POLICY BRIEF

FROM RAINFALL UNCERTAINTY TO MARKET CONSTRAINTS: STRENGTHENING WOMEN'S AGRICULTURAL RESILIENCE IN GOMBE STATE

By Centre for Inclusion and Development Innovation



Key Policy Message

Women farmers in Gombe State face growing agricultural risks from unpredictable rainfall, declining soil quality, desertification, and competition over scarce land and irrigation water. These challenges increase production costs and cause repeated crop losses, particularly for women who lack the financial capacity to replant or purchase inputs. Strengthening access to climate-resilient farming, irrigation, affordable agricultural finance, organic soil-management practices and reliable markets is critical to sustaining women's participation in agriculture.

Context

Agriculture remains an important livelihood for women in Gombe State, but changing weather patterns are making farming increasingly unpredictable. Interviews with two women engaged in agriculture in the state highlighted changes in the timing and adequacy of rainfall, declining soil fertility, increasing desertification and growing pressure on land and water resources.

The experiences shared suggest that climate-related challenges are not only affecting agricultural productivity; they are also increasing the financial risks associated with farming. For women with limited access to capital, a failed planting season can mean losing the resources invested in seeds and other inputs without having the means to recover or replant..



Key Findings

01 **Unpredictable rainfall is increasing crop failure and production costs**

Both interviewees described significant changes in rainfall patterns compared with previous years. One farmer reported planting soybeans three times last year and twice this year because rainfall was insufficient for successful germination. Several weeks without rain after planting caused seeds to fail to germinate, requiring additional spending on seeds and other inputs. The other interviewee similarly reported planting the same plot twice this year, compared with three planting attempts in the previous year. According to her, insufficient rainfall reduced productivity and left some agricultural land uncultivated.

The interviews indicate that erratic rainfall creates a double financial burden for women farmers: they incur the cost of an initial planting without a corresponding harvest and then need additional resources to replant.

02 **Climate pressures are contributing to land degradation**

The interviews also highlighted increasing desertification and declining soil fertility. Areas previously suitable for cultivation are reportedly becoming increasingly sandy and less productive. Interviewees observed that some land is being abandoned because it no longer retains the nutrients needed for productive farming, and they also noted that agricultural inputs remain expensive. The increasing price of fertiliser, including bio-fertiliser, was contrasted with the relatively low prices farmers receive for their produce.

In response, women farmers are beginning to adopt organic practices, including using manure and household or kitchen waste to improve soil fertility. These practices can provide a lower-cost alternative to purchased fertiliser for farmers with limited financial resources.

03 **·Scarcity of water and land is creating tensions among farmers**

The interviews also identified growing competition over agricultural resources, particularly land and irrigation water.

According to one interviewee, disputes occur when individuals claim ownership of the same parcels of land. Similar tensions arise among farmers engaged in dry-season farming because irrigation water is insufficient to meet the needs of everyone cultivating in the area. This suggests that expanding irrigation and dry-season agriculture without adequate water-management systems could intensify competition unless mechanisms are put in place to improve equitable access and manage competing demands.

04 **Women have limited capacity to absorb agricultural shocks**

Climate variability is particularly severe for women with limited financial resources. As one interviewee explained, a farmer may invest her available resources in seeds and cultivation, only to lose the investment when rainfall fails. Without additional capital or institutional support, she may be unable to replant or continue farming.

The interviews therefore point to access to finance as a critical dimension of climate resilience for women farmers. Climate adaptation cannot depend solely on farmers changing their practices if they lack the resources required to implement those changes.

Policy Implications

The interviewees' experiences suggest that climate adaptation policies in Gombe State need to move beyond general awareness-raising and provide women farmers with practical ways to manage climate-related production risks.

First, investment in irrigation and dry-season farming could provide an alternative production window when rainfall is increasingly unreliable. However, irrigation expansion should be accompanied by transparent water-allocation arrangements and local mechanisms for managing disputes over water access.

Second, agricultural finance programmes need to account for the additional risks farmers face under changing climatic conditions. Conventional financing may be difficult for small-scale women farmers who cannot easily absorb losses arising from failed planting seasons.

Third, soil-health interventions should recognise the potential of locally available organic materials. Extension services can support farmers with practical knowledge on composting, manure management and other affordable soil-restoration practices.

Finally, increased production will have limited benefits if farmers remain dependent on local markets with weak bargaining power. Better connections between women farmers, aggregators, processors and larger markets are therefore essential to improving farm-gate returns.

Policy Recommendations

01 **Expand affordable irrigation and dry-season farming opportunities**

Government and development partners should invest in small-scale irrigation infrastructure and improve farmers' access to reliable water sources. Dry-season farming programmes should specifically include women farmers and incorporate mechanisms for equitable water allocation.

02 **Develop climate-responsive agricultural finance for women**

Agricultural finance schemes should provide affordable and flexible financing that recognises the possibility of climate-related crop failure. Options such as seasonal repayment schedules, risk-sharing mechanisms and targeted support for replanting could help women recover from climate-related losses.

03 **Strengthen climate-smart agricultural extension services**

Extension programmes should provide women farmers with practical guidance on changing planting windows, drought-tolerant production practices, water management, soil conservation and crop diversification. Local knowledge and farmers' observed changes in rainfall patterns should also inform extension messaging..

04 **Promote low-cost organic soil management**

Government and agricultural organisations should promote the production and use of compost, manure and other locally available organic fertilisers. Training should focus on practical methods that allow resource-constrained farmers to improve soil fertility without relying entirely on expensive commercial inputs.

05 **Strengthen market linkages for women farmers**

Women farmers should be connected to aggregators, processors, institutional buyers and larger markets beyond their immediate communities. Improved market information, aggregation and collective marketing can strengthen farmers' bargaining position and reduce dependence on low-paying local markets.

05 **Establish local mechanisms for managing land and water-related conflicts**

As competition for productive land and irrigation water increases, relevant government institutions and community structures should strengthen mechanisms for resolving land and water disputes. Irrigation schemes should have clear and transparent water-allocation arrangements to reduce conflicts among farmers.

Conclusion

The experiences of women farmers interviewed in Gombe State show how climate variability translates into direct economic pressures at the farm level. Unpredictable rainfall causes failed germination and repeated planting; declining soil fertility reduces land productivity; and competition over land and irrigation water creates tensions among farmers.

Women are responding through delayed planting, dry-season farming, organic soil management and diversification. However, limited access to capital, expensive inputs, inadequate water infrastructure, and weak market linkages constrain their ability to adapt.

A more effective policy response should therefore combine climate-resilient agricultural production with access to finance, irrigation, soil-health management, extension services and markets. Supporting women to manage climate-related risks is not only important for their livelihoods but also for sustaining agricultural production and food security in Gombe State.



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