

# What Factors Affect the Adoption of Climate-Smart Agriculture by Smallholder Farmers in Nigeria?

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## Introduction

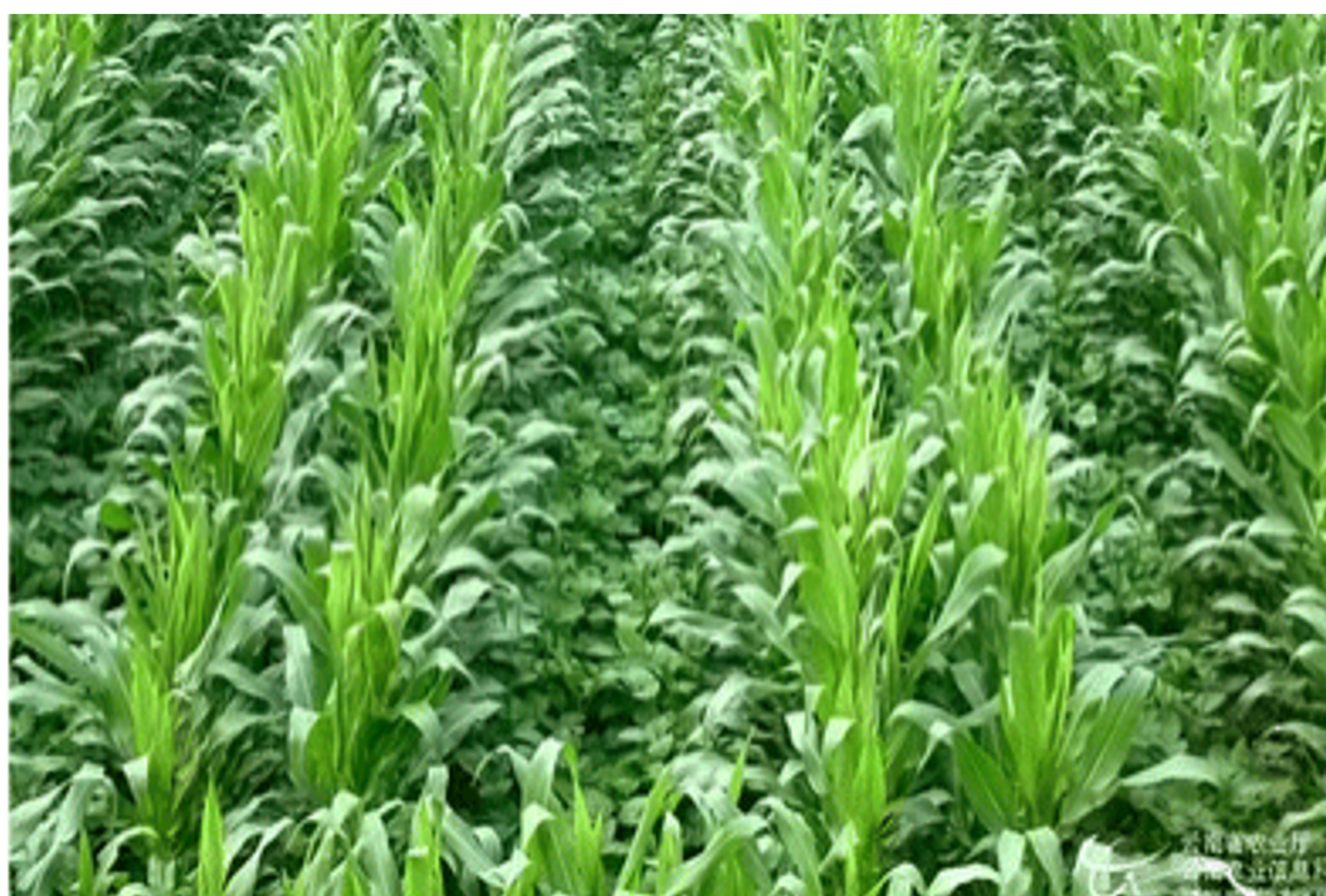
Rural smallholder farmers cultivate most of Nigeria's farmland and rely on agriculture as their primary income source. They contribute significantly to the nation's economy and conservation of natural resources; however, their productivity is constrained by various challenges, including climate change and its attendant threats to food security (Kamara et al., 2019).

## Purpose

This study explored the factors affecting the adoption of climate-smart agriculture by smallholder farmers in Nigeria.

## Methods

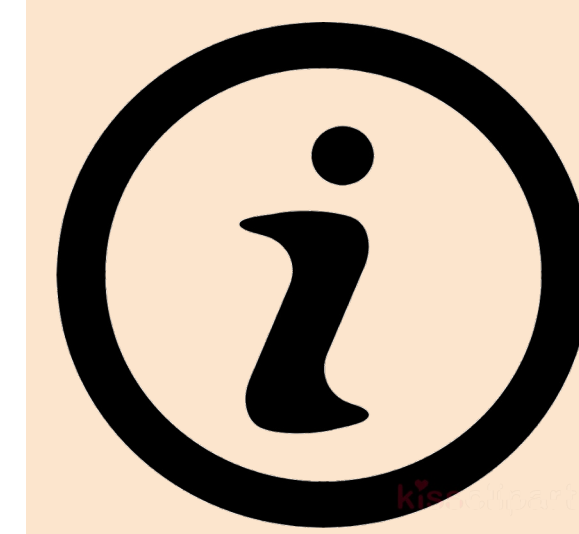
The study reviewed related literature on the factors influencing smallholder farmers' adoption of climate-smart agriculture (CSA) in Nigeria's northern, south-west, south-east, and south-south regions.



Soybean mixed-cropped with maize

## Findings

Education/Literacy level. Farmers with some level of education are more likely to process information related to new technology and adopt climate-smart agriculture practices faster than less educated farmers.



Access to information. Contact with and access to extension services providers and mass media are important sources of information on climate change and good agricultural practices. Farmers with access to information have a higher probability of adopting knowledge, skills, and processes; and continuous use of climate-smart agriculture.

Land ownership. Farmers who are indigenous to a community or own their farmlands are more likely to adopt climate-smart agriculture practices such as agroforestry, minimum tillage, and crop rotation as a result of the relative security of their tenure.

Access to credit. There is a positive relationship between the adoption of climate-smart agriculture and access to credit. Credit availability increases the probability of uptake of climate-smart agriculture practices by easing cash constraints and allows farmers to buy inputs.



Farming experience has a positive effect on the adoption of climate-smart agriculture because as they grow older, they are more conscious of the relevance of good agricultural practices based on exposure and more experience in responding to climate change.



Household size significantly increases the likelihood of adjusting agricultural production systems and increases the probability of uptake of climate-smart agriculture practices due to the labor needed for on- and off-farm activities.

Membership of groups, e.g. cooperatives. Farmers who are members of such groups are exposed to a wide range of innovation and improve their attitude towards adoption.



## Conclusion

Some smallholder farmers are developing resilience and adaptation to climate variabilities and shocks through climate-smart agriculture. A major strength in favor of the adoption of climate-smart agriculture is that many aspects of the approach are already embedded in the indigenous practices of the smallholder farmer.

## Recommendation

In line with the findings of this study, deliberate efforts should be intensified in institutional and policy support to create an enabling environment for more smallholder farmers to adopt climate-smart and good agricultural practices.

## References

Etim, N.-A., & Ndaeyo, N. (2020). Adoption of Climate Smart Agricultural Practices by Rice Farmers in Akwa Ibom State, Nigeria. *Journal La Lifesci*, 1(4), 20-30. <https://doi.org/10.37899/journallifesci.v1i4.203>

Food and Agriculture Organization of the United Nations (2013). *Climate-Smart Agriculture Sourcebook*. FAO. <http://www.fao.org/docrep/018/i3325e.pdf>

Kamara, A., Conteh, A., Rhodes, E. R., & Cooke, R. A. (2019). The Relevance of Smallholder Farming to African Agricultural Growth and Development. *African Journal of Food, Agriculture, Nutrition and Development*, 19(01), 14043-14065. <https://doi.org/10.18697/ajfand.84.BLFB1010>

Ojoko, E., Akinwunmi, J., Yusuf, S., & Oni, O. (2017). Factors influencing the level of use of climate-smart agricultural practices (CSAPs) in Sokoto state, Nigeria. *Journal of Agricultural Sciences, Belgrade*, 62(3), 315-327. <https://doi.org/10.2298/JAS1703315O>

Olawuyi, S. O., & Mushunje, A. (2020). Heterogeneous treatment effect estimation of participation in collective actions and adoption of climate-smart farming technologies in South-West Nigeria. *GeoJournal*, 85(5), 1309-1323. <https://doi.org/10.1007/s10708-019-10024-2>

Onyeneke, R. U., Igberi, C. O., Uwadoka, C. O., & Aligbe, J. O. (2018). Status of climate-smart agriculture in southeast Nigeria. *GeoJournal*, 83(2), 333-346. <https://doi.org/10.1007/s10708-017-9773-z>