



*Ministry of Agriculture and Livestock*



# Women Farmers & Mechanization in Bhutan

*“Making Machinery Accessible to Women Farmers”*



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"Sustainable food system and natural resources for the equitable social and economic well-being"







## Background

- Bhutan remains predominantly an agrarian society, with 43.5% of its population employed in the agricultural sector
- A substantial proportion of these workers, 65.3%, reside in rural areas
- Interestingly, the sector sees **higher female participation**, with women making up **52.3%** of the workforce compared to 37.3% for men (NSB, 2023)
- **Gender Division in an Agriculture:** *Feministic notion that Transplanting, Weeding, Drying, etc are women's job as well as shoulder disproportionate amount of care & Household works*
- **Less Access to Productive Resources** such as Farm Technology





## Addressing the Challenges & Bridging the Gaps

### **1. Government Policies and Strategies to promote mechanization among women farmers:**

- i. Access to equal minimum wages
- ii. Access to financial /credit service

### **2. Agriculture Machinery & Technology Centre:**

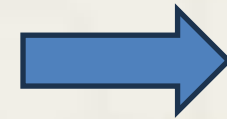
- i. Access to gender friendly technologies through R & D
- ii. Safe and Efficient Farm technology to all





**R & D of Gender Friendly Farm technology**

**1. Land Preparation**



- Traditional Method of ploughing using oxen was carried out mostly by men

- Free training on farm machinery operation (power tiller & mini tiller) to all
- Majority of women farmers have access to mini tiller because of its light weight and ease of operation in the field
- Access to equal financial credits/loans







## 1. Land Preparation



**Bed Making**

- Bed-making was mostly done by women as it is mostly associated with growing vegetables



- AMTC developed bed-maker which can be attached to tractor, powertiller and mini tiller



**Mulch Laying**

- Tractor, power tiller and mini tiller attached mulch laying technology has been designed and developed to replace the manual mulch laying method





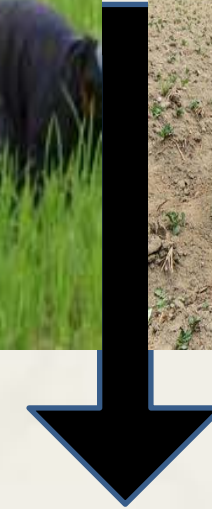
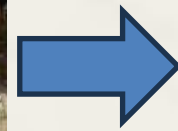


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## Planting/Transplanting/Weeding



### Traditional Method

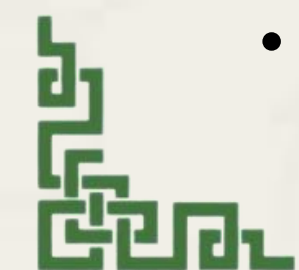


### Introduction of Direct seeding technology

- Alternative to transplanting method in paddy cultivation  
(Huge number of women are involved )
- To mechanize the sowing and weeding method in paddy cultivation
- To mitigate labor constraint



- Introduction to weeders which are light-weight and easy to operate



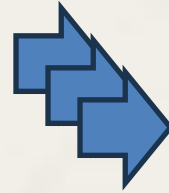




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## Harvesting



- Designed and developed power tiller attached potato digger

- Capacity building on combine harvester, power tiller/mini tiller attached reaper and portable brush cutter for harvesting



Combine harvester



Brush Cutter



Power Reaper







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## Digitization of Agriculture



### Development of Mobile & WEB Application

- Smart irrigation systems for both open fields and inside greenhouses
- Remote controlling of greenhouse monitoring and irrigation scheduling over cloud or local area
- Precise environment-based control to maintain favorable temperature in greenhouse
- User friendly and cost saving technology







## Conclusion & Recommendation

Making agricultural machinery accessible to women farmers is crucial for enhancing productivity, promoting gender equality, and empowering women in agriculture

### 1. Design Gender-Sensitive Machinery

- **Lightweight Equipment:** Develop tools and machines that are lighter and easy to operate for women of varying physical strengths
- **Multi-Functional Devices:** Create machinery that can handle multiple tasks, reducing the need for multiple devices
- **Adjustable Features:** Include adjustable seats, handles, and controls to accommodate different body sizes and heights







## Conclusion & Recommendation

### 2. Challenge Stereotypes:

- Conduct awareness campaigns to challenge societal norms that restrict women's access to machinery
- **Inclusion in Decision-Making:** Ensure women farmers are included in local agricultural policy and equipment distribution decisions

### 3. Technological Innovation

- **Digitization & Remote support:** Offer mobile apps or platforms for ease of field monitoring





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# THANK YOU



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