CocoaSoils

What does a Nigerian cocoa farm look like: a preliminary characterization of farming practices in Ondo state.

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Introduction

Closing yield gaps in west African cocoa farms implies implementation of several technologies including the use of improved planting materials, adequate plant nutrient, pest and disease management, etc. in line with ISFM principle. A set of Good Agricultural Practices (GAPs) has been developed, but it is expected that farmers gradually adopt part or all of the GAPs, depending on their specific context and needs. Stepwise implementation of ISFM suggests identification of main production constraints and the most effective and efficient technologies at hand. After decades of extension, it is valuable to (re)assess these constraints and the opportunities to address them effectively for relatively homogeneous groups of farmers. Characterizing cocoa farms may be an entry-point to assess ex-ante the effectiveness and suitability of selected technologies to various contexts. Here we report partial results from a household survey run in 800 cocoa farms in Nigeria to identify 1) the "potentially" effective yield-improving technologies (fertilization excluded), and 2) the characteristics that may influence their adoption.

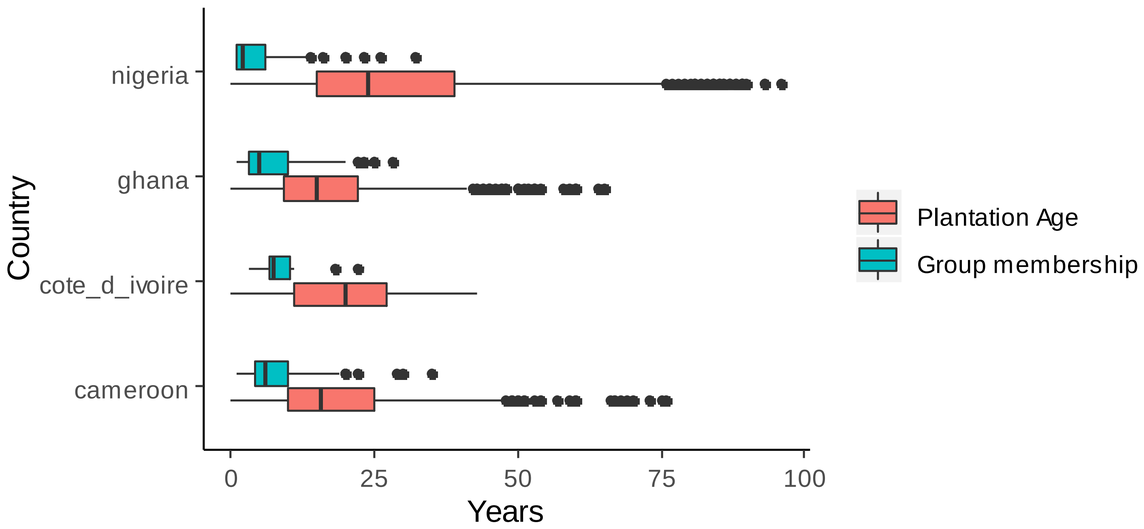

Fig. 1: Differences between cocoa farms at country level

Methods

Household survey:

- household social characterization (PPI, importance of cocoa as source of income) ;
- plantation general characteristics (age, size, distance to compound);
- management practices on main cocoa plots (use of external inputs, preferred period of implementation).

Descriptive statistics

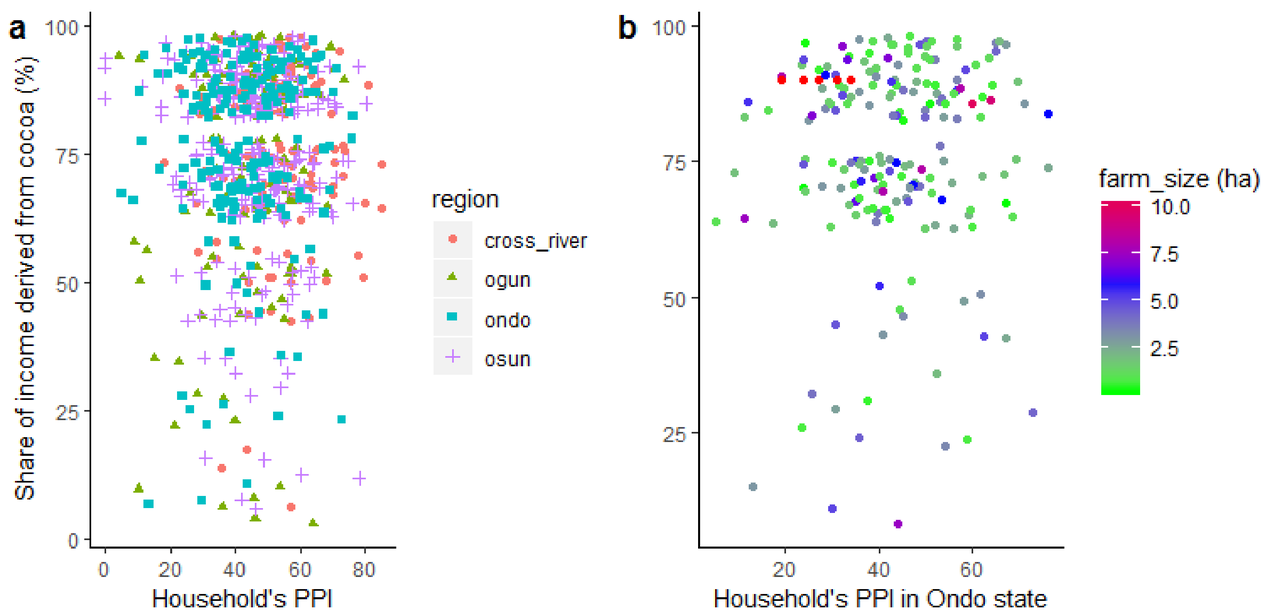

Fig. 2: Living standard, land resources and reliance on cocoa production

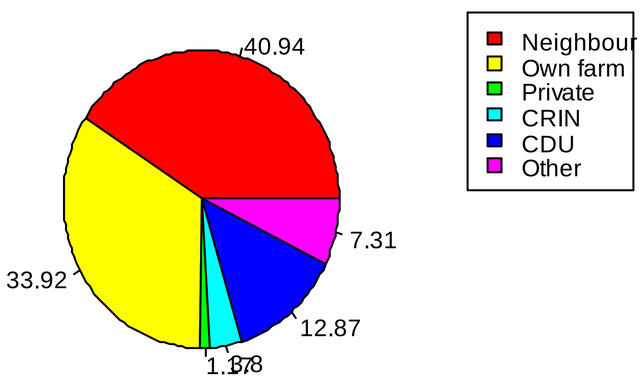

Fig. 3: Source of planting materials

Key findings

Rarely raised with improved germplasm, cocoa plantations in Nigeria are significantly older (28 years) than in any other west African country (18 years, Fig. 1 & 3). Whether poor or better-off, most of the farmers deeply rely on the income derived from cocoa production, except those operating in the metropolitan area (Ogun state) where there are probably more casual/profitable job opportunities (Fig. 2a). It appears in Ondo state that the size of cocoa plantations is not correlated with the household's living standard. Some households with high PPI and dependent on cocoa production are found with low acreage, suggesting opportunities for intensification (Fig. 2b).

There are two non-exclusive forms of intensification: labour- and input-based. The first is achieved through regular pruning and/or weeding while the latter is about increasing use of pesticides (fungicides and/or insecticides), provided that the use of granular fertilizers is virtually absent in those farms (less than 5%, data not shown). The yield-response to pruning and weeding seems to be lower than that of pest control (Fig. 4).

Fig. 5 suggested that large confusions persist among farmers when it comes to categorize pesticides. In addition, current levels of pesticide consumption (Fig. 4c) are lower than the recommended rates.

Fig. 4: Yield response to regular pruning (a), weeding (b), and increased rate of pesticide (c) in cocoa plantation in Ondo state, Nigeria

Conclusion

Cocoa farms in Nigeria have some peculiarities as compared to the neighbouring countries. Most cocoa farmers highly depend on their cocoa production as source of cash income. However, the richer farmers are not necessarily the ones managing the larger plantations. This suggests that there is a potential for intensification which can be labour- and/or input-related. In the current situation, input-based intensification refers to the rate of insecticide/fungicide used over the growing season. It seems to be more responsible of yield increase than labour-based intensification (pruning/weeding frequency). More insights are needed on actual pest management practices in Nigerian cocoa farms.

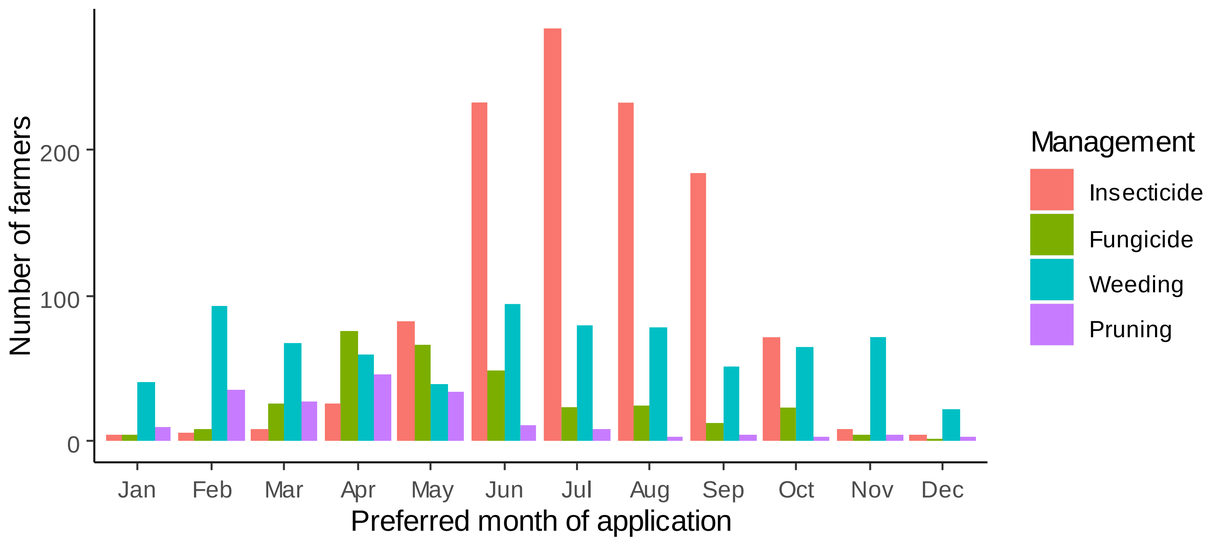

Fig. 5: Cocoa crop calendar in Ondo state, Nigeria