# Unlocking Barriers to Adoption and Scaling of Climate Smart Cocoa Practices in Ghana

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## Introduction

Farmer typology has become a common method of segmenting farmers into groups to assist in developing targeted farm extension programs (Schwar et al. 2009). It takes into account the social values of farmers and their approach to farming, together with the structural and demographic variables of traditional market segmentation. This ensures that farmer's specific training needs are addressed as individual farmers with different personal characteristics and resources may have different training needs at different times.

## Objective

Identify farmer typologies across the different cocoa climate impact zones of Ghana and how this affect adoption of Site Specific climate-smart cocoa CSC recommendations.

## Context

Cocoa output has been negatively affected by extreme rise in temperatures and sharp decline in rainfall over the years and this may worsen in the future. The introduction of site specific climate-smart cocoa (CSC) practices (Minimum, Bronze, Silver and Gold) which is tailored to individual resource endowments of farmers can reduce the impact of climate change on cocoa production with positive effects for optimum output.

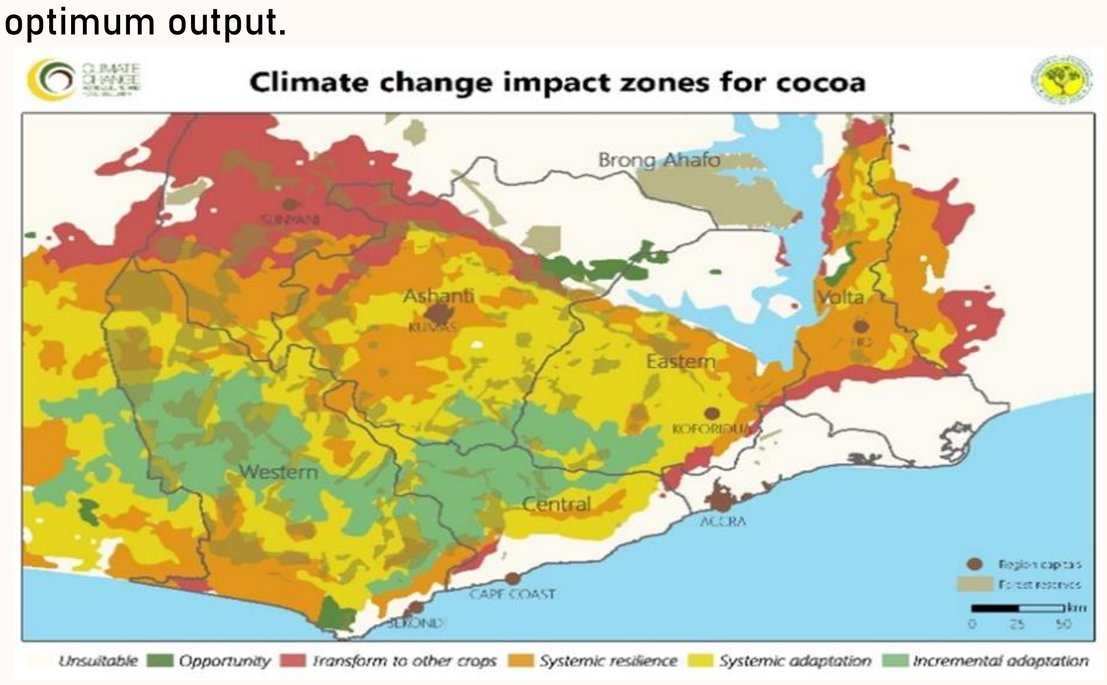


**Fig. 1: Cocoa Climate Impact Zones of Ghana Source: Bunn et al (2015)**

## Materials and Methods

Semi-structured questionnaire was administered to 270 cocoa farming household on socio-economic characteristics and intensity of CSC implementation across the climate zones. Using the R software statistical package, a principal component analysis (PCA) was carried out. Focus group discussion' was used to generate farmers constraints. Pair wise ranking was also used to prioritize.

**Fig. 2: Focus group discussion with cocoa farmers to identify constrains to CSC adoption**

## Results and Discussion

Preliminary results show varying intensity of implementation of CSC practices which determines the efficiency of the clusters.

- The first cluster of cocoa farmers is characterized as the least efficient in production in terms of Cocoa productivity (248 kg/ha) and Cocoa income (USD 981 per annum)
- Second cluster of farmers are the most efficient with the highest cocoa income (USD 3000 per annum) and Cocoa productivity (583 kg/ha).
- Third Cluster represent farmers with the most resources in terms of land under cocoa (3.7 ha) and hired out labor (≃4 people from the household) and also not efficient with cocoa productivity of (301 kg/ha)

In all clusters, access to hybrid seedlings, financial challenges and extension service delivery were identified as challenges hindering adoption of CSC recommendation.

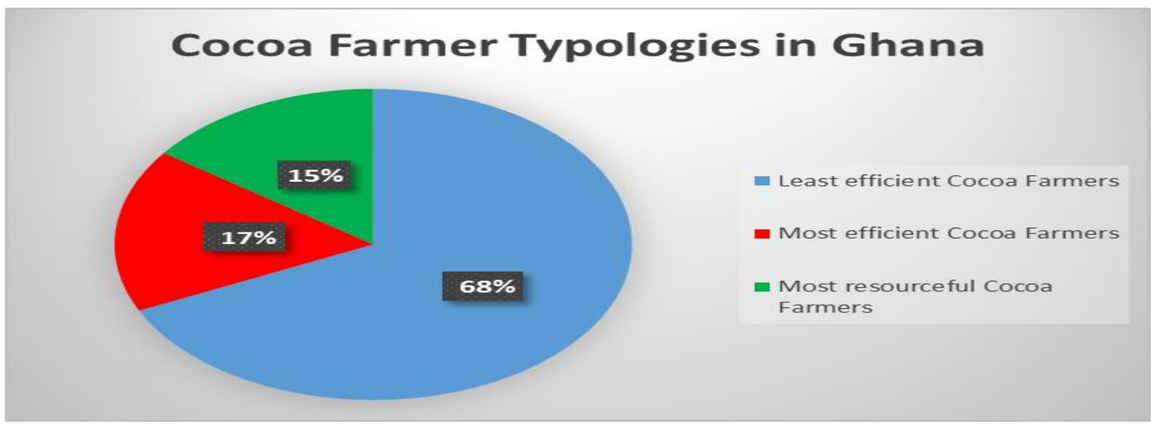


**Fig. 3: Distribution of cocoa farmer typologies in Ghana**

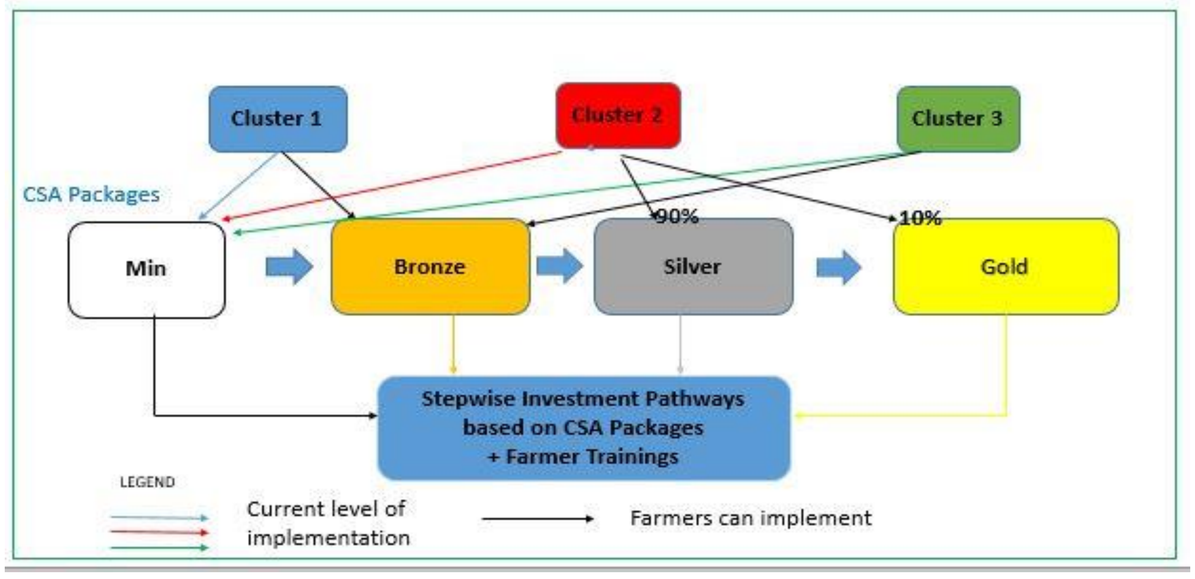


**Fig. 4: MAPPING FARMER TYPOLOGIES &CSA PACKAGES**

## Conclusion

The efficiency of cocoa farmers is influenced by the level and intensity of implementing CSC practices.

It is recommended that farmer typologies aligned with CSC recommendations in the climate impact zones should be taken into consideration for effective adoption. A farmer segmentation tool (FST App) is being developed and will be available on App Stores to enhance the adoption of CSC practices amongst different types of cocoa farmers.

### Reference

Schwarz, I., McRae-Williams, P. and Park, D. (2009). Identifying and Utilizing a Farmer Typology for Targeted Practice Change Programmes: A Case Study of Changing Water Supply in the Wimmera Mallee. Extension Farming Systems Journal. Vol. 5, No. 1 – Research Forum.

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## Acknowledgements

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