Pathways for closing the income gap for cocoa farming households in Côte d'Ivoire, a segmented approach

Executive summary and recommendations

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This document presents an executive summary of the findings of an independent study on pathways towards an LI for cocoa farmers in Côte d'Ivoire carried out by KIT Royal Tropical Institute in 2021, commissioned by Nestlé.

Executive summary

Objective

The objective of the study was to learn from the Elite Farmer program launched by Nestlé in 2015 and identify other high-potential cocoa farming Nestlé Cocoa Plan (NCP) households (HH) who could benefit from more tailored services that meet their specific needs and aspirations. The end goal is to develop pathways which show how a significantly larger proportion of cocoa-growing HH can achieve a living income (LI), and provide actionable recommendations for Nestlé.

Methodology

Based on quantitative and qualitative methods, the study developed potential customized pathways for cocoa farming HH. This was based on four steps: 1) Take learnings from the NCP Elite Farmer program; 2) Identify interventions which are successful in closing the LI gap; 3) Data-driven segmentation for LI; and 4) Deep-dive into high potential HH segments. In total, 417 respondents, of which almost a quarter were women, participated in two rounds of data collection in Côte d'Ivoire. In the first round, we included different groups of elite farmers in a living income survey: farmers who joined before 2019, and farmers who joined the program more recently. Additionally, we collected data through FGDs with both groups of elite farmers and through semi-structured interviews with elite farmers and their spouses. In the second round of data collection (through FGDs) we included mainly non-elite farm households, who were considered to be high potential to closing their living income gap. The findings are summarized by step.

Learning from the Elite Farmer program

The Elite Farmer program was launched in 2015 in Côte d'Ivoire, with the aim to differentiate the better performing from other NCP farmers and further unleash their potential; 155 farmers enrolled in different cohorts since its inception. Elite farmers were selected based on recommendations from local cooperative managers in combination with a set of loosely applied criteria (linked to age, land size, education, attitude and importance of cocoa). The Elite Farmer program consists of a three-day intensive training course at a central location, an individual action plan, and individual coaching to support the realization of these plans.

Our data suggest participation in the Elite Farmer program contributed to increases in Good Agricultural Practices (GAP) implementation and yields among its participants. Furthermore, better financial planning and discipline, and improved HH relations enhanced the quality of their lives. The first cohort of elite farmers, which we label the Arrived elite, owe their relative success in particular to their large land sizes, often (partly) under a sharecropper arrangement. The average total HH income for arrived elite is almost double the income of the younger cohort of elite farmers, which we label the Aspirational elite. Although the Aspirational elite's production level tends to be above average, their HH income remains low due to their small land sizes. Table 1 summarizes some of the main differences between the Arrived elite and the Aspirational elite.

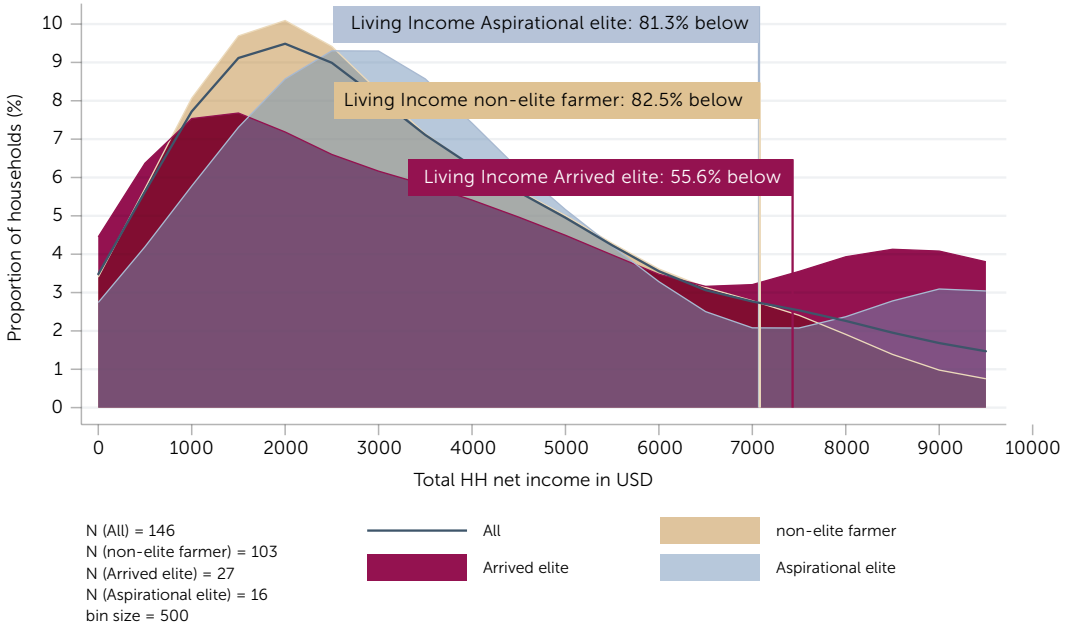
Table 1 Summary of significant differences between Arrived elite and Aspirational elite

Demographics	Arrived elite	Aspirational elite
Age (years)	49	34
Proportion marries/co-habiting	83%	65%
Senior high school education completed	21%	47%
Years in cocoa	20.55	8.53
Productive cocoa land size (ha)	6.72	2.72
Making use of sharecropper	62%	18%
Cocoa yields (productive land)	624	844
Total HH income (median value)	US$5293	US$3350

Notes: All statistics are mean averages per elite group.

Despite its success, the majority of elite farmers do not (yet) attain an LI. When assessing the income distribution, we find that 43% of the Arrived elite earned an income above the LI benchmark, while for the newer cohort this was only 19%.

Figure 1 Distribution of total HH income and % of respondents below the LI gap



Besides excellent performance, the Elite Farmer program was expected to stimulate elite farmers to operate as lighthouse for other farmers. We identified an opportunity to strengthen elite farmers to operate as role models, particularly the Aspirational elite cohort. This might require additional coaching and training in non-cognitive skills (i.e. 'soft skills', such as planning, time discounting, leadership and communication skills), to channel knowledge effectively to other likeminded farmers.

Interventions to enhance productivity, diversification and household income

Data on 176 NCP households (including those participating in the Elite Farmer program) collected in 2020, gave us further insights into the drivers of cocoa productivity and HH income. Although based on a small, non-random sample, our data suggests that HH who obtain an LI are most likely to include a married or cohabiting couple, are less reliant on cocoa sales for their income, have more cocoa land, are more likely to have sharecroppers on their land, and benefit from relatively higher yields than traditional HH. Their agricultural practices also suggest they have business skills, obtained through experience or dedicated training, and rejuvenate their plantation by planting cocoa trees on a larger percentage of land. In terms of diversification, they derive more income from the sale of non-cocoa crops (particularly rubber) and from other forms of trade and business activities.

However, HH who obtain an LI are not representative of the average HH. Given that a substantial proportion of HH has limited access to productive cocoa land, sustainable intensification remains highly relevant to increase HH income. To enhance cocoa productivity, conventional GAPs, such as fertilizer application, weeding, and pruning remain important. Fertilizer application in particular has a notable effect on productivity, and access to finance seems to play a key role in the uptake and application of it. Another promising route to increase HH income is an increased focus on non-cognitive development as part of agricultural support programs. Our results show that the perception to which farmers feel in control of their lives correlate positively with HH performance. GAP training in combination with 'soft skills' development as a basic standard support package is therefore believed to better enhance sustainable intensification for all HH.

For HH with less than three ha of land, reaching an LI through sustainable intensification of cocoa farming alone remains challenging, which highlights the importance of income diversification. Analyses reveal that HH who are less relying on cocoa sales for their income have higher incomes (and vice versa). Yet, this does not imply that sustainable intensification of cocoa production is irrelevant for HH with small farm sizes. In fact, the opposite is the case as cocoa production remains their most important source of income.

In addition, pooling of labor and financial resources (and land) through marriage or number of adults in the HH has a strong effect on productivity, input use, production

and cocoa income, income diversification, and, ultimately, total HH income. HH with less productive members available are more likely to have lower cocoa income, fewer income sources, and lower HH income. Although not a new insight, this result underlines the importance of approaching LI interventions from a more integrated HH perspective, including spouses or other productive household members in training and coaching sessions.

Although a moral imperative, our findings suggest that increased pricing mechanisms as singular LI instruments have limited effect on income levels in the short-term, and also indicate that they would be more effective in combination with viable income diversification and sustainable intensification of cocoa production while requiring supply management. The effects of cash payments are known to be most effective for the poorest HH and conditional cash transfers are mainly anticipated to be seen in the long-run as a result of behavioral change in the uptake of GAPs, increased production and income diversification.

Data-driven segmentation to identify high-potential segments

Cocoa farmer segmentation and farm profiles have gained momentum among cocoa stakeholders, particularly following the introduction of the concept of LI. The utility of farmer profiles (or HH profiles) is based on the assumption that, using certain archetypes, interventions and extension services can be better tailored towards farmer groups to effectively address their barriers and needs. The purpose of data-driven segmentation (through cluster analysis) is to identify these like-minded groups that could benefit from a customized approach. Naturally, the segmentation approach has limitations. Most importantly, most HH and farmers included are certified farmers which means the analysis holds value primarily for certified farmers but has less validity for those who are not certified.

Four unique datasets were utilized for our data-driven segmentation approach (based on 12,000 farmers/ households). Through cluster analysis, we defined five unique segments, from which we selected three high-potential ones:

1. ‘Young, single, and ambitious’ (~10% - 20% of the NCP farm population)
2. ‘Diversified’ (~15% - 30% of the NCP farm population)
3. ‘Cocoa dependent’ (~30% - 50% of the NCP farm population)

HH in the Young, single, and ambitious segment demonstrate potential due to their relatively young ages, aspirational attitude and relatively higher education levels. The Diversified HH segment is promising due to its high level of income diversification and, consequently, high(er) HH income (and thus smaller LI gap). The Cocoa-dependent HH segment stands out due to their cocoa dependence, but also because they display average-to-high yield levels in some of the cluster analyses

revealing a within-group capability to reach higher farm productivity levels. They also represent the largest HH segment.

On top of the three segments identified through data-driven clustering, we add two additional groups in the remainder of our analyses: the Aspirational elite as a 'lookalike' of the Young, single, ambitious farmers and Female entrepreneurs, who are relatively young women (35-40 years old) and often married to NCP members. What typifies them is that they operate a business by themselves (or in a group), often allowing them to keep the proceedings for their own personal needs. The women belonging to this segment already participate in an income-generating activity and/or VSLA group, initiated by Nestlé or partners.

The identified high-potential HH segments represent HH who are in a different phase of life, which, to some extent translate in different aspirations. But there are also other factors that influence segment-specific aspirations and needs, such as the level of education, land-size, dependency on cocoa, ethnicity and gender. Therefore, the HH segments should not be considered as sequential. Only for Young, single, and ambitious farmers, as look-a-likes of the Aspirational elite (both being relatively young, entrepreneurial and confident), we see potential for them to following in the footsteps of the Aspirational elite.

Most aspirations of the high-potential segments are in the economic sphere. As the income earned from cocoa sales is not sufficient to cover the increasing costs of living all segments seem to aspire income diversification as pathway to increase their HH income. What the Young, single and ambitious farmers have in common with the Cocoa-dependent HH is that cocoa remains central in their income diversification strategy, while for other segments work on the cocoa farm seems to become less fundamental as income generating activity.

Potential pathways towards achieving an LI

For each selected segment, we identified initial, practical avenues that provide a first self-evident opportunity to start exploring how existing and newly proposed interventions can be best tailored towards the aspirations and needs of the segments. These pathways provide a number of positive spin-offs for the wider community, such as creating a local pool of female and male ambassadors as lighthouse for youth, advancing gender equality, increased rural economic activity outside the cocoa season, increased nutrition and diet diversity, better educated youth and a skilled labor force that can be employed to increase farm productivity.

As part of the Elite Farmer program training, **Aspirational elite** have participated in training on HH management, which is frequently reported as an eye-opener regarding the value of developing a shared goal and benefits of working together as

a couple. Therefore, strengthening their performance as a joint HH is a potential entry-point to effectively pool their labor and resources enabling them to make well-informed, joint HH decisions on the allocation of time, investments and expenditures. This is anticipated to result in more bargaining power for the spouse and more involvement in income generating activities, resulting in higher HH incomes, more savings and more effective expenditure allocation. Moreover, a joint HH income plan is anticipated to result in a more optimal allocation of the HH labor across income sources. Strengthening elite couple's performance could be activated through the Elite Farmer program, inviting their partner (and/or adult children) to the Elite refresher training, while providing additional HH management modules to couples to help them develop a joint HH vision and build trust. Several existing tools are available to develop such as HH vision, for example the Gender Action Learning System (GALS) has already been widely tested and accepted. For such a successful follow-up of the existing Elite Farmer program modules, this would require the support of well-trained gender-sensitive coaches.

We consider the **Young, single and ambitious** as well-positioned to provide skilled, paid labor to other farmers allowing them to earn an extra income. Specialized training on GAP is considered to be highly effective given their relatively high education levels and non-cognitive skills, resulting in a highly-skilled workforce which could be organized at the cooperative level. This segment can also be invited as new cohort of elite farmers. Based on the lessons learnt from the Elite Farmer program, financial planning skills and a Farm Development Plan (FDP) will likely enable them to make better-informed strategic choices while at the same time increasing their technical agricultural knowledge of modern cocoa farm technologies. Especially for this segment, additional modules can be further tailored, including soft- and life skills like household decision-making and gender-sensitivity training (when starting an own household). To further develop their plantation, monetary resources are needed, primarily to acquire quality inputs. Young, single, and ambitious farmers put emphasis on their preference for savings and investments, especially following cocoa sales, rather than taking out a (risky) loan. Conditional cash transfers, in-kind delivery, or input credit schemes are possible alternative financial incentives that might help this segment to access finance. Combined with the anticipated income from labor, savings and access to finance might allow them to make the necessary investments to execute their planned farm improvements, acquire the necessary inputs to gradually increase on-farm productivity and/or use it as a stepping stone to other income generating activities.

For both **Diversified HH** and **Cocoa dependent HH**, training on income diversification and business skills is expected to increase their non-cocoa income, particularly if offered to both spouses. Different income diversification training modules could be offered (e.g. intercropping, food crops, non-farm), which could become part of regular NCP trainings. Follow-up coaching will likely accelerate training effectiveness and is

expected to support Diversified HH to optimize their diversified income sources, while enabling Cocoa-dependent HH to make well-informed choices about intercropping and investments in non-cocoa activities outside the cocoa season. For both segments, access to a skilled labor force for more labor-intensive on-farm activities will be an imperative, alleviating their struggle to access affordable labor. It could support Diversified HH in more efficient allocation of their labor to income diversification, while still maintaining their cocoa farm to ensure adequate productivity levels. For Cocoa-dependent HH, affordable, skilled labor can accelerate farm productivity through advanced technology like motorized pruning. Investing in (affordable) child care and HH labor saving devices (including HH amenities like access to running water) will also positively impact both segments. Such support is anticipated to lead to an increase in women's labor-force participation, support HH income and advance women's decision-making in the HH. The organization of child care and labor saving devices could potentially be developed and piloted with Village Saving and Loan Associations (VSLAs) or together with NGOs and/or suppliers, based on an assessment among potential users of this service and devices.

In particular, Diversified HH, Cocoa-dependent HH and Female entrepreneurs identify the (timely) contribution to a school fund as a welcome intervention to support their children in secondary school as paying the high costs involved in education, including costs of boarding and food, is one of their most pressing concerns. This requires the involvement of the local government – with the support of a financial institution – to efficiently set up procedures and harmonize efforts to increase school attendance.

Female entrepreneurs report that they experience a lack of access to finance to realize their business ambitions. Their participation in a VSLA might be a perfect entry-point, enabling them to save small amounts of their income while also having the opportunity to take out small loans under favorable conditions. Small loans allow Female entrepreneurs to buy the necessary tools and equipment like fridges, cook stoves or sewing machines to kick-start and expand their business. This segment will also benefit from an additional training module that supports them in developing a business plan for professionalizing their business, including attention to financial planning, marketing and soft skills development. This training could be offered via VSLAs, or alternatively via the cooperatives, as their spouses are often members. Depending on the type of business, some Female entrepreneurs might benefit from nearby wholesale opportunities, giving them easier access to small items (e.g. zippers and buttons for sewing) that they use for their trade for which they currently need to travel to the nearest town. While others would benefit from improved access to (peri-urban) markets to receive better prices for (food) products. Several suppliers and NGOs have already started these types of interventions that help to improve market linkages.

Recommendations

This document ends with a number of actionable recommendations to accelerate LI among high-potential HH segments. Some of these recommendations are specifically for Nestlé (and it suppliers and implementing partners), while others might be relevant for the wider cocoa sector.

1 Expand the Elite Farmer program

Participation in the Elite Farmer program contributes to increased yields, financial planning and improved HH relations. Although the small scale is inherent to the Elite Farmer program, we see room for (limited) scaling by Nestlé in two ways:

a. Invite the Young, single and ambitious farmers as new cohort

Similar to the Aspirational elite, the Young, single and ambitious segment has a positive and entrepreneurial attitude and exerts willingness to invest in cocoa. Inviting them as new cohort of elite farmers is likely to work as a LI accelerator. Before doing so, we recommend to take stock of learnings of the Aspirational Elite to best assist the Young, single and ambitious farmers.

As the Young, single and ambitious farmers belong to the poorest HH, without access to finance they might not be able to benefit fully from participation in the Elite program. Therefore, we recommend to support this new cohort of elite farmers, with financial incentives (e.g. conditional cash transfers) and with mobilizing savings (e.g. through mobile payments and financial coaching).

b. Give elite farmers the option to invite their spouses (and potentially other adult HH members) to the Elite refresher training.

The current cohort of Aspirational elite aspires to be more successful as a couple and would like to collaborate more with their spouses. Providing the elite the option to invite their spouses to the refresher trainings is likely to help to unleash their potential as a couple, particularly if efforts are made to develop a shared household vision, stimulating joint decision-making and trust in the HH. This would require additional gender training for trainers and coaches to understand and navigate intra-HH dynamics. Nestlé could benefit from existing gender-sensitive HH tools, such as GALS and bringing on board local gender expertise.

2 Expand number of coaches

Follow-up coaching is an important success factor of the Elite Farmer program, and has been reported as essential to ensure that farming HH implement their learnings correctly and are supported in implementing their FDP. Follow-up coaching can also

help HH to reallocate their labor or shift focus towards income generating activities that appear to be the most promising, helping them to further increase their HH income.

We recommend to explore with suppliers and cooperatives how best to utilize coaching trajectories and FDP and consider the recruitment of additional coaches to do follow up visits with a wider group of NCP members, in particular the Diversified HH and Cocoa-dependent HH.

3 Support NCP farmers with income-diversification

Income diversification is positively correlated with HH income and is important for all HH segments. However, HH segments have different income diversification needs. Cocoa-dependent HH would benefit from training on inter-cropping and commercialization of food crops, while Diversified HH would benefit from specific attention to market information and business skills development. We recommend to create different levels with relevant training content for different segments to meet the specific diversification needs of the Cocoa-dependent HH and the Diversified HH in particular.

Without access to markets for non-cocoa crops and other products or services, the training on crop diversification or additional livelihoods in itself will not create additional economic benefits. These markets might be outside the community or even district, as local prices for food crops are usually low due to oversaturation during the peak production season. Market opportunities for processed perishable food crops could be further explored. Nestlé could tap into the experience of suppliers and NGOs who are already actively supporting farmers with establishing market linkages. Additionally the role of cooperative could be explored to play a role in stimulating income diversification and marketing of alternative crops for its members.

4 Integrate soft-skill development in wider set of trainings

We found that internal locus of control is positively correlated with input use, cocoa income, and total HH income – and this finding could encourage greater focus on developing soft skills as part of agricultural support programs for cocoa producing HH. Adding soft skills training to more conventional technical programs aimed at increasing technology adoption and productivity could yield great potential to substantially increase cocoa net income. In addition, VSLA participants could benefit from training modules that include soft skills development, particularly around leadership and building self-esteem. Finally, training in soft skills can strengthen Aspirational elite (and their spouses) to operate as role models, supporting them to channel knowledge effectively to other likeminded farmers and to stimulate and support them in reaching out to their younger, like-minded peers.

5 Increase financial incentives and support mobilizing savings

Access to financial resources is one of the main pressing concerns of cocoa producing HH and different financial packages can be developed for different purposes (e.g. GAP implementation, plantation rejuvenation, income diversification) and different HH segments.

Rather than focusing on loans, most HH segments would benefit from other financial incentives and savings. In many cases loans are taken out to pay for education and healthcare, which suggests that household income is not sufficient to cover basic needs and loans are considered a fallback option for emergency purposes rather than an investment in additional livelihood options.

Particularly, Young, single and ambitious farmers and Cocoa-dependent HH, being among the poorest high-potential HH, they would benefit from financial incentives, such as conditional cash transfers, to make the required investment both on-farm and off farm and increase their HH income. The learning from Nestlé's Household Accelerator Program could be used to further tailor cash transfers to HH segments, supporting HH in achieving their aspirations.

6 Develop a gender-sensitive household approach

We recommend to all stakeholders who are committed to achieving an LI for cocoa households to take a gender-sensitive HH approach towards LI.

For reaching an LI, better results can be reached by taking a gender-sensitive household approach, as the income a HH earns usually comes from multiple sources to which different HH members contribute – and intra-HH dynamics are known to influence HH decision-making and investments. It has been well documented that women tend to prioritize their families' health, nutrition, and education when spending income.

A gender-sensitive HH approach towards LI includes the engagement of different productive HH members in training and service provision, while paying attention to HH dynamics, labor division, spousal decision-making and trust. There are existing tools, such as GALS that can help create a shared HH vision. What is also anticipated to help unleash the potential of couples are interventions that reduce time needed for care and HH activities, creating time for income generating activities, particularly for the spouse. We recommend to take stock of existing initiatives that promote labor saving devices.

To take a gender-sensitive HH approach implies that field staff and coaches will need to be trained to ensure they have the capacity to understand gender issues and address gender inequalities that hinder spouses of elite and NCP farmers and Female entrepreneurs to unleash their potential and contribute to the HH income.

7 Leave no one behind

More vulnerable groups, such as Female farmers, unorganized farmers, laborers (including sharecroppers), and farmers who live more remotely are currently underrepresented in NCP, and therefore automatically fell out of the scope of this study. However, we would like to emphasize that there is an urgent need for the sector to look at such vulnerable groups in more detail in future research and sustainability programs.