Leibniz Centre for **Agricultural Landscape Research (ZALF)**

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PRO-PLANTEURS Professionnalisation des Producteurs & leurs Organisations pour une Cacaoculture durable

Positive Deviance among Ivorian Cocoa Farmers:

Identifying and predicting best-performance cases to foster a sustainability transition in West African cocoa production

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Objectives

1. Identify and predict cases of positive deviance among PRO-PLANTEURS targeted cocoa farmers.
2. Understand the reasons for their better performance in achieving a higher standard of living (~*Living Income story*) by analyzing their innovative practices and behavior.

Using the Positive Deviance (PD) approach

› A way to identify cocoa farmers who outperform their peers despite facing the same resource limitations.
› To identify uncommon practices and behaviors that potentially contribute to achieving a decent living from cocoa
› Examine how PD cocoa farmers deal with trade-offs.
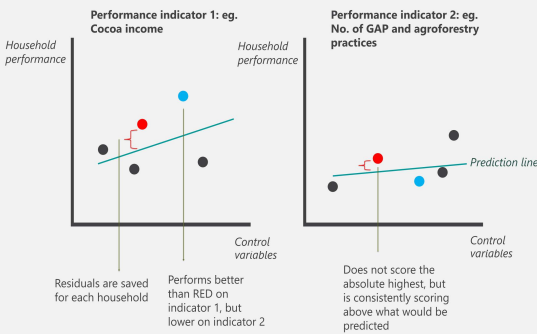› Identified practices can be promoted in future intervention strategies of the PRO-PLANTEURS Project.

Figure 1: Principle of Positive Deviant households. Figure after Steinke et al. (2019).

Tentative results

Some PD practices that were observed among PRO-PLANTEURS targeted cocoa farmers during the in-depth interviews:

› Access to large quantities of **chicken manure -** replacing expensive chemical fertilizer.
› Cultivating **maize and paddy rice -** to bridge the dry season (food security)
› **Financial diversification -** to eliminate the need to take credit at the cooperative.
› Actively **applying formations** on farm diversification, compostation and agroforestry – contributing to sustainable cocoa production.
› Creating own **compostation methods** – recycling nutrients on farm.

Outlook

› Further analysis of observed practices in relation to success
› Use the data to provide lessons for future interventions

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Methodology

1.1 Defining performance

1. QUANTITATIVE

1. Baseline **data-set**: 303 households (HH) surveyed in 2022 by PRO-PLANTEURS Recherche in 5 regions in Cote d'Ivoire targeted by the PRO-PLANTEURS project (Figure 3)
2. Defining **performance indicators** (Figure 2)
3. Defining **control variables** (factors outside the control of the household): *Area of land, paid labor, access to information, no. of trainings received, HH size, rainfall region, gender, lifestock, gross cocoa income dependency.*
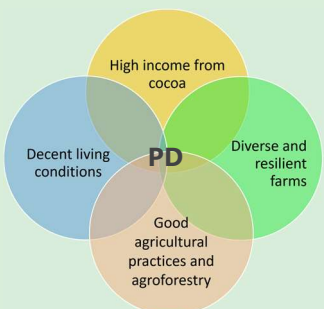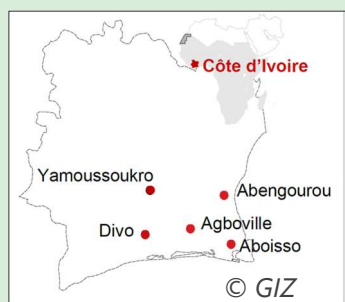

Figure 2: Four indicators of performance

Figure 3: Regions of PRO-PLANTEURS © GIZ

1.2 Quantile Regression model

For each indicator of performance a quantile regression model is created (Figure 1):
Y = performance, **X** = varying set of control variables
Residuals = difference between predicted and actual performance
→ Residuals are saved and combined in a vector for each HH.

1.3 Pareto optimal: frontier analysis on residual vectors

Residual vectors are put in a frontier analysis, and subsequently, best-performing HH were selected in three different rounds.

16 positive deviant HH's
on the 1st and 2nd frontier;
27 HH's on the 3rd frontier.

2. QUALITATIVE

In-depth interviews (August, 2023) with 15 PD farmers in Côte d'Ivoire on 5 PRO-PLANTEURS locations (Figure 3). Farm practices, secondary crops, animal husbandry, education, financial means... are discussed, and practices that stand out are registered.

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