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EVIDENCE REVIEW ON THE EFFECTIVENESS OF INTERVENTIONS PROMOTING WOMEN'S EMPOWERMENT IN DEVELOPING COUNTRIES

Approach paper

Aslihan Arslan, Ndaya Beltchika, Romina Cavatassi, Mir Md Shahriar Islam, Naila Kabeer, Deborah Sun Kim, Vibhuti Mendiratta, Martin Prowse, Jyotsna Puri, Andreas Reumann, Sabina Singh, Ratheebhai Vijayamma, Asha Warsame, Howard White

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Deborah Sun Kim, Vibhuti Mendiratta, Martin Prowse, Jyotsna Puri, Andreas Reumann,
Sabina Singh, Ratheebhai Vijayamma, Asha Warsame, Howard White

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LIST OF AUTHORS

The authors of the evidence review on the effectiveness of interventions promoting women's empowerment in developing countries are (in alphabetical order by last name):

FULL NAME	AFFILIATION
Aslihan Arslan	International Fund for Agricultural Development
Ndaya Beltchika	International Fund for Agricultural Development
Romina Cavatassi	International Fund for Agricultural Development
Mir Md Shahriar Islam	International Fund for Agricultural Development
Naila Kabeer	London School of Economics
Deborah Sun Kim	Independent Evaluation Unit, Green Climate Fund
Vibhuti Mendiratta	International Fund for Agricultural Development
Martin Prowse	Independent Evaluation Unit, Green Climate Fund
Jyotsna Puri	International Fund for Agricultural Development
Andreas Reumann	Independent Evaluation Unit, Green Climate Fund
Sabina Singh	Campbell South Asia
Ratheebhai Vijayamma	Campbell Collaboration
Asha Warsame	Independent Evaluation Unit, Green Climate Fund
Howard White	Campbell Collaboration and Global Development Network

ABSTRACT

Women's empowerment contributes to both intrinsic and instrumental benefits, such as meeting the Sustainable Development Goals (SDGs). In its appraisal of the effectiveness of efforts to promote women's empowerment in developing countries, this evidence review builds on Kabeer's (1999) conceptualization that empowerment requires steps involving the resources, agency and achievements of girls and women of all ages. The evidence review aims to answer the following questions:

- What evidence exists regarding the effectiveness of interventions that seek to promote the fields of development and environment?
- How can interventions be clustered most effectively to allow for aggregation and meta-analysis? What are the effects of selected interventions on key outcome areas? How much confidence can be placed in the findings of included studies? Which factors explain the variation of effects?

The review will answer these questions by developing a typology of interventions for women's empowerment in development and environment and anticipated outcomes from these interventions. The evidence review will produce two products: an evidence gap map showing the landscape of studies to promote women's empowerment; and a systematic review with relevant meta-analysis of specific cells within the evidence gap map.

This evidence review uses the PICOS model [population, intervention, comparator, outcome and study design] to describe our inclusion/exclusion criteria. It also details the methods used for the systematic search of academic and other databases and websites, and manual searches of selected journals and citation tracking. In addition, the approach paper describes the strategy for data-collection and analysis and the contours of the systematic review. The separate protocol for the systematic review will detail the methods to be used for the meta-analysis.

A. BACKGROUND

From the 1970s onwards, the recognition of the role of women in development and the environment has evolved considerably. Arguments for integrating women within development first focused on investing in women's productivity, with this justified in terms of economic and social returns. For example, Boserup (1970) highlighted women's productive role within the agricultural economy and how women's role changed as agricultural systems became more commercialized. From the 1980s onwards, this approach was replaced by a greater focus on gender relations and the respective roles and status of women and men. This move from focusing on women in development to gender and development followed the realization that engagement in productive activities did not give sufficient attention to relative status and power differentials (Miller and Razavi, 1995). Researchers adopting the gender and development approach of the 1980s and 1990s focused particularly on intra-household dynamics. For example, researchers offered several critiques of the unitary model of the household. This model posited the household as a single decision-making unit with a benevolent household head whose preferences reflect concern for all household members and who maximizes household utility under conditions of perfect information and perfect competition, thus ignoring intra-household allocation and the dynamics of household decision making (Becker, 1981; see Doss, 1996). For example, Sen (1987) argued that the household could be seen as a site of cooperative conflict where multiple actors constitute households with varying and often conflicting preferences, interests and opportunities. This view highlighted how conflict might originate from asymmetrical entitlements and the division of labour between husbands and wives, while cooperation might result from a joint interest in the overall well-being of the household (see Sen, 1987, 1990; Haddad, Hoddinott, and Alderman, 1998; Agarwal, 1997). Udry's (1996) work highlighted an additional way to view the household – as a site of non-cooperation. Based on agricultural data from Burkino Faso, Udry (1996) argued that the allocation of labour across plots controlled by men and women is far from optimal, as the variance of both yields and input application is more significant *within* households than *between* households. Intra-household concerns are also prominent within more recent debates on women's empowerment. Osmani (2007) highlights that, in many contexts, women have limited bargaining power in the household, which may be linked to limited opportunities in the labour market and income-earning abilities overall. Kandpal, Baylis, and Arends-Kuenning (2013) follow this line of argument and suggest that empowerment should be measured "by a woman's ability to make household decisions, relative to her husband's ability". The work of Garikipati (2008) further illustrates a focus on intra-household issues. She argues that women's empowerment is constituted by four aspects of households relations. The first is an economic aspect, defined as ownership/control over household assets and incomes. The remaining three are aspects within the household. These include the level of participation and authority in household decision making; the use of time; and the division of social reproductive tasks.

This evidence review is a systematic and rigorous collation, assessment and presentation of evidence regarding the effectiveness of interventions that seek to promote women's empowerment. The evidence review will be relevant to the policies and practices of the Green Climate Fund and the International Fund for Agricultural Development. It will offer a clear descriptive and analytical synthesis of the evidence base. The evidence review is composed of two stages. First, it will present the evidence landscape through an evidence gap map (EGM). This will allow practitioners to improve project design by seeing where the evidence base is richest and learning from these studies. The EGM will plot a variety of empowerment interventions across varied contexts in developing countries and cover a range of outcome areas. Second, the evidence review will complete a systematic review of selected interventions and apply relevant approaches to meta-analysis. This will allow practitioners to integrate the specific intervention within project design to improve

women's empowerment, if the meta-analysis shows a positive effect size on outcomes. But before turning to the details of the evidence, we begin the approach paper by summarizing recent academic and grey literature on women's empowerment.

1. DESCRIPTION OF THE PROBLEM

Women's empowerment is often proposed as a solution to tackle gender inequality and other development outcomes.

Kabeer (1999) notes that the inherent value in advocating for women's empowerment is often insufficient for policy makers unless it is linked to certain development outcomes. These outcomes could include reduced poverty, improved child nutrition and health, family welfare and fertility decline. Such outcomes are particularly pertinent in the aftermath of the International Conference on Population and Development, Cairo, in 1994. In this respect, the instrumental benefits from women's empowerment can often be seen to override intrinsic benefits. Numerous instrumental outcomes are unlikely to be achieved unless gender inequality is addressed. These include many of the SDGs. For example, although SDG 5 directly addresses gender inequality, Doss and others (2018) suggest that at least 11 of the 17 SDGs require indicators related to gender dynamics. The SDGs for climate action (SDG13), responsible consumption and production (SDG12), the eradication of hunger (SDG2) and poverty (SDG1) are closely linked to addressing gender inequality (SDG 5).

However, the path to women's empowerment is laden with varied challenges. One of the most contested and debated issues concerns the definition of empowerment. Kabeer (1999) notes that some feminists find this conceptual fuzziness useful. It thus becomes important to state clearly the conceptual framework that guides our understanding of empowerment. We follow Kabeer's (1999) conceptualization of empowerment as a process that involves incremental steps to support the resources, agency and achievements of girls and women of all ages.

Programmes or interventions that aim to promote the empowerment of girls and women of any age are essential to achieving gender equality. In addition to the intrinsic moral value of gender equality, and as indicated above, empowerment of girls and women may result in better development and demographic outcomes, an added advantage. From the perspective of climate change, an equal society with men and women as equal partners can better adapt to adversities/shocks posed by global warming.

Just as Kabeer's approach to empowerment relies on related dimensions for intergenerational application, there is an entwined complexity in the interactions between gender and sustainability. Environmental changes and development pressures accentuate siloed views of women's roles. Sustainability is fundamentally concerned with meeting the needs of the present without compromising the ability of future generations to meet their own needs, which relies on responsible management within the interplay of social, political, and economic systems. If gender equality shapes relationships within and among households and communities dependent on natural and human systems, then it also determines the outcomes of the human-environment relationship. Women and girls are half of the globe's population and unless efforts are directed at their empowerment, it will simply not be possible to meet the 1.5 degrees Celsius goal. For example, critical sectors that are responsible for emissions such as agricultural production, energy production and consumption, forestry, buildings and transport directly involve women and girls and any effective strategy for mitigation must also ensure that gender equality through women's empowerment is at the heart of a sustainable future.

2. WOMEN'S EMPOWERMENT

Recent literature illustrates how women's empowerment requires changes to society as a whole. Swain and Wallentin (2009) argues that "truly empowering activities are those that reflect the changes that women have effectively made to improve the quality of their lives by resisting the gender-based traditions and norms that reinforce gender inequality". De Smet and Boros (2021) concur and highlight how empowering one individual rests on the assumption "that it is impossible for them to employ this agency as long as the structures that create and reproduce gender inequality remain the same". In this respect, changing empowerment is challenging in the short term, as it is partly determined by social acceptability (Kandpal, Baylis, and Arends-Kuenning 2013). For example, Garai, Mazumder and Maiti (2012) found that decision-making power relations "operate in different spheres of life (for example, economic, social, political) and at different levels (for example, individual, household, community, market, institutional)," substantiating that empowerment covers interactions between multiple spheres.

In this respect, women's empowerment reflects gendered norms and values within a society. Sangeetha and others (2013) highlight how the empowerment process is part and parcel of the transition societies often move through during economic, social and political changes, which include urbanization, migration and demography, alongside changes in gender relations. Empowerment can be seen as a process where women increase their awareness and enhance their capacity. This improved awareness and capacity contribute to larger, wider and more geographically dispersed participation in decision-making in many spheres. For example, Malhotra, Schuler and Boender (2002) define empowerment as stretching across intra- and interpersonal, sociocultural, economic, legal and political scales. Hillesland and others (2021) also disaggregate the micro-to-macro scale using three domains, as constructed by Malapit and others (2019): intrinsic, instrumental, and collective agency. Along parallel lines, Mayoux (2000) defines empowerment as the multidimensional and interlinked relationship to, within and with agency and decision-making power, which Garai, Mazumder and Maiti (2012) have translated as personal autonomy, family decision-making, domestic economic consultation, and political autonomy.

It is clear from these varied and incisive definitions that empowerment can be regarded as the processes by which women take control and ownership of their lives through the expansion of their choices. For example, core elements of empowerment have been defined as agency (the ability to define one's goals and act upon them), awareness of gendered power structures, self-esteem and self-confidence (Mitra and Kundu, 2012; see also Jha and others 2020).

If we consider women's empowerment in a stepwise fashion, it can first be seen as comprising two interrelated components: (i) economic advancement and (ii) power and agency. These components are interlinked, as economic gain promotes women's power and agency. At the same time, when a woman can control and share in resource use (power) and define and make choices (agency), she is better able to advance economically (Alsop and Heinsohn, 2005).

A further example comes from Kandpal, Baylis, and Arends-Kuenning (2013) who suggest that empowerment covers three different spheres: economic empowerment (with a focus on assets); political empowerment (which is related to participation in political processes and meetings), and social empowerment (which results in improved social status and recognition). For these authors, the process allows women to reach their full potential and feel confident in their capabilities.

Shrestha (1994) contends that five aspects of women's empowerment should be considered:

- 1) Welfare: equal concern with material welfare of women and children relative to men in such matters as food supply, income and medical care (as indicated by increased income, increased utilization of credit facilities and increased health facilities).

- 2) Access: equal access to the factors of production – land, labour, credit, training, public services and benefits.
- 3) Conscientization: acceptance of the idea that sexual and gender division of labour should be fair and agreeable to both sides and not involve the economic and political domination of one gender by the other.
- 4) Participation: involvement of men and women in the same proportion in decision-making as their composition in the broader community.
- 5) Control: participation of women in the decision-making process to the extent that women have equal control over benefits and resources.

In one of the most complex definitions, Schuler (1993) define the empowerment of women along six dimensions:

- 1) Sense of self and a vision of the future, including resisting negative behaviours of the husband.
- 2) Mobility and visibility, including how women are treated when they are travelling.
- 3) Economic security, including cash income, new skills and knowledge.
- 4) Status and decision-making power within the household, including making purchases independently.
- 5) Ability to interact effectively in the public sphere, such as joining credit programmes.
- 6) Participation in non-family groups, such as credit programmes and solidarity movements.

These approaches to empowerment reflect an over-arching definition in the literature, namely that provided by Kabeer (1999), which argues empowerment is “the process by which those who have been denied the ability to make strategic life choices acquire such an ability.” Kabeer (1999) conceptualizes empowerment as a process that involves incremental steps involving interrelated dimensions of resources, agency and achievements of girls and women of all ages. These three dimensions can be seen to be at a slightly more abstract conceptual level than some of the definitions listed above. Consequently, it is important to explain what each dimension refers to.

The first part of Kabeer’s (1999) framework, resources, encapsulates material, social and human resources, including social relationships, allocations, claims (whether in the present or the future) and expectations. The second part, agency, refers to “the ability to define one’s goals and act upon them” (Kabeer, 1999, p. 438). This ability to define one’s life choices and pursue personal goals is broader than simple decision-making (including many forms of engagement, resistance, reaction and analysis) and can be utilized by individuals as well as collectives. The third part, achievements, refers to the extent to which the combination of resources and agency facilitates the realization of living the life an individual wishes. In other words, achievements refer to the extent to which the “potential for living the life one wants is achieved” see Kabeer, 2005, p. 15). Lwamba and others (2021) highlight how achievements can be regarded as “ways of being and doing which can be realized by different individuals”. Garikipati (2008) suggests these three components map onto preconditions, processes and outcomes. We integrate Kabeer’s framework within our theory of change described below and reflect on the utility of this approach within the EGM report.

Metrics and indicators

Kandpal, Baylis, and Arends-Kuenning (2013) highlight that empowerment covers many domains and is essentially an unobservable latent phenomenon. Due to this, researchers need to use observable proxies as empowerment cannot be measured directly. The use of proxies is similar to attempts to measure cognitive abilities or quality of life which are also unobservable latent phenomena. Swain and Wallentin (2009) highlight how researchers have created indices using arbitrary weights, or have used factor analysis or principal components analysis (the latter are data reduction tools which extract a limited number of underlying components from a range of variables).

Furthermore, researchers have also used self-reported attitudinal data creating constructs typically used in psychology.

Therefore, women's empowerment is usually measured by using proxies that contribute to each of the empowerment domains the study is considering (as described above). Such metrics need to consider the societal context within which the measurement is taking place. For example, Pandey and Roberts (2012) highlight how, in India, household and interfamilial relations should be included as these are believed to be a central locus of women's disempowerment. A good example is a study by Khanna, Kochhar and Palaniswamy (2015) that measures empowerment within the household through a metric of female respondents' ability to influence decisions in the home.

The breakdown into intrinsic, instrumental, and collective agency provided by Hillesland and others (2021) seems to offer space for a broad range of indicators used to measure empowerment. Intrinsic agency may include values and attitudes, such as self-confidence (see Hillesland and others, 2021; Dohmworth and Liu, 2020; Mazumder and Wencong, 2015; Hutchinson and others, 2020; among others). Instrumental agency includes vocational and life skills training and other economic or income-related activities. Collective agency includes community influence, social support, and networks (Hillesland and others, 2021; Hutchinson and others, 2020; Alcázar, Balarin and Iglesias, 2016; Beath, Christia and Enikolopov, 2012; among others).

Overall, the absence of commonly deployed quantitative metrics for women's empowerment (applicable across contexts) often makes it difficult to evaluate the impact of individual projects in a comparable manner (Brody and others, 2015). A number of replicable composite empowerment indices have been created and are included in this evidence review (for example, see Quisumbing and others, 2021). Although qualitative studies have yielded valuable insights into what aspects of specific projects empower women, generalizing these findings beyond their specific context to inform decisions about scaling up programmes is challenging. In addition, many studies use measures that rely only on data collected from women, making it challenging to ascertain the impact on men. For many objectives related to empowerment – such as changing gender norms – assessing the effects on men is critical. Moreover, little is known about whether increases in women's empowerment occur at the expense of men's empowerment (as a limited number of studies measure men's empowerment, see Quisumbing and others, 2021).

Selected findings

We highlight four studies that illustrate the complexity of findings on empowerment before turning to the objectives of the evidence review. This section illustrates to the reader a range of challenges encountered regarding women's empowerment. These selected studies are not representative. They merely illustrate the importance of recognizing the context and the challenges associated with changing gender norms and values, including backlash and resistance.

First, in Ashraf, Karlan, and Yin's (2009), an experimental design is used to evaluate household savings from a microfinance intervention. This study found that a critical barrier was primarily psychological, and shaping the intervention to fit the intended beneficiaries' routines increased commitment and engagement. In terms of empowering women, or households, on perceived savings behaviours, the study acknowledged that even if husbands continued appropriating their wives' loans, the microfinance itself would change perceptions and thus behaviours. At the same time, the authors highlighted how the context around microfinance "may subjugate women to the power of their spouses", highlighting the importance of recognizing the potential for a backlash and resistance from husbands to empowerment interventions. Ashraf, Karlan, and Yin (2009) acknowledged that evidence ultimately supported both possibilities and, thus, the outcomes "may depend largely on the region-specific economic and social setting".

Second, while the literature highlights how women-only cooperatives may be more effective for empowerment due to having fewer barriers to entry compared to mixed-gender cooperatives, the evidence is not straightforward. True to the nature of multidimensional empowerment, Dohmworth and Liu (2020) found that despite the more challenging barriers to ensure participation, mixed-gender cooperatives provided greater opportunities that were not scalable in women-only groups. Overall, experience with economic autonomy, the ability to overcome stereotypes and the presence and participation of women and men were all valuable.

Third, Beath, Christia and Enikolopov (2012) tested a community-driven approach for empowerment in Afghanistan and found increased female participation in positive economic and societal outcomes but “no effects on the division of intrafamily decision-making or on attitudes toward the general role of women in society.” The study also found that the programme’s impact on attitudes varied significantly based on age, role, and education. While the impact was strong on younger and more educated men and women, it was “in turn weaker for women already influential in the village, as proxied by level of female land ownership.” The study found that the “intervention [had] notable effects on women’s community and political participation, but a more circumscribed impact on individual attitudes on the role of women in the household or broader society” due to restrictions attributed to the wider cultural context. It also found that men were more open to women’s participation or mobility in areas with existing examples.

Fourth, Jha and others (2020) argue that women who are members of self-help groups (SHGs) have higher self-efficacy than women who are not. These women demonstrate a good awareness of their rights, higher participation in social programmes, and more employment through their engagement in income-generating activities and saving schemes connected to SHGs. Some barriers were also found to women’s participation and empowerment in SHGs, and women’s representation in leadership roles. These barriers included male dominance, lack of assets and resources, social and cultural barriers, lack of capacity, domestic violence, and defamation. We now turn to the objectives of this evidence review.

3. OBJECTIVES OF THE EVIDENCE REVIEW

This evidence review aims to contribute findings that will supplement existing evidence on women’s empowerment. As far as the authors are aware, there is no existing EGM on women’s empowerment across a wide range of sectors and outcome areas in developing countries. There is an ongoing map from the World Bank’s Gender Innovation Lab, but it is different in scope and geographically more restricted. There are several systematic reviews, of which some are listed here. A mixed-method, systematic review on the effectiveness of SHG programmes for improving women’s empowerment found that SHGs have positive effects on the economic, social and political empowerment of women (Brody and others, 2015). Another review suggests that vocational and business training had a limited effect on women’s employment, income and earnings in low and middle-income countries (Chinen and others, 2017). Another review studied the effects of microcredit on women’s control over household spending in developing countries (Vaessen and others, 2014). A systematic review discussed women’s empowerment and gender equality but is confined to fragile contexts (Lwamba and others, 2021). In addition, no existing maps make the connection between women’s empowerment and climate change.

The evidence review’s first objective is to produce an EGM that visually depicts what evidence exists regarding the effectiveness of interventions that seek to promote women’s empowerment. Specifically, we will respond to the following question:

What evidence exists regarding the effectiveness of interventions that seek to promote women’s empowerment?

This will be achieved by:

- Developing a typology of interventions for women's empowerment and anticipated outcomes from these interventions.
- Creating an EGM showing evaluations of interventions to increase women's empowerment. The map will also include several filters related to population, intervention and other study characteristics.

The evidence review's second objective is to produce a systematic review with relevant meta-analysis regarding the following review questions:

How can interventions be clustered most effectively to allow for aggregation and meta-analysis? What are the effects of selected interventions on key outcome areas? How much confidence can be placed in the findings of included studies? Which factors explain the variation of effects?

Overall, the evidence review will be a systematic collation, assessment, and presentation of evidence in an EGM and subsequently a systematic review on selected intervention/outcome areas and relevant meta-analysis.

The evidence review will inform the practices of the Green Climate Fund and the International Fund for Agricultural Development through informing debates on policies, programme and project design. It will follow all the necessary protocols, search requirements, coding procedures and replicability requirements as set out by leading global institutions on evidence synthesis. These include using specialist search strings for different databases, snowball sampling, searches in sub-areas, expert knowledge in sub-areas and canvassing the experience of search specialists and systematic review specialists. The remaining sections of this approach paper focus on the methods, search strategy and data-collection and analysis for the EGM.

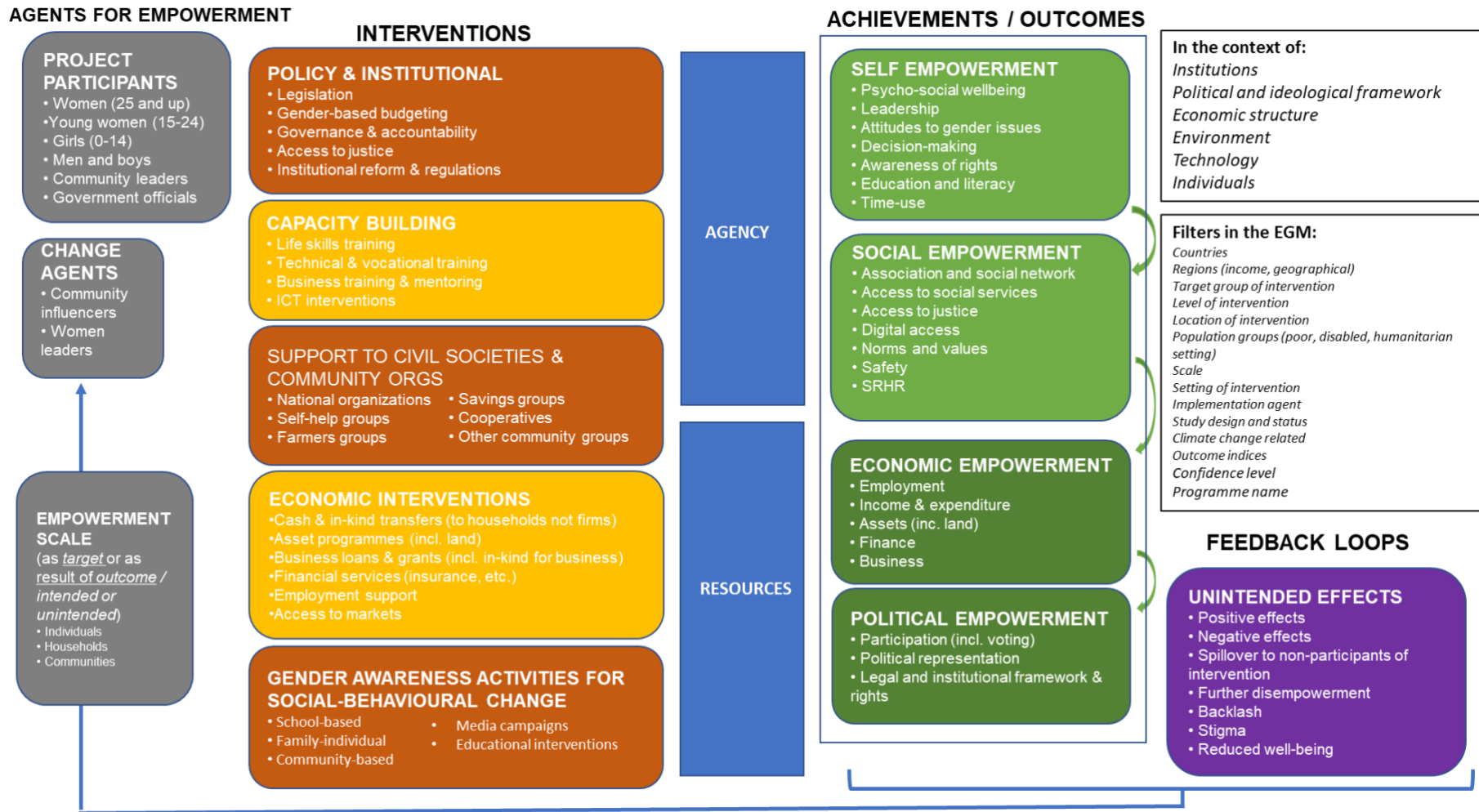
B. METHODS

First, we present the evidence review's theory of change. Next, we present the approach to developing the evidence review's intervention/outcome framework. We then describe the review's use of the PICOS (population, intervention, comparator, outcome and study design) approach to inclusion and exclusion criteria and the strategy for searching for and identifying the relevant literature. We also detail the literature coding, extraction and analysis process we will use to generate the EGM.

1. THEORY OF CHANGE

Figure 1 presents the evidence review's theory of change. The theory of change illustrates the types of interventions in the EGM and the outcome areas. It also illustrates the enabling environment, filters in the EGM, feedback loops and agents for empowerment.

Figure 1. Theory of change for this evidence review



Abbreviation: SRHR (sexual and reproductive health and rights)

The EGM considers five broad pathways leading to women's empowerment namely policy and institutional, capacity building, support to civil society and community organizations, economic interventions and lastly gender awareness activities for social-behavioral change. All of these pathways jointly and severally contribute to both improved resources and agency (from Kabeer's framework) which directly or indirectly map onto one or multiple dimensions of women's empowerment categorized as self, social, economic and political empowerment. These empowerment domains are the outcomes (or achievements in Kabeer's terms) the interventions are seeking to achieve.

The relative impact of these interventions is expected to hinge on several factors, including whether the intervention is implemented at the individual, household, community or society level and the institution or service provider responsible for its implementation. The urban or rural location of the intervention may also affect empowerment outcomes. Women's characteristics that are likely to influence the four dimensions of empowerment include age, race/ethnicity, caste, religion, migrant status, indigenous group, lifecycle status (pregnant, lactating, adolescent), civil status (widow, married, single, divorced), abilities (consider people with disabilities) and household status (whether the head of the household or a household member). Finally, the impact on sustainable empowerment will also be affected by the intervention being either standalone or combined with others.

Women, girls, men, boys, community leaders and/or government officials are expected to participate in the programmes. Community influencers and women leaders could act as facilitators in promoting women's empowerment. Finally, it is important to highlight the unintended consequences of some interventions. These may include spillover effects to non-participants, disempowerment, backlash, stigmatization and reduced well-being.

For these interventions to yield the desired and expected outcomes, some assumptions need to hold. Some key assumptions relate to the political environment, government structures and macroeconomic stability. Other important assumptions relate to the availability of adequate financial resources and institutions and service providers capable of effectively implementing interventions. Another set of assumptions relates to the interest and willingness of the target population to participate, adopt and access various interventions. Yet another set of assumptions relates to the fact that interventions will build momentum for a change in norms, values or attitudes and scaling up. Specific interventions are also likely to be highly context-specific and thereby work only if certain assumptions hold in that context.

2. INTERVENTION/OUTCOME FRAMEWORK

The EGM assesses the evidence base of interventions designed to promote women's empowerment in developing countries. The interventions engage with the transition from disempowerment to empowerment through improved access to material, human, or social resources.

Rather than simply adopting existing labels or terminology, a set of empowerment outcomes was defined based on material, human or social resources (assets) and opportunities (agency). Each of the five categories was disaggregated into sub-categories (see Table 1).

Outcomes were also disaggregated into sub-categories, based on layers of empowerment, with the recognition that empowerment in one area does not guarantee an equivalent effect in all others. The broader categories were classified as self, social, political, or economic empowerment. Layers of the sub-categories were determined as economic, political, social-cultural, legal, relational (familial and interpersonal) and psychological. Additionally, unintended positive or negative effects and impacts of interventions were noted. Furthermore, the scale of time required by either interventions or impacts was recorded. Table 2 lists the outcome categorization and disaggregation.

3. INCLUSION/EXCLUSION CRITERIA

This section outlines the steps taken to systematically review the considerable evidence on women's empowerment, including the scope of the review. We use the PICOS model to describe our inclusion/exclusion criteria.

a. Population

The population are all those in developing countries. More specifically, developing countries in this context are Non-Annex I countries as defined by the Kyoto Protocol. The target group of the eligible interventions could be women of any age and may also include men and boys of any age. The map will include a filter that allows readers to specify low- or middle-income country categories.

b. Interventions

The interventions included in the map will be interventions intended to increase women's empowerment. To be considered, interventions must support the transition from disempowerment to empowerment. The EGM will include interventions that promote access to material, human, psychological or social resources. The EGM will include interventions implemented at different units of observation (e.g. individual, household, and community levels). When results include the impacts of interventions on both men and women it is imperative to disaggregate the impacts on women.

One problematic issue confronting this review is that many interventions are now labelled as empowerment interventions when in previous years identical interventions were not similarly labelled (partly due to the recent increase in practitioner and academic interest). Consequently, the study team had to choose between:

- 1) Only including studies which explicitly label the intervention or outcomes as empowerment; or
- 2) Defining a set of empowerment outcomes and screening studies for these outcomes.

The first approach would bias the included studies against older studies in which the empowerment label was not so broadly used. However, the latter approach risks being very broad as it is arguable that 'everything' is empowerment. If the study team decided to include any study which presented gender-disaggregated outcomes this would drag in a large proportion of development impact evaluations. We therefore use the second approach, but with a clearly defined set of eligible outcomes related to women's empowerment but not wellbeing. To keep the scope manageable, we are not including interventions targeted at women but intend to improve welfare rather than empowerment (e.g. maternal and child health programmes). This rule is easier to state than to apply, as a broad range of activities claim to have empowered women. For example, it is claimed that improved water supply, such as a village water pump, is empowering because it saves time. However, the map cannot include all studies of water, sanitation and hygiene interventions. Studies of water, sanitation and hygiene interventions reporting only child health outcomes will not be addressed, while studies reporting time savings for women will be included.

Similarly, a study of a microfinance programme – even if targeted at women – will not be included if outcomes are restricted to business revenues. However, the study will be included if it has an empowerment goal, including economic empowerment through women's income. Furthermore, mere disaggregated data on income will not be considered empowerment unless there is a specific reference to exercising choice regarding women's use of income or assets by women. Hence, to be included, the study must report gender-disaggregated outcomes as a necessary but not sufficient condition. Nonetheless, empowerment is broadly defined, as described under outcomes in Table 2.

The classification of the interventions, as determined by the conceptual framework, has five broad categories with further sub-categories. Table 1 lists the intervention categories and sub-categories. Appendix 1 provides full definitions.

Table 1. *List of intervention categories and sub-categories*

INTERVENTION CATEGORIES	SUB-CATEGORIES
Policy and institutional	Legislation Gender-based budgeting Governance & accountability Access to justice Institutional reform & regulations
Capacity-building	Life skills training Technical and vocational training Business training & mentoring Information and Communications Technology interventions
Support to civil society and community organizations	National organizations Self-help groups Farmers groups Savings groups Cooperatives Other community groups
Economic interventions	Cash and in-kind transfers (to households, not firms) Asset programmes (inc land) Business loans and grants (including in-kind for business) Financial services (insurance, etc.) Employment support Access to markets
Gender awareness activities for social-behavioural change	School-based Family-individual Community-based Media campaigns Educational interventions

c. Comparator

The EGM will include both quantitative and qualitative studies. Regarding quantitative studies, the gap map will include experimental and non-experimental studies that aim to evaluate the effect of an intervention on relevant outcomes by using valid comparison groups or adjusting for selection bias. Eligible experimental studies should provide a comparison between two or more equivalent units of study. Qualitative studies may use methodologies such as in-depth interviews or ethnographies. Qualitative studies must mention an underlying methodological and analytical approach.

d. Outcomes

Included studies will assess changes in women's empowerment as a result of eligible interventions. The EGM will catalogue how interventions support different empowerment domains such as resources, agency and achievements. The review refers to agency as opportunities for decision-

making, collective action, and leadership. This may include increased participation, voice and negotiation. The EGM will disaggregate outcomes by dimensions of empowerment (i.e. economic, political, social-cultural, legal, familial and interpersonal, and psychological spheres), recognizing that empowerment in one dimension is not necessarily indicative of empowerment in another.

The EGM will consider outcomes across a range of relevant areas concerning each of the aforementioned dimensions of empowerment. These include but are not limited to social capital, employment, capability, knowledge, and training, access to and control of resources and assets (economic security), participation in decision-making, mobility, well-being and happiness, time-use and domestic work, community and political participation, marriage and kinship. The EGM will also include changes in institutional structures (laws, relations, norms), which may facilitate empowerment outcomes. In this context, we refer to norms as a set of widely held beliefs and common practices.

The EGM will consider unintended effects of interventions, including potential negative effects (i.e. further disempowerment, backlash, trade-offs, stigma and reduced well-being). The EGM will also take stock of other impacts that may be associated with or moderate women's empowerment outcomes, such as the influence of other socio-biographical characteristics.

If applicable, the EGM will aim to denote spillover effects of interventions to non-participating women on the same outcomes. Outcomes should evaluate the extent to which empowerment outcomes have been sustainable across timescales. As changes in behaviour often take time to take root, studies included in the EGM should measure outcomes a reasonable time after the onset of the intervention. The EGM will provide the ability to filter outcomes by unit of observation (i.e. individual, family, community).

The outcomes for this map are broadly classified as self-empowerment, social empowerment, political empowerment and economic empowerment, with further sub-categories under each outcome. The list of outcome categories is given in Table 2. Full details are described in Appendix 1.

Table 2. Outcome categories and subcategories

OUTCOME CATEGORIES	SUB-CATEGORIES
Self-empowerment	<ul style="list-style-type: none"> Psychosocial wellbeing Leadership Attitudes to gender issues Decision-making Awareness of rights Education and literacy Time-use
Social empowerment	<ul style="list-style-type: none"> Mobility Association and social network Access to social services Access to justice Digital access Norms and values Safety Sexual and reproductive health and rights
Economic empowerment	<ul style="list-style-type: none"> Employment Income & expenditure

OUTCOME CATEGORIES	SUB-CATEGORIES
	Assets (control and ownership of assets and land) Finance (including access to credit, loans and other forms of finance) Business (any outcome of women owning or controlling a business)
Political empowerment	Participation (inc voting) Political representation Legal and institutional framework and rights

In the theory of change, outcome areas are not shown as intermediate outcomes (e.g. norms and attributes) and final outcomes (i.e. empowerment measures). The study team views intrinsic and instrumental outcomes as equally important. Qualitative studies discuss barriers and facilitators to successful implementation, present participant and other stakeholder perceptions or unpack causal processes. The EGM will thus include columns for ‘implementation issues’, ‘stakeholder perceptions’ and ‘causal mechanisms’ that include studies that provide information on these areas. Where a study reports a composite empowerment measure, such as the Women’s Empowerment Agriculture Index, it will be coded under each component of that study. We will also include a column for composite empowerment outcomes so the map can identify a list of indices which are being used. All outcomes may be measured at the individual, household, community-level or larger geographic unit. The unit of measurement will be coded as a filter.

e. Study designs

Eligible study designs may be one of the following:

- 1) Impact studies: the study of the impact of an intervention using an experimental or non-experimental design – the latter with either a valid comparison group or a regression-based approach using data on untreated observations which adjusts for selection bias, such as the use of instrumental variables.
- 2) Other evaluations and qualitative studies of interventions: process evaluations are evaluations of implementation usually based on qualitative data. There are also qualitative studies of interventions (e.g. ethnographic studies, often called ‘development anthropology’) that are not evaluations of the intervention in the conventional sense.
- 3) Systematic reviews of the above two categories of studies.

The evidence review will rate systematic reviews included in the EGM according to the Supporting the Use of Research Evidence or similar framework. The team will assign an overall rating after they have assessed the methods utilized in the review. This rating should be based on the level of confidence in the effects reported in systematic reviews.

f. Exclusion criteria

We will exclude all published or grey literature that is not in English, as well as all studies published before the year 2000.

C. SEARCH STUDY

This section details the methods used for the systematic search of academic and other databases, websites, and other methods such as manual searches of selected journals and citation tracking.

1. SEARCH STEPS

A protocol was developed with the list of databases to be searched, along with other sources such as organizational websites or databases that retrieve reports and other grey literature. The protocol also includes a list of selected journals, published in the past five years, that are likely to include eligible studies approved for screening by the advisory group members.

2. DATABASES AND REPOSITORIES

We will conduct a systematic search of eight academic databases. The dates of searches and the number of hits for each database will be provided in detail. Table 3 lists the databases.

Table 3. *List of databases to be searched*

DATABASE
CAB Abstracts
EconLit with full text, Political science complete, Soc-Index complete, Social science full text, Education source APA PSYC Articles (EBSCOHOST PLATFORM)
JSTOR
ProQuest
PubMed
Sage Journals Database
Scopus
Web of Science

In addition to the academic database searches, grey literature will also be searched systematically. Table 4 lists the grey literature sources.

Table 4. *List of grey literature sources to be searched*

LIST OF GREY LITERATURE SOURCES TO BE SEARCHED
Engender Impact
Evidence for Policy and Practice Information (EPPI) systematic reviews, EPPI knowledge library
International Centre for Research on Women (ICRW)
IDEAS/REPEC
National Bureau of Economic Research (NBER)
Social Science Research Network (SSRN)
UNWomen
USAID-DCE

3. SEARCH TERMS

The search strings for various databases will be customized. In general, search terms will include synonyms of population, intervention, outcome, study design and list of eligible countries as per the eligibility criteria of this EGM. Boolean operators OR, and AND will be used, where possible. The

list of countries as per the map's criteria, namely Kyoto Protocol Non-Annex 1 countries, will be used as filters for various databases. The review will consider whether to use eligible programme names and outcome indices to ensure better coverage of eligible studies. Appendix 2 contains illustrative search terms.

D. DATA COLLECTION AND ANALYSIS

The number of records acquired from searching the academic databases and other sources will be recorded in a spreadsheet, along with the search dates and strings. The number of 'includes' and 'excludes' at each stage will also be logged in a spreadsheet. For each of the stages that require a comparison of the decisions made by two researchers, comparison reports for the reconciliation of disagreements will be generated in EPPI Reviewer 4. Data will be analysed using the frequencies and cross tab features in EPPI Reviewer 4 for primary and secondary dimensions of the map. The map will be generated using EPPI-Mapper. Some figures, such as the aggregate maps, will also be plotted using EPPI-Visualiser.

1. SCREENING OF STUDIES

Each record will be screened by a set of two researchers independently using a screening tool and a third researcher will resolve any disagreements. The screening at the title, abstract and full-text stages will ensure each record is assessed by two researchers. Table 5 provides details of the screening tool.

Table 5. Screening tool

No.	QUESTION	RESPONSE
1.	Is the study conducted in developing countries, as per the Kyoto Protocol classification of Non-Annex-I countries?	Yes, screen on Q.2 No, Exclude on country
2.	Does the study target women/men (of any age, employment or landholding status or engaged in any sector of the economy, be it formal/informal/self-employed) or programme staff and community-level influencers (youth/elderly) towards empowering women?	Yes, screen on Q.3 No, Exclude on population
3.	Is the intervention (policy, programme, project or practice) aimed at empowering women at any level, be it individual/household/community and may be led by women?	Yes, screen on Q.4 No, Exclude on intervention
4	Does the study analyse the effect of the intervention on the empowerment of women resulting from economic or sociocultural or legal or political or familial or interpersonal or psychological outcomes? (Quantitative)	Yes, Include! No, Exclude on design
5.	Is the study an evaluation of an intervention? (Qualitative/Mixed-Method)	Yes, Include! No, Exclude on design
	Overall (include if Yes to all the above)	

2. DATA EXTRACTION AND MANAGEMENT

The data will be extracted from the studies included at the full-text stage using a coding form/data extraction form in EPPI Reviewer. The coding form used for data extraction will be described in an appendix of the report for the EGM. The data extracted from the studies will be found eligible at the

full-text stage by two researchers. Disagreements will be resolved by a third researcher at the screening stage. The draft coding tool is shown in Appendix 3.

3. EVIDENCE GAP MAP

The intervention/outcome framework is shown in Appendix 1. This will define the structure of the EGM. To summarize, the EGM will map interventions (along the *y*-axis) onto outcomes (along the *x*-axis). Each intervention-outcome cell will offer a possible cluster of studies.

4. SYSTEMATIC REVIEW

The systematic review will assess the effectiveness of interventions in achieving empowerment outcomes. The types of interventions for the assignment will be informed by the EGM, which will highlight the areas with the highest potential for the systematic review. The systematic review will include evidence from one or several adjacent or nearby cells in the EGM. The systematic review will focus only on quantitative studies that seek to evaluate the causal effect of relevant interventions on associated outcomes. The meta-analysis will ascertain overall effect sizes (and confidence levels) for groups of interventions spread over multiple studies (as determined by the project team and advisory group). This will require that both interventions and outcomes be very similar, which will rely on expert judgment. The team will generate forest plots to illustrate the effect of sample size on effect size and confidence intervals. If numerous experimental and quasi-experimental studies are available, the selected team will perform sub-group and meta-regression analyses with moderator variables.

E. CONCLUSIONS

From the 1970s onwards, the debate on the role of women within the environment and development has evolved from a focus on productive activities, to the relative status and power differentials of women and men, to a focus on women's empowerment. While women's empowerment contributes to both intrinsic and instrumental benefits (such as meeting the SDGs) the instrumental benefits from women's empowerment often appear to override intrinsic benefits. This evidence review builds on Kabeer's (1999) conceptualization of empowerment as a process that involves incremental steps involving interrelated dimensions of resources, agency and achievements of girls and women of all ages.

This evidence review aims to contribute findings which will supplement existing evidence on women's empowerment across a wide range of sectors and outcome areas in developing countries. The review will display what evidence exists regarding the effectiveness of interventions that seek to promote women's empowerment in the form of an EGM through developing a typology of interventions for women's empowerment, and outcomes from these interventions.

This approach paper uses the PICOS model to describe our inclusion/exclusion criteria. It also details the methods used for the search of academic and other databases and websites, searches of selected journals and citation tracking. In addition, the approach paper describes the strategy for data-collection and analysis and the contours of the systematic review. The separate protocol for the systematic review will detail the methods to be used for meta-analysis.

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APPENDICES

Appendix 1. INTERVENTION-OUTCOME FRAMEWORK

INTERVENTION	SUB-INTERVENTION	DEFINITIONS
Policy and institutional	Legislation	Laws supporting women's rights, access to resources and options; advocacy for rights and legislation (Addae, 2015).
	Gender-based budgeting	A gender-based assessment of budgets, incorporating a gender perspective at all levels of the budgetary process and restructuring revenues and expenditures to promote gender equality (Quinn, 2009).
	Governance & accountability	Organizational systems, procedures and interventions by government bodies to provide information and accountability to non-government stakeholders such as civil society organizations and the general public.
	Access to justice	Use of judicial system to redress rights violations. Interventions to improve access to justice for women.
	Institutional reform & regulations	Changes at the level of institutions in policies, rules, regulations and procedures to serve increase gender sensitivity or gender transformation and gender equity.
Capacity-building	Life skills training	Training to enhance life skills, which are defined as the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life.
	Technical and vocational training	Non-traditional forms of training or learning training may comprise "a series of courses on income-generating activities" (Bandiera and others, 2012) or developing 'soft skills' such as "interaction with customers, work in teams, acting professionally and properly representing themselves in job interviews" (Groh and others, 2012) with the aim of equipping participants to find employment in any sector or be self-employed. The technical skills training may be around enhancing knowledge about the technical aspects of an occupation/vocation, such as the use of certain machines or technology in agriculture or seed management to enhance productivity.
	Business training & mentoring	Business coaching or mentoring programmes that provide participants with knowledge and skills to prepare for starting a business or "promote entrepreneurship by providing entrepreneurship training" (Pascaul, 2008). E.g. financial management and marketing strategies.
	Information and communications technology interventions	Training or learning programmes on digital tools and software and other technologies.
Support to civil society and community organizations	National organizations	Government or civil society national level associations for women.
	Self-help groups	Community groups of about 10-20 members that pool savings and offer circular credit. Groups may or may not be supported by a formal lending institution like a bank, and may undertake joint activities.
	Farmers groups	Groups or associations among farmers that provide common activities such as training or input procurement.

INTERVENTION	SUB-INTERVENTION	DEFINITIONS
	Savings groups	Groups or associations with a majority of women that assist with savings and borrowing.
	Cooperatives	Producer and consumer cooperatives for sales and purchases.
	Other community groups	Any other associations within the community for women or supporting women.
Economic	Cash and in-kind transfers (to households, not firms)	Cash and in-kind or other goods and services given for free to households, either conditionally or unconditionally.
	Asset programmes (inc. land)	Programmes which provide ownership or use rights to assets, including land.
	Business loans and grants (including in-kind for business)	Cash loans and in-kind or other goods and services for business purposes or entrepreneurship.
	Financial services (insurance, etc.)	Financial services provided by the finance sector other than loans (e.g. insurance and forex).
	Employment support	Interventions to provide employment through work placement, apprenticeships and internships, public works and job reservation.
	Access to markets	Interventions that promote women's knowledge of and access to markets and participation in trade-related activities.
Gender awareness activities for social-behavioural change	School-based	Interventions that may be delivered at a classroom level or follow a whole-school approach towards raising awareness among the students and staff about the gender inequality and bias and enhance inclusive learning.
	Family-individual	Interventions that are delivered on a one-to-one or family basis (including couples/significant others/partners) to reflect on gender norms, roles and relations to encourage joint decision-making and on aspects of sexual and reproductive health and rights.
	Community-based	Interventions that are delivered in a group setting among the community members who may or may not be influential to reflect, discuss and debate the gender norms and roles to address gender inequalities.
	Media campaigns	Interventions promoting gender awareness through print or electronic media and may be around sex-selective abortions, girl education, immunization, nutrition and other related issues that address gender inequalities).
	Educational interventions	Various educational materials/activities/programmes on gender awareness.

Appendix 2. ILLUSTRATIVE SEARCH TERMS

Name of the Database: Scopus

Date Searched: 18-02-2022

Number of hits: 311

(((((title-abs-key (women or female* or girl or gender or mother* or "women empowerment" or "women's empowerment")) and (title-abs-key ("sensitisation campaign*" or "gender awareness" or "safer spaces" or "civic education" or "inclusive community" or "cash transfers" or "job skills training" or "activelabour market" or "transport infrastructure" or "public works program*" or "self-help groups" or "in-kind transfers" or "group education" or "pradan" or "kudumbasree" or "nregs" or "insurance" or "kiosks" or "advocacy group" or "small enterprises" or "social-enterprises" or "one-stop centers" or "media campaigns" or "educational incentives" or "microlending" or "ngo" or "microfinance" or "community mobilization" or "community mobilization" or "arts-based approach*" or "community radio" or "mass media"))) and (title-abs-key ("women empowerment index" or "self confidence" or "self esteem" or "self image" or "decision making" or "decision-making" or bargaining or "freedom of mobility" or "freedom of movement" or "reduced age of marriage" or "family size" or "women leader*" or "women entrepreneurs" or "awareness of rights" or "gender transformation" or education* or "inheritance of property" or negotiations or "voting rights" or "land rights" or empowered or capabilit* or autonomy or "political empowerment" or "digital access" or "gender equality" or "political inclusion" or "political participation"))) and (title-abs-key ("systematic review" or "methodological review" or "overview" or "critical review" or "randomized controlled trial" or "randomly or random*" or trial or rct or groups" or "before vs after studies" or "experimental" or "quasi-experimental studies" or "meta-analysis" or "propensity score" or "metaanalysis" or "regression discontinuity" or "difference indifference" or "impact evaluation"))) and (title-abs-key ("developing countr*" or "less developed" or "low middle income countr*" or lmic or india or bangladesh or africa or "south asia")))

Appendix 3. CODING TOOL

- Country
 - List of countries including not reported
- Region (Geographic)
 - East Asia and Pacific
 - Europe and Central Asia
 - Latin America and Caribbean
 - Middle East and North Africa
 - South Asia
 - Sub-Saharan Africa
 - Not reported
- Region (Income)
 - Low-income
 - Lower-middle income
 - Upper-middle income
 - High-income
 - Not reported
- Target group of intervention
 - Women (25 and above)
 - Young women (15-24)
 - Girls
 - Men and boys
 - Community leaders
 - Government officials
 - Non-governmental organization workers
 - Target not stated/reported
- Population
 - Poor and disadvantaged
 - People with disabilities
 - Humanitarian settings/conflict affected
 - Not reported
- Study design
 - Randomized Controlled Trial
 - Non-experimental design with comparison group
- Study status
 - Completed
 - Ongoing

- Level of intervention
 - Individual
 - Household
 - Firm
 - Community and community groups
 - Not stated/relevant
- Location of intervention
 - Rural inc. semi-rural
 - Urban inc. peri-urban
 - Both
 - Not stated or unclear
- Scale
 - Local
 - Regional
 - National
 - Not stated/not reported
- Implemented by
 - Government agency
 - Official development agency
 - International non-governmental organization
 - Local non-governmental organization
 - Private sector
 - Research team
 - Community or individual
 - Other
 - Not reported
- Setting of intervention
 - School and college
 - Training centre
 - Community (centres, public spaces, fields etc)
 - Private sector organization
 - Other
 - Not stated/reported
- Intervention
 - Policy and institutional
 - + Legislation
 - + Gender-based budgeting
 - + Governance & accountability
 - + Professional training

- + Institutional reform & regulations
- Capacity-building
 - + Life skills training
 - + Technical and vocational training
 - + Business training & mentoring
 - + Information and communications technology interventions
- Support to civil society and community organizations
 - + National organizations
 - + Self-help groups
 - + Farmers groups
 - + Savings groups
 - + Cooperatives
 - + Other community groups
- Economic interventions
 - + Cash and in-kind transfers (to households not firms)
 - + Asset programmes (inc. land)
 - + Business loans and grants (including in-kind for business)
 - + Financial services (insurance, etc.)
 - + Employment support
 - + Access to markets
- Gender awareness activities for social-behavioural change
 - + School-based
 - + Family-individual
 - + Community-based
 - + Media campaigns (incl. social media)
 - + Educational interventions
- Outcomes
 - Self-empowerment
 - + Psychosocial wellbeing
 - + Leadership
 - + Attitudes to gender issues
 - + Decision-making
 - + Awareness of rights
 - + Education and literacy
 - + Time-use
 - Social empowerment
 - + Mobility
 - + Association and social network
 - + Access to social services

- + Access to justice
- + Digital access
- + Norms and values
- + Safety
- + Sexual and reproductive health and rights
- Economic empowerment
 - + Employment
 - + Income & expenditure
 - + Assets (inc. land)
 - + Finance
 - + Business
- Political empowerment
 - + Participation (inc. voting)
 - + Political representation
 - + Legal and institutional framework and rights
- Climate change element
 - + Climate change focused
 - + Climate change components may be relevant
 - + No climate change element
 - + Not clear
- Programme name
 - AMSTAR-2 checklist
 - + 1. Did the research questions and inclusion criteria for the review include the components of PICO?
 - ◆ Yes
 - > Population
 - > Intervention
 - > Comparator group
 - > Outcome
 - > Time frame for follow-up (optional)
 - ◆ No
 - + 2*. Did the report of the review contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify any significant deviations from the protocol?
 - ◆ Yes: The authors state that they had a written protocol or guide that included ALL the following
 - > Review question
 - > Search strategy
 - > Inclusion/exclusion criteria

- > A risk of bias assessment
 - > A meta-analysis/synthesis plan, if appropriate
 - > A plan for investigating causes of heterogeneity
 - > Justification for any deviations from the protocol
 - ◆ Partial yes: The authors state that they had a written protocol or guide that included ALL the following
 - > Review question(s)
 - > A search strategy
 - > Inclusion/exclusion criteria
 - > A risk of bias assessment
 - ◆ No
- + 3. Did the review authors explain their selection of the study designs for inclusion in the review?
- ◆ Yes: If the review satisfies ONE of the following
 - > Explanation for including only RCTs
 - > OR Explanation for including only NRSI
 - > OR Explanation for including both RCTs and NRSI
 - ◆ No
- + 4*. Did the review authors use a comprehensive literature search strategy?
- ◆ Yes: Should have all the following
 - > Searched at least 2 databases (relevant to the research question)
 - > Provided key word and/or search strategy
 - > Justified publication restrictions (e.g. language)
 - > Searched the reference lists/bibliographies of included studies
 - > Searched trial/study registries
 - > Included/consulted content experts in the field
 - > Where relevant, searched for grey literature
 - > Conducted search within 24 months of completion of the review
 - ◆ Partial yes: All the following
 - > Searched at least 2 databases (relevant to the research question)
 - > Provided key word and/or search strategy
 - > Justified publication restrictions (e.g. language)
 - ◆ No
- + 5. Did the review authors perform study selection in duplicate?
- ◆ Yes, either ONE of the following
 - > At least two reviewers independently agreed on the selection of eligible studies and achieved consensus on which studies to include
 - > Two reviewers selected a sample of eligible studies and achieved good agreement (at least 80 per cent), with the remainder selected by one reviewer.

- ◆ No
- + 6. Did the review authors perform data extraction in duplicate?
 - ◆ Yes: either ONE of the following
 - > At least two reviewers achieved consensus on which data to extract from included studies
 - > Two reviewers extracted data from a sample of eligible studies and achieved good agreement (at least 80 per cent), with the remainder extracted by one reviewer
 - ◆ No
- + 7*. Did the review authors provide a list of excluded studies and justify the exclusions?
 - ◆ Yes: if it includes the following
 - > Provided a list of all potentially relevant studies that were read in full-text form but excluded from the review
 - > Justified the exclusion from the review of each potentially relevant study
 - ◆ Partial Yes if:
 - > Provided a list of all potentially relevant studies that were read in full-text form but excluded from the review
 - ◆ No
- + 8. Did the review authors describe the included studies in adequate detail?
 - ◆ Yes: should also have ALL the following
 - > Described population in detail
 - > Described intervention in detail (including doses where relevant)
 - > Described comparator in detail (including doses where relevant)
 - > Described study's setting
 - > Timeframe for follow-up
 - ◆ Partial yes: should have the following
 - > Described populations
 - > Described interventions
 - > Described comparators
 - > Described outcomes
 - > Described research designs
 - ◆ No
- + 9*. Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies that were included in the review?
 - ◆ RCTs
 - > Yes: must have assessed RoB from
 - (i) Allocation sequence that was not truly random, and
 - (ii) Selection of the reported result from among multiple measurements or analyses of a specified outcome

- > Partial Yes: must have assessed RoB from
 - (i) Unconcealed allocation, and
 - (ii) Lack of blinding of patients and assessors when assessing outcomes (unnecessary for objective outcomes such as all-cause mortality)
- > No
- ◆ NRSI
 - > Yes: must also have assessed RoB from
 - (i) Methods used to ascertain exposures and outcomes, and
 - (ii) Selection of the reported result from among multiple measurements or analyses of a specified outcome
 - > Partial Yes: must have assessed RoB
 - (i) From confounding, and
 - (ii) From selection bias
 - > No
- + 10. Did the review authors report on the sources of funding for the studies included in the review?
 - ◆ Yes: Must have reported on the sources of funding for individual studies included in the review. Note: Reporting that the reviewers looked for this information but it was not reported by study authors also qualifies
 - ◆ No
- + 11*. If meta-analysis was performed did the review authors use appropriate methods for the statistical combination of results?
 - ◆ RCTs
 - > Yes if
 - (i) The authors justified combining the data in a meta-analysis
 - (ii) AND they used an appropriate weighted technique to combine study results and adjusted for heterogeneity if present
 - (iii) AND investigated the causes of any heterogeneity
 - ◆ For NRSI
 - > Yes if
 - (i) The authors justified combining the data in a meta-analysis
 - (ii) AND they used an appropriate weighted technique to combine study results, adjusting for heterogeneity if present
 - (iii) AND they statistically combined effect estimates from NRSI that were adjusted for confounding, rather than combining raw data, or justified combining raw data when adjusted effect estimates were not available
 - (iv) AND they reported separate summary estimates for RCTs and NRSI separately when both were included in the review
 - ◆ No
 - ◆ No meta-analysis conducted

- + 12. If a meta-analysis was performed, did the review authors assess the potential impact of RoB in individual studies on the results of the meta-analysis or other evidence synthesis?
 - ◆ Yes if
 - > Included only low RoB RCTs
 - > OR, if the pooled estimate was based on RCTs and/or NRSI at variable RoB, the authors performed analyses to investigate possible impact of RoB on summary estimates of effect
 - ◆ No
 - ◆ No meta-analysis conducted
- + 13*. Did the review authors account for RoB in individual studies when interpreting/discussing the results of the review?
 - ◆ Yes if
 - > Included only low RoB RCTs
 - > OR, if RCTs with moderate or high RoB, or NRSI were included the review provided a discussion of the likely impact of RoB on the results
 - ◆ No
- + 14. Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review?
 - ◆ Yes if
 - > There was no significant heterogeneity in the results
 - > OR if heterogeneity was present the authors performed an investigation of sources of any heterogeneity in the results and discussed the impact of this on the results of the review
 - ◆ No
- + 15*. If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review?
 - ◆ Yes if
 - > Performed graphical or statistical tests for publication bias and discussed the likelihood and magnitude of the impact of publication bias
 - ◆ No
 - ◆ No meta-analysis conducted
- + 16. Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?
 - ◆ Yes if
 - > The authors reported no competing interests OR
 - > The authors described their funding sources and how they managed potential conflicts of interest
 - ◆ No
- Overall study quality

- High: No or one non-critical weakness in the systematic review provides an accurate and comprehensive summary of the results of the available studies that address the question of interest
- Moderate: More than one non-critical weakness
- Low: One critical flaw* with or without non-critical weaknesses

Independent Evaluation Unit
Green Climate Fund
175, Art center-daero, Yeonsu-gu
Incheon 22004, Republic of Korea
Tel. (+82) 032-458-6450
ieu@gcfund.org
<https://ieu.greenclimate.fund>

International Fund for Agricultural Development
Strategy and Knowledge Department
Via Paolo di Dono, 44
00142 Roma, Italy
Tel.: (+39) 0654591
knowledge@ifad.org
<https://www.ifad.org>

