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Opinion of Women on Possession of Land and Risk Handling Capacity

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Abstract:
This study shows that and ownership affects women's risk management abilities. This study was conducted in the two upazilas (Sub-districts) namely Delduar, and Nagorpur of Tangail district in Bangladesh. In this study, data were collected during the period of February 2024 to March 2024 from the studies areas. We found a favorable correlation between women's land ownership and risk management. Larger landholding women were more confident and competent in managing financial, environmental, and social hazards. This higher risk handling capability is due to land assets' financial stability, the ability to invest in risk-reducing technology or practices, and community bargaining power. This study shows that property ownership gives women a greater buffer against economic uncertainty and allows them to take proactive risk mitigation strategies. Data also shows that landowner women are more likely to have diverse income sources, minimizing their market susceptibility. They also use support networks and community risk management efforts more. The study concludes that land ownership improves women's risk management. Women acquire economic stability and risk management leverage by obtaining land holdings. This shows that land access regulations might boost women's resilience and risk management. Future study should examine how land ownership affects risk management and how to give disadvantaged women land access.

Keywords: Land, NGO, Risks, Risk Management, Women

BACKGROUND:

The economy of Bangladesh continues to rely on the agricultural sector, which comprises four sub-sectors: crop production, fishing, livestock, and forestry (Ministry ofFinance, 2023). The crop industry has become the main driver of Bangladesh's agricultural GDP, surpassing the fishing sub-sector (Mistry of Finance, 2023). The significance of the agricultural sector in Bangladesh cannot be overlooked in its contributions to reducing rural poverty, earning foreign currency, creating jobs, and guaranteeing national food security by increasing agricultural output (Ministry of Finance, 2023). Despite the expansion of the industrial sector, around 43% of the nation's workforce is still engaged in the agricultural sector for their sustenance (Mistry of Finance, 2023). The Government of Bangladesh (GoB) has developed National Agricultural Policies (NAP) with a primary focus on enhancing agricultural productivity, promoting technical skills among farmers, addressing gender disparities in farming communities, and ensuring environmentally sustainable agricultural practices. Non-Governmental Organizations (NGOs) and donor agencies (Ministry of Finance, 2023) give technological, financial, legal, and infrastructural support to farming communities, with a focus on prioritizing poor women farmers, in accordance with the Non-Aggression Principle (NAP).

Agricultural activities come with various risks, including financial, production, marketing, and institutional risks (Parvez et al., 2026; Mahmud et al., 2021) To enhance the risk management capability of agricultural communities, measures such as prioritizing crop diversity, promoting modern farming practices, and providing access to financial facilities are important (Parvez et al.,2016). Farmers in Bangladesh employ a combination of on-farm and off-farm approaches to mitigate risks, including diversifying crops, engaging in non-farm activities, and accumulating precautionary savings (Adnan et al. 2020). Providing credit facilities to rural agricultural communities and eliminating middlemen in the fisheries value chain can significantly mitigate hazards associated with farming(Mahmud et al. (2021).According to some researchers, the adoption of inorganic fertilizers, diversification of cropping patterns, providing credit facilities and access to extension services can be fruitful strategies to improve the agricultural community's ability to manage risks(Kapoor, A. 2023; Asravor, R. K. (2022); Huet et al., 2020).

Notwithstanding these endeavors, impoverished farming communities in Bangladesh sometimes encounter numerous hazards and uncertainties when engaging in agricultural pursuits due to their limited access to productive resources such as land and financing. The farming communities in Bangladesh frequently encounter various obstacles when engaging in agricultural activities, such as financial risks due to lack of funds, technological risks caused by limited access to training, production risks, marketing risks resulting from low product prices, and climatic risks including drought, flood, and pest attacks (Mahmud et al., 2021; Mitra et al., 2021; Anik et al., 2020). In Bangladesh, extreme climatic events are a significant factor contributing to the extensive damage to agricultural productivity among farmers (Anik et al., 2020; Parvin& Shaw, 2017; Khanom etal., 2016). Dealing with these particular hazards and uncertainties becomes significantly more intricate when it pertains to female farmers under the established patriarchal systems of rural communities in Bangladesh.It is worth noting that the, farming women in Bangladesh are lack of access to productive resources (e.g., land, credit etc) and they often face more obstacles in pursuing their IGAs due to existing patriarchal norms of the rural society (Mahmud et al.,2023;Sultana et al., 2024), as results they have limited capacity to mitigate risk and uncertainty.

PROBLEM STATEMENT:

In underdeveloped nations such as Bangladesh and India, women engaged in farming typically have little resources and decision-making capacity (Sultana et al., 2024; Mahmud et al., 2023; Hossain et al., 2022). Previous research conducted in Bangladesh have shown that women engaged in agricultural activities have limited income, education, land ownership, and decision-making abilities (Mahmud et al., 2023; Kieran et al., 2017; Kieran et al., 2015). In addition, impoverished women often face a lack of authority over their productive assets, including land ownership (Kieran et al., 2017; Kieran et al., 2015; Mahmud et al., 2023). The primary obstacles for women in Bangladesh to obtain and manage land property are the prevailing social and religious conventions (Khan et al., 2016; Kieran et al., 2017). In Bangladesh, rural women frequently relinquish their land rights to their husbands or siblings as a result of societal coercion (Khan et al., 2016).

The fact is that access to land, credit, and skill-building training facilities are essential for empowering impoverished rural women in underdeveloped nations (Misra & Sam, 2016; Agarwal2020; Hilton et al., 2022).Researchers have found that providing access to land can better the living standards of individuals in terms of social and economic elements (Agarwal, 2020; Misraand Sam, 2016; Allendrof et al., 2007).

This, in turn, can improve their ability to manage risks. However, several academics have contended that the empowerment of women cannot be ensured just through their ownership of property unless they also maintain control over land resources (Mahmud et al., 2023: Jacob and Keys, 2015). Therefore, the subsequent inquiries can be posed:

1. Does female land ownership truly enhance their ability to manage risks?
2. How do farm women perceive their capacity for managing agricultural risks?

This study has made a genuine attempt to investigate the answers to the aforementioned questions. Prior research has mostly concentrated on evaluating the influence of women's land ownership on their standard of living, including factors such as income, expenditure, food security status, and decision-making capacity (Mahmud et al., 2023; Agarwal, 2020; Misra and Sam, 2016). This study stands out from others by employing econometric approaches to evaluate the influence of women's land ownership on their ability to manage agricultural risks. The results of this study are expected to aid policymakers in Bangladesh and other regions in developing and executing policies to mitigate the risks and uncertainties faced by women engaged in rural farming. This study primarily examines the following aspects: (i) the various types of risks encountered by women engaged in farming; (ii) the risk management strategies implemented by farming communities; (iii) the influence of women's land ownership on their lives; and (iv) the challenges encountered by female farmers in managing risks.

A. The Effects of Women's Ownership of Land on Their Lives

In India, it has been noted that women's access to land has helped them enhance their food security status (Agarwal 2018; Santos et al. 2014). According to the findings of Doss et al. (2014), women residing in poor nations can readily acquire knowledge of contemporary agricultural practices provided that they have ownership of the property. Researchers suggest that ensuring women's land rights may serve as a viable approach to enhance both children's educational attainment and agricultural productivity within households (Gaddis et al., 2022). Menon et al (2014) argue that women's land ownership can have a substantial impact on creating job prospects for them. Koirala,S.(2022) also notes that in Nepal, women who lack access to land frequently encounter significant difficulties in seeking loan assistance. Ensuring women's tenure security in China enables them to have the authority and control to allocate resources towards healthcare and the purchase of essential items (Han et al., 2019). A study conducted in Ethiopia found that guaranteeing women's land rights has a substantial impact on enhancing their ability to allocate more funds towards food and healthcare expenses (Muchomba, 2017). Allendorf (2007) found that in Nepal, children were less likely to be underweight if their mothers owned land. A study conducted in Pakistan found a favorable correlation between women's land ownership and the improvement of children's nutritional status (Rehman et al., 2019). The availability of maternal healthcare in Uganda was found to be closely linked to the protection of women's land rights (Nyakato et al., 2020). Furthermore, in underdeveloped nations, guaranteeing women's ability to obtain land can have a beneficial effect on elevating their quality of life in terms of societal standing and authority in household decision-making (Muchomba, 2017; Ahmad et al., 2016; Sangita,2016; Koirala,S 2022). Researchers argue that guaranteeing women's land rights is a vital measure for empowering women, as it helps to decrease instances of violence against women (Panda & Agarwal, 2005).

Previous studies have mainly focused on the impact of land on the income, food security healthcare issues. However, our study is different from other studies as it focuses on the opinionof women’s land ownership and how it can affect their risk management abilities.

CONCEPTUAL FRAMEWORK

Farmer risk management is influenced by several elements, not only human traits. Thus, the conceptual framework to improve farmers' risk management must consider social, economic, legal, and infrastructural factors (Figure 1). Education and training help people learn, adopt new agricultural methods, and become more conscious of social, economic, and environmental issues (Mahmud et al., 2021, Kabir et al 2019). They lessen farming dangers this way. Rural farming women in Bangladesh usually have less education and skills for income-generating activities (Hilton et al., 2016). Thus, they face higher risks and unpredictability. Compared to an untrained woman with limited or no education, a farm woman with extensive training and a higher level of education is better able to generate income, make informed decisions, and access agricultural information.

Women's land ownership and social and economic empowerment are positively correlated (Mishra & Sam 2016; Menon et al. 2014; Agarwal, 2018). In developing nations, rural women's lack of land ownership hinders their agricultural income-generating activities. A farm woman with a greater landholding would have an advantage in revenue production, agricultural decision-making, and risk management compared to a woman with no or a small plot. Agricultural communities need finance to operate (Mitra et al., 2019; Narayanan,S 2016). Poor Bangladeshi farmers struggle to get loans (Mitra et al., 2019; Mahmudet al., 2014), limiting their agricultural activities. Due to collateral requirements, poor Bangladeshi farmers struggle to get loans from government banks. Female farmers are far worse off. Provide adequate credit with acceptable terms and conditions to allow women farmers engage in income-generating activities (IGAs), increasing agricultural output and revenue. This will greatly improve risk management. Climate risks are common in Bangladesh and damage agricultural productivity. A farmer with additional climate threats would likely struggle to meet output and profitability goals. This would impair their risk and uncertainty management, unlike a farmer who has few disasters. Importantly, giving agricultural insurance services to disadvantaged farmers, especially women, will considerably improve their climate risk management.

The researchers observed that rural infrastructure is still inadequate for the rural population (Mahmud et al., 2014; Kabir, 2019). Thus, rural Bangladeshis struggle to access infrastructure, which hinders their adoption of modern farming methods, diversification of agricultural practices, and risk and uncertainty management. A farmer with better access to rural infrastructure amenities may be better at getting agricultural knowledge, developing networks, making money, and managing agricultural hazards.

Note 1: This conceptual framework has been adopted and modified from Hilton et al., 2016; Mahmud et al., 2014; Mahmud and Hilton 2020.

METHODOLOGY

A. Construction of the Risk Management Score Index

Women were asked to give opinions based on 5 statements which were:

- Access to land increase my ability to manage production risk
- Access to land increase my ability to handle marketing risk
- Access to land increase my ability to handle climatic risk
- Access to land increase my ability to handle facing modern technology
- Access to land increase my ability to handle financial risk
- Access to land increase my food purchasing power

Each statement has 5 options, which were:
SA: Strongly agree; A: Agree; N: Neutral; DA: Disagree; SDA: Strongly disagree. For SA, they get 5 points. For A, they get 4 points. For N, they get 3 points. For DA, they get 2 points
For SDA, they get 1 point.
From each statement, each person can achieve maximum of 5 points and minimum of 1 point. For total 5 statements a person can achieve maximum 25 points and minimum 5 points.
Based on these scores, we can deduce that risk management capacity is high for those whose scores are above 20. From 11-19, the management capacity can be considered to be moderate and for scores between 0-10, their management capacity is low.

RESULTS AND DISCUSSIONS

A. Socioeconomic and Demographic Profile of the Women

The (Table I) characteristics for women's socio-economic demographic profile provides a comprehensive understanding of their lives and communities, encompassing several dimensions. The mean age of the women surveyed is 36.2 years. The sample consists of a substantial majority of married women, accounting for 92.7% of the total. From a religious standpoint, 91.4% of the population identifies themselves as Muslim.

Table I. Characteristics of the sampling women

Variables	Mean	Number	Percentage
Age of the women	36.2		-
No. of years of schooling	2.7		
% of married woman	-	278	92.7%
% of Muslim women	-	275	91.4%
Family size (number)	5.8	-	-
Household land possession (decimal)	89.4	-	-
Women owned land (decimal)	37.3	-	-
% of male headed household	-	269	89.7%
Value of household asset in 2023	132714.95	-	-
Distance of AEO (km)	3.8	-	-
Distance of Rural Market (km)	1.17	-	-
% of households having electricity	-	54	18%

The mean family size is 5.8 members; the average land ownership per household is 89.4 decimals. The average years of schooling for the women are 2.7 years. On average, women possess 37.3 acres of land. Male-headed households comprise 89.7% of the sample. The mean value of household assets in 2023 is roughly 132,714.95 Taka, reflecting the financial status of the households. Regarding accessibility, the mean distance to the Agricultural Extension Officer (AEO) is 3.8 kilometers, while the distance to the closest rural market is 1.17 kilometers. Power availability is restricted, since about 18% of homes own access to power.

B. Land Ownership of Women

This distribution in the table below shows that 59% of land owned by women falls into the less than 50 decimals category. 28% of women own land between 51-100 decimals. The data highlights the fact that

a significant majority of women hold smaller land parcels, with ownership sharply decreasing as land size increases. A mere 14% of the women own land greater than 100 decimals. (Table II)

Table II: Women land ownership categorized into the categories

Land Category	Number	Percentage (%)
< 50 decimals	176	58.67%
51-100 decimals	82	27.33%
101-150 decimals	42	14.00%

C. Risk handling Score of the women

Table III: Relationship between Category of Land owned by women and average risk management score

Land Category	Average risk management score
< 50 decimals	12.4
51-100 decimals	16.7
101-150 decimals	21.3

The table above (Table III) shows the category of land owned by women and average risk management score. As the land area increases, from less than 50 decimals to 101-150 decimals, the average risk management score rises from 12.4 to 21.3, indicating improved risk management with larger land holdings showing a positive relation.

D. Types of Risk faced by Women

Women faced mainly four types of risks: (a) financial risks (lack of fund); (b) technological risks (lack of inputs, equipment, and training); (c) processing and marketing risk (low price of product, lack of transportation, and storage facilities); and (d) natural calamity (fish diseases, pest attacks, and destruction of fish and fishery products due to flood, excessive rainfall, hail storm, and drought). Marketing risks and financial risks were the major obstacles for the women in our study (Table IV). However, women in Bangladesh face severe obstacles in pursuing agricultural related IGAs mainly because of the farmers' lack of financial capacity. Their inability to tackle the risks brings in a loss of agricultural production and low level of income for them.

Table IV: Types of Risk faced by Women:

Category	No. of Risks faced	Total	Percentage (%)
Production related risk	139	300	46.34%
Financial Risk	193	300	64.34%
Technological Risk	177	300	59%
Marketing Risk	217	300	72.33%
Climate Risk	124	300	41.33%

E. Opinion of the woman regarding risk management

Women were asked to give opinions based on 5 statements. The following statement were: a) Access to land increase my ability to manage production risk b) Access to land increase my ability to handle marketing risk c) Access to land increase my ability to handle climatic risk d) Access to land increase my ability to handle facing modern technology e) Access to land increase my ability to handle financial risk f) Access to land increase my food purchasing power.

Table V:

Statement	SA	A	N	DA	SDA
Access to land increase my ability to manage production risk	34	165	22	62	17

Statement	SA	A	N	DA	SDA
Access to land increase my ability to handle marketing risk	19	137	48	75	21
Access to land increase my ability to handle climatic risk	37	182	15	42	24
Access to land increase my ability to handle facing modern technology	25	167	27	62	19
Access to land increase my ability to handle financial risk	42	197	18	32	11
Access to land increase my food purchasing power	35	174	13	63	15

SA: Strongly agree
A: Agree
N: Neutral
DA: Disagree
SDA: Strongly disagree

The table (Table V) provides a concise overview of women's perspectives on land access and its influence on risk management. The majority of respondents (199) show that having access to land enhances their capacity to effectively oversee production. Additionally, a significant number of respondents (239) perceive that land access contributes to better management of financial risks. Specifically, 42% strongly agree and 197% agree on the importance of land access for financial risk management. There is a lack of agreement among people on marketing hazards, with 156 replies, and current technology, with 192 responses. 219 respondents had a good perception of climatic risk management. Land access is perceived as advantageous for increasing food buying power, as shown by 209 replies. However, a smaller proportion of women (35%) strongly agree with this notion. Land access is highly prized for the purpose of minimizing a wide range of threats. Hence, we can conclude that majority of women believe that higher the amount of land owned by them, higher is their ability to handle different risks.

F. Risk Management Strategies for Women

The table (Table VI) shows the risk management strategies of women. The data shows that 67.7% women adopt strategies like taking credits from formal or informal sources in order to overcome financial risks and they also mortgage their lands (47.33%) and adopt new technologies (55.00%) to mange risks faced.

Table VI

Sl.	Strategies	Number	Percentage	Total
1.	Taking credit from formal or informal sources	203	67.67%	300
2.	Selling livestock assets	156	52%	300
3.	Changing IGAs	53	17.67%	300
4.	Land Mortgage	142	47.33%	300
5.	Adopt New Technology	165	55.00%	300
6	Receive Training from	129	43.00%	300
7.	Access to infrastructure like storage system, bridges etc.	91	30.33%	300

CONCLUSION

This study sheds insight into rural women's land ownership and risk management. The data show that land ownership improves risk handling capacity. Landowner women can handle production, marketing, climatic, and financial concerns better. Land ownership is essential to rural economic stability and

resilience.

Land ownership improves risk management, highlighting the need for rural women-specific policy. Land tenure security initiatives provide women legal land rights through government action. Offering legal counsel and resources to women during land registration might also help. Land titling plans that empower women and safeguard their land rights will also lessen land conflicts.

Education regarding land management and agricultural best practices for women is crucial in this patriarchal society. Women can better reduce dangers on their property by enhancing their technical skills and understanding. Credit and grants for women landowners can fund risk-reducing technology and practices.

Creating support networks and forums for women to exchange experiences and tactics can also promote risk management collaboration. Infrastructure, such as market access and technology, may directly affect marketing and climatic risk management, thus government policies should improve it.

Finally, improving land ownership and management for rural women strengthens them economically and helps them manage hazards. Comprehensive policies and support systems are needed to turn land ownership into benefits and strengthen rural communities.

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