



# Identification of potential future areas for sustainable cashew production in Togo using the maxent model

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## Introduction

To help cashew nut producers to identify areas suitable for cashew nut production in Togo.

This research was conducted to identify areas currently highly favourable for cashew nut production.

Find out how climate change will affect cashew nut production areas in 2050.

## Study area

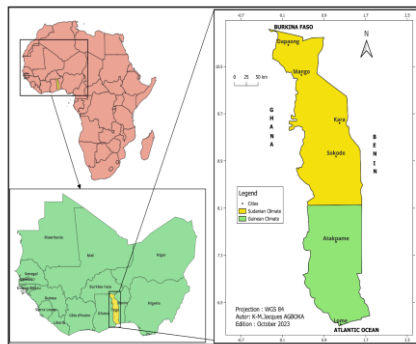


Figure 1: Location of the study area A : Togo in Africa B: Togo in West Africa C: Climatic zones of

## Methods

For the maximum entropy algorithm, 2538 species occurrence records and a combination of seventeen (17) climate, soil and elevation variables were used.

For the future two global circulation models (HadGEM3-GC3.1-L and MIROC6) and two shared socio-economic pathways (SSP245 and SSP585) by 2050.

## Results

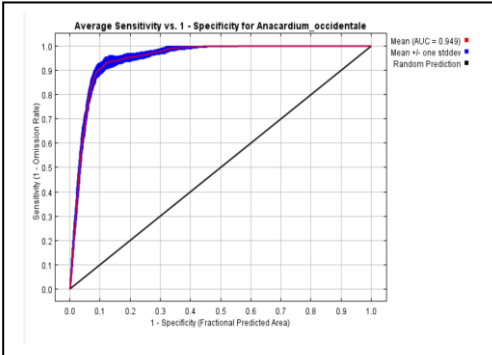


Figure 2: The Cross-validated areas under the receiver operating characteristic curve (AUC) Current and future potential cropping area of *A. occidentale* in 2050

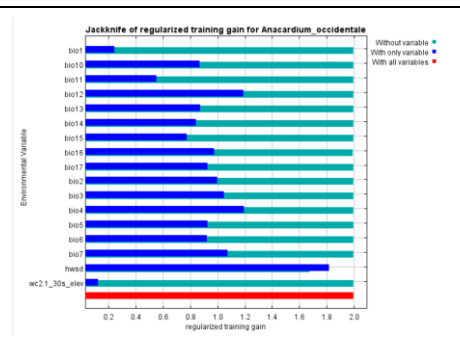


Figure 3: Contribution of variables in the modelling according to the Jackknife test

Good prediction because the AUC value is 0.949 (Figure 2)

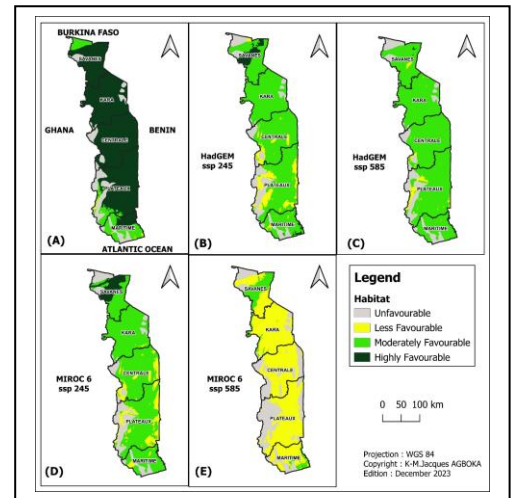


Figure 4: Current habitat suitability according to economic regions; and future potential distribution in 2050 for *Anacardium occidentale* in Togo, according to GCM-HadGEM A, scenarios; B, ssp 245; C, ssp585 GCM-MIROC6, scenarios; D, ssp 245; E, ssp 585.

## Conclusion

In short, 89.14% of Togo's territory is currently highly suitable for cashew nut production.

This area will be reduced by more than 50% by 2050 according to our results.

It is important to use climate-smart cashew production techniques.

## Acknowledgements

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