Study Brief 49: Research

Empowering Change: Gender and Youth in Climate Action for Low Emission and Resilient Agriculture

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Summary

The rapid acceleration of climate change impacts is threatening the livelihoods of men, women and youth smallholder farmers, globally. As the risks intensify, the roles and responsibilities of men and women are shifting, as are their responses to these challenges. These differentiated and gendered impacts can increase women's vulnerabilities. At the same time, a growing young population needs empowerment through knowledge and skills, to ensure the sustainability of this critical sector. Without these considerations, we risk exacerbating poverty and food insecurity. It is therefore essential that any project and programme intervention prioritises inclusive and tailored solutions that address the unique challenges faced by men, women, and youth in farming communities.

This study brief provides examples of CABI's work, demonstrating how integrating the cross-cutting themes of gender, climate change and youth into projects can improve smallholder farmers' resilience to risks while also boosting agricultural productivity sustainably.

Key highlights

- CABI recognizes that closing the gender gap is crucial for sustainable agricultural development in the face of climate change. Youth must also be equipped with modern technologies and knowledge to adapt to growing climate risks and uncertainties.
- At CABI, we are taking deliberate steps to ensure these cross-cutting themes are not treated as add-ons but are instead central to our approach focusing on the *'triple-wins'* - climate change adaptation, gender equality and youth empowerment.
- CABI's PlantwisePlus Programme is empowering women, men and young farmers to reduce crop losses and produce more food using safer practices that safeguard human health and environment.
- In Pakistan, women-only plant clinics provide essential plant health advice and empower women in agricultural decision-making, on resource use, time management, and income.
- Young male and female Integrated Pest Management (IPM) professionals are equipped with gender and climate change skills, enabling them to be able to address these critical issues in their future careers.
- In Zambia, CABI is trialling two biological control methods where use of these biological controls is providing farmers, especially women farmers, with a climate-smart management option for FAW.

Background

Climate hazards such as heat waves, long-term temperature increases, erratic rainfall patterns, and other extreme climatic events are likely to increase in both frequency and intensity. Climate change presents a daunting threat to agricultural production, and to the livelihoods and food security of the estimated 500 million smallholder farmers.

These smallholder farmers, approximately 43% of whom are women, are responsible for one-third of global food production (UN Women, 2024; IFAD, 2022). The impacts of climate change are gendered, intersecting with and exacerbating all aspects of social, environmental and cultural inequalities. These influence gender differences in the adoption of climate-smart agriculture practices (Hailemariam, A., Kalsi, J.& Mavisakalyan, A., 2024), driven by other factors such as gender-based division of labour, and persistent gendered inequalities in access and control over productive resources (including climate related advice and information). In Pakistan for instance, differences were noted between how men and women access agriculture advisory information, where women receive less frequent information through more limited sources, in comparison to men (Lamontagne-Godwin, J. *et.al.* 2018).

Under climate change scenarios, an estimated 1^0C increase in long-term average temperature can lead to about a one-third reduction in the incomes of female-headed households, compared to those of male-headed households (FAO, 2024). By 2050, in a worst-case scenario, climate change could drive an additional 158 million women and girls into poverty globally, based on international poverty thresholds of $2.15 per day (UN Women, 2024).

A large portion of the world's 1.2 billion young population, aged between 15-24 years, are engaged formally or informally in the agriculture sector (UNCCD, n.d.). 89% of the rural youth population working in agriculture in Sub-Saharan Africa contribute up to 33% towards Africa's GDP (Olariu, C.P., n.d.). Yet, they face marginalization through unequal access to training and education and have less power and voice in society. Climate change is increasing 'eco-anxiety' among the young population (Hickman, C., 2021.), impacting their current and future livelihoods, particularly in low-income countries with fast-growing populations with a high proportion of youth, such as the Sub-Saharan African countries. It is imperative that any investment in youth considers climate change because the success, adoption and sustainability of jobs for young people will be determined by the climate scenarios, and today's youth will carry the burden of any failure for the rest of their lives (IFAD, 2019).

Limited recognition of gender and age considerations in climate change hinders global efforts to tackle the intertwined challenges of climate change, gender and youth, particularly in relation to achieving the Paris Agreement.

What we did

Across all its programmes and projects, CABI prioritizes the need for integrating cross-cutting themes such as gender, climate change, and youth empowerment. We recognize that without closing the gender gap, sustainable agricultural development under the new realities of climate change cannot be achieved. At the same time, youth need to be empowered with current knowledge of emerging agri-technologies and practices that can help them transition and adapt to changes, especially with the growing climate risks and uncertainties.

Addressing these interconnected challenges requires a holistic understanding of local contexts, societal challenges, gender norms, current and emerging climate risks, and governance structures and policies. At CABI, we are taking deliberate steps to ensure these cross-cutting themes are not treated as add-ons but are instead central to our approach, guided by the priorities identified in the Gender Strategy, the Climate Change Strategy and the Youth Engagement Strategy.

This study brief brings together examples from our fieldwork that demonstrate how targeted and inclusive interventions can build resilience of men, women and youth farmers, overcoming societal barriers and gender norms.

What was achieved?

Plantwise Plus

CABI's PlantwisePlus aims to reach 75 million smallholder farmers in 27 low-and-lower-middle-income countries, providing them with access to knowledge and skills to improve their crop production practices and resilience to climate change. The programme is helping countries to predict, prevent and prepare to address plant health threats in the face of a changing climate. Women, men and young farmers are being empowered to reduce their crop losses and produce more food using safer practices that safeguard human health and environment. This includes working directly with these farmers through participatory, inclusive and bottom-up approaches towards:

- Better understanding of existing gendered and youth related barriers to access productive resources that hinder their climate change adaptive capacities and resilience pathways for higher agricultural outputs.
- Continuing commitments to include an integrated climate, gender, youth and inclusion perspectives into all activities at planning and implementation phases and contribute at scale, towards growing knowledge of differentiated impacts through age and sex disaggregated data collection.
- Facilitating collaborative environmental initiatives that enhance the adaptive capacities and resilience of rural women and youth, while empowering them to become climate and environmental champions within their local communities.
- Designing targeted capacity strengthening and, social and behavioural change campaigns for promoting climate smart and sustainable agriculture practices, considering gender and age biases, and differences.
- Empowering youth to seize emerging green job opportunities that offer critical employment prospects and enable young men and women to contribute directly to climate change mitigation through sustainable practices.
- Supporting women and youth groups to better access resources and credit facilities through knowledge and skillsets for more informed decision-making power.
- Actively exploring partnerships and collaborations to improve the entrepreneurial skills of women, men and youth for better access, power and voices in the markets.
- Strongly advocating for gender and youth inclusion in climate policies and action plans in the agriculture sectors, at the national and local levels, through more inclusive and participatory stakeholder consultation processes.
- Highlighting the intersections of gender and climate, while focusing on promoting awareness of low-risk biocontrol options, institutional strengthening and gender and financing
- Demonstrating how country's international climate change commitments are supported by PlantwisePlus.

Women-Only Plant Clinics in Pakistan

In Pakistan, women primarily rely on informal sources of information, such as female friends and neighbours, while having limited roles in decision-making due to social and cultural norms. Since 2011, approximately 900 ***plant clinics*** have been established, allowing farmers to receive free advice on managing crop pests and diseases. Against the backdrop of the gender social norms in the country, the programme also facilitated women-only clinics that not only provided essential plant health guidance but also empowered women in agricultural decision-making, particularly on resource use, time, and income.

By tailoring the traditional plant clinic model to the needs of women farmers, the initiative addressed practices like vegetable cultivation, cotton picking, and crop harvesting. These clinics enabled female farmers to achieve similar benefits as their male counterparts, leading to improved crops and increased income, thereby helping to bridge the gender gap in agriculture.

Additionally, training more women as extension workers is crucial for maintaining a knowledgeable network of female advisors for farmers. This improved access to productive resources and equipped the women plant clinic users with pertinent knowledge and information that contributed towards building their resilience to unforeseen climate shocks.

Southeast Asia Gender-Skills Capability Training Course: IPM, Climate Change and Biodiversity

Training the next generation of agricultural researchers with climate change, gender and inclusion skills is essential if we are to address the exacerbated effects of climate change impacts on women farmers. Within the Southeast Asian region, a six-month course trained young Integrated Pest Management professional women and men. The course covered gender dynamics and the intersections of gender, youth and climate change. Research carried out in the course included a bibliographical analysis of gender and climate change in agriculture and examining gender dynamics in a variety of different farming systems, with the aim of ensuring that these young agricultural researchers have the skills to address both gender and climate change issues in agriculture in their professional careers in the future.

Climate-Smart Biological Control Brings Hope for Fall Armyworm Management for Women Farmers in Zambia

Women have a critical role in farm-level pest management and the uptake of climate smart agricultural technologies, such as biological control. As women generally have lower access to resources, including those required for pest management, they seek out and use locally available and low-cost pest control solutions. These options are often time consuming to implement, especially when compared to chemical pesticide applications. Two biological control methods are being trialled in Zambia as lower-risk options for fall armyworm (FAW) management on maize. These products are be applied early in the growing season, just after sowing, thereby relieving some time burden from women, and hence requiring less pest monitoring and management later in the season. The adoption and use of these biological controls (if successfully piloted) should provide farmers, especially women farmers, with another climate-smart management option for FAW, complimentary to the current management practices.

Business Training for Youth in Biological control of FAW in Zambia

Training young men and women in business skills in agriculture equips them for future roles in agriculture, particularly to adapt and adopt emerging employment opportunities under climate change scenarios. Biological control increases ecological resilience of agriculture systems, in addition to mitigating climate change impacts through lower greenhouse gas emissions, when compared to traditional agro-chemical fertilizers. To this end, training on business models for the production, distribution and application of biological control solutions has been carried out in Zambia to not only improve skillsets but also relay the importance of climate smart and sustainable agricultural practices. Business opportunities were explored, and business plans developed, linking young men and women trainees, with the work on the biological control trials (above), so that when the trials

are completed, these young trainees can become the key supply chain link to ensure that farmers have access to the biological control products.

The way forward

Women's unique skills, knowledge and networks, owing partly to their traditional gender roles should be central to developing solutions for sustainability, addressing resource scarcity, and enhancing climate resilience (ILO, 2015).

Youth play critical roles in food system transformation by raising awareness, advocating for change, and driving economically viable innovations (FAO, 2021). Their economic empowerment and leadership are, therefore, valuable assets to drive locally led actions for transforming food systems and building long term climate resilience (World Bank, 2023).

CABI is committed to empowering women and youth with skills, tools and knowledge to adapt to the impacts of climate change, through its Strategy where two out of its five goals are focused on climate change, gender and youth.

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