

Gender Perspectives in Opportunity Crop Development



Kenyan farmer displaying wild finger millet in Matungu, Kenya. Photo: Michael Major/Crop Trust

Summary

Opportunity crops can help build more resilient, nutritious and inclusive food systems – but only if the women who have conserved, cultivated and improved these crops for generations are recognized and supported.

Drawing on gender analyses from Nigeria, Kenya, Zambia, Colombia and India, together with literature reviews and interviews, this policy brief shows that women are central to opportunity crop seed systems, biodiversity conservation, product development and local markets. Yet women continue to face barriers to land, finance, markets, extension services and decision-making, limiting their opportunities as well as the development potential of these crops.

Gender-responsive policies can unlock this potential. Investing in women's leadership, strengthening their access to productive resources, valuing indigenous and local knowledge, supporting women-led enterprises and ensuring equitable participation across value chains will help opportunity crops deliver greater benefits for nutrition, livelihoods and resilience. By placing women at the center of opportunity crop development, governments and partners can strengthen food systems while safeguarding cultural knowledge and agricultural biodiversity for future generations.

1. Introduction

Opportunity crops include a wide range of indigenous fruits, vegetables, grains, legumes, and roots and tubers. They are culturally significant, well-adapted to local ecosystems and contribute to diversified diets and livelihoods for rural, Indigenous and Tribal Peoples and marginalized communities across the globe.

The commercialization of opportunity crops offers pathways to economic empowerment alongside maintaining agrobiodiversity for smallholder farmers and other value chain actors. Challenges to their development include lack of investment in R&D, policy neglect, low consumer awareness, poor market access, and competition from more popular staple crops. In some locations, opportunity crops are stigmatized as “poor people’s” or “women’s” crops (Tanimonure *et al.*, 2023).

Women are central to opportunity crops

“Knowledge about seeds is transmitted by women. In my community, when a young woman gets married older women give her seeds, for example sorghum and finger millet, to take to her husband’s place. And they transmit their knowledge with the seeds. So, it’s really a female thing. Even most of the varieties have feminine names. We call them “nya + name of variety”. This means that a specific variety is the daughter of another variety. These are important dynamics in my culture”. Key informant Interview, Kenya.

Women are key custodians and managers of opportunity crops globally (Ramirez-Santos *et al.*, 2023). They hold extensive indigenous and local knowledge related to seed selection, cultivation, conservation, processing, preparation and marketing of these crops. This knowledge is transmitted intergenerationally, primarily – though not exclusively – through women, thus preserving crop genetic diversity and cultural heritage. Several opportunity crops are central to the cosmologies of Indigenous and Tribal Peoples.

Women’s involvement extends beyond economic and nutritional roles to encompass ecological stewardship, the maintenance of genetic diversity, cultural sustenance and the maintenance of informal seed exchange networks and community seed banks. In Colombia, Indigenous and Afro-Colombian women maintain diverse seed stocks and conserve plant species vital for pollinators, traditional diets, and rituals (Suárez *et al.*, 2018). In India, Tribal women have specialized knowledge in millet seed management, cultivation and use – and opportunity crops have important religious functions (Notaro *et al.*, 2017). In Kenya, women transmit seeds and knowledge about how to use different varieties for different purposes, for example using millet to create a traditional brew at weddings, to ensure satiety, or for baby food (Sulle and Mudege, 2021). In Nigeria and Zambia, women cultivate, process, and market crops like cowpea, sorghum, and indigenous vegetables as well as use them for medicines and other cultural uses (Fatokimi & Tanimonure, 2021; Ogunjimi *et al.*, 2023). Opportunity crops supply a wide range of nutrients. The preparation of delicious healthy foods is a means of expressing care and love to family members (Brückner 2020). In all these contexts, women express a wide range of trait preferences relating to the multiple uses of

these crops. Men tend to be more interested in marketability traits for most crops, though they also value other traits and cultural uses.

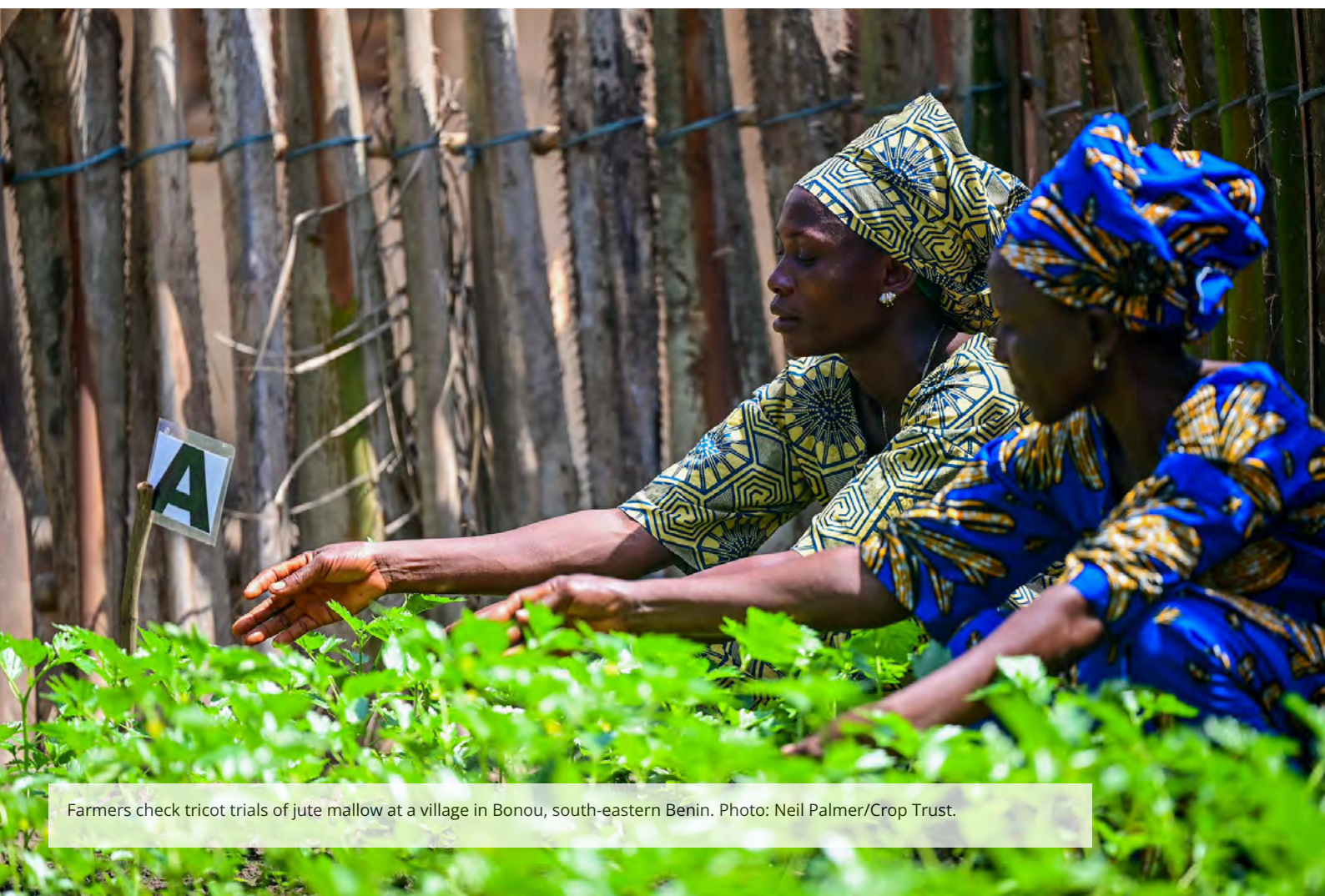
2. Pathways and challenges to inclusive opportunity crop development

Globally, there are very few examples of gender-responsive seed-related policies and laws which recognize farmer varieties and support how farmers curate seed. This results from the rise of formal seed systems and the corresponding decline of indigenous seed systems. (Tenneti *et al.*, 2024). An assessment of seed-related policies and laws in selected Sub-Saharan countries demonstrates limited recognition and support – whether policy, legal, technical, operational or financial – for farmer-managed seed systems. This includes the lack of recognition of women’s roles, responsibilities and benefits. A more supportive environment has begun to emerge in some countries, for instance, in Uganda, with increasing attention paid to farmer varieties. Nigeria has recently adopted the concept of a pluralistic seed sector, and Zambia shows some recognition of farmer-managed seed systems (Vernooy *et al.*, 2023). Regarding gender mainstreaming, national genebanks adhere to governmental gender equality and social inclusion policies, but they – and agricultural research organizations more broadly – may lack explicit gender strategies and sufficient resources for mainstreaming gender equality and social inclusion at scale. Gender-disaggregated data collection and analysis is frequently limited, and women’s specific trait preferences and needs can be overlooked in breeding and seed system development (Tenneti *et al.*, 2024).

At the opportunity crop production level, women are strongly involved in labour-intensive tasks such as planting, weeding, harvesting, processing, and storage (Hackfort *et al.*, 2023). Compared to men, women access less fertile plots, and frequently have limited access to credit, inputs, irrigation, and digital technologies. Customary and statutory laws often favour men's land rights. Extension services frequently target men for innovation because women who do not own land are rarely considered farmers in their own right with corresponding decision-making power. Information asymmetry limits women's knowledge, productivity and profitability, and by extension their agency to set goals and act upon them. Women, and smallholder farmers more broadly, frequently rely on informal seed exchange networks because these are within their financial means and geographical reach. They broadly lack sufficient linkages to formal seed sector actors such as research institutions, universities and seed companies (Tenneti *et al.*, 2024).

At processing and market level, women are responding to emerging market interest in opportunity crops through innovation.

For example, women in cooperatives in Colombia are creating flours, oils, dried products, snacks, and other carefully branded and packaged foods to sell to new demand-led markets like schools and tourism enterprises (Suárez *et al.*, 2018). In India, women are actively responding to market demand for millets by producing millet-based products such as malts, ready-made mixes, snacks, and other processed foods (King *et al.*, 2017). In Nigeria, particularly in the South, women dominate trading in opportunity crops in wholesale markets, they produce key dietary staples like pounded yam and gari, and more recently have begun processing and marketing a range of pigeon pea products (Osuntade *et al.*, 2024). In Zambia, women brew traditional sorghum beer (Vernooy *et al.*, 2023). The Alliance of Bioversity International and CIAT, supported by the Ministry of Agriculture, Nature and Food Quality of the Dutch government, worked with farmers in Kenya, Uganda, Zambia, and Zimbabwe to identify opportunity crops with potentially high market and food and nutrition security value. This work is critical given the predicted maize production gap due to climate change (Vernooy *et al.*, 2023). Box 1 provides a case study from Kenya and planned further actions.



Farmers check tricort trials of jute mallow at a village in Bonou, south-eastern Benin. Photo: Neil Palmer/Crop Trust.

Case Study 1. Kenya

In western Kenya farmers cultivate cassava, finger millet, sorghum, and traditional leafy vegetables. Using the LINK value chain methodology, women and men farmers were trained to develop value chains for red sorghum, yellow maize, and amaranth. They created “power unga,” a composite flour from cassava, sorghum, and yellow maize to prepare a nutritious porridge. Two Community Seed Banks acquired roller mills to produce and sell other flour blends locally. Another seed bank acquired an aggregation centre with an environmentally-friendly cooler to store vegetables, and a solar dryer to dry leafy vegetables for the market. The Alliance team, seed banks, and farmers worked on value chain mapping to identify business opportunities. Farmers prepared business plans before launching their products (Vernooy *et al.*, 2023).

Women frequently experience restricted decision-making power. Harmful gender norms and social structures limit women’s influence over crop choices, income use, and participation in high-level decision-making within households, communities, farmer organizations and multi-stakeholder platforms. Men often dominate discussions and frequently hold leadership positions: this can marginalize the expression of women’s gender needs in the promotion of opportunity crops. Men are also more likely to attend markets and build social networks which help them diversify their sources of agricultural knowledge, including from formal sector knowledge brokers (Tenneti *et al.*, 2024). Women’s time-consuming domestic and care responsibilities, combined with labour-intensive agricultural tasks, can restrict their mobility, participation in training, and engagement in market activities. Gender and social norms may require women to seek permission from spouses or male relatives to participate in opportunity crop research, training, or market activities. Women’s inclusion is further limited by social resistance to gender equality and intersectionality concepts among some formal sector actors. In the promotion of opportunity crops, the above-mentioned factors have to be addressed to avoid women’s disempowerment through the commercialization of opportunity crops (Nortje *et al.*, 2023).

3. Policy implications

This Policy Brief suggests the following principles and recommendations tailored to stakeholders and decision-makers aiming to facilitate the conservation, production, marketing and consumption of opportunity crops. All recommendations aim to foster women’s centrality

in opportunity crops and to contribute to their empowerment.

Design policies which empower women as catalysts in opportunity crop seed systems and value chains

Incorporate gender considerations – including paying attention to the knowledge as well as the needs of Indigenous and Tribal Peoples, and other marginalized groups, to ensure equitable access to quality seeds and associated information. Policies should also recognize and protect farmers’ rights to save, exchange, and sell seeds. They need to support community seed banks and local seed businesses - including those led by women - and provide them with legal status (Tennetti *et al.*, 2023; Vernooy *et al.*, 2024).

Promote women’s participation and leadership in decision-making bodies

Increase women’s active participation and leadership in farmers’ associations, community seed banks, multi-stakeholder platforms, and higher levels to ensure that women’s priorities are built into plans, strategies, and policies. Implement gender quotas in project activities, training, farmer organizations and decision-making bodies to ensure women are present in the room. Employ culturally sensitive facilitators (fluent in local languages) to create empowering environments that enable women, Indigenous and Tribal Peoples, and marginalized groups to express their aspirations and be listened to. Conduct gender-disaggregated and participatory monitoring, evaluation and learning processes to durably

capture women's perspectives and effectively measure empowerment outcomes, and work with this data to improve project design.

Strengthen women's economic empowerment and market access

Design value chain interventions to explicitly include gender equality and empower women. Support women's participation across all stages of opportunity crop value chains, including processing, transport, marketing, and leadership roles (including in market management committees). Promote value addition and diversification of products derived from opportunity crops to help women access new markets.

Promote collectivization together with other pathways

Self-help groups (SHGs), women-led cooperatives, and mixed gender farmer producer groups/ companies provide opportunities for skills development, collective savings, access to credit, leadership training, and increased visibility. They can help women overcome barriers related to mobility, social capital, and market access. Women collectives can find it easier to obtain land than individual women can. Support should be

provided to women's groups and cooperatives to help them obtain legal recognition, enhance their business management skills, and strengthen their marketing, branding, and negotiation abilities. However, ensure diverse pathways to reaching women are designed and implemented (and their efficacy studied), because marginalized women may lack the resources to join collectives (Tenetti *et al.*, 2024).

Strengthen gender equality and social inclusion within agricultural organizations.

Support national genebanks and related organizations to design and implement gender-responsive and gender-transformative strategies that empower women and Indigenous, Tribal, and marginalized people. Allocate adequate resources and appoint gender specialists to high-level positions. Establish Gender and Opportunity Crops Communities of Practice (CoP) to facilitate knowledge exchange, foster learning, and promote collaboration among diverse stakeholders. Build the capacity and raise the awareness of project teams, partners, and institutions on gender analysis, intersectionality, and transformative approaches to advance these objectives.



Members of the Bana Farmers Group work the amaranth dough in Kamuli District, Uganda. Photo: Michael Major/Crop Trust

Integrate gender and indigenous knowledge in knowledge development and extension.

Research and development efforts should incorporate gender-responsive and culturally appropriate strategies for crop breeding and seed systems that build in Indigenous, Tribal and marginalized people's trait preferences and accompanying knowledge around their management and use. Use a mix of digital and non-digital communication channels tailored to women's accessibility and preferences, ensuring information is provided in local languages and at times suitable for women's schedules. As part of this, ensure the concerns of Indigenous and Tribal People's cultural autonomy are respected. Alongside community seed banks, consider working with Participatory Guarantee Systems (PGS), a system of informal seed quality assurance which permits farmers to engage in quality seed production outside the formal seed system by adhering to standards determined by farmer collectives.

Improve women's access to productive resources.

Collaborate with traditional authorities, legal authorities, and women themselves within customary systems to extend and enforce women's land tenure rights, ensuring secure management or ownership. Improve the implementation of gender-responsive statutory land policies through partnerships with government, legal authorities, community bodies, and women themselves. Work with financial institutions to develop affordable, collateral-free loan products tailored for women and marginalized communities. Ensure women have access to labour-saving production and post-harvest processing technologies, such as small sprayers and processing machinery – mills, solar dryers, coolers etc. Provide a conducive environment for women to increase their participation in capacity development measures.

Engage men as beneficiaries and allies

Conduct awareness and capacity-building programmes that encourage support for gender equality, shared decision-making, and balanced household and community relations. Collaborate with community and traditional leaders to foster

widespread backing for women's involvement and leadership in opportunity crop initiatives. Use social and behavioural change communication strategies to promote positive gender-sensitive and supportive behaviours and normative change.

4. Conclusion

Opportunity crops offer significant promise for advancing sustainable, resilient, and inclusive food systems globally. Women's central role as custodians, cultivators, and innovators within opportunity crop value chains needs to be maintained. Gender-responsive and gender-transformative interventions that recognize women's contributions, address systemic barriers, and promote equitable participation and benefit-sharing in opportunity crop value chains are required. By investing in women and fostering inclusive participation, the potential of opportunity crops can be realized for the benefit of individuals, livelihoods, communities, ecosystems, and future generations.

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