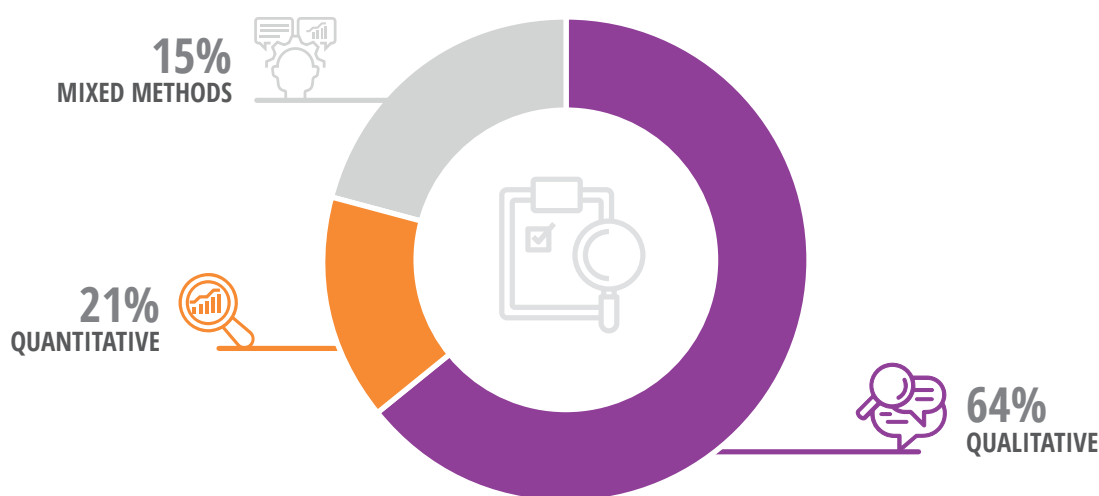
Graph 3: Number of articles published per year

⁵ Except for Deere (1982) and Espinosa (1998).

⁶ Widely referenced in the selected articles.

Methodologies implemented

Graph 4 shows the percentage of each of the methodologies implemented in the studies under review, among which qualitative methodologies held the first place with a total of 56 articles, followed by quantitative studies, with 18 articles, and mixed methods, with 13 articles.⁷



Graph 4: Number of selected articles according to the methodology used⁸

Additionally, Graph 5 shows that we found 36 documentary and literature reviews, which resorted to the analysis of secondary sources to approach the concepts and contexts regarding gender in agriculture. This technique is mostly used in qualitative articles (35), while in quantitative articles, the most commonly used technique was conducting surveys in communities (12) to obtain data that, in some cases, were used with statistical techniques to develop models, tests, and analyses of information. For instance, Galiè et al. (2019), Alkire et al. (2013), and Dietz et al. (2018) developed indicators on the basis of the information obtained through surveys, while Sundström et al. (2017) developed an indicator with information obtained from national databases.

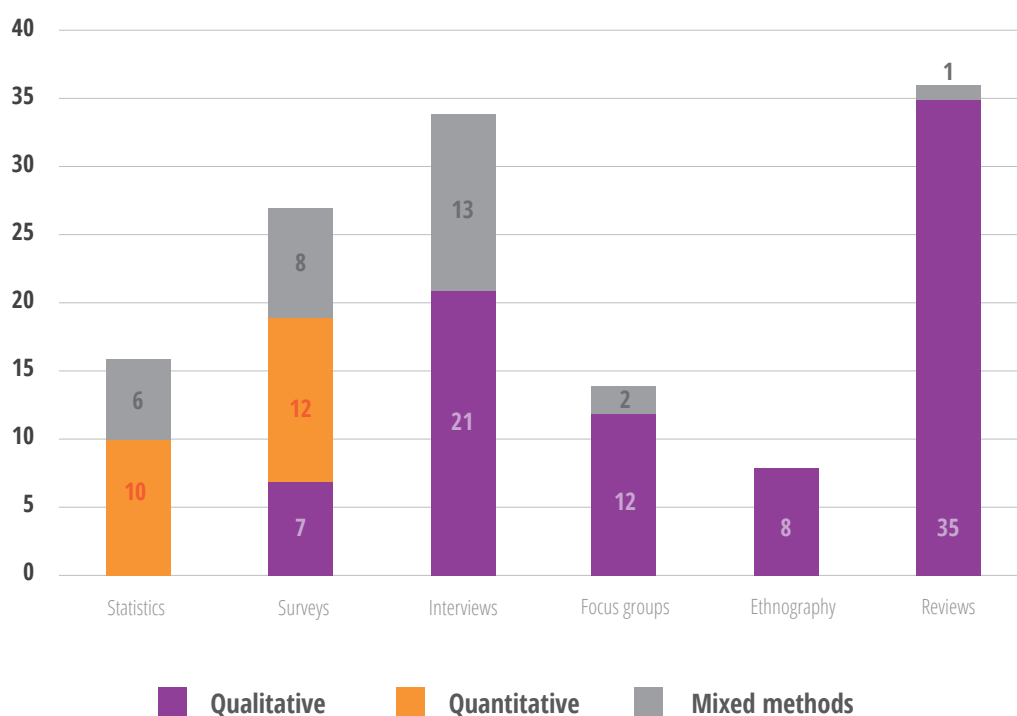
On the other hand, both articles with a qualitative approach and articles with a mixed methodological approach used interviews and focus groups as research techniques. Of the total amount of interviews conducted, 21 were made in articles with a qualitative approach and 12 in articles with a mixed methods approach, while the use of focus groups was mostly implemented by qualitative approaches (12), and there

were only two articles with a mixed methods approach that used them.

We also found that some qualitative articles highlight the need to use mixed methods, such as Galiè et al. (2019), who considered that their results would not make much sense if they were not supported by the comments of local residents, this being a need arising from the lack of information about domestic perception and dynamics, which can be solved by the application of a mixed methodology.

⁷ The division of methodologies was based on whether or not the results were quantified.

⁸ **Qualitative:** Asher and Varley (2018); Bacon (2010); Bee (2013); Beuchelt and Badstue (2013); Bolandnazar et al. (2011); Boza et al. (2018); Brumer (2004); Buechler (2009, 2016); Colfer and Minarchek (2015); Croppenstedt et al. (2013); Cruz et al. (2019); Deere (2018); Deere and León (2001); Deere et al. (2012); Di Ciommo and Schiavetti (2012); Espinosa (1998); Farmar-Bowers (2010); Ferriol (2016); García and Wanner (2017); Giraldo (2016); Glemarec (2017); Gumucio and Rueda (2015); Gutiérrez et al. (2018); Imburgia (2019); Johnson et al. (2018); Jones et al. (2017); Khodamoradi et al. (2011); Koralagama et al. (2017); Kristjanson et al. (2017); Larson et al. (2019); Lastarria (2009); López et al. (2019); Lyon (2008); Lyon et al. (2010); Mathez et al. (2016); McEvoy et al. (2012); McKune et al. (2015); Mollett (2010, 2015); Paulilo (2013); Phillips (2011); Pineda et al. (2019); Radel (2011); Ransom and Bain (2011); Riaño and Keilbach (2009); Rocas and Montiel (2010); Selwyn (2010); Sundberg (2004); Taukobong et al. (2016); Tavira and Tapia (2008); Valdivia (2001); Vazquez (2008); Vidrascu et al. (2016); Waltz (2016); Yang et al. (2018). **Quantitative:** Alkire et al. (2013); Alwang et al. (2017); Awaworyi et al. (2019); Branisa et al. (2014); Buendía and Carrasco (2013); Can et al. (2007); Coleman and Mwangi (2013); Deere (1982); Deere and Twyman (2012, 2014); Deere et al. (2013); Dietz et al. (2018); Eastin (2018); Fletschner (2008, 2009); Galiè et al. (2019); Sundström et al. (2017); Twyman et al. (2015). **Mixed methods:** de Lima (2013); Del Castillo (2015); Hamilton (2002); Humphries et al. (2012); Larrauri et al. (2016); Lyon et al. (2017); Radel (2005, 2009, 2012); Radel et al. (2012); Reynolds (2002); Twyman et al. (2015); Urquieta and Alwang (2012).



Graph 5: Data collection and analysis techniques used by type of methodology⁹

Another case that recognizes the need of resorting to qualitative techniques is the work by Alkire et al. (2013), as they acknowledge that the way in which indicators are measured is not always the best one and therefore, the support of a qualitative analysis could help correct these issues. Nevertheless, not all research studies declaring the use of mixed methods actually do it. Sometimes it seems that the qualitative or quantitative techniques are not provided with the same level of attention when analyzing the information. For instance, Urquieta and Alwang (2012), de Lima (2013), and Radel (2009) present a narrative framed by a quantitative analysis showing few qualitative findings.

Unit of analysis

Another aspect to take into consideration when defining the methodology is identifying who will be the subject(s) of study. This is important, since the type of techniques to be used depends upon this, as it sets the direction for methodology and expectations regarding the information to be obtained through research. In most studies, the units of analysis were rural women (29), followed by the couple making up

the household (22). There are also some projects focusing on rural men and women (9). Finally, there are studies with units of analysis consisting of projects, documents, households, countries, or even indicators (27). As expected, a significant number of studies focus their unit of analysis on rural women, reflecting a possible attachment to the conception that studying women means conducting a gender analysis. However, there is also a significant number of studies focused on the couple, showing a shift in the paradigm and addressing gender as the analysis of the social differences between men and women. For instance, Taukobong et al. (2016). Deere et al. (2012), and Deere and Twyman (2012, 2014) when addressing gender analysis in agriculture, make specific reference to the need of obtaining information disaggregated by sex to be able to make comparative gender analyses, as many projects are solely concerned with the head of household (generally a man), which causes gender biases in studies with a household focus.

⁹ Out of the 87 articles included in the systematic review, we found that 35 use two or more techniques to collect and analyze information. Therefore, the total number of techniques does not correspond to the total number of articles.

Gender and Empowerment: conceptualization and operationalization

Gender

All articles agree that gender is a set of standards, roles, and behaviors that a given society confers to men and women, even though some define it explicitly and others implicitly. Some authors look into the role of society and the institutions in the systematic exclusion of women from the agricultural sector (Buechler, 2016), the autonomy denied to them when working the land (Larson et al., 2019), and in the determination of agricultural needs from the perspective of male aspects (Taukobong et al., 2016; Cruz et al., 2019). Other authors approach gender analysis depending on what they intend to achieve: to reach, benefit, or empower women (Johnson et al., 2018). Reach refers to women's participation or involvement in projects, meetings, groups, or as decision-makers. Benefits for women include examples such as increasing their incomes, generating employment, or reducing their hours of work. Finally, when referring to empowerment, emphasis is made on gender norms and support for women to be able to make strategic decisions on their own lives.

Some authors draw attention to gender gaps identifying unequal access to assets and resources such as land, employment, education, training, technologies, credit, and decision-making (Kristjanson et al., 2017; Alwang et al., 2017; Croppenstedt et al., 2013; Imburgia, 2019; Ferriol, 2016). Others focus on the implications of the roles of men and women in agriculture. For instance, for Radel (2011), the social construct of men as farmers and women as housewives that "help" in farm work has led to legitimizing men's unequal access to land, resources and credit, while the work of women is rendered invisible. The articles of Paulilo (2013), Ferriol (2016), Twyman et al. (2015), and Waltz (2016) actually reflect upon the issue of rendering women's care and agricultural work invisible.

Regarding the determination of the gender gap, some authors state that measuring it at the

household level is not the same as measuring it at the individual level (McKune et al., 2015; Deere et al., 2012); similarly, the project level is not the same as at the results level (Johnson et al., 2018). At the household level, the information obtained might be confusing when there is no agreement among the answers within the household.

Within projects, counting the number of women participating or attending a meeting cannot be compared to the number of women actively involved and for whom the acquired knowledge is reflected in their ability to make decisions. For instance, some studies create groups for women to participate, or they involve them as employees, but they overlook workloads (Mathez et al., 2016) and the strong social standards that could restrict their participation (Buechler, 2016; Radel, 2012; Colfer and Minarchek, 2015).

Thus it is necessary to clearly define the ultimate goal that research studies and projects pursue, since the activities, execution times, and results may be more oriented towards reaching and benefiting than to empowering women (Boza et al., 2018; Johnson et al., 2018; Pineda et al., 2019).



Empowerment

Thirty-seven articles contained a definition of empowerment. Of these, 21 were found to revolve around the subject based on the definition of Kabeer (1999) (Khodamoradi et al., 2011; Del Castillo, 2015; Eastin, 2018; Pineda



Credit: © Bioversity International/P. Bordon



et al., 2019; Larson et al., 2019; Mathez et al., 2016; Koralagama et al., 2017; Radel et al., 2012; Radel, 2005, 2009, 2012; Waltz, 2016; Galiè et al., 2019; Alkire et al., 2013; Jones et al., 2017; Di Ciommo and Schiavetti, 2012; Dietz et al., 2018; Sundström et al., 2017; Deere and Twyman, 2012; Buendía and Carrasco, 2013; McEvoy et al., 2012). The other 13 used the definitions of Rowlands (1997), Amiri (2000), Narayan (2002), Zenz (2000), Alsop et al. (2006), Longwe and Clarke (1994), Mosdale (2005)¹⁰. Analyzing the aspects taken into consideration by each article, we found that the main ones include: work, land ownership, decision-making, income, financial capital, and social standards. Furthermore, we decided to differentiate between qualitative articles, which address empowerment without considering measurements, and quantitative and mixed-methods articles, which present various ways to measure it.

The definitions of empowerment used in qualitative articles take into account the theoretical perspectives of Kabeer (1999) and Rowlands (1997). In this regard, some operationalize the concept from an economic dimension, considering that the access and control of resources is directly correlated to empowerment (Kristjanson et al., 2017; Gutiérrez et al., 2018; Larson et al., 2019, and Jones et al., 2017). On the other hand, Khodamoradi et al. (2011), Pineda et al. (2019), and Di Ciommo and Schiavetti (2012) focus on decision-making when

addressing empowerment; while Radel (2011), Mathes et al. (2016), Koralagama et al. (2017), and Farmar (2010) prioritize the development of new skills as the way to ensure empowerment. Finally, Bolandnazar et al. (2011) and Waltz (2016) argue that the empowerment of rural women depends on their access to decision-making positions.

Out of the 18 quantitative articles found through this systematic review, eight define empowerment following the proposal by Kabeer (1999), emphasizing the importance of the freedom and capacity of women to make strategic life decisions. However, at the time of formulating the indicators, there were marked differences. For instance, for Eastin (2018), empowerment is measured by assessing the impact of climate change on social and economic rights of women, i.e., taking structural aspects into consideration. Likewise, Sundström et al. (2017), when referring to WPEI (Women Political Empowerment Index) discuss the impact of democracy and social inclusion in empowering women according to their country, while Buendía and Carrasco (2013) focus on analyzing the correlation between economic development and the empowerment of women. On the other hand, Galiè et al. (2019), Alkire et al. (2013) and Dietz et al. (2018) develop indicators

¹⁰ Annex 2 contains the definitions of empowerment by each author.



that focus on practical needs directly related to women's decision-making as well as the household couple's decision-making. Meanwhile, Deere and Twyman (2012) and Can et al. (2007), despite not having developed indicators, focus on household decision-making. In the first case, they analyze land ownership and farm management decisions; and in the second, they study decision-making related to household expenses.

Most of the 13 mixed-methods articles also discuss the concept of empowerment proposed by Kabeer (1999). Some authors address the subject from a systematic point of view; for Larrauri et al. (2016), empowerment tends to be an equity process that must ensure education, labor rights, and the access to health services. From a structural overview, Radel (2005) understands that ensuring women's control over land could become a key factor to develop their power of agency in the household. On the other hand, Humphries et al. (2012) and Radel (2012) highlight the importance of female participation in groups that allow them to make decisions, as they are often denied the opportunity for the role they play in the household. In contrast, Radel (2009) and Radel et al. (2012), under the concept of practical needs, study the case of Calakmul, Mexico, where there is a high labor migration rate of men heads of household, and they found that migration is a factor that increases women's decision-making, while restricting their mobility, which ultimately results in an ambiguity about the effect on empowerment within the community.



Operationalization

There are many ways to approach the work on gender, based on the intentions of authors. In this section, we present the way in which the articles operationalize the concepts using qualitative, quantitative, and mixed methodologies. Due to the large diversity of aspects covered when addressing gender, we grouped the elements considered by each article. From this exercise we obtained 23 codes that were subsequently classified (by affinity) in seven categories: learning, agricultural resources, work, leadership, society, laws, and wellbeing. Here we discuss each category

and the codes of which it is composed. At the end of this section, we include Graph 6, showing the number of articles addressing each of the categories outlined according to their methodology and Annex 3 groups all studies reviewed under each code and their corresponding category.



Qualitative

Under the "learning" category, four codes were grouped: knowledge, education, extension services, and information. This category focuses its attention on the learning gained by an individual both through informal channels and the transfer of intergenerational or community knowledge (Kristjanson et al., 2017; Vidrascu et al., 2016; Bolandnazar et al., 2011; Waltz, 2016; Yang et al., 2018, and Farmar, 2010); as well as through institutional channels, such as school (Boza et al., 2018; Taukobong et al., 2016; Croppenstedt et al., 2013; Ransom and Bain, 2011; Colfer and Minarchek, 2015, and many others), extension workers (Lastarria, 2009; Beuchelt and Badstue, 2013; Khodamoradi et al., 2011; Paulilo, 2013; García and Wanner, 2017, and Johnson et al., 2018), or mass media (Glemarec, 2017; Taukobong et al., 2016; Buechler, 2016, and Di Ciommo and Schiavetti, 2012).

The second category refers to "agricultural resources" and it groups the following codes: agricultural inputs, capital, land ownership, and other resources. Since the main subject upon which this review was built is women in agriculture, these four codes concentrate a large number of articles. However, only two consider the four aspects simultaneously (Buechler, 2016 and Johnson et al., 2018), and two work on three aspects together (Deere, 2018 and Jones et al., 2017). Most of the articles related to this category focus on two main aspects, when referring to gender in projects and research studies: i) access, tenure, and control over land, notably the works by Deere and León (2001), Deere et al. (2012), Mollett (2015), and Mathez et al. (2016); ii) the possibility to access credit and its use to increase land productivity by acquiring and using agricultural inputs, where the works by Colfer and Minarchek (2015) and Ferriol (2016) are particularly relevant.



The third category, “work,” comprises: productive work, domestic work, and income. These three codes provide an opportunity to discuss the workload of women by considering not only the work they carry out at home in reproductive tasks, but also the work they carry out in productive areas and the income derived from it (Buechler, 2009; Glemarec, 2017; Pineda et al., 2019; Vazquez, 2008). Pineda et al. (2019), Brumer (2004), Giraldo (2016), and Vazquez (2008) highlight the importance of reconsidering the gender division of labor to make progress towards gender equity, since, unless workloads are modified at the household level, women will continue to be responsible for multiple tasks and their work will remain invisible, as they are seen as assistants rather than as farmers.

For Radel (2011), this double load of reproductive and productive work is often expressed in the phrase “I am dedicated to my home”, since it hides the multiple tasks carried out by women without any economic recognition. Similarly, Selwyn (2010), Espinosa (1998), and Riaño and Keilbach (2009) refer to how the social definition of a woman as a housewife is the secret behind the difference in opportunities and salaries between men and women, because, despite the increasing number of women who must take over the household economy, they continue to experience inequalities regarding income, employment, professions, and their economic and political participation.

The fourth category, “leadership,” groups the following codes: associations, participation, decision-making, and power. For the authors of the articles identified with these codes, there is a major challenge facing women in terms of their participation in associations (Roces and Montiel, 2010; Lyon, 2008; Lyon et al., 2010; Sundberg, 2004; Bacon, 2010; Ferriol, 2016; Vidrascu et al., 2016), decision-making (Imburgia, 2019), and training to enhance awareness of their rights, as well as their involvement in activities contributing to the development of the community in the public spheres (Jones et al., 2017), all of which are necessary for female and community empowerment.

Regarding decision-making, McKune et al. (2015) highlight the need for more information disaggregated by sex to help understand



Credit: © CIAT/M. Koningstein

how decisions are made by men and women in agriculture, especially taking into account that ownership is no guarantee of control or decision-making power. Situations such as this lead to women being in a marginal position of increased vulnerability when making decisions about resources, income, and ultimately, on the processes that affect the nutrition of their families, as expressed by Larson et al. (2019).

The fifth category refers to “society” and groups mobility, roles, social standards, and violence. For many rural women, the existing social standards restrict their mobility and thus, the possibility of participating in decision-making spaces, especially those traditionally considered as masculine spaces. López et al. (2019), Cruz et al. (2019), Mathez et al. (2016), Mollett (2010), Bee (2013), McEvoy et al. (2012), and Koralagama et al. (2017) clearly show how machismo handicaps women, in terms of: Mobility, because they must request their husband’s permission to leave the house. Participation, due to the conflicts it generates in terms of time demand, as they have to fulfill their household responsibilities to be able to participate in the activities, which drives many of them out of these spaces. Public image, because taking part in activities that require mobilization outside the community is not well accepted by society. The access to education for girls and the training they receive at home to serve and obey men are among the social standards that determine women’s behavior.

The “laws” category includes the codes intersectionality and laws, policies, and rights. For Mollett (2015), women can use law and policies as mechanisms to access new rights that allow them to transform the situation in which they are living. For Gumucio and Rueda (2015), this clarity should lead to institutions working together to promote gender inclusion when planning the future of communities. Similarly, Tavira and Tapia (2008) and Deere et al. (2013) highlight the importance of considering the differential needs of men and women, maintaining a gender equity approach when designing policies, because putting them aside only reinforces inequality. Along this line, Asher and Varley (2018) put emphasis on considering gender as a social category that interacts with other categories, such as ethnicity and social class, to be able to address gender issues

in public policies from an interdisciplinary perspective. Finally, Phillips (2011) argues to make women visible at the institutional level for their further integration into politics, in terms of leadership and positions of power.

Finally, the “wellbeing” category is comprised of food security and health. Vidrascu et al. (2016) stress that access to health shows the widest gender gaps, as a result of women’s subordination to men, to the detriment of their rights. For Phillips (2011) and Gutiérrez et al. (2018) food security may be evidenced in nutrition; therefore, rural development plans should focus on promoting and strengthening food security to help reduce gender gaps, enhancing women’s capacities to make decisions over the diets in their households and improving the nutritional status of the whole family.



Quantitative and mixed methods

Additional to the analysis of categories we conducted on qualitative studies, we also decided to differentiate them according to the study techniques used to analyze the approaches of quantitative and mixed-methods articles. The articles quantifying their results use techniques such as: surveys, statistical techniques, or both. When we mention surveys,



we refer to research studies that conduct fieldwork to collect data from a demographic sample to meet the objectives of the study, which may be analyzed and presented as percentages, averages, or be converted into indicators. In statistical techniques, we group those studies that perform regression calculations or statistical tests using large databases (not originating from surveys specifically designed for the study). Finally, we grouped works combining both surveys and statistical techniques.

The studies using only the technique of sample surveys measured information related to the categories “agricultural resources”, “work”, and “society”, presenting data such as participation rates in agricultural activities (Del Castillo, 2015; Radel et al., 2012; Lyon et al., 2017; Raynolds, 2002; Twyman et al., 2015; Deere, 1982; Radel, 2009), the average number of hectares of land or resources owned by women (Raynolds, 2002; Twyman et al., 2015; Deere and Twyman, 2014; Espinosa, 1998; Hamilton, 2002; Radel, 2009), and the perception of couples at the moment of making decisions within the household (Raynolds, 2002; Deere and Twyman, 2012; Can et al., 2007; Deere, 1982; Radel, 2009). There are also articles that build indicators using survey data; Galiè et al. (2019), as well

as Alkire et al. (2013) and Dietz et al. (2018) do so to develop two tools, WELI (Women’s Empowerment in Livestock Index) and WEAI (Women’s Empowerment in Agriculture Index), respectively; which they use to measure empowerment using various dimensions. Galiè et al. (2019) focus on “agricultural resources”, “work”, “society” and “wellbeing”, as they measure access to opportunities and decision-making over production, agricultural resources, their control, income, and household nutrition. Alkire et al. (2013) and Dietz et al. (2018) focus on “agricultural resources”, “work”, and “leadership”, with decision-making indicators for production, income and credit, ownership of assets, participation in groups, and workload. In contrast, Larrauri et al. (2016), after reviewing a set of equity and empowerment indicators (which are related to all the categories in our analysis), surveyed a number of cacao-producing households, identifying the most relevant indicators as differences in years of schooling within couples, access to health, and work.

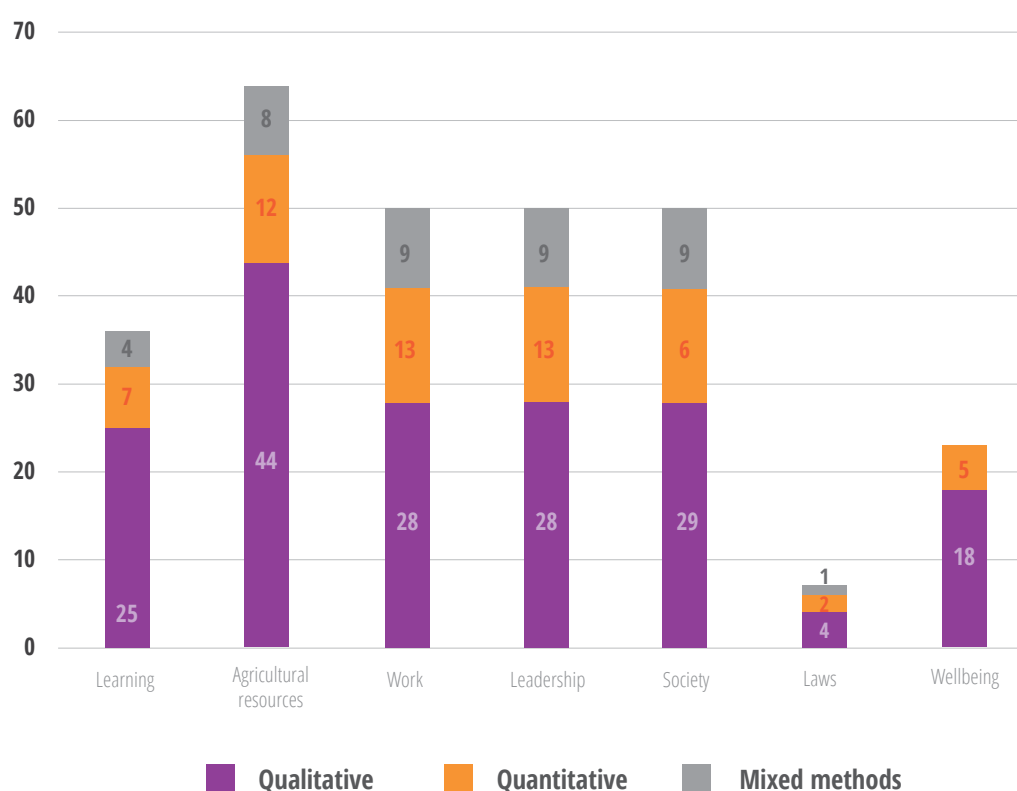
In the case of research studies using only statistical techniques, we found that some articles focus on the development of statistical models, where we find that Eastin (2018) studies the climate change impact on the social and economic rights of women, Awaworyi et al. (2019) measure the impact of ethnic diversity in gender equality, and Buendía and Carrasco (2013) look at the relationship between empowerment, economic development, and entrepreneurship. In addition to having a measuring tool in common, the three articles take into account aspects such as “learning”, “work”, and “society”. On the other hand, Branisa et al. (2014) ranked countries outside the Organization for Economic Cooperation and Development (OECD) in terms of social institutions and gender inequality, in which they address “agricultural resources”, “society”, and “laws”. Finally, Coleman and Mwangi, (2013) develop the WPEI (Women’s Political Empowerment Index), an index based on variables related to “agricultural resources”, “work”, “leadership”, and “laws”.

Finally, we have articles that used both surveys and statistical techniques. In these works, what stands out is the implementation of descriptive analyses followed by a regression.



Two very important categories in terms of the research studies are “work” and “leadership”. For example, Humphries et al. (2012) and Radel (2005; 2012) study the probability of using conservation techniques in agricultural production and the probability of participation in these groups; Alwang et al. (2017) analyze how couples’ decision-making influences labor-market participation, and Twyman et al. (2015) examine if resources, land ownership, and income determine women’s participation in agriculture. On the other hand, Fletschner (2008; 2009) studies financial capital by analyzing if

education, land ownership, and income are aspects that influence the difficulty to access credit. Urquieta and Alwang (2012) measure the probability of women being able to sell potatoes in markets if they own a cell phone, to analyze if being in possession of a resource such as a cell phone modifies an aspect as important as social standards. Finally, de Lima (2013) does not develop a statistical model, because she conducts the study with cluster analyses, observing women’s participation rate in agricultural activities, based on age, resources, and land ownership.



Graph 6: Number of articles discussing different aspects of empowerment by methodology





Discussion and conclusions

This work focused on understanding the way in which agricultural development research studies and projects measure empowerment or gender inequalities in Latin America. To achieve this, we adapted the Systematic Literature Review methodology proposed by PRISMA (Welch et al., 2012) to a social study and we carried out a search for articles taking into account five main subjects: gender, indicators, agriculture, development, and Latin America. The 87 studies meeting the inclusion criteria were analyzed, taking into account their theoretical concepts and methodologies, as well as the specific measures or indicators used.

The literature review allowed us to identify that the theoretical definitions of empowerment and gender used in the articles reviewed were similar. In terms of empowerment, the predominant definition is that by Kabeer (1999), which is reflected in the aspects taken into consideration by each article. Nevertheless, although there are many similar theoretical definitions, the differences lie in the way each study operationalizes the concepts of gender and empowerment, which in turn is connected to the methodological approaches guiding each research study.

In practice many aspects related to gender are considered in agricultural development studies: understanding the gender gaps or inequalities; analyzing the implications of men's and women's roles in agriculture; exploring the role of society and institutions in the systematic exclusion of women from the agricultural sector; or measuring empowerment. However, we find a clear limitation in the studies reviewed, since they base their theoretical framework on the concept of empowerment, but their results are focused on what, according to the framework proposed by Johnson et al (2018), could be classified as reach or benefit, but not empowerment, because they lack a focus on targeting changes in social norms and strengthening women's capacities to make and implement decisions that affect their lives. Therefore, operationalizing gender and/or women's empowerment should link theory



to practice. As such it is important to clearly articulate the study or project goals and explain how they can be measured and they link to the underlying, and often intangible and unmeasurable, concepts.

Regarding the methodologies, we found that qualitative research focuses on approaching theoretical concepts from the social aspects, always with the challenge of capturing these characteristics in descriptions of the context. Meanwhile, quantitative studies use indicators to be able to quantify the different aspects or dimensions of the theoretical concepts. Among the studies reviewed, the formulation of indicators revolves around the access to resources or services, ownership of assets, workload, leadership, decision-making, and participation in positions of power. We also found that some authors had developed their own indexes, based on the aforementioned indicators, to measure the empowerment of women. Such is the case of WEAI (Alkire et al., 2013), WELI (Galiè et al., 2019), and WPEI (Sundström et al., 2017). The first two are instruments that approach the concept of empowerment proposed by Kabeer (1999) from a practical perspective, focusing mainly on the agency component, with less (or no) emphasis on resources and achievements (the other two components discussed in Kabeer, 1999). They also do not discuss or consider intersectionality¹¹ (Awaworyi et al., 2019) and its relevance in Latin American contexts. WPEI, for its part, is a tool that approaches empowerment from a structural perspective, emphasizing

public policies, civil liberties, freedom of social participation, and political engagement. However, managing such a wide scale makes it difficult to take into account variables that may be important at the community level (Eastin, 2018).

Therefore, projects and studies aiming at empowering women should require a transformational gender approach, with instruments and activities oriented towards reshaping power relationships and the existing inequalities between men and women. Likewise, they should consider the impacts their interventions might have on the current context of each community and on the full set of needs that exist at the time of implementation, since interventions are not undertaken in isolated and controlled environments, but, on the contrary, they occur in communities that are under constant change, for which an aspect covered by the intervention could have direct consequences on other aspects that were not covered. It is also important to recognize that not all research studies or development projects incorporating a gender component are targeting the empowerment of women, and thus, their theoretical framework and the methodology that supports their analysis of information, the presentation of results and the recommendations or activities proposed, should be relevant to the overall goal of the study and they should be implemented using techniques that allow for the interaction between qualitative and quantitative methods (Galiè et al., 2019; Alkire et al., 2013).

¹¹ Interaction between class, age, ethnic and racial condition, culture, religion, geographical environment, and economic and political factors.

References

- Alkire, S., Meinzen-Dick, R., Peterman, A., Quisumbing, A., Seymour, G., Vaz, A. (2013). The women's empowerment in agriculture index. *World Development*, 52:71–91.
- Alsop, R., Bertelsen M., Holland J. (2006). Empowerment in Practice from Analysis to Implementation. World Bank.
- Alwang, J., Larochele, C., Barrera, V. (2017). Farm Decision Making and Gender: Results from a Randomized Experiment in Ecuador. *World Development*, 92:117–129. Doi: [10.1016/j.worlddev.2016.11.015](https://doi.org/10.1016/j.worlddev.2016.11.015)
- Amiri, S. (2000). Female centered sustainable human development. *Journal of Agricultural and Development Economics*, No. 9.
- Asher, K., Varley, G. (2018). Gender in the jungle: a critical assessment of women and gender in current (2014–2016) forestry research. *International Forestry Review*, 20(2):149–159. Doi: [10.1505/146554818823767537](https://doi.org/10.1505/146554818823767537)
- Awaworyi Churchill, S., Salim Nuhu, A., López, K. (2019) Persistence of gender inequality: the role of ethnic divisions, *Applied Economics*, 51:8, 781–796, Doi: [10.1080/00036846.2018.1513635](https://doi.org/10.1080/00036846.2018.1513635)
- Bacon, C. M. (2010). A spot of coffee in crisis: Nicaraguan smallholder cooperatives, fair trade networks, and gendered empowerment. *Latin American Perspectives*, 37(2):50–71.
- Bee, B. (2013). Who reaps what is sown? A feminist inquiry into climate change adaptation in two Mexican ejidos. *ACME: An International Journal for Critical Geographies*, 12(1):131–154.
- Beuchelt, T. D., Badstue, L. (2013). Gender, nutrition and climate-smart food production: Opportunities and trade-offs. *Food Security*, 5(5):709–721.
- Bolandnazar, A., Emami, A., Sadighi, M. (2011). Marvdasht Branch, Islamic Azad University, Marvdasht, Iran.
- Boza, S., Muñoz, T., Cortés, M., Rico, M., Muñoz, J. (2018). Development programs for female farmers: identifying clusters for the case of Chile's "Education and training program for rural women". *Revista de La Facultad de Ciencias Agrarias*, 50(1):141–155.
- Branisa, B., Klasen, S., Ziegler, M., Drechsler, D., Jütting, J. (2014). The institutional basis of gender inequality: The Social Institutions and Gender Index (SIGI). *Feminist Economics*, 20(2):29–64.
- Brumer, A. (2004). Gênero e agricultura: a situação da mulher na agricultura do Rio Grande do Sul. *Revista Estudos Feministas*, 12(1):205–227.
- Buechler, S. (2009). Gender, water, and climate change in Sonora, Mexico: implications for policies and programmes on agricultural income-generation. *Gender & Development*, 17(1):51–66.
- Buechler, S. (2016). Gendered vulnerabilities and grassroots adaptation initiatives in home gardens and small orchards in Northwest Mexico. *Ambio*, 45(s3):322–334. Doi: [10.1007/s13280-016-0832-3](https://doi.org/10.1007/s13280-016-0832-3)
- Buendía, I., Carrasco, I. (2013). Mujer, actividad emprendedora y desarrollo rural en América Latina y el Caribe. *Cuadernos de Desarrollo Rural*, 10(72):21–45.
- Can, E. M. C., García, F. D. G., Rosales, D. O. M., Schmook, B. (2007). Fuentes de ingreso y empoderamiento de las mujeres campesinas en el municipio de Calakmul, Campeche. *Política y Cultura*, (28):71–95.
- Coleman, E. A., Mwangi, E. (2013). Women's participation in forest management: A cross-country analysis. *Global Environmental Change*, 23(1):193–205. Doi: [10.1016/j.gloenvcha.2012.10.005](https://doi.org/10.1016/j.gloenvcha.2012.10.005)
- Colfer, C., Minarchek, R. (2015). Introducing "The gender box": A framework for analysing gender roles in forest management. 15(4), 411–426. Doi: [10.17528/cifor/004026](https://doi.org/10.17528/cifor/004026)
- Croppenstedt, A., Goldstein, M., Rosas, N. (2013). Gender and agriculture: Inefficiencies, segregation, and low productivity traps. *World Bank Research Observer*, 28(1):79–109. Doi: [10.1093/wbro/lks024](https://doi.org/10.1093/wbro/lks024)
- Cruz, G., Vanegas M., Torres, C., Harvey, C., Shackleton, C., Schreckenber, K., Willcock, S., Navarrete, C., Sachet, E. (2019). He says, she says: Ecosystem services and gender among indigenous communities in the Colombian Amazon. *Ecosystem Services*, 37 (2019), 100921. Doi: [10.1016/j.ecoser.2019.100921](https://doi.org/10.1016/j.ecoser.2019.100921)
- de Lima, D. (2013). Work division in family farm production units: Feminine responsibilities typology in a semi-arid region of Brazil. *Journal of Arid Environments*, 97:242–252.
- Deere, C. D. (1982). The division of labor by sex in agriculture: a Peruvian case study. *Economic Development and Cultural Change*, 30(4): 795–811.
- Deere, C. D. (2018). Sustainable Development Goals, Gender Equality and the Distribution of Land in Latin America. *Cadernos Pagu*, (52):1–33. Doi: [10.1590/18094449201800520006](https://doi.org/10.1590/18094449201800520006)
- Deere, C. D., León, M. (1982). Women in Andean agriculture: peasant production and rural wage employment in Colombia and Peru. International Labour Organisation.
- Deere, C. D., León, M. (2001). Institutional reform of agriculture under neoliberalism: the impact of the women's and indigenous movements. *Latin American Research Review*, 31–63.
- Deere, C. D., Twyman, J. (2012). Asset ownership and egalitarian decision making in dual-headed households in Ecuador. *Review of Radical Political Economics*, 44(3):313–320.
- Deere, C. D., Twyman, J. (2014). ¿Quién toma las decisiones agrícolas? Mujeres propietarias en el Ecuador. *Agricultura Sociedad y Desarrollo*, 11(3):425. Doi: [10.22231/asyd.v11i3.94](https://doi.org/10.22231/asyd.v11i3.94)
- Deere, C. D., Alvarado, G. E., Twyman, J. (2012). Gender Inequality in Asset Ownership in Latin America: Female Owners vs Household Heads. *Development and Change*, 43(2):505–530.
- Deere, C. D., Oduro, A. D., Swaminathan, H., Doss, C. (2013). Property rights and the gender distribution of wealth in Ecuador, Ghana and India. *The Journal of Economic Inequality*, 11(2):249–265.
- Del Castillo, C. (2015). Camisea, Compensation and Diversification of Livelihoods in the Native Community of Cashiriari (Cusco- Perú). *Debates en Sociología* (41):53–82. <https://bit.ly/2lBX3Gp>
- Di Ciommo, R. C., Schiavetti, A. (2012). Women participation in the management of a Marine Protected Area in Brazil. *Ocean and Coastal Management*, 62:15–23. Doi: [10.1016/j.ocecoaman.2012.02.010](https://doi.org/10.1016/j.ocecoaman.2012.02.010)
- Dietz, T., Estrella Chong, A., Font Gilabert, P., Grabs, J. (2018). Women's empowerment in rural Honduras and its determinants: insights from coffee communities in Ocotepeque and Copan. *Development in Practice*, 28(1):33–50. Doi: [10.1080/09614524.2018.1402862](https://doi.org/10.1080/09614524.2018.1402862)
- Eastin, J. (2018). Climate change and gender equality in developing states. *World Development*, 107:289–305. Doi: [10.1016/j.worlddev.2018.02.021](https://doi.org/10.1016/j.worlddev.2018.02.021)
- Espinosa, G. (1998). Mujeres campesinas en el umbral del nuevo siglo. *Estudios Agrarios*, 4(10):101–119.
- FAO. (2011). El Estado Mundial de la Agricultura y la Alimentación. Las mujeres en la agricultura: cerrar la brecha de género en aras del desarrollo. Roma. www.fao.org/publications/sofa/2010-11/es/
- Farmer-Bowers, Q. (2010). Understanding the strategic decisions women make in farming families. *Journal of Rural Studies*, 26(2):141–151. Doi: [10.1016/j.jrurstud.2009.09.008](https://doi.org/10.1016/j.jrurstud.2009.09.008)
- Ferriol, M. (2016). Social inclusion of women in the agriculture production of the cooperative sector in Cienfuegos, Cuba. *Revista INCLUSIONES*, 3(2):196–205.
- Fletschner, D. (2008). Women's access to credit: Does it matter for household efficiency? *American Journal of Agricultural Economics*, 90(3):669–683.
- Fletschner, D. (2009). Rural women's access to credit: market imperfections and intrahousehold dynamics. *World Development*, 37(3):618–631.

- Galiè, A., Teufel, N., Korir, L., Baltenweck, I., Girard, A. W., Dominguez-Salas, P., Yount, K. M. (2019). The women's empowerment in livestock index. *Social Indicators Research*, 142(2):799–825.
- García, A., Wanner, T. (2017). Gender inequality and food security: lessons from the gender-responsive work of the International Food Policy Research Institute and the Bill and Melinda Gates Foundation. *Food Security*, 9(5):1091–1103. Doi: [10.1007/s12571-017-0718-7](https://doi.org/10.1007/s12571-017-0718-7)
- Giraldo, V. R. (2016). Contexto rural caficulator en Colombia: consideraciones desde un enfoque de género. *La Manzana de la Discordia*, 4(1):53–62.
- Glemarec, Y. (2017). Addressing the gender differentiated investment risks to climate-smart agriculture. *AIMS Agriculture and Food*, 2(1): 56–74. Doi: [10.3934/agrfood.2017.1.56](https://doi.org/10.3934/agrfood.2017.1.56)
- Gumucio, T., Rueda, M. T. (2015). Influencing gender-inclusive climate change policies in Latin America. *Journal of Gender, Agriculture and Food Security (Agri-Gender)*, 1(302-2016-4765):42–61.
- Gutiérrez, I., Arguedas, M., Ramírez, F., Mercado, L., Sellare, J. (2018). Contributing to the construction of a framework for improved gender integration into climate-smart agriculture projects monitoring and evaluation: MAP-Norway experience. *Climatic Change*, 1–14. Doi: [10.1007/s10584-018-2231-1](https://doi.org/10.1007/s10584-018-2231-1)
- Hamilton, S. (2002). Neoliberalism, gender, and property rights in rural Mexico. *Latin American Research Review*, 119–143.
- Humphries, S., Classen, L., Jiménez, J., Sierra, F., Gallardo, O., Gómez, M. (2012). Opening Cracks for the Transgression of Social Boundaries: An Evaluation of the Gender Impacts of Farmer Research Teams in Honduras. *World Development*, 40(10):2078–2095. Doi: [10.1016/j.worlddev.2012.05.008](https://doi.org/10.1016/j.worlddev.2012.05.008)
- Imburgia, L. (2019). Irrigation and Equality: An integrative Gender-Analytical Approach to Water Governance with Examples from Ethiopia and Argentina, 12(2):571–587. Recuperado de www.water-alternatives.org
- Johnson, N., Balagamwala, M., Pinkstaff, C., Theis, S., Meinzen-Dick, R., Quisumbing, A. (2018). How do agricultural development projects empower women? *Linking Strategies with Expected Outcomes*. 3(2): 1–19.
- Jones, N., Holmes, R., Presler-Marshall, E., Stavropoulou, M. (2017). Transforming gender constraints in the agricultural sector: The potential of social protection programmes. *Global Food Security*, 12(March), 89–95. Doi: [10.1016/j.gfs.2016.09.004](https://doi.org/10.1016/j.gfs.2016.09.004)
- Kabeer, N. (1999). Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment. *Development and Change*, 30:435–464.
- Khodamoradi, S., Abedi, M., Branch, Q. (2011). Assessing Employment of rural women and its effect on other empowerment. *Life Science Journal*, 8(2):222–226.
- Koralagama, D., Gupta, J., Pouw, N. (2017). Inclusive development from a gender perspective in small scale fisheries. *Current Opinion in Environmental Sustainability*, 24:1–6. Doi: [10.1016/j.cosust.2016.09.002](https://doi.org/10.1016/j.cosust.2016.09.002)
- Kristjanson, P., Bryan, E., Bernier, Q., Twyman, J., Meinzen-Dick, R., Kieran, C., ... Doss, C. (2017). Addressing gender in agricultural research for development in the face of a changing climate: where are we and where should we be going? *International Journal of Agricultural Sustainability*, 15(5):482–500. Doi: [10.1080/14735903.2017.1336411](https://doi.org/10.1080/14735903.2017.1336411)
- Larrauri, O. de M., Neira, D. P., Montiel, M. S. (2016). Indicators for the analysis of peasant women's equity and empowerment situations in a sustainability framework: A case study of cacao production in Ecuador. *Sustainability (Switzerland)*, 8(12). Doi: [10.3390/su8121231](https://doi.org/10.3390/su8121231)
- Larson, J., Castellanos, P., Jensen, L. (2019). Gender, household food security, and dietary diversity in western Honduras. *Global Food Security*, 20(November 2017), 170–179. Doi: [10.1016/j.gfs.2019.01.005](https://doi.org/10.1016/j.gfs.2019.01.005)
- Lastarria, S. (2009). Land Tenure, Titling, and Gender in Bolivia. *Saint Louis University Public Law Review*, 29(1):9.
- León, M., Deere, C. D. (1977). Estudio de la mujer rural y el desarrollo del capitalismo en el agro colombiano. *Violencia contra las mujeres/ Violencia de género*.
- León, M., Deere, C. D. (1980). *Mujer y capitalismo agrario*. Colombia: ACEP.
- Longwe, S., Clarke, R. (1994). *Women's Equality and Empowerment Framework*. UNICEF.
- López, A., Valencia, O., Díaz, H. (2019). Política pública y procesos de empoderamiento femenino. Un estudio del Proyecto Estratégico de Seguridad Alimentaria en Santa Lucía Miahuatlán, Oaxaca. *Aposta*, 81(81):38–53.
- Lyon, S. (2008). We want to be equal to them: Fair-trade coffee certification and gender equity within organizations. *Human Organization*, 67(3):258–268.
- Lyon, S., Bezaury, J. A., Mutersbaugh, T. (2010). Gender equity in fairtrade–organic coffee producer organizations: Cases from Mesoamerica. *Geoforum*, 41(1):93–103.
- Lyon, S., Mutersbaugh, T., Worthen, H. (2017). The triple burden: the impact of time poverty on women's participation in coffee producer organizational governance in Mexico. *Agriculture and Human Values*, 34(2):317–331.
- Mathez, S., Ayquipa, J., Corrales, R., Rosales, L., Valdivia, M. (2016). Identifying Gender-Sensitive Agroforestry Options: Methodological Considerations from the Field. *Mountain Research and Development*, 36(4):417–430. Doi: [10.1659/mrd-journal-d-16-00051.1](https://doi.org/10.1659/mrd-journal-d-16-00051.1)
- McEvoy, J., Petrzalka, P., Radel, C., Schmook, B. (2012). Gendered mobility and morality in a south-eastern Mexican community: Impacts of male labour migration on the women left behind. *Mobilities*, 7(3):369–388.
- McKune, S. L., Borresen, E. C., Young, A. G., Auria, T. D., Russo, S. L., Diao, A., Coleman, M., Ryan, E. P. (2015). Climate change through a gendered lens: Examining livestock holder food security. *Global Food Security*, 6:1–8. Doi: [10.1016/j.gfs.2015.05.001](https://doi.org/10.1016/j.gfs.2015.05.001)
- Mollett, S. (2010). Está listo (Are you ready)? Gender, race and land registration in the Río Plátano Biosphere Reserve. *Gender, Place & Culture*, 17(3):357–375.
- Mollett, S. (2015). Displaced futures: indigeneity, land struggle, and mothering in Honduras. *Politics, Groups, and Identities*, 3(4):678–683. Doi: [10.1080/21565503.2015.1080620](https://doi.org/10.1080/21565503.2015.1080620)
- Narayan, D. (2002). *Empowerment and Poverty Reduction*. World Bank.
- Paulilo, M. (2013). FAO, fome e mulheres rurais. *Dados*, 56(2):285–310. Doi: [10.1590/s0011-52582013000200002](https://doi.org/10.1590/s0011-52582013000200002)
- Phillips, L. (2011). Gender Mainstreaming: The Global Governance of women? *Canadian Journal of Development Studies*, 26(1):651–663. Doi: [10.1080/02255189.2005.9669104](https://doi.org/10.1080/02255189.2005.9669104)
- Pineda, J. A., Piniero, M., Ramírez, A. (2019). Coffee Production and Women's Empowerment in Colombia. *Human Organization*, 78(1):64–74. Doi: [10.17730/0018-7259.78.1.64](https://doi.org/10.17730/0018-7259.78.1.64)
- Radel, C. (2005). Women's community-based organizations, conservation projects, and effective land control in southern Mexico. *Journal of Latin American Geography*, 7–34.
- Radel, C. (2009). Migration and Gender: The Case of a Farming "Ejido" in Calakmul, Mexico. *Yearbook of the Association of Pacific Coast Geographers*, 144–163.
- Radel, C. (2011). BECOMING FARMERS : Opening Spaces for Women's Resource Control in Calakmul, Mexico. *Latin American Research Review* 46(2):29–54. <https://www.jstor.org/stable/41261456>
- Radel, C. A. (2012). Outcomes of conservation alliances with women's community-based organizations in Southern Mexico. *Society & Natural Resources*, 25(1):52–70.

- Radel, C., Schmook, B., McEvoy, J., Mendez, C., Petrzalka, P. (2012). Labour migration and gendered agricultural relations: The feminization of agriculture in the ejidal sector of Calakmul, Mexico. *Journal of Agrarian Change*, 12(1):98–119.
- Ransom, E., Bain, C. (2011). Gendering agricultural aid: An analysis of whether international development assistance targets women and gender. *Gender and Society*, 25(1):48–74. Doi: [10.1177/0891243210392571](https://doi.org/10.1177/0891243210392571)
- Raynolds, L. T. (2002). Wages for wives: Renegotiating gender and production relations in contract farming in the Dominican Republic. *World Development*, 30(5):783–798.
- Riaño, R. E., Keilbach, N. M. (2009). Mujeres y nueva ruralidad: Un estudio de caso sobre la desfeminización de la agricultura. *Sociedades Rurales, Producción y Medio Ambiente*, 9(18):79–108.
- Roces, I. G., Montiel, M. S. (2010). Mujeres, agroecología y soberanía alimentaria en la comunidad Moreno Maia del Estado de Acre. Brasil. *Investigaciones Feministas*, 1:43–65.
- Rowlands, J. (1997). Questioning empowerment: Working with women in Honduras. Oxfam.
- Selwyn, B. (2010). Gender wage work and development in North East Brazil. *Bulletin of Latin American Research*, 29(1):51–70. Doi: [10.1111/j.1470-9856.2009.00311.x](https://doi.org/10.1111/j.1470-9856.2009.00311.x)
- Shamseer, L., Moher, D., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Stewart, L. A. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *Bmj*, 349.
- Sundberg, J. (2004). Identities in the making: conservation, gender and race in the Maya Biosphere Reserve, Guatemala. *Gender, Place & Culture*, 11(1):43–66.
- Sundström, A., Paxton, P., Wang, Y. T., Lindberg, S. I. (2017). Women's political empowerment: A new global index, 1900–2012. *World Development*, 94:321–335.
- Taukobong, H., Kincaid, M., Levy, J., Bloom, S., Platt, J., Henry, S., Darmstadt, G. (2016). Does addressing gender inequalities and empowering women and girls improve health and development programme outcomes? *Health Policy and Planning*, 31(10): 1492–1514. Doi: [10.1093/heapol/czw074](https://doi.org/10.1093/heapol/czw074)
- Tavira, N. B., Tapia, F. H. (2008). Emergencia de la relación desarrollo rural-género. *Convergencia. Revista de Ciencias Sociales*, 15(48):223–253.
- Twyman, J., Muriel, J., García, M. A. (2015). Identifying women farmers: Informal gender norms as institutional barriers to recognizing women's contributions to agriculture. *Journal of Gender, Agriculture and Food Security*, 1(2):1–17.
- Twyman, J., Useche, P., Deere, C. D. (2015). Gendered perceptions of land ownership and agricultural decision-making in Ecuador: who are the farm managers? *Land Economics*, 91(3):479–500.
- Urquieta, N. R. A., Alwang, J. (2012). Women rule: potato markets, cellular phones and access to information in the Bolivian highlands. *Agricultural Economics*, 43(4):405–415.
- Valdivia, C. (2001). Gender, livestock assets, resource management, and food security: lessons from the SR-CRSP. *Agriculture and Human Values*, 18(1):27–39.
- Vazquez, V. (2008). Gender, ethnicity, and economic status in plant management: Uncultivated edible plants among the Nahuas and Populucas of Veracruz, Mexico. *Agriculture and Human Values*, 25(1), 65–77. Doi: [10.1007/s10460-007-9093-x](https://doi.org/10.1007/s10460-007-9093-x)
- Vidrascu, P., Iacob, O., Volintiru, A., Cristea, A. (2016). Gender Equality, Chances Equality and Intangible Assets in the Knowledge Society. Scientific Papers: Management, Economic Engineering in Agriculture & Rural Development, 16(3):361–365. Recuperado de <https://bit.ly/3nyTGP7>
- Waltz, A. (2016). The women who feed us: Gender empowerment (or lack thereof) in rural Southern Brazil. Recuperado de <https://bit.ly/2IM9TBs>
- Welch, V., Petticrew, M., Tugwell, P., Moher, D., O'Neill, J., Waters, E., White, H. (2012). PRISMA-Equity 2012 extension: reporting guidelines for systematic reviews with a focus on health equity. *PLoS Medicine*, 9(10).
- Yang, Y. E., Passarelli, S., Lovell, R. J., Ringler, C. (2018). Gendered perspectives of ecosystem services: A systematic review. *Ecosystem Services*, 31:58–67.
- Zenz, A. (2000). Evaluating empowerment: the World Vision Area Development Programme. DevNet Conference 2000—Poverty, Prosperity, and Progress.

Annexes

Annex 1: Stages, steps, actions and outputs to undertake the systematic review.

| STAGE | STEPS | ACTIONS | OUTPUTS |
|---|--|---|--|
| 1. Clearly define the question to be answered by the review or the hypothesis to be tested | Step 1. Define the question. | 1. Clearly specify the question to be answered by the review. | 1. Final question to be answered |
| | | 2. Specify the population, sub-population, results of interest, timeframe, language, and geographical region on which the research will focus. | 2. Population, sub-population, timeframe, language, and geographical region defined. |
| | | 3. Clearly define who is expected to be the target audience for the review. | 3. Target audience |
| | | 4. Develop a forward plan to disseminate the results found in the review and to help interpret their use. | 4. Plan for the dissemination of results |
| 2. Determine the types of studies that need to be found in order to answer the question | Step 2. Develop a protocol and have it reviewed. | 1. Write a protocol with the outputs from Step 1: starting with the question about the review, the methods to be used, and the types of studies to take into consideration. In addition, specify the means to be used in the evaluation and synthesis of studies. | Protocol |
| 3. Conduct an extensive literature search to find the studies | Step 3. Conduct the literature search. | 1. Find the studies that, due to their characteristics, will help answer the question. a. Search in electronic databases, libraries, chapters of books, and others. b. Consult experts. | List #1 of studies found in the literature review that can help answer the question. (This is the master list). |
| | | 2. If possible, make a list with the titles and the summaries. | |
| 4. Filter the search results | Step 4. Filter the references. | 1. List #1 should be reviewed to identify what articles will be read in full. | 1. List #2 prepared using the evaluation parameters. This includes the references to be read in full. 2. List #3. Discarded references and the reasons according to the parameters. |
| 5. Critical assessment of the studies included | Step 5. Assess the rest of studies against inclusion and exclusion criteria. | 1. Conduct a review of the summaries to exclude some references. | 1. List #3 gets longer. |
| | | 2. Search for the full text of articles to review them and determine whether they meet the inclusion and exclusion criteria. | 2. List #3 gets longer. |
| | Step 6. Data extraction | 3. Identify the texts referenced in the articles to prepare a new list following the snowball method. | 3. New list with articles recovered with the snowball method. |
| | | 1. Develop a data extraction matrix to contain the data obtained from each article. It will record: the title, general information about the document, theoretical approaches, methodology, indicators, and conclusions. | 4. Carry out actions one and two of this stage on the new articles found through the snowball. 1. Data extraction matrix. |

| STAGE | STEPS | ACTIONS | OUTPUTS |
|--|---|--|--|
| 6. Synthesize the studies and assess heterogeneity among study findings | Step 7. Synthesis of the studies. | 1. Synthesize the data from the studies to conduct an initial statistical analysis. | 1. Statistical synthesis. 2. Graphs with synthesized results. |
| | | 2. Prepare a narrative synthesis that helps to systematically integrate the heterogeneity of the results of the studies. | 1. Narrative synthesis. |
| | Step 8. Take into account publication biases. | 1. Consider aspects such as the size of the study, the quality of the study, the source of funding, and the publication bias, as the results of primary studies may be affected when analyzing the information | 1. Paragraph explaining the findings against biases. |
| | Step 9. Writing the article. | 1. Write the article including the details of all the research and a methodological section that shows the selection and exclusion process. | Final result: article |
| 7. Disseminate the findings of the review | Step 10. Broader dissemination. | 1. Implement the initial dissemination plan. | 1. Summaries of the review. |
| | | 2. Draft summaries or other versions of the review for decision makers and for a non-specialized audience. | |
| | | 3. Work with information users to help them understand the implications of the findings of the review on the formulation of policies and future research. | 2. Conferences and others. |
| | | 4. Conferences, workshops, seminars, consultations with experts, and others. | 4. Impact of the review and its results. |
| | | 5. Measure the impact that the review might have on relevant related aspects. | |

Prepared by the authors with information taken from Petticrew and Roberts, Systematic reviews in the social sciences: a practical guide (2006).



Annex 2: Definitions of empowerment according to different authors

| AUTHOR | DEFINITION OF EMPOWERMENT* |
|---------------------------------|--|
| Kabeer (1999) | Women's empowerment is about the process by which those who have been denied the ability to make strategic life choices acquire such an ability. |
| Rowlands (1997) | Women's empowerment deals with the transformation of social relations and, in particular, social relations based on sexual differences. According to this author, empowerment has three dimensions: personal, which means the development of a sense of self and individual capacity; relational, which refers to the ability to negotiate and influence the nature of relationships; and collective, which entails working together to achieve a more extensive impact. |
| Amiri (2000) | Empowerment is the capacity of women to gain economic independence and self reliance within a social and cultural context. |
| Longwe and Clarke (1994) | Empowerment entails developing critical awareness to transform the structures produced by gender inequities. It is a process of change towards greater equity both individual and collective, where women work actively to regain control over their lives, their bodies, and their territories in the material, social, and symbolic sphere. |
| Alsop et al. (2006) | Empowerment is the ability of a group of individuals to make decisions and choices, and to transform those choices into actions and desired results. |
| Zenz (2000) | Empowerment refers to the ability of individuals and groups to act by themselves to achieve the goals set by themselves. |
| Narayan (2002) | Empowerment is the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives. |

* The definitions were taken from consulted articles.

Annex 3: Classification of articles according to code and operationalization category.

| CATEGORY | CODE | ARTICLES |
|------------------------|---------------------|---|
| Learning | Knowledge | Kristjansson et al., 2017; Alwang et al., 2017; Vidrascu et al., 2016; Bolandnazar et al., 2011; Waltz, 2016; Farmar, 2010; Di Ciommo and Schiavetti, 2012; Bee, 2013; Yang et al., 2018. |
| | Education | Glemarec, 2017; Khodamoradi et al., 2011; Eastin, 2018; Boza et al., 2018; Taukobong et al., 2016; Paulilo, 2013; Alwang et al., 2017; Croppenstedt et al., 2013; Vidrascu et al., 2016; Ransom and Bain, 2011; Johnson et al., 2018; Larrauri et al., 2016; Colfer and Minarchek, 2015; Awaworyi et al., 2019; López et al., 2019; Bolandnazar et al., 2011; Fletschner, 2009; Ferriol, 2016; Branisa et al., 2014; Lyon et al., 2017; Waltz, 2016; Di Ciommo and Schiavetti, 2012; Coleman and Mwangi, 2013; de Lima, 2013; Buendía and Carrasco, 2013. |
| | Extension services | Kristjansson et al., 2017; Glemarec, 2017; Khodamoradi et al., 2011; Paulilo, 2013; Alwang et al., 2017; García and Wanner, 2017; Johnson et al., 2018; Waltz, 2016; Bacon, 2010; Beuchelt and Badstue, 2013; Lastarria, 2009. |
| | Information | Glemarec, 2017; Taukobong et al., 2016; Buechler, 2016; Farmar, 2010; Di Ciommo and Schiavetti, 2012; Urquieta and Alwang, 2012; Tavera and Tapia, 2008; Beuchelt and Badstue, 2013. |
| Agricultural resources | Agricultural inputs | Kristjansson et al., 2017; Radel, 2011; McKune et al., 2015; Gutiérrez et al., 2018; Buechler, 2016; Cruz et al., 2019; Johnson et al., 2018; Branisa et al., 2014; Alkire et al., 2013; Dietz et al., 2018; de Lima, 2013; Espinosa, 1998; Valdivia, 2001. |
| | Capital | Glemarec, 2017; Khodamoradi et al., 2011; Radel, 2011; Pineda et al., 2019; Paulilo, 2013; Alwang et al., 2017; Croppenstedt et al., 2013; Vidrascu et al., 2016; García and Wanner, 2017; Buechler, 2016; Ransom and Bain, 2011; Johnson et al., 2018; Larrauri et al., 2016; Colfer and Minarchek, 2015; Imburgia, 2019; Humphries et al., 2012; Radel, 2012; Bolandnazar et al., 2011; Fletschner, 2009; Ferriol, 2016; Deere, 2018; Branisa et al., 2014; Alkire et al., 2013; Jones et al., 2017; Farmar, 2010; Di Ciommo and Schiavetti, 2012; Dietz et al., 2018; Deere et al., 2012; Fletschner, 2008. |
| | Land ownership | Kristjansson et al., 2017; Glemarec, 2017; Khodamoradi et al., 2011; Radel, 2011; Eastin, 2018; Pineda et al., 2019; Boza et al., 2018; Mollett, 2015; Paulilo, 2013; Alwang et al., 2017; Croppenstedt et al., 2013; Buechler, 2016; Johnson et al., 2018; Mathez et al., 2016; Larrauri et al., 2016; Radel, 2012; Deere, 2018; Branisa et al., 2014; Lyon et al., 2017; Waltz, 2016; Alkire et al., 2013; Jones et al., 2017; Dietz et al., 2018; Deere and Twyman, 2014; Deere and Twyman, 2012; Twyman et al., 2015; Bacon, 2010; Bee, 2013; Brumer, 2004; Buechler, 2009; Deere and León, 2001; Deere et al., 2013; Espinosa, 1998; Hamilton, 2002; Lastarria, 2009; Lyon, 2008; Mollett, 2010; Radel, 2005; Valdivia, 2001. |
| | Resources | Pineda et al., 2019; Gutiérrez et al., 2018; Boza et al., 2018; Taukobong et al., 2016; Asher and Varley, 2018; García and Wanner, 2017; Vazquez, 2008; Larson et al., 2019; Buechler, 2016; Johnson et al., 2018; Mathez et al., 2016; Koralagama et al., 2017; Larrauri et al., 2016; Colfer and Minarchek, 2015; Imburgia, 2019; Ferriol, 2016; Deere, 2018; Branisa et al., 2014; Galiè et al., 2019; Jones et al., 2017; Reynolds, 2002; Deere et al., 2012; Twyman et al., 2015; Bee, 2013; Beuchelt and Badstue, 2013; Deere et al., 2013; Espinosa, 1998; Valdivia, 2001. |
| Work | Productive work | Glemarec, 2017; Del Castillo, 2015; Eastin, 2018; Pineda et al., 2019; Taukobong et al., 2016; Alwang et al., 2017; Croppenstedt et al., 2013; Vidrascu et al., 2016; Selwyn, 2010; Vazquez, 2008; Ransom and Bain, 2011; Larrauri et al., 2016; Humphries et al., 2012; Awaworyi et al., 2019; Bolandnazar et al., 2011; Fletschner, 2009; Lyon et al., 2017; Galiè et al., 2019; Alkire et al., 2013; Reynolds, 2002; Dietz et al., 2018; de Lima, 2013; Twyman et al., 2015; Twyman et al., 2015; Tavera and Tapia, 2008; Bacon, 2010; Bee, 2013; Beuchelt and Badstue, 2013; Brumer, 2004; Buechler, 2009; Buendía and Carrasco, 2013; Deere, 1982; Espinosa, 1998; Lyon, 2008; Radel, 2005; Radel, 2009; Riaño and Keilbach, 2009; Sundberg, 2004; Valdivia, 2001. |
| | Domestic work | Glemarec, 2017; Radel, 2011; Pineda et al., 2019; Boza et al., 2018; Phillips, 2011; Vazquez, 2008; Larrauri et al., 2016; Humphries et al., 2012; Bolandnazar et al., 2011; Lyon et al., 2017; Galiè et al., 2019; Alkire et al., 2013; Jones et al., 2017; Reynolds, 2002; Dietz et al., 2018; Sundström et al., 2017; Twyman et al., 2015; Tavera and Tapia, 2008; Bacon, 2010; Bee, 2013; Brumer, 2004; Buechler, 2009; Deere, 1982; Lyon, 2008; Sundberg, 2004. |
| | Income | Glemarec, 2017; Del Castillo, 2015; Eastin, 2018; Pineda et al., 2019; Taukobong et al., 2016; Alwang et al., 2017; Croppenstedt et al., 2013; Vidrascu et al., 2016; Selwyn, 2010; Vazquez, 2008; Ransom and Bain, 2011; Larrauri et al., 2016; Humphries et al., 2012; Lyon et al., 2017; Waltz, 2016; Galiè et al., 2019; Alkire et al., 2013; Reynolds, 2002; Di Ciommo and Schiavetti, 2012; Dietz et al., 2018; Coleman and Mwangi, 2013; de Lima, 2013; Deere et al., 2012; Bacon, 2010; Beuchelt and Badstue, 2013; Brumer, 2004; Buechler, 2009; Can et al., 2007; Espinosa, 1998; Rocas and Montiel, 2010; Lyon, 2008; Radel, 2005; Radel, 2009; Riaño and Keilbach, 2009; Valdivia, 2001. |



| CATEGORY | CODE | ARTICLES |
|------------|-----------------------------------|---|
| Leadership | Associations | Glemarec, 2017; Taukobong et al., 2016; Imburgia, 2019; Radel, 2012; Ferriol, 2016; Lyon et al., 2017; Sundström et al., 2017; de Lima, 2013; Bacon, 2010; Roces and Montiel, 2010; Lastarria, 2009; Lyon et al., 2010; Radel, 2005; Radel, 2009; Sundberg, 2004. |
| | Participation | Vidrascu et al., 2016; Larrauri et al., 2016; Radel et al., 2012; Humphries et al., 2012; Radel, 2012; Awaworyi et al., 2019; Lyon et al., 2017; Galiè et al., 2019; Alkire et al., 2013; Di Ciommo and Schiavetti, 2012; Dietz et al., 2018; Coleman and Mwangi, 2013; Sundström et al., 2017; de Lima, 2013; Bacon, 2010; Buendía and Carrasco, 2013; Roces and Montiel, 2010; Lyon, 2008; Lyon et al., 2010; Sundberg, 2004. |
| | Decision-making | Kristjanson et al., 2017; McKune et al., 2015; Gutiérrez et al., 2018; Boza et al., 2018; Taukobong et al., 2016; Paulilo, 2013; Garcia and Wanner, 2017; Larson et al., 2019; Ransom and Bain, 2011; Johnson et al., 2018; Koralagama et al., 2017; Imburgia, 2019; Radel et al., 2012; Humphries et al., 2012; Galiè et al., 2019; Alkire et al., 2013; Jones et al., 2017; Farmar, 2010; Di Ciommo and Schiavetti, 2012; Urquieta and Alwang, 2012; Dietz et al., 2018; Deere and Twyman, 2014; Deere et al., 2012; Deere and Twyman, 2012; Twyman et al., 2015; Bacon, 2010; Beuchelt and Badstue, 2013; Can et al., 2007; Deere, 1982; Fletschner, 2008; Lyon, 2008; Lyon et al., 2010; McEvoy et al., 2012; Radel, 2005; Radel, 2009. |
| | Power | Vidrascu et al., 2016; Colfer and Minarchek, 2015; Imburgia, 2019; Jones et al., 2017. |
| Society | Mobility | Glemarec, 2017; Taukobong et al., 2016; Croppenstedt et al., 2013; Ransom and Bain, 2011; Johnson et al., 2018; Larrauri et al., 2016; López et al., 2019; Branisa et al., 2014; Tavira and Tapia, 2008; Buechler, 2009; McEvoy et al., 2012; Radel, 2005; Radel, 2009. |
| | Roles | Radel, 2011; Del Castillo, 2015; Phillips, 2011; Vazquez, 2008; Cruz et al., 2019; Mathez et al., 2016; Larrauri et al., 2016; Colfer and Minarchek, 2015; Humphries et al., 2012; Bolandnazar et al., 2011; Branisa et al., 2014; Lyon et al., 2017; Waltz, 2016; Jones et al., 2017; Raynolds, 2002; Di Ciommo and Schiavetti, 2012; Urquieta and Alwang, 2012; Twyman et al., 2015; Tavira and Tapia, 2008; Bee, 2013; Brumer, 2004; Deere, 1982. |
| | Social standards | Kristjanson et al., 2017; Glemarec, 2017; Del Castillo, 2015; Eastin, 2018; Taukobong et al., 2016; Croppenstedt et al., 2013; Vazquez, 2008; Buechler, 2016; Koralagama et al., 2017; Larrauri et al., 2016; Colfer and Minarchek, 2015; Imburgia, 2019; Bolandnazar et al., 2011; Fletschner, 2009; Deere, 2018; Branisa et al., 2014; Lyon et al., 2017; Waltz, 2016; Farmar, 2010; Urquieta and Alwang, 2012; Coleman and Mwangi, 2013; Twyman et al., 2015; Tavira and Tapia, 2008; Bee, 2013; Deere, 1982; Fletschner, 2008; McEvoy et al., 2012; Mollett, 2010; Giraldo, 2016. |
| | Violence | Glemarec, 2017; Del Castillo, 2015; Taukobong et al., 2016; Larrauri et al., 2016; Branisa et al., 2014. |
| Wellbeing | Food security | Gutiérrez et al., 2018; Phillips, 2011; Galiè et al., 2019; Beuchelt and Badstue, 2013. |
| | Health | Vidrascu et al., 2016; Larrauri et al., 2016; Awaworyi et al., 2019; Beuchelt and Badstue, 2013. |
| Laws | Intersectionality | Asher and Varley, 2018; Selwyn, 2010; Vazquez, 2008; Buechler, 2009; Deere, 1982; Deere and León, 2001; Sundberg, 2004; Awaworyi et al., 2019. |
| | Laws, policies, and rights | Kristjanson et al., 2017; Eastin, 2018; Mollett, 2015; Taukobong et al., 2016; Paulilo, 2013; Phillips, 2011; Vazquez, 2008; Colfer and Minarchek, 2015; Branisa et al., 2014; Waltz, 2016; Jones et al., 2017; Sundström et al., 2017; Deere et al., 2012; Gumucio and Rueda, 2015; Tavira and Tapia, 2008; Buechler, 2009; Deere and León, 2001; Deere et al., 2013; Lastarria, 2009. |

Alliance



**RESEARCH
PROGRAM ON
Policies,
Institutions,
and Markets**

Led by IFPRI



Science for a food-secure future

Bioversity International and the International Center for Tropical Agriculture (CIAT) are part of CGIAR, a global research partnership for a food-secure future.

Bioversity International is the operating name of the International Plant Genetic Resources Institute (IPGRI).

Americas Hub

Km 17, Recta Cali-Palmira CP 763537
Apartado Aéreo 6713
Cali, Colombia
Tel. (+57) 2 4450000

alliancebioversityciat.org
www.bioversityinternational.org
www.ciat.cgiar.org
www.cgiar.org