

Gender-Responsive Green Growth: Green Innovation and Entrepreneurship

Katherine Miles

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Introduction

Gender-responsive green innovation and entrepreneurship by Micro, Small and Medium-sized Enterprises (MSMEs) led by women and men is needed to accelerate the transition to an inclusive green economy. This is in a context where there are lower numbers of women-owned businesses internationally, due to a range of interconnected constraints underpinned by social norms.

Green entrepreneurship can refer to the use of a green technology in production, to an innovative green product or service, or to entrepreneurship restricted to green sectors in the economy (e.g. energy).¹ **Gender-responsive green entrepreneurship** may be defined in terms of the gender of a green enterprise’s leader, or in terms of a green enterprise’s approaches to gender, gender equality, and overcoming historical gender biases.² These gender-responsive approaches are relevant to, and may be taken throughout, the whole entrepreneurship process.

Gender-responsive green innovation is green innovation that accounts for the social, behavioural, and cultural attributes, expectations, and norms associated with the biological differences between males and females, and that addresses historical gender biases. It does this in the

¹ [OECD, 2011](#).

² Gender refers to the social, behavioural, and cultural attributes, expectations, and norms associated with being male or female, and gender equality refers to how these factors determine the way in which women and men relate to each other, and the resulting differences of power between them.

product or service resulting from innovation, but also across the entire innovation process. Green innovation can be **gender transformative** if it addresses the underlying causes of socially constructed norms, attitudes, and relations of power, and reduces inequalities.³

This Guidance Sheet sets out some rationales for gender-responsive green innovation and entrepreneurship programmes; provides examples of how diverse gender and green growth approaches have been integrated into existing donor programmes; and presents lessons learned and recommendations for future programmes.



Why is gender relevant to green innovation and entrepreneurship?

- **Green innovation is not gender-neutral; processes and innovations can have gender differential impacts.** Green innovations can have unintended impacts on gender-equality if subconscious gender biases exist and gender differences in needs are not accounted for. For instance, the safety of women is jeopardized by car manufacturers designing and testing safety technology around the physical shape of an average man.⁴
- **Gender analysis can lead to different insights that inform and create new opportunities for green innovation and entrepreneurship.** Integrating an understanding of biological and social-cultural differences between women and men into innovation research can stimulate new knowledge and technologies for the green economy. For example, social norms often dictate that water procurement is ‘women’s work’ and as a result many women have detailed knowledge of soils and their water yields

³ [Verma, 2014](#); [CARE, 2015](#).

⁴ [Khonje, 2017](#).

which can inform civil engineering projects.⁵ Their role as primary users of household energy also means women can be more effective than men at selling clean energy technologies.

- **Women’s participation as entrepreneurs in green enterprise models can advance wider development goals**, such as access to energy for all, gender equality and women’s economic participation. For example, women energy entrepreneurs may be more effective in expanding energy access for rural communities as their proximity to female customers places them at an advantage to support last mile distribution of energy products.⁶
- **Women may face greater vulnerability or different barriers to green innovation and entrepreneurship than men.** Women have lower levels of participation in academic subjects that are most relevant to the green economy sectors (e.g. engineering, manufacturing and construction), face additional constraints on time due to the expectation that unpaid care work is done by women, and in some countries do not have the same legal rights as men to open a business, sign a contract, or open a bank account. Moreover there is a significant gender gap in access to financial and non-financial services facing women entrepreneurs.
- **Green innovations can raise the risk of deepening gender inequalities if not managed appropriately.** For example, there is a need to recognise the gender gap in access to technology access and skills, with 313 million fewer women than men use mobile internet, representing a gender gap of 23%.⁷



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⁵ [Stanford University](#).

⁶ [Energia](#), 2019.

⁷ [GSMA](#), 2019.

How has gender been integrated into existing green innovation and entrepreneurship programmes?

Donor programmes supporting MSMEs to start and scale innovative green business models have adopted a variety of gender-responsive approaches. These primarily focus on entrepreneurship and include:

- Providing **support to women’s associations** to promote women entrepreneurship (Box 1);
- **Enhancing women’s participation** in energy value chains (Box 2);
- Fostering women entrepreneurs through **competitions and accelerator programmes** (Box 3); and,
- **Research** on the role of women in entrepreneurship and the barriers they face (Box 4).



Importantly, existing programmes have acknowledged the need to work at the macro, meso, and micro levels on gender-sensitive entrepreneurship. Moving forward, there is a need for donor programmes to explore key green growth sectors beyond energy and address the gap in focus on gender in green innovation processes.

Box 1: Case studies – Support to women’s associations

UNIDO’s [Promoting Women Empowerment for Inclusive and Sustainable Industrial Development in the MENA Region](#) programme developed the capacities of six national women’s associations through training on UNIDO software and investment promotion methodology. The programme provided direct technical assistance to more than 2,000 women-led companies and women entrepreneurs to increase their business opportunities and ability to mobilise investments. Further, at least 500 promising business opportunities gained access to finance and 800 new jobs were created as a result of the programme.



Box 2: Case studies – Enhancing women’s participation

- [JITA Social Business Bangladesh](#) employs rural women from low socio-economic backgrounds to distribute solar lamps, among other products, door-to-door. Using these women employees, the JITA ran an awareness campaign to highlight the benefits of environmentally friendly technologies, and has helped 30,000 households move from kerosene to solar lamps, thereby reducing carbon emissions. This engagement has led women who previously had no income to earn approximately USD 30 per month working for JITA and provided a sustainable income for 75 JITA hub staff. In 2014, JITA won the gender equality award category as part of the annual [SEED Awards for Entrepreneurship in Sustainable Development](#).
- The Energia [Women’s Economic Empowerment Programme](#) worked with 4,000 women entrepreneurs across Africa and Asia over 2014-2017 in the delivery of energy services and productive uses of energy. Women-led micro and small businesses received training, hand-holding support, and technical assistance to build their capacity. As a result, 2.6 million energy consumers were reached, household time and money spent on collecting or buying fuel roughly halved, and 70% of the women entrepreneurs record a positive profit margin.
- The [Partnership on Women’s Entrepreneurship in Renewables](#) (wPOWER) ran between 2013 and 2018 and promoted the role of women across the clean energy value chain. It successfully trained around 12,000 people across Kenya, Uganda, Tanzania, Rwanda, Nigeria, and India in clean energy, led to nearly 1,000 people being employed by women entrepreneurs, and increased access to energy for almost 6,000,000 people.

What are the lessons learned and success factors from existing programmes?

- ✓ **Proactive efforts to boost women’s participation are beneficial** in green entrepreneurship programmes, as otherwise the participants are likely to mainly be men. Such efforts can lead to an increase in the quality of women applicants and women’s engagement in the overall programme.
- ✓ **Women’s participation in incubation programmes can result in green innovation that addresses challenges faced by women based on their social-cultural roles in society.** For example, through the UNIDO GCIP in Pakistan, a woman applicant proposed a mobile baby incubator powered by solar cells to be piloted in remote areas of the country with limited electricity and high rate of infant mortality.⁸
- ✓ **Ensuring gender diversity in the governance bodies of incubation programmes** can result in a greater level of sensitivity by the group to the challenges faced by women in green innovation and entrepreneurship.
- ✓ **Leveraging political and personal priorities of individual ministers** to enhancing women’s participation in the science and technology sector can secure political buy-in to support advocacy messages.
- ✓ **Approaches focused only on women entrepreneurs at a sector level can change the dynamics of the conversation** and help build the support network that women need in male-dominated industries.
- ✓ **Strengthening women’s confidence and decision-making skills through capacity building is critical to enabling the success of their businesses.** There is also demand for training programmes to incorporate gender in capacity building content so entrepreneurs become aware of their own gender bias.
- ✓ **The enabling environment for women’s entrepreneurship is important** and it is vital to work with policymakers, as well as women entrepreneurs in green growth sectors, to address the general and sector-specific barriers to women’s entrepreneurship.
- ✓ **Engaging women as micro-entrepreneurs in energy-related businesses may not be the best option for poor women** who are unable to take on the financial risks associated with entrepreneurship, according to [Energia](#).

⁸ Stakeholder consultation.

Recommendations for future programmes

Below are some recommendations to consider when incorporating a gender-responsive approach to green innovation and entrepreneurship. See Box 5 for resources to assist with adopting these recommendations.

Design

- ✓ Consider barriers to women's participation in incubation and accelerator programmes, particularly if any training involves overnight stay, as unpaid caring responsibilities and other socio-cultural factors can affect women's participation in such programmes.
- ✓ Build in policy-level engagement to ensure that policymakers are aware of the benefits of women's entrepreneurship in green sectors and that barriers facing women green entrepreneurs are identified.
- ✓ Seek partnerships with organizations with expertise on gender and women's entrepreneurship in general and at a sector level.
- ✓ Identify the constraints to green entrepreneurship for relevant green sectors of intervention, including whether there are any gender differences.

Implementation

- ✓ Integrate a focus on gender and innovation into programme activities through innovation challenges on gender in green sectors.
- ✓ Engage in the development and implementation process of any national financial inclusion strategy to ensure that constraints in access to green finance (e.g. climate risk insurance or green credit) for both women and men-led MSMEs with green enterprise models or working on green innovation are sufficiently addressed.
- ✓ In any accelerator programme, build in questions to applicants on whether they have conducted a gender analysis in their research to inform the development of their innovation and business model.
- ✓ Use a human-centred design approach in research and training. This is a design and management framework that develops solutions to problems by involving the human perspective in all steps of the problem-solving process. In doing so, it recognises that women or men are not homogenous groups but face different risks and needs.

- ✓ Incorporate gender into the content of any capacity building programme with entrepreneurs. For example, discuss case studies of gender-sensitive green innovation, as well as examples whereby innovations have had an unintended impact on gender relations. Moreover, provide green entrepreneurs with personal agency training.
- ✓ Incorporate approaches to ensuring ongoing mentoring, support, and coaching of entrepreneurs beyond any capacity building intervention. This has been shown to be crucial in the energy sector to developing the skills of sales agents, particularly women, allowing them to be more effective in making sales.

Evaluation and sustainability

- ✓ Incorporate sex-disaggregated indicators into the programme to see how an entrepreneur's household income has increased as a result of the green entrepreneurship.
- ✓ Gather sex-disaggregated data on the number of entrepreneurs broken down by green sector.
- ✓ Identify the number of people employed by women entrepreneurs supported through donor activity.
- ✓ Capture data on the number of people reached through advocacy campaigns on social norms constraints facing women's entrepreneurship.
- ✓ Identify laws or national policies proposed or adopted that address legal gender differences to women's entrepreneurship or address gender-specific policy constraints to entrepreneurship.



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Box 3: Case studies – Competitions and accelerator programmes

- APEC's [Empowering Women as Managers of the Renewable Energy Sector](#) project aimed to develop the skills and confidence of women from Asia-Pacific to advance in their careers as leaders and entrepreneurs in the renewable energy sector. It did this through running a competition for women in which participants developed and pitched a renewable energy business/project idea, receiving support along the way from female mentors. Following the competition, the majority of in-person participants intended to further develop and pursue the implementation of their business/project ideas, and one of the participants is already in talks with potential investors for her project, having secured a business partnership with one of the committee members.
- UNIDO's [Global Cleantech Innovation Programme \(GCIP\)](#) programme accelerates clean technology innovation and entrepreneurship through identifying promising innovators and entrepreneurs at a country level. It has adopted a gender-responsive approach in many of its activities including: undertaking awareness-raising activities to boost the number of applications from women, such as advertising in women's magazines and having women from previous years share their experiences; adopting country-specific approaches to overcome constraints to women's engagement, such as allowing team applications in Pakistan as it was culturally unacceptable for women to attend the programme alone; and, introducing women mentors and judges.

Over 2014-2017, the GCIP received almost 3,000 applications in the eight countries of operation, and over 865 start-up companies were selected as semi-finalists. At the 2018 GCIP Global Forum, 53% of the ventures were female-led. Based on a sample of 14 alumni companies, the GCIP is estimated to have reduced CO₂ by 624 kilotons, generated USD23 million of revenue, and created 329 new cleantech jobs.



Box 4: Case studies – Research

- Energia initiated a research programme on the intersection of gender and energy. Programme resources are available on its portal including a publication on [Women's Energy Entrepreneurship: A Guiding Framework and Systematic Literature review](#). This research found that female micro-entrepreneurs seem to have been most effectively engaged within energy value chains in sales and distribution of energy products/services roles and in after-sales service, maintenance, and repair roles.
- Through its [Promoting Women Empowerment for Inclusive and Sustainable Industrial Development in the MENA Region](#) programme, UNIDO conducted a [survey](#) of 1,200 women entrepreneurs from six MENA countries. Respondents cited lack of financing, lack of experience, and lack of contacts as the main obstacles to entrepreneurship, and cited access to capital, recruitment, access to new markets, political conditions, and cost of public services as obstacles to business growth.

From its findings, the survey made recommendations to foster women's entrepreneurship, including: use of media communications to give exposure to women entrepreneur role models; adjust institutional frameworks, especially in terms of improving women's access to finance and specific markets; develop training programmes about entrepreneurship and implement women-specific programmes at all levels of the education system; develop incubators, seed company clusters, and entrepreneurship centres for women; and, build or reinforce entrepreneurial ecosystems at the local level.



Box 5: Resources

- **Additional case studies**
 - [Gendered Innovations: Case studies](#), Stanford University
 - [Where are all the women in the energy sector](#), wPower
- **Advocating for women's entrepreneurship in green economy sectors**
 - [Women's Energy Entrepreneurship: A Guiding Framework and Systematic Literature Review](#), Energia
 - [Opportunities and Constraints for Women's Employment and Entrepreneurship in Renewable Energy](#), GrOW Working Paper Series
 - [Supporting Growth-Oriented Women Entrepreneurs: A Review of the Evidence and Key Challenges](#), World Bank Group
 - [Best Practices for Education and Training to Advance Women's Energy Entrepreneurship](#), wPower
 - [Agency-Based Empowerment Training Enhances Sales Capacity of Female Energy Entrepreneurs in Kenya](#)
- **Human-centred design**
 - [Human-Centered Design toolkit](#), Design Kit
 - [Empowered Entrepreneur Training Handbook](#), Global Alliance for Clean Cookstoves
- **Identifying constraints**
 - [Access, usage and agency country assessment toolkit for women's and girls' financial inclusion](#), PoWER UNCDF
 - [Scaling Adoption of Clean Cooking Solutions through Women's Empowerment: A Resource Guide](#), Global Alliance for Clean Cookstoves
- **General**
 - [Gendered Innovations: How Gender Analysis Contributes to Research](#), European Commission
 - [Gender Equality in Academia and Research \(GEAR\) tool](#), European Institute for Gender Equality
 - [Advice Paper Gendered Research and Innovation: Integrating Sex and Gender Analysis into Research Processes](#), League of European Research Universities
 - [Gender in Design Toolkit](#), Stanford University
 - [Gender in EU-funded research: Training and toolkit](#), Yellow Window
 - [List of projects doing work on Gendered Innovations](#), Stanford University