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Gender, Climate Vulnerability, and Technology Adoption: An Assessment of Agricultural Microenterprises in Rural Bangladesh

Aniruddha Roy Protya and Sujan Banik
Department of Mechanical Engineering
Bangladesh University of Engineering & Technology
Dhaka-1000, Bangladesh
protya99@gmail.com, baniksujan005@gmail.com

Provat Kumar Saha
Department of Civil and Environmental Engineering
University of Washington
Seattle, Washington, United States
psaha3@uw.edu

Sabiha Yeasmin Rosy
Department of Women and Gender Studies
University of Dhaka
Dhaka-1000, Bangladesh
sabiha.rosy@du.ac.bd

Mohammad Golam Kibria
Department of Soil Science
Bangladesh Agricultural University
Mymensingh, Bangladesh
kibria.ss@bau.edu.bd

Yushiou Tsai
The ByWater Institute
Tulane University
6823 St. Charles Avenue, New Orleans, LA, USA
ytsai3@tulane.edu

Md Aman Uddin
Department of Mechanical Engineering
Bangladesh University of Engineering & Technology, Dhaka, Bangladesh
amanuddin@me.buet.ac.bd

Abstract

Women in Bangladesh comprise over 50% of the agricultural workforce, and their involvement in microenterprises (MEs) - poultry, horticulture, and aquaculture - plays an essential role in the national economy. However, extreme weather events cause financial losses and the adaptation of climate-smart technologies remains an underexplored area of research. This research aims to assess gendered challenges to technology adoption and

climate resilience among women-led MEs with main focus on poultry sector due to its higher vulnerability to extreme weather conditions. This research was conducted in three key agricultural subsectors in Bangladesh—poultry, horticulture, and aquaculture and examines the particular issues for MEs. We employed a scientific assessment of existing challenges through a survey and focus group discussions of 427 MEs composed predominantly of female participants across the North-West (Joypurhat, Naogaon, Dinajpur), Central (Tangail, Gazipur) for poultry and the South-West (Jashore, Satkhira) for horticulture and aquaculture. Findings revealed that women's participation is highest in poultry sector, with considerable ownership and decision-making roles. This research shows that poultry sector is the most vulnerable to extreme weather due to mass death from heatstroke, as well as cold shocks that are dangerous in brooding. Furthermore, covered farms cause NH_3 gas buildup during winter, of which farmers are unaware. This research finds that despite having low awareness of weather-related technologies among women farmers, their high willingness to technology adoption and more use of smartphone can contribute to increased suitable adoption of climate-smart technologies, leading towards their improved capacity-building and empowerment in the long-run.

Keywords
Gender Dynamics in Agriculture, Climate Resilience, Technology Adoption Behavior, Women-Led Microenterprises, Bangladesh Agriculture Sector.

Biographies
Aniruddha Roy Protya completed his B.Sc. in Mechanical Engineering from Khulna University of Engineering and Technology (KUET). He is currently pursuing his M.Sc. in Mechanical Engineering at BUET.

Sujan Banik completed his B.Sc. in Mechanical Engineering from Rajshahi University of Engineering and Technology (RUET). He is currently pursuing his M.Sc. in Mechanical Engineering at BUET.

Dr. Provat Kumar Saha is an Affiliate Associate Professor of the Department of Civil and Environmental Engineering at University of Washington. His academic and research interests focus on environmental engineering, including air pollution and related environmental issues.

Dr. Sabiha Yeasmin Rosy is an Associate Professor of the Department of Women and Gender Studies at University of Dhaka. Her research spans gender dynamics in agriculture, women's participation and empowerment, indigenous rights, ethical political ecology, and gender-based violence.

Dr. Mohammad Golam Kibria is an Associate Professor in the Department of Soil Science, Faculty of Agriculture at Bangladesh Agricultural University (BAU). His research primarily focuses on soil acidity management, abiotic stress tolerance in plants, nutrient dynamics and availability in soils, plant nutrition, heavy-metal toxicity in soil and plants, and plant-stress physiology.

Dr. Yushiou Tsai is a Research Associate Professor at Tulane University's ByWater Institute. Her work bridges hydrology and human decision-making, focusing on how social, economic, and governance factors shape water-resource management. She develops socio-hydrologic models to support sustainable, community-centered water policies.

Dr. Md Aman Uddin is an Associate Professor in the Department of Mechanical Engineering at BUET in Dhaka. His research interests are centered around electrochemical energy systems, especially fuel cells, electrolyzers, polymer electrolyte systems and transport phenomena in energy materials.