GENDER Impact Platform

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EVIDENCE EXPLAINER

Integrating gender and intersectionality in post-harvest loss research helps reduce negative economic and social impacts

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- **Currently post-harvest losses in food systems average about 25 percent globally, reducing food availability and increasing food insecurity.**
- **Women's participation in post-harvest processing is almost 50 percent, but their role is undervalued.**
- **Appropriate technologies can reduce losses. But if they are developed and introduced in a manner that is not gender-responsive, the technologies can widen gender gaps and other social inequalities.**
- **There is an urgent need to collect sex-disaggregated data on post-harvest losses to inform how we develop appropriate technology and other enabling innovations.**

Women can reduce post-harvest losses, but are not responsible for all post-harvest processes

Post-harvest food losses put food systems at risk, especially in low- and middle-income countries. They limit the availability of food and nutritional diets (https://doi.org/10.1007/s10018-014-0083-0), while increasing food prices. They also add to the environmental burdens, (https://www.aphlis.net/en/news/29/climate-change-and-postharvest-loss#/) contributing to climate change (https://www.aphlis.net/en/news/29/climate-change-and-postharvest-loss#/).

In recent years, several case studies (https://doi.org/10.1016/j.worlddev.2014.08.002) have shown reducing post-harvest losses (PHLs) must be tackled from both technical and social perspectives. This double-pronged approach is also necessitated by the low levels of adoption of post-harvest technologies, especially by women.

We conducted a systematic literature review to explore the relationship between PHLs and gender. The objective was to understand whether gender differences affect PHLs and identify other socioeconomic characteristics that influence this relationship. More evidence can help inform the design of interventions to reduce PHLs and achieve gender-equality objectives.

We analyzed 48 studies (published between 1980 and 2024) that met the criteria for representativeness and reliability. While the search included publications in English, Spanish, Portuguese and Arabic, only the English articles met all the inclusion criteria.

The data was analyzed by categorizing the commodities into three groups: (i) cereals (maize, beans and rice), (ii) horticulture (fruits and vegetables, with an emphasis on bananas) and (iii) livestock and fish (also including eggs, milk and camel milk).

Figure 1 illustrates the participation of women in post-harvest operations (e.g., 51 percent for cereals) and the percentage of food loss (25 percent losses during post-harvest).

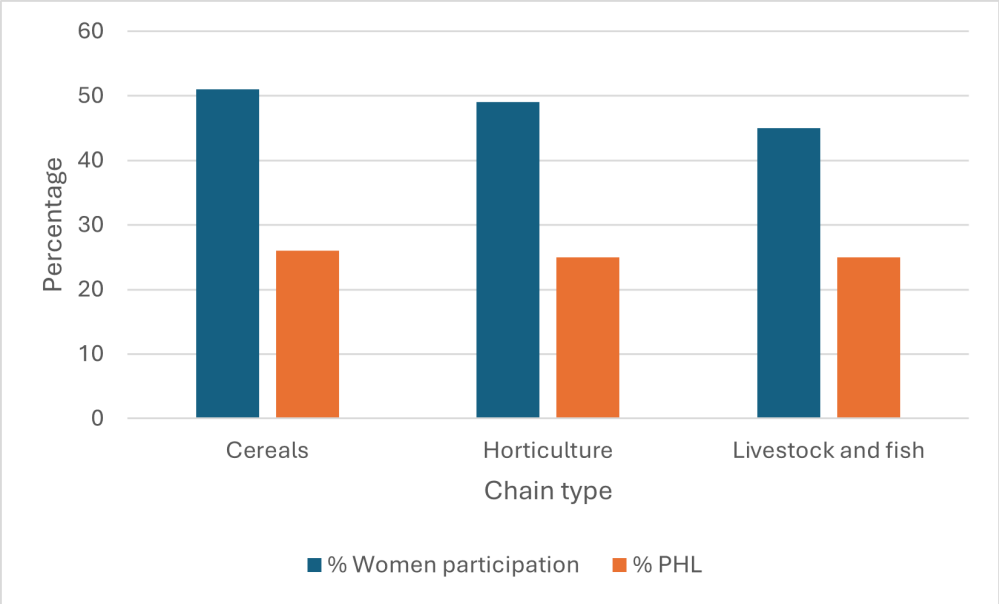

Figure 1: Women's participation and PHL by commodity groups

We assumed that women's participation in post-harvest processes could reduce the magnitude of losses (https://doi.org/10.1108/JADEE-08-2021-0191); however, we found significant disparities regarding women's roles and agency in post-harvest activities:

- Women are responsible for storing (https://doi.org/10.4000/cea.5991) the harvest, in times of scarcity, this control allows them to use the products for household consumption.
- However, women do not have a role in sales or control of income. Therefore, interventions focused on increasing sales immediately after production go against helping women—who store the harvest and then have to market lower quality products (https://doi.org/10.3390/su122310091) compared to men.
- There are instances where women take spoiled grains (https://doi.org/10.3389/fnut.2022.725815) to feed their households during low food availability. This comes with the risk of negative health impacts.

Technologies can reduce losses but need to be gender-responsive

Although technologies can reduce the extent of PHLs, their benefits are not always fully realized due to various socioeconomic factors that were not considered by the PHL interventions.

We identified four categories of interventions that were difficult for women to adopt: storage, harvest, training, and care of seed. For example, introducing silos for maize storage (https://doi.org/10.1016/j.jspr.2020.101734) in several African countries exacerbated gender gaps (e.g., including economic) when men displaced women from storage roles. Similarly, introducing moisture meters (https://doi.org/10.1080/09718524.2023.2273153) in northern Ghana was detrimental because women did not have the knowledge and skills

to use them, who were further marginalized when men predominantly used them.

To address these disparities, it is crucial to design and implement new technologies using a gender-intentional approach, considering the unique needs, roles and constraints of women in agricultural value chains. Also, women are not a homogeneous group, and we must consider other intersectional variables such as education, age, marital status, class and ethnicity.

Insights to action: recommendations for decision-makers

This evidence underscores the urgent need for decision-makers to adopt a gender-responsive approach—leveraging the unique contributions of both women and men—in addressing PHLs. This approach would improve food security and economic outcomes, and promotes gender equity and social inclusion.

Priorities for action include:

- **Collect and use sex-disaggregated data**
  - There is a significant gap in data and comprehensive analyses that explore the social dynamics influencing post-harvest losses in food systems. Most of the available evidence is focused on Africa. To be able to design equitable and effective interventions to reduce PHLs, we need sex-disaggregated data on the different needs, roles and contributions of women and men in the harvest and post-harvest (https://doi.org/10.1002/wmh3.578) processes, along with their socioeconomic and demographic characteristics and agency (https://doi.org/10.1002/wmh3.280). Some of these data points could be integrated into regular national censuses (https://doi.org/10.33997/j.afs.2017.30.S1.013) and surveys that collect sex-disaggregated data, and should be accompanied by mechanisms to regularly monitor and evaluate the impact of interventions and continuously refine and improve strategies.
- **Design and implement gender-responsive interventions**
  - Studies found heavy workloads for women due to participation in post-harvest activities, food insecurity, and low adoption of post-harvest technologies due to lack of education (because social norms limit women's access to education from childhood). We must ensure that new technologies are accessible and usable by both women and men, considering factors like literacy, mobility and social norms. Considering the roles and responsibilities traditionally held by women, we should design interventions that enhance their participation rather than displace them. The introduction of technologies must always be accompanied by training and capacity-building programs to meet the needs of women, addressing barriers such as literacy and education. Programs should be designed to equip women with necessary

skills to adopt and use new technologies effectively. Encouraging communities and women to act as agents of their own change can occur by involving them in the design and implementation of strategies to reduce PHLs.

- **Promote gender equity in policy and practice**
  - Integrate gender considerations (https://agritrop.cirad.fr/593757/1/Gender%20integration%20in%20agriculture%20CC%20and%20FSN%2028%20fev%20fina into agricultural and PHL policies: while we came across policies aimed at reducing loss and waste that identify women and children as the main beneficiaries, particularly in relation to food security, none were found to be gender-responsive. The policies need to recognize the role of women in post-harvest activities; identify and mitigate challenges faced by them, such as limited access to technology, information and markets; involve both women and men in the policymaking process to ensure that different perspectives and needs are addressed; and provide training and resources tailored to women's needs to increase their effectiveness in PHL management.
  - Promote circular-economy enterprises: support initiatives that transform PHL into value-added products (https://hdl.handle.net/10568/138012), and provide technical assistance and access to markets and finance for women. This can enable women to establish their own businesses, reducing PHL and promoting economic empowerment. The CGIAR Initiative on Nature-Positive Solutions has mapped circular economy processes led by women (https://hdl.handle.net/10568/138012), and it is important to develop evidence that demonstrates these processes.

You can read this article at https://gender.cgiar.org/news/integrating-gender-and-intersectionality-post-harvest-loss-research-helps-reduce-negative or frame the following QR Code with your mobile phone camera:

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