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Drudgery Reduction Tools for Women Farmers

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INTRODUCTION

Indian and most developing countries' agriculture is noted to be highly labor-intensive, particularly for small and marginal farmers. Female contributions to farm labor, it is estimated, are as much as 60–80%, and in crop production activities such as transplanting, weeding, harvesting, threshing, and processing. Notwithstanding this considerable input, equipment and tools for agricultural use are largely men-specific, overlooking the physiological and ergonomic needs of women.

This gender-blind design creates physical overstrain, musculoskeletal disorders, decreased work efficiency, and diminished productivity for female farmers. Drudgery-reducing tools are easy to use, affordable, and ergonomically crafted tools that seek to reduce the workload for women, enhance their health and safety, and increase farm productivity.

Drudgery in Agriculture: Definition and Dimensions

Agricultural drudgery refers to the undue physical and mental strain, fatigue, and monotony experienced while performing farm activities. For women farmers, this drudgery is particularly significant due to multiple overlapping factors. First, the intensity of manual labor demands long hours of bending, squatting, and repetitive tasks, which lead to exhaustion. Second, health risks such as persistent backache, joint pain, eye strain, and respiratory ailments arise, especially from exposure to dust and harsh field conditions. Third, the time-consuming nature of agricultural work consumes much of their day, leaving little scope for education, skill development, or active participation in household and community decision-making. Finally, the limited access to mechanization further compounds the burden, as most machines are either too heavy, expensive, or not culturally appropriate for women's use.

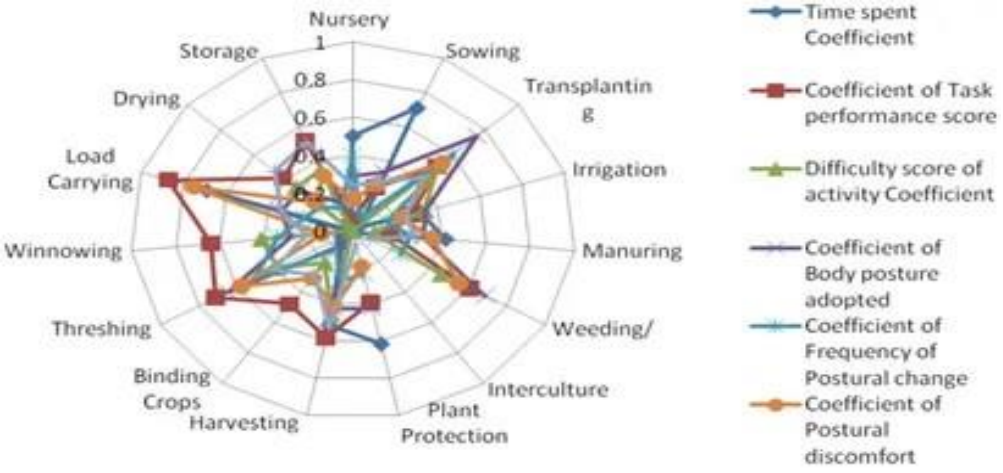
Recognizing these constraints highlights the urgent need for women-friendly drudgery reduction tools and technologies that can minimize physical strain, safeguard health, save time, and empower women's active participation in sustainable agricultural development.

Source: https://www.greaterkashmir.com

Key Drudgery-Prone Farm Activities among Women Farmers

Women farmers are largely involved in the following farm tasks involving maximum drudgery:

- Sowing and planting – manual dibbling, line sowing, and transplanting require bending for several hours.
- Weeding and intercultural operations – hand weeding or sickling causes musculoskeletal disorders.
- Harvesting – repetitive wrist and back movement in cutting crops with a sickle.
- Threshing and winnowing – manual trampling or beating causes increased fatigue and respiratory strain.
- Post-harvest processing – grading, shelling, de-husking, cleaning, and grinding are time-consuming and laborious.
- Water and fuelwood collection – although not directly agricultural, it considerably contributes to the workload of rural women.



Source: https://www.frontiersin.org/journals/sustainable-food-systems

Drudgery Reducing Tools for Women Farmers

Number of research institutions like the Indian Council of Agricultural Research (ICAR), Central Institute for Women in Agriculture (CIWA), and Central Institute of Agricultural Engineering (CIAE) have come up with gender-sensitive tools. Some of these important tools are:

1. Sowing and Planting Tools

Seed Drill (Hand-operated) – minimizes bending posture, provides even spacing of seeds.

Paddy Transplanter (Manual) – minimizes fatigue and maximizes transplanting efficiency.

2. Weeding and Intercultural Tools

Conoweeder – light weight, applied in paddy fields to save manual hand weeding.

Wheel Hoe – effective for use in row crops, saves drudgery and boosts weeding speed.

3. Harvesting Tools

Improved Serrated Sickle – created with improved grip and serrated edge to minimize hand strain and cutting time.

Vegetable Harvesting Knife – designed ergonomically for safe and efficient vegetable harvesting.

4. Post-Harvest Tools

Groundnut Decorticator – conserves time and minimizes finger injuries over manual shelling.

Maize Sheller (Hand-held/rotary) – diminishes drudgery in shelling of maize cobs.

Pedal-operated Paddy Thresher – minimizes fatigue, can be used in small holdings.

5. Household and Allied Tools

Improved Chulha (Smokeless stove) – diminishes indoor air pollution, saves fuelwood.

Water Carrying Devices (Head-load reduction tools such as wheel-based carriers) – minimize physical load of carrying loads.

Advantages of Drudgery Reduction Tools

The introduction of women-friendly drudgery reduction tools in agriculture brings multiple benefits that go beyond easing physical labor. The foremost advantage lies in health benefits, as such tools minimize musculoskeletal disorders, reduce injuries, and lower physical fatigue caused by continuous bending, lifting, or repetitive motions. Secondly, they lead to significant time saving, allowing women to reserve valuable hours for education, skill development, childcare, or alternative income-generating activities. This not only enhances personal well-being but also improves family welfare.

Another critical outcome is economic empowerment, as drudgery-reducing technologies improve operational efficiency, thereby increasing agricultural productivity and household income. These tools also contribute to gender equity, by acknowledging women's role as key producers in farming systems and ensuring that their contributions are recognized at par with men. Moreover, many of these implements are environmentally friendly and energy-efficient, thus promoting sustainable agriculture by reducing excessive human labor and dependence on non-renewable energy sources.

Overall, drudgery reduction tools empower women farmers, improve livelihoods, and ensure healthier, more equitable, and sustainable agricultural practices.

Challenges in Adoption

Their adoption is still limited despite women-friendly tools being available because of:

- Lack of awareness and training.
- Socio-cultural resistance and inability to adapt.
- Limited tools availability in rural markets.
- Financial limitations of women farmers.

Way Forward

- Capacity Building: Rural women demonstrations and training.
- Policy Support: Credit and subsidies to drudgery-reducing technologies.
- Research and Development: Improved designs with greater ergonomics, keeping in mind local requirements.
- Extension Services: Women-oriented mechanization integrated into agricultural extension programs.
- Women Self-Help Groups (SHGs): Tool bank promotion for shared use.

CONCLUSION

Women farmers are the foundation of Indian agriculture, but they still suffer from huge drudgery because of traditional farming methods and narrow access to technology. Drudgery reduction technologies targeted at women have the capacity to make farm work a healthier, efficient, and more remunerative activity. Large-scale awareness, training, and policy action are needed to see to it that these technologies penetrate rural women's lives, thus raising their productivity, mitigating their health risks, and increasing gender equity in agriculture.

REFERENCES

Ahlawat, S., & Singh, S. (2018). Acceptability of selected drudgery reducing tools by farmwomen. *International Journal of Current Microbiology and Applied Sciences*, *7*(11), 1992-2005.

Aryal, U., & Kattel, R. R. (2019). Drudgery reduction for women in agriculture sector in Nepal: An analytical study. *Archives of Agriculture and Environmental Science*, *4*(4), 449-463.

Bhushan, K. B., Misra, K. D., Tirkey, U. T., Jain, G., & Goswami, A. K. (2016). Awareness about drudgery reducing farm tools and implements by women farm workers in Gujarat, India. *Indian Research Journal of Extension Education*, *16*(3), 89-92.

Kishtwaria, J., & Rana, A. (2012). Ergonomic interventions in weeding operations for drudgery reduction of hill farm women of India. *Work*, *41*(S1), 4349-4355.

Surabhi, S., Santosh, A., Sarita, S., Ahlawat, T. R., & Alok, G. (2016). Drudgery reduction of farm women through improved tools. *International Journal of Agriculture Sciences, ISSN*, 0975-3710.

Singh, S. P., Gite, L. P. J., & Agarwal, N. (2006). Improved farm tools and equipment for women workers for increased productivity and reduced drudgery. *Gender, Technology and Development*, *10*(2), 229-244.