COCOA FARMER'S SEGMENTATION IN GHANA

Introduction and Background

Adoption of cocoa (Theobroma cacao) production technologies recommended to cocoa farmers in Ghana has been low, leading to yield and production levels below potential. This has been partly due to a blanket recruitment of farmers for training on agronomic practices without considering their resource endowment or training needs. To investigate farmers' adoption strategies, a socio-economic survey was conducted across three (3) climate impacts zones in Ghana namely Cope, Adjust and Transform delineated by Bunn et al. (2015). The results of a cluster analysis of the survey gave some distinctive characteristics of three (3) clusters based on 15 socio-economic characteristics identified by farmers' as factors that differentiated them. This cocoa segmentation brief is expected to help cocoa stakeholders especially, private sector companies to understand the challenges and needs of these farmer-groups and to effectively target groups with some vulnerabilities for easy adoption of the CSA recommendations, which CCAFS is piloting. This work will also translate into a toolkit for cocoa farmer segmentation.

Objectives

This work tool profiles cocoa farmers into groups/clusters based on their socio-economic indicators/resource endowments and maps the recommendations of the CSA practices for farmer adoption.

Methodology

The study employed Focus Group discussions and semi-structured questionnaire (individual interviews) to collect qualitative and quantitative data respectively. A stratified sampling technique was used in grouping farmers at each community into women and men (35 years and above) and youth (men and women) between 18 and 34 years to conduct the focus group discussions. This was to allow the women and youth groups to freely express themselves in the discussions. A cluster analysis was done using principal component analysis to identify socio-economic indicators that differentiated farmers.

Figure 1: A section of cocoa farmers being taken through the concept of farmer segmentation by IITA staff

General Findings

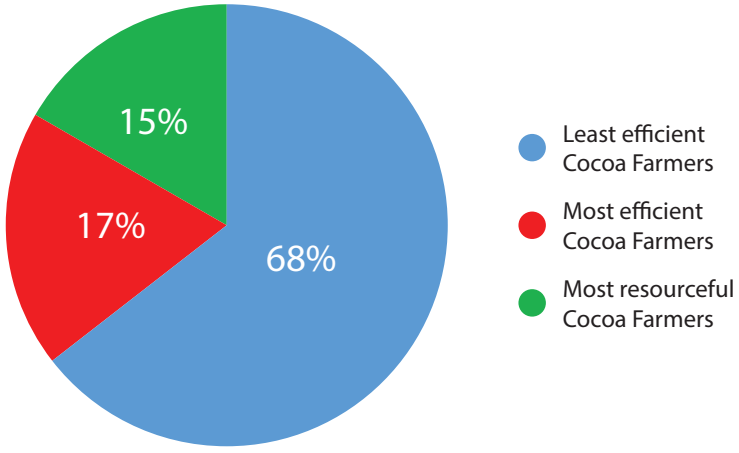
Preliminary results show three (3) distinctive clusters in all the climatic impact zones. This was based on differences in the following observed variables: Age of farmers, Education (Years), Market orientation (%), Household size, Family farm labor (N0.), Hire labor, Sell labor, Land hired in (ha), Land hired out (ha), Total land (ha), Land under cocoa (ha), Total annual income (USD), Cocoa income (USD), Total livestock (TLU) and Cocoa productivity (kg/ha)

Based on the preliminary analysis of the above socio-economic indicators, we can conclude that, Cocoa farmers in cluster two (most efficient) are the best in terms of the characteristics they exhibit but in terms of the percentage of farmer that fall into this category, they represent only 17% which is the least amongst the three groups. Famers in this category has the highest in cocoa productivity (584kg/Ha) which translates into the highest income earned from cocoa. They are also the most educated (9.5 years of formal education) group and are engaged in other economic activities including the cultivation crops other than cocoa thus their total annual income is also the highest (4184 USD). They are also able to afford the services of laborers to support them in their farming either permanently or on part time basis. The average age (32 years) of the farmers in this cluster is very encouraging and they have the lowest household size which means less dependency on their resources and more to re-invest into their cocoa farming. Apart from cocoa, they also produce and sell 78% of other farm produce (cocoyam, plantain, cassava, etc.) and consume the rest. the rest.

Cluster three cocoa farmers (most resourced) are the second best and represented 17 % of our sample size. Famers in this category has the highest mean age (58 years) with the highest household size of 7 people which means a higher dependency on the household resources. In comparison to farmers in cluster 2 in terms of cocoa productivity and total income from cocoa , famers in this category recorded 302kg/ha (below the National average of 450kg/Ha) and 1198 USD respectively. Even though they have the biggest land (9.4 Ha) and cocoa farms (3.7Ha), it does not correlate positively with productivity and income hence their inability to re-invest in their cocoa farms. This could be due to the low level of education (8 years) and their old age of cocoa farmers.

Cocoa farmers in cluster one (least efficient) represented 68 % of the total sample. They recorded the least values in cocoa productivity, total cocoa income and total annual income with 248kg/Ha, 981 USD and 1700 USD respectively. This means farmers in this cluster produce cocoa below the national average and get almost 50% of their total annual income from other sources. Despite their low productivity, farmers in this cluster still hire in a lot more land than the other clusters with the hope of increasing cocoa productivity in the future. The low productivity could also be attributed to the fact that, they sell out labor (i.e. work on other people's farms for money) instead of working their own farms, amongst others.

Cocoa Farmer Typologies In Ghana



In effect, cluster two farmers representing 17 % of cocoa farmers sampled for this work produce cocoa above the national average of 450kg/Ha whiles cluster three and cluster one collectively representing about 83 % produce below. These studies shows that, there is still a lot more work to be done to get farmers out of poverty by systematically guiding and/or training them on the use of Climate smart practices in addition to the Good Agricultural Practices (GAP) that is already being taught to farmers in the cocoa production process.

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.

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