Empowering Rural Women - Drudgery Reduction Through Mechanized

Mr. Mayank Mehra, Dr. K. S. Yadav, Dr. Mamta Singh and Dr. Vaishali Sharma
Krishi Vigyan Vigyan Kendra, Sagar, JNKVV Jabalpur

In rural agricultural settings, particularly in developing regions, women often bear a significant portion of the cultivation. The arduous and time-consuming nature of traditional weeding methods not only imposes physical strain but also limits women's participation in other productive activities and opportunities for socioeconomic advancement.

reducing drudgery for rural women focus on introducing ergonomic, gender-friendly tools (like long-handled weeders, better sickles, and improved harvesters) and technologies (like solar cookers) to decrease the immense physical strain from agriculture and household tasks, leading to less back pain, reduced energy expenditure, time savings (allowing focus on well-being), and overall empowerment, though adoption depends on training and matching needs. Studies show these interventions significantly cut working hours and improve quality of life, highlighting the need for wider dissemination

Therefore, there is a pressing need to explore and implement technologies that alleviate the drudgery of weed management while promoting gender equality and empowering rural women. In response to this imperative, the adoption of Cycle Hand hoe represents a promising solution. Cycle Hand hoe are mechanical devices or implements designed for weed management in agriculture, typically consisting of rotating blades or brushes mounted on a wheeled frame.

In spite of technological advancements, there are hardly any deliberate efforts made to generate women friendly technologies to increase their efficiency and effectiveness and reduce drudgery.

It is paradox in the context that farm women account for more than 90 percent of agricultural work force and 75 percent of female population is engaged in agriculture (Census 2001, GOI). Such a large work force is associated in the field but are still being deprived of the benefits of farm mechanization in order to minimize their health risk and drudgery.

Ergonomics of tools and implements can give interfaces for better design of equipment in order to increase efficiency without jeopardizing health. A comparative study was conducted for some selected agricultural implements to evaluate cardio vascular load, energy expenditure, yield, perceived exertion and Musculo-skeletal problems in use of traditional as well as improved tools, viz., weeders, sickle, cleaner grader, fertilizer broadcaster and bhindi Plucker.

Key Themes in Empowering Rural Women:

- **Problem:** Rural women perform back-breaking, repetitive tasks (weeding, harvesting, water fetching, cooking) often for 12-16 hours daily, leading to musculoskeletal issues, particularly lower back pain.
- **Solutions Explored:**
  - **Ergonomic Tools:** Developing and introducing tools like wheel hoes, Cycle Hand hoe , sapling transplanters, cotton harvest bags, and serrated sickles designed for women's physiology.
  - **Energy Efficiency:** Measuring reduced energy expenditure and heart rates when using improved tools compared to traditional ones.
  - **Household Drudgery:** Addressing chores like cooking with solar cookers to save time and improve health.

Impact:

- **Time Savings:** Women save hours daily, freeing up time for family, rest, and other activities.
- **Health Benefits:** Reduced physical strain, lower risk of musculoskeletal disorders.
- **Economic Empowerment:** Increased efficiency and potential for higher yields, though challenges in marketing and finance persist.
- **Implementation:** Success relies on awareness programs, proper training, and ensuring tools meet the specific needs and preferences of farm women.

Examples of Specific Studies:

- One study found serrated sickles reduced drudgery by nearly 19% compared to local sickles for harvesting.
- Another showed interventions saved 3-5 hours per day for over half the women involved, improving their quality of life.

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