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Gender Mainstreaming in Sustainable Agricultural Mechanization

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**“Improving women smallholder farmers’ access to mechanization:
Integrated approaches to scale gender-responsive mechanization and
addressing gendered barriers to technology adoption”**

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Status of Mechanization in Pakistan

- ❖ Agriculture is a vital sector of Pakistan's economy. It accounts 21% of total GDP in Pakistan. It employs 37.8% of the labor force of Pakistan. About 47% of the national land is agricultural land, higher than the global average of 38%. Traditional farming methods are still prevalent in many regions of Pakistan. Limited mechanization due to factors such as small landholdings, financial constraints, and lack of awareness.
- ❖ Pakistan has only experienced selective farm mechanization as this concept has remained limited to use of tractors only and at the country level, the temporal analysis shows that an increase in tractor population.
- ❖ At present there are about 0.94 million tractors in Pakistan, which alone provides 0.84 hp/acre. Land preparation is the only operation that is nearly 100% mechanized in the country for almost all crops.



Status of Mechanization in Pakistan

- ❖ Farm mechanization in Pakistan has been limited to basic tools for land preparation and outdated models of combined harvesters, indicating a need for modernization in this area.
- ❖ There is a need for modernization and improvement in farm mechanization to enhance agricultural productivity and sustainability.



- ❖ Tractor count in Pakistan: Approximately 0.692million units.
- ❖ Land preparation: Almost entirely mechanized for all crops.
- ❖ Chisel ploughs: 9916 units.
- ❖ Mould board ploughs: 50,000 units.
- ❖ Thrasher market in Pakistan: Estimated at 20,000-30,000 units annually.
- ❖ Result: Nearly 100% mechanized threshing for cereal crops.



Gender Gap in Pakistan

- ❖ Pakistan has an agriculture-based economy as most of its economic resources are generated by the agricultural sector.
- ❖ In Pakistan, 74% of employed women work in agriculture, according to World Atlas.
- ❖ In Pakistan, gender gaps in farm mechanization limits women's access to modern agricultural tools. Women in Pakistan are facing limited access to farm machinery, leading to lower productivity and income.
- ❖ The gender gap in farm mechanization is evident in the low women's ownership of agricultural machinery and limited access to training on modern farming equipment.



- ❖ Limited access to farm machinery hinders women's participation and efficiency in farming activities.
- ❖ We can promote gender equality, increase women's economic opportunities, and enhance agricultural productivity in Pakistan.
- ❖ The gender gaps in farm mechanization in Pakistan is due to cultural norms and stereotype thinking.
- ❖ Addressing these causes is crucial in bridging the gender gaps and promoting women's empowerment in the agricultural sector.



- ❖ Several initiatives have been implemented to address gender gaps in farm mechanization in Pakistan.
- ❖ By focusing on these initiatives, we can work towards closing the gender gaps and creating equal opportunities for women in the agricultural sector.
- ❖ These are limited access to finances and lack of awareness about the benefits of mechanization among women farmers pose additional hurdles in closing the gender gaps.



Challenges and Constraints

- ❖ Challenges include cultural barriers, lack of financial resources, and limited technical knowledge.
- ❖ Some of the agricultural machines are not adaptable to women farmers because of their difficult operation and injury risks.
- ❖ Yield of farm managed by female farmers are less productive than managed by male farmers. However, closing the gap could boost agricultural production. And it could also improve food security and enhance the welfare of rural households.



Addressing gender gaps in farm mechanization is crucial for sustainable agricultural development in Pakistan. By promoting gender-inclusive policies and providing supportive infrastructure, we can bridge the divide and create a more equitable agricultural sector.



MECHANIZATION AND CHANGING ROLE OF WOMEN IN RURAL PAKISTAN

A case study of Tapiali Village District Rawalpindi

- ❖ The study aimed to examine the impact of mechanization on the role of women in the rural areas of Pakistan. Recognition of this change was the goal of this study. For this purpose, Tapiali village was selected as a case study.
- ❖ Mechanization of agriculture has put women into new moulds and roles in village Tapiali and depending upon the amount of agricultural land a household owned, mechanization of their farms quite evidently modified their habits and living patterns.



MECHANIZATION AND CHANGING ROLE OF WOMEN IN RURAL PAKISTAN

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Present research study has been carried out with the following objectives:

- a. To analyze the social processes affecting women's role in society.
- b. To study the change in the social and economic roles of women in the rural society vis-à-vis increasing mechanization.
- c. To examine social, economic and cultural factors that shape the relationship between mechanization and women's role in rural society.
- d. To calibrate social change in terms of gender distribution of work with different levels of mechanization.
- e. To find out changes in the participation patterns of rural women resulting from mechanization in the village society.



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- ❖ Efforts are being made to address these challenges and promote the sustainable mechanization of agriculture for women in Pakistan. For instance, the “Plant wise Plus” program provides gender-sensitive extension services and promotes climate-smart farming practices using digital advisory tools.
- ❖ Ongoing research projects aim to provide evidence of the level of women's contribution across agricultural activities and identify factors influencing their participation in farm activities.



Recommendations and suggestions in the country and regional levels

To address the specific needs of women in applying mechanization, several recommendations and suggestions can be made at the country and regional levels. These include:

- 1. Gender-responsive needs assessment:** Conducting a gender-responsive needs assessment for mechanization can help identify women's needs
- 2. Considering gender implications in research and design:** Researchers and practitioners should carefully consider the gendered needs and implications of interventions.



Recommendations and suggestions in the country and regional levels

3. Empowering women farmers: Providing women farmers with access to mechanization resources, such as equipment, machinery, and training.

4. Gender-sensitive training: Implementing gender-sensitive training programs can help women become more comfortable with using mechanization tools.

5. Establishing group models for machine operation: Encouraging the formation of groups for machine operation, based on gender-sensitive principles.



Recommendations and suggestions in the country and regional levels

6. Overcoming barriers: Addressing technical, economic, and cultural barriers that constrain female participation in both reaper service business ownership and in hiring services as a client is essential.

By incorporating these recommendations into national policies, programs, and interventions, it is possible to promote gender equality in the application of mechanization and improve the overall efficiency and sustainability of agricultural operations.



Thank you



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