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Adaptive Capacity of Egyptian Women to Climate Change in Agriculture

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Agriculture is one of the sectors most vulnerable to changes in weather patterns and extreme events, such as drought and flooding. Adapting to this evolving environment is essential to overcome challenges in providing food for a growing population, sustaining livelihoods throughout the food value chain, and enhancing the sustainability of the agricultural sector. Agriculture in Egypt is particularly exposed to climate change. In recent decades, Egypt's climate has been dry, hot, and barren, with minimal precipitation. However, climate change has exacerbated these already challenging climatic conditions through increased temperature fluctuations, severe heat waves, desertification, and droughts. In 2021, yields of key crops, including mangoes and olives, plummeted by 40% and 80%, respectively, due to climate change. Projections suggest that crop yields will decline significantly by 2050.

The impacts of climate change on Egypt's agriculture are expected to be substantial. They will disproportionately affect millions of Egyptian households, particularly women who depend on this economic activity for their livelihoods. The agricultural sector employs a large number of working women in Egypt, a sector recognized for its low and unstable earnings. Rural women engaged in farming activities are already facing poverty, and climate change is likely to worsen their situation. Thus, it is crucial for Egypt's gender and sustainable development agenda and its climate change adaptation programs to explicitly incorporate components that address the capacity-building needs of these women and strengthen rural females' livelihood options.

In 2022, Egypt's National Strategy for Adaptation to Climate Change and Disaster Risk Reduction 2050 was established as a multi-sectoral document addressing climate change and adaptation measures as integral to the Egyptian government's sustainable development programs and plans (Ministry of Environment, 2022). The strategy outlines four types of adaptation actions: infrastructural, institutional, behavioral, and nature-based options. Examples include building seawalls or inland flood defenses, creating new insurance schemes, modifying crop planting times or varieties, and establishing green spaces. However, at the national level, there remains a lack of focused attention on the adaptation and capacity-building needs of rural female workers within the country's gender and development policy agenda. Gender equity is essential for any sustainable development framework. Furthermore, adaptation costs involve making society more resilient to climate change.

Figure (1) illustrates the various factors influencing climate change adaptation: i) Women's Climate Change Adaptation in Agriculture through the development of climate change strategies, poverty reduction, resilience, and socio-economic development. ii) Women's Adaptive Capacity to Climate Change in Agriculture through enhanced access to effective communication, financial support and technical resources, technology transfer, and education and training.

Much of Egypt's agriculture is characterized by fragmented land, seasonal production processes, and unstable earnings, leaving millions of women who depend on this sector impoverished. It is estimated that approximately 27 million females reside in rural areas, reflecting the national proportion of females to males and the rural population percentage in the country. Based on the rural poverty rate of 32%, an estimated 8 million rural women (many of whom begin working before the age of 15) are impoverished, including those employed in agriculture. The average daily wage for a seasonal farmworker in Egypt ranges from $5 to $8, typically lower for women than for men (Kandeel, 2017).

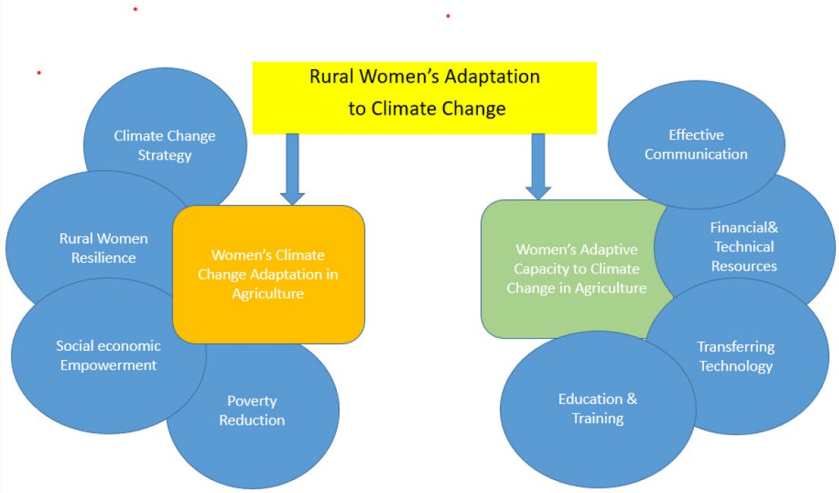

Figure 1: Women's Adaptation to Climate Change in Agriculture. (*Source*: Author).

This overall situation concerning Egyptian women in agriculture raises further concerns. Food prices are likely to remain high and may rise even more in the foreseeable future. Rural women in agriculture, often seasonal workers with unstable earnings, are particularly vulnerable to food insecurity, which affects all aspects of life. Climate change presents considerable risks to the already fragile socio-economic conditions faced by rural women. Egypt's agriculture is especially susceptible to the impacts of increasing heat waves, decreased rainfall, more extreme dry and wet weather events, and the subsidence of prime agricultural land in the Nile Delta due to rising sea levels. Rural women, who often experience high illiteracy rates, lack asset ownership, and possess limited capacity for economic mobility and adaptation, will be the most affected by these challenges.

Gender inequality significantly influences women's adaptive capacity to climate change. Each year, women farmers and female-headed households in low- and middle-income countries incur substantial losses due to climate-related shocks such as heat stress or flooding, often exceeding the losses experienced by male-headed households. Women and girls disproportionately bear the impacts of climate change. However, they are also driving climate solutions at all levels—as farmers, workers, consumers, household managers, activists, leaders, and entrepreneurs.

Climate change is further increasing the number of hours women are required to work, compounding the already significant burden of care they carry. On average, women spend four hours per day on unpaid domestic and care work, while men spend less than two hours. This additional burden from climate change includes tasks such as gathering water or wood and fulfilling other care responsibilities essential for maintaining a household or farming operation. Additionally, women and girls must contend with persistent discriminatory social norms in agricultural food systems, which may restrict their ability to work outside the home or limit their travel distance for employment. The climate crisis does not impact all community members uniformly.

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