



Invasive species management

Integrating a gender perspective

This publication is a brief overview of how gender affects the management and control of invasive species, and how CABI is working to address this through its projects and implementation now and in the future.

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Key messages

- Invasive species are species whose introduction and spread threaten biological diversity or have other unforeseen impacts. **They disproportionately affect communities in poor rural areas** who depend on agriculture and natural resources for their livelihood.
- Gender roles and relationships in agriculture influence the way **men and women experience the impact of invasive species** and their ability to cope or control and manage invasive species.
- CABI advocates for **gender sensitive policies and practices for prevention**, management and control of invasive species, which take account of how men and women are differently impacted, to improve their access to information and their ability to adopt technology to control and manage invasive species.
- CABI advocates for **evidence generation on gender** in invasive species work, including an understanding of the underlying gender-based constraints affecting women's ability to access and use technologies to prevent, control and manage invasive species and solutions to inform policy and programming

Background

Invasive species are species that arrive in a new area with human assistance, intentionally for economic and other reasons, or unintentionally through trade routes, aid shipments, etc., and cause damage to crop and livestock production, human health and the environment. The establishment and spread of invasive species is also facilitated by climate change, which reduces the resilience of habitats to biological invasions. Invasive species include pathogens, weeds, various vertebrates and invertebrates.

Left unmanaged, they undermine investment in development and adaptation to climate change. Research by CABI reveals that just five invasive alien species are causing USD 0.9 – 1.1 billion in economic losses to smallholder farmers across six eastern African countries each year, equating to 1.8% – 2.2% of total agricultural GDP for the region¹. The most vulnerable people to the impact of invasive species are poor communities who live in rural areas and depend on agriculture and natural resources for their livelihood.

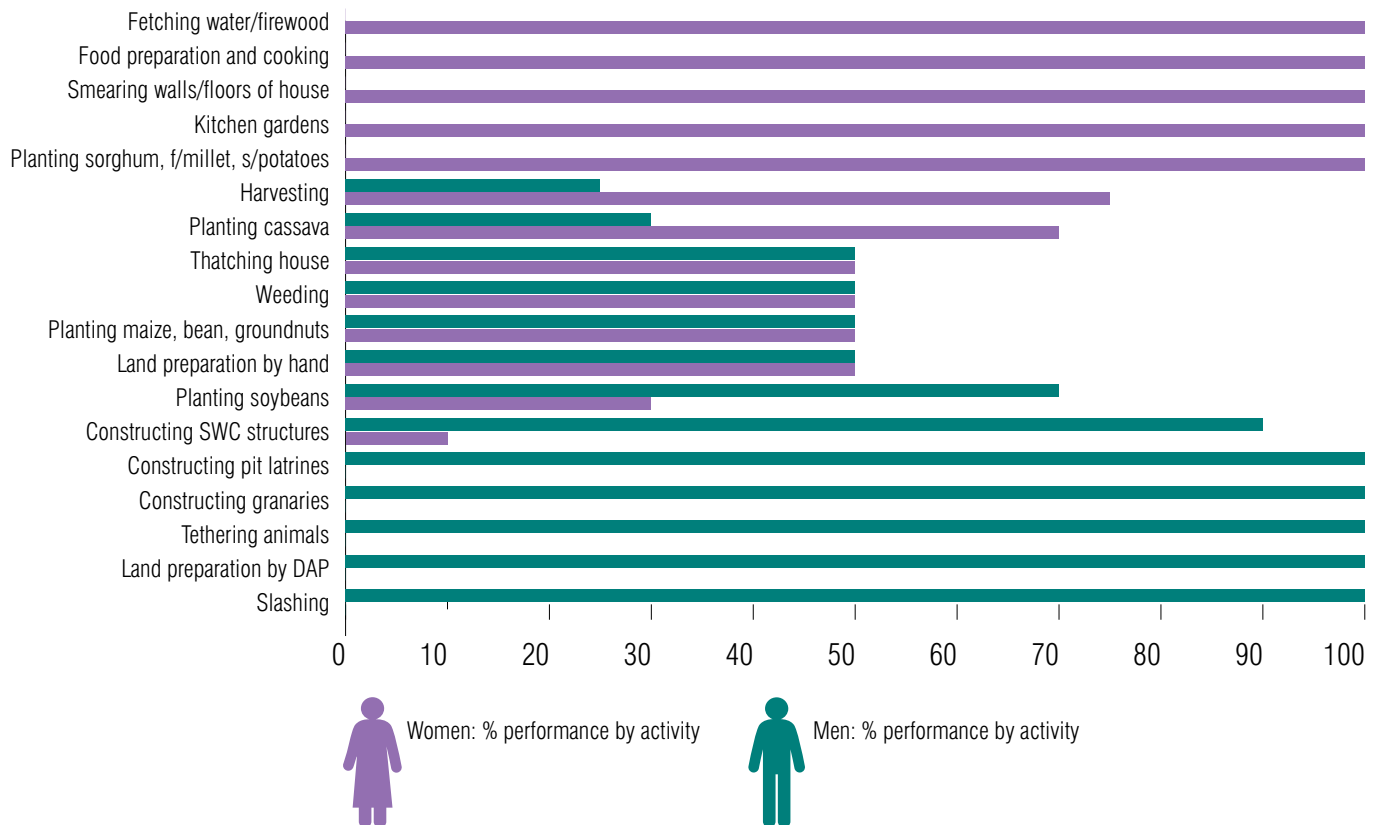
Gender relationships and the impact of invasive species

Gender roles in agricultural production and natural resource management and gender norms influence the way men and women experience the impact of invasive species. For example, in developing countries where women are primarily engaged in unpaid care work activities, such as collecting fuel wood and water for household use, the impact of invasive species that affect availability and quality of drinking water and fuel wood will be felt more strongly by women and girls. In pastoralist areas, where herding livestock is the main responsibility of men, the impact of invasive species that affect grazing land will be more strongly felt by men and boys.

Traditionally, the production of subsistence crops is controlled by women, while the production of cash crops is controlled by men, although the gender division of labour in crop production is more complex and both men and women participate in different stages of the cropping cycle on family managed farms². More recently, different studies show the traditional gender division in cropping patterns is changing due to socio-economic changes and emerging opportunities, such as commercialization^{3,4,5}. However, depending on the different agro-ecological zones and cultural contexts, men are heavily involved in the production of some crops, while women are more involved in the production of other crops⁶. This will have implications on men and women's prioritization of crops and crop-pest risks.

In short, based on their gender roles, men and women will have different perceptions of risk on different types of invasive species, which ultimately, will have implications in their participation in management and control of the species. Understanding the different impacts of invasive species on men and women's roles should also inform the process of identification and prioritization of invasive species for intervention.

Figure 1: Gender division of labour in Nandafubwa, Busia District, Kenya



SWC: soil and water conservation structures such as fanja juu, trash lines, cutoff drains, diversion dishes and boundary bunds.

Source: Bishop-Sambrook, 2003.

Gender differences in control and management of invasive species

There are different costs and benefits for women and men in managing invasive species. For example, weed control, using hand weeding, is predominantly a women's activity as time-use studies in different countries show⁷. In Nigeria, one study shows women contribute 90% hand weeding labour for most crops⁸. Another study in Nigeria shows, 69% of children between the age of 5-14 are forced to leave school to work on farms, especially at peak periods of weeding⁹. Hand weeding is laborious and time consuming and takes away time that can be spent doing other income generating activities or participating in different social activities. When time spent on hand weeding is reduced through adopting improved technologies, women can spend more time in other care or income generating activities and political and community activities¹⁰.

Gender roles and norms also affect men and women's ability to manage and control invasive species differently. Statistics from FAO show that women make up 43% of the agriculture labour force in developing countries, and agriculture is the primary source of livelihood of 79% of economically active women living in these countries.

However, compared to men, women farmers have limited access to the information, extension advice and technology that they need to deal effectively with invasive species. Men have higher rates of adoption of improved seed varieties and other technologies promoted by extension advisors. Extension approaches, visits and trainings reach more men than women. Implementation of extension recommendations is reduced by women's lack of access to capital.

As a result of limited access to agricultural inputs, the productivity rate of farms managed by women is 20-30% less than that of men. Yet bridging this gap can increase agricultural production by 2.4 – 4% in developing countries and substantially contribute to food security and economic growth¹¹.

CABI believes a gender sensitive approach should be at the centre of the strategy to manage and control invasive species. Understanding the gender dynamics helps to increase effectiveness in prevention and control of invasive species and also contributes to gender equality in agriculture with a multiplier effect on improved rural livelihoods and food security.

Case study: Gender differentiated impact of invasive species in Ethiopia

Prosopis juliflora

Prosopis juliflora is a shrub or small tree native to Mexico which was introduced to the middle Awash Basin valley in Ethiopia, in 1999. It was introduced as a wind break to protect citrus orchards planted on state farms, to rehabilitate the degraded range land, provide shade and fodder, and also for charcoal production. It has gradually invaded 700,000 hectares of range land in the middle and upper Awash Valley, a predominantly pastoralist area, displacing natural pasture and native trees, and forming impenetrable thickets that have reduced grazing land size.

The impact of this invasive species is experienced differently by men and women. Women in Afar are mainly responsible for collecting fuel wood and constructing houses. The sharp thorns of the bush cause injury when collecting fuel wood and, as the wood is not useful for

construction of houses, and native trees have been displaced, women have to travel to distant places to collect building materials, increasing their work burden.

The decline in grazing land also reduced milk and butter production, negatively impacting women's income as sales of these products is also controlled by women.

This has also affected men who are primarily responsible for looking after livestock and have to travel longer distances in search of grazing land; something that has triggered conflict with neighbouring communities. However, at the same time, men also benefited from making and selling charcoal from *Prosopis*, an income controlled by men.¹²



700,000 ha

**of pastoralist land invaded
in the Awash Basin Valley**

Case study: Gender differentiated impact of invasive species in Ethiopia

Parthenium hysterophorus

Parthenium hysterophorus, a low annual shrub native to South America was accidentally introduced through aid shipments in the 1980s. It spread in the eastern and northern parts of Ethiopia invading 1 million hectares of cropping and grazing land. It affected staple crops by reducing sorghum yields from 97% to just 40% in one cropping season. It also reduced grazing land and forage.

Parthenium is highly allergenic and extended exposure to the weed affects both human and animal health, causing severe respiratory and dermatological reactions. In the

Boset district, farmers rely on crop and livestock production, which constitutes 80% and 20% of their income, respectively.

Women who are responsible for weeding activities were more exposed to the health impacts of the parthenium. In addition, the reduced availability of milk and butter as a result of lack of fodder and tainted milk because of livestock feeding on parthenium also reduced women's income as the ones responsible for the sale of dairy products.¹²

yield of sorghum
reduced from **97%**



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in one cropping season

What next?

Going forward the following will be CABI's key focus areas in its invasive species work.

Advocacy for gender sensitive policy and practice in prevention and management of invasive species:

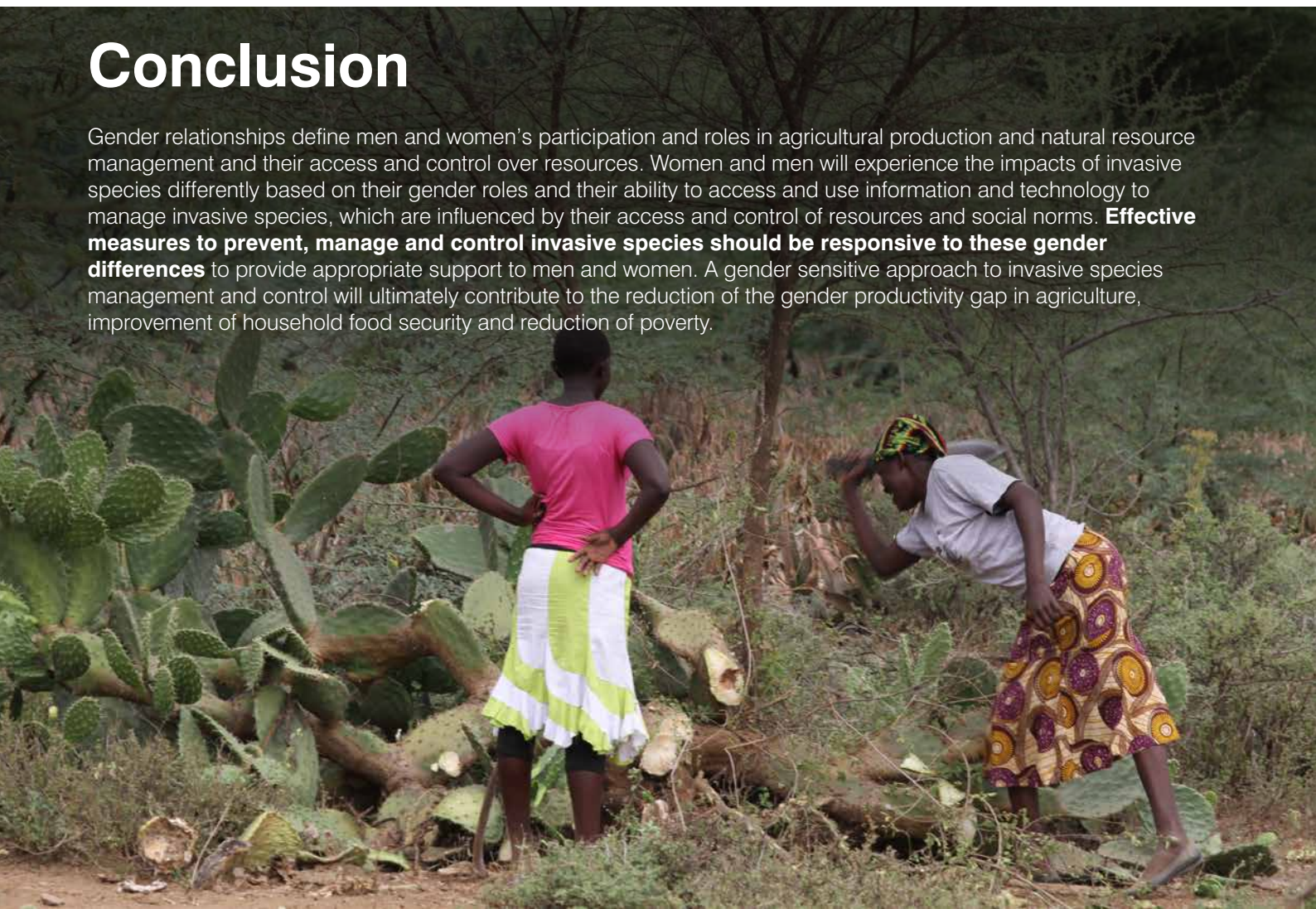
CABI has established stakeholder platforms that bring together public and private organizations at various local, national and international levels; a convening capacity that positions it well to influence the development and implementation of gender-sensitive policies and programmes in the prevention and management of invasive species. Together with national partners, CABI will support evidence generation on the gender disaggregated social impacts of invasive species, current practices in management and control of invasive species, accessibility, affordability and appropriateness of available technologies to men and women farmers. The evidence will help stakeholders to develop policies and programmes that address the needs and challenges of men and women farmers. CABI will also support the development of research in novel, safe and affordable invasive species control and management technologies and communicate lessons learned for scale up of best practices through the platforms.

Improved access to information on invasive species management and control by men and women:

CABI has used information communication technology and innovative ways to reach women farmers in extension advice on plant health issues, based on lessons learned from its Plantwise programme and other similar projects. Building on this experience, CABI will support national partners to use communication channels accessible to men and women farmers based on an assessment of their most common sources of information. We will also ensure that communication messaging is clear, understandable and practical for both women and men farmers. CABI will support partners to conduct evaluations of the impact of communication messages. It will support the representation and informed participation of men and women farmers in the design and implementation of projects and programmes to manage and control invasive species.

Conclusion

Gender relationships define men and women's participation and roles in agricultural production and natural resource management and their access and control over resources. Women and men will experience the impacts of invasive species differently based on their gender roles and their ability to access and use information and technology to manage invasive species, which are influenced by their access and control of resources and social norms. **Effective measures to prevent, manage and control invasive species should be responsive to these gender differences** to provide appropriate support to men and women. A gender sensitive approach to invasive species management and control will ultimately contribute to the reduction of the gender productivity gap in agriculture, improvement of household food security and reduction of poverty.





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