



LINDT & SPRÜNGLI

Lindt & Sprüngli Farming Program Impact Evaluation Ghana

Executive Summary



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Executive Summary

This report presents the findings of an impact evaluation of the Lindt & Sprüngli (L&S) Farming Program in Ghana carried out by KIT Royal Tropical Institute in 2019. Based on quantitative and qualitative methods, the evaluation covered a variety of topics in line with the program's Theory of Change. To track change over time, KIT compared cocoa farming households from 'old verified societies' that entered the L&S Farming Program in season 2013/2014, with cocoa farming households from 'new societies' that entered in season 2017/2018.

In total, 1,002 households were surveyed in Western Region North and Western Region in March 2019. Thirty-two focus group discussions with farmers and twenty-one key informant interviews, for example with staff from Implementation Partner of the Lindt & Sprüngli Farming Program in Ghana (IP), complemented the data collection.

The report focuses on program outputs, outcomes and impacts. Findings are summarized by sub-component.

Survey sample

Out of the households surveyed, 65% belong to 'old verified societies', 12% are part of societies that are new to L&S but have experience with sustainability certification/programs ('new verified, past certified'), and 22% belong to new verified societies without prior exposure to a sustainability program. A distinction can also be made between household clusters: male-headed, typical households (67% of the sample), with up to 4 ha of productive cocoa land; male-headed, large households (17%), with more than 4 ha of productive cocoa land; and female-headed households (16%).

The majority of respondents are male (72%) and represent male-households (84%). The average age of respondents is 47 years; 37% do not have formal education (61%). Only 3% of respondents indicated having girls and boys aged 7-17 years who do not attend school.

Respondents' cocoa farms are relatively old, with an average tree age of 16.5 years. Respondents cultivate an average size of 3.8 ha, with 3.3 ha being used for cocoa trees, mostly of the 'hybrid' variety. Female-headed households cultivate 0.6 ha less than male-headed households. Most farmers (84%) own their land under traditional land ownership. Plantain and cassava are the most important crops after cocoa for the surveyed households, both in terms of production volume and income generation.

Program outputs

Farmer training

The majority of households (77%) attended training organised by the L&S Farming Program in the past five years. While training is mandatory for all participating farmers, in some cases, farmers indicated that they cannot or do not want to attend training; in other cases, field trainers' capacity to reach remote areas is limited.

Most farmers (77%) attended training on Good Agricultural Practices (GAP), 73% (also) attended training on Good Environmental Practices (GEP), and 74% attended training on Good Social Practices (GSP). On average, 63% of respondents reported having received a 'field trainer visit' in the last year (either an internal monitoring visit or coaching visit). Furthermore, 59% stated that they participated in other training.

Most GAP training was received on pruning, pest and disease management, and weed management (93-96% attended GAP training). Farmers received less training on productivity enhancement, post-harvest quality management and soil fertility (68-69% attended GAP training).

Attendance rates of GEP training were highest for protecting water bodies and waste management (95% and 89% attended GEP training) and lowest for climate-smart agriculture (55%), followed by wildlife protection (67%) and forest conservation (68%).

The two GSP topics for which most attendants received training in the past five years include health & safety (92%) and child labor prevention (85%). Differences between old verified and new societies are pronounced for the topics of child labor, working conditions and community relations, which were discussed more in old verified societies and 'new verified, past certified' societies than in new verified societies.

The past five years, most other training took the form of farmer business school (FBS) (96%) compared to training on non-agriculture income generation (73%) or on crop diversification (71%). A relatively higher proportion of female-headed households participated in crop diversification training (*significant*).

Access to inputs

Agro-dealers are the most important source of inputs for farmers, especially for liquid fertilizer and pesticides as the two main products used by farmers. In addition, farmers receive inputs from the government (COCOBOD) or IP; however, shortfalls in supply from these sources have been noted. Farmers particularly appreciate the quality of IP-provided inputs, but indicated that these products are often more expensive than from local agro-dealers, so they buy less than they would need for their entire farm.

Female-headed households have significantly less access to fertilizer, plant protection products and equipment than male-headed, typical households and male-headed, large households.¹

IP is an important distributor of cocoa and shade tree seedlings. Most farmers get their cocoa seedlings from IP (42%), followed by COCOBOD (38%). The most important source of shade tree seedlings are farmers' own farm (55%), followed by IP (54%).

Access to financial services

Access to adequate financial products is rather low. Only one third of respondents reported having taken out a loan in the last year – on average about US\$320 per household at an average interest rate of more than 25% per month, accessed from the purchasing clerk (PC), IP or friends/relatives. Village Savings and Loans Associations (VSLAs) are not common and only 4% of respondents stated that they (or another household member) are a VSLA member.

Program outcomes

Cocoa yields

Yields of L&S farmers are relatively high, calculated at 638 kg/ha (for main and light season 2018). Yields are positively correlated with: (1) a visit by an IP field officer in the last year (+92 kg/ha); (2) fertilizer use (+80-85 kg/ha); (3) attendance of GAP training on record keeping in the past five years (+124 kg/ha); (4) self-reported adoption of record keeping (+140 kg/ha); (5) self-reported adoption of post-harvest quality management (+135 kg/ha); and (6) attendance of farmer business schools in the past five years (+98 kg/ha).

Yields are negatively correlated with: (1) attendance of GSP training on child labor prevention in the last year (-95 kg/ha); and, (2) attendance of GSP training on laws and regulations in the last year (-225 kg/ha). It is possible that farmers who have attended these trainings choose 'responsible labor' over children and also abide by set terms and conditions with their employees. Due to the high cost of labor and farmers' low net incomes, they may not be able to afford enough responsible labor to effectively manage their farms which, in turn, will impact yield negatively. Yields are also negatively correlated with: (3) self-reported adoption of harvest management (GAP) (-174 kg/ha). This could be due to the discarding of diseased or damaged pods during harvest.

Regional differences affect yields, as households in Western North have 313-321 kg/ha lower yields than those in the Western Region. The regions are also impacted differently by pests and diseases: 44% of farmers in Western North reported problems with stem

¹ Female-headed households: all female-headed cocoa households; Male-headed typical households: all male-headed households with up to 4 ha of productive cocoa land; Male-headed large households: all male-headed household with more than 4 ha of productive cocoa land.

borer, compared to 26% of farmers in the Western Region. Stem borer has a statistically significant effect of reducing yields by about 100 kg/ha.

Yields of female-headed households are, on average, between 106-115 kg/ha lower than for male-headed households. Furthermore, households with larger land size typically have lower yields. Education levels of the household head positively correlate with higher yields.

Change in cocoa production

Most respondents perceived a decrease in cocoa production over the past five years. This corresponds with statistical data of the Cocoa Marketing Company (CMC), which suggests that cocoa production in the Western Region has decreased significantly for the past three crop years. Sixty-two percent of farmers reported that last season was a bad year for cocoa production due to higher incidence of pests and diseases, less rainfall and old cocoa trees. Respondents who experienced a good year linked this to having more cocoa knowledge through attending training, followed by more inputs used than usual, and having more mature and productive cocoa trees.

Adoption rates of new practices

Self-reported GAP adoption rates are high, especially for pruning, weed management and pest and disease management. Challenges include the labor intensity of certain practices, in particular weeding and pruning, and financial constraints (to hire additional labor or invest).

Reported GEP adoption rates are also high, especially concerning the topics of protecting water bodies, waste management and safe chemical application. Application of organic fertilizer and pesticides is not very common. Shade trees are very common among households (93%), yet at rather low density. Farmers notice positive effects of shade trees, including protecting cocoa trees from heavy sun exposure and providing a source of timber. Female-headed households have significantly fewer shade trees.

Self-reported GSP adoption rates vary considerably. Households indicated that they adopt health and safety practices and adopt practices taught in child labor prevention training. However, adoption of improved working conditions, community relationships, and laws and regulations take place at a much lower extent.

Income sources

Income from cocoa sales accounts for 72% of all household income among respondents, whereas other activities contribute relatively little, such as sales of other crops (15%) and other small business activities (5%). Crop diversification is widespread, aimed not only at household consumption but also surplus selling. However, financial gains from crop diversification are low, suggesting that either respondents sell relatively little and/or that prices for the crops produced are low.

Household income

Net annual income from cocoa varies considerably between household categories and lies at US\$1,290 for female-headed households, US\$1,731 for male-headed, typical households and US\$2,728 for male-headed, large households. This leads to a calculated total household income of US\$1,869 for female-headed households, US\$2,503 for male-headed, typical households and US\$3,836 for male-headed, large households. Female-headed households have relatively small land sizes, below average yields, low input costs and high costs for hired labor, which reduces their production efficiency and household income.

Program impact

Wealth levels

Calculations using the Demographic and Health Surveys (DHS) Wealth Index reveal that 36% of the surveyed households belong to the poorest segment of society and 48% belong to the second poorest segment. Only 13% and 3% are part of the 3rd and 4th wealth quintiles, respectively. None of the respondents fall under the highest wealth category, which shows a high level of poverty among surveyed households – without significant differences between either societies or household clusters.

Living income

Most farmers do not earn a living income.² Female-headed households have the largest gap to achieving a living income (53% gap, equating to US\$2,088). Male-headed, typical households have a gap of 42% (equating to US\$1,815) and male-headed, large households have a gap of only 11% towards a living income (equating to US\$482). However, if the value of crops grown for household consumption (US\$450) is included in the calculation, male-headed, large households do achieve a living income, but for female-headed and male-headed, typical households, the gap is too extensive to be closed in this way.

Farmers who have been part of the L&S Farming Program for longer (i.e. from old verified societies) have a smaller gap towards the Living Income benchmark (i.e. the cost for a decent standard of living) than farmers from new verified societies (38% versus 44% gap).

The probability of achieving a living income increases with land size and decreases with the age of the household head. Furthermore, the likelihood of earning a living income increases with fertilizer use, attendance of training (general), field visits by field officers and attendance of farmer business schools. Attendance of training on child labor prevention and forest conservation, however, reduce the likelihood of achieving a living income.

² Living Income is the net annual income required for a household in a particular place to afford a decent standard of living for all members of that household. Source: <https://www.living-income.com/>

Food security

Food security is high among surveyed farmers, which can presumably be linked to the diversity of crops grown by farmers, which are partially used for household consumption. In addition, it can be expected that the training by the L&S Farming Program on crop diversification contributes to diversity of crops grown, as 68% of trained respondents self-reported adoption. The relatively high dependency on cocoa by L&S farmers does not seem to come at the expense of food security.

Sustainable intensification

It is too early to measure the impact of the L&S Farming Program on sustainable intensification. However, observations suggest that while intensification of production is visible, sustainable intensification is not yet widely practiced. While the use of (inorganic) fertilizer and pesticides is widespread among farmers, GEP adoption lags behind. This is particularly the case with shade management (as a new practice to many farmers) and use of organic inputs. The latter is due to problems with access and labor-intensity of the practice. Farmers that have participated longer in the L&S Program use relatively more organic fertilizer/manure; yet, the percentage of farmers using it is still low (12%). Lastly, around 43% of farmers had also increased the land under cocoa in the past five years – usually (36% of the cases) by clearing forest.

Stability of supply

Two-thirds of farmers have a positive outlook on cocoa production in the future. Only 14% of farmers plan to exit cocoa production. The vast majority of farmers also appreciate the L&S Farming Program and recommend other farmers to join. Combined with relatively high yields and stable or increasing amount of land under production, these factors suggest a stable – or even growing – base of farmers from which to source cocoa. Training on post-harvest management positively contributes to volume and quality of cocoa supply; threats to cocoa production lie in pests and diseases, climate change and average age of trees.

Conclusion

The evaluation was able to bring to light the diverse effects on farmers of the L&S Farming Program. To conclude, the following points can be highlighted:

- 1 More than three-quarters of participating farmers have received training by the program in the last five years, especially in the last year (2018). While there is a relative balance in training on GAP, GEP and GSP, between the various modules there are important differences in farmer attendance. Modules on which farmers have received relatively little training can therefore easily be identified.

- 2 Most farmers who have been trained indicated that they had adopted at least some of the new practices learned, particularly on GAP. While non-adoption is often linked to the labor-intensity of new practices – and resulting cost implications, adoption rates are generally higher in groups (societies) that have been part of the L&S program for a longer period of time. This suggests that adoption increases over time, possibly also due to initial gaps in farmers' understanding of new practices which impede immediate adoption. This is most likely the case with practices that are completely new to farmers or even contradict previous knowledge. At the same time, the overall lower adoption rates of GEP and GSP compared to GAP are lagging behind and could indicate a lower priority of these issues by farmers. This also has implications for sustainable intensification, which is not yet adequately practiced by cocoa farmers.
- 3 L&S Farming Program farmers have relatively high cocoa yields, with 638 kg/ha. Different elements of the program have a positive effect on yields, such as GAP training and GAP adoption. Interestingly, training on child labor and on labor laws have a negative effect on yields, revealing a trade-off between different economic and social objectives of the L&S Farming Program.
- 4 Despite high yields achieved by farmers, the L&S Farming Program does not solve the widespread poverty among cocoa growing communities. Most farmers do not earn a living income. Increases in volume sold by farmers do not, by themselves, offer a way out of poverty. Neither does crop diversification which is widely practiced by L&S farmers, but does not result in relevant financial gains due to lacking remunerative markets.
- 5 Most cocoa farmers do not have concrete plans to move out of cocoa. In fact, two-thirds of farmers see good prospects for cocoa. This suggests that farmers are willing to invest in their production, which they are already partially doing by increasing the land under cocoa and/or planting new cocoa seedlings. Care needs to be taken to ensure that practices of converting forest into productive land are discontinued and alternative options are provided to farmers. Pests and diseases, as well as impacts from climate change, have been identified as the main threats to continued cocoa production in the survey areas.
- 6 Female-headed farming households are significantly worse-off than their male counterparts on nearly all accounts. They receive less training, have lower yields, higher labor costs and are not able to spend a lot of money on inputs. Their incomes are lower, they are more often part of the poorest segment of society, and their gap towards reaching the living income benchmark is highest out of the household clusters analyzed. Future programming can benefit from an increased focus on farmer segmentation and customized services to act on the existing socio-economic inequalities among farming household categories.

Recommendations

The L&S Farming Program was initiated in February 2008 with the aim to significantly enhance and scale reach of rural services in order to offer more innovative and inclusive agricultural products and services to a total of 70,000 cocoa farmers by 2021 and beyond, enabling them to professionalize their farming practices, leading to increased yields and income, and ultimately improve their livelihoods.

The core elements of the program are: i) traceability and farmer organization; ii) training and knowledge transfer, making use of demo plots; iii) farmer investments and community development; and iv) verification and continuous progress.

Some inputs & activities of the L&S Program are relatively new:

- Training on additional livelihoods;
- Farm rehabilitation and management services;
- Supporting farmers land tenure registration;
- Seed financing of additional income opportunities and inclusive businesses;
- Support of farmers in options to save;
- No deforestation & agroforestry.

We expect that if these new inputs and activities are rolled out further, this will potentially support L&S farmers to further diversify their income, to make investments in farm rehabilitation and income diversification, reduce deforestation and, ultimately, contribute to resilient livelihoods. However, to unleash this potential, certain additional conditions need to be met or invested in. Moreover, to ensure that all members can potentially benefit, services and activities need to become more tailored. Lastly, to avoid wasting inputs and resources, a more selective outreach approach and transparent distribution process could be put in place.

To unleash the potential of the program further, the following recommendations are key:

- 1** Improved connectivity, infrastructure and (safe) transport. Poor roads (especially in the rainy season) and a lack of transportation makes farmers' living conditions hard and the tasks of field staff difficult. This results in some farmers not attending/receiving (some) training/field visits, and having difficult access to inputs/services and local markets, etc. Improving rural infrastructure is primarily a responsibility of the Ghanaian government.
- 2** (Financial) literacy for record keeping, financial planning and right investment choices. Illiteracy poses a barrier for adoption of good practices, such as record keeping, particularly for female-headed households (60% has no formal edu-

cation). Being financially literate will help farmers make the right investment decisions for rehabilitation and farm management.

- 3** Professional supply chains for the distribution of plant protection products and seedlings based on demand and at market prices. In order to contribute to sustainable intensification, plant protection products and seedlings (cocoa and shade trees) should be delivered on time, in sufficient volumes and be of good quality, to the farmers. Particularly when products are bought on credit, such as fertilizer. For effective distribution and application, there might be a need for additional services, for example nursery services, to avoid young seedlings from dying, or services related to transport or planting of seedlings. In addition to providing inputs and services, the policy should be to avoid farmers becoming heavily indebted before the cocoa main season. Possible strategies are the promotion of saving schemes, income diversification and paying farmers their premiums in the cocoa lean season.
- 4** Selective outreach and transparent distribution of inputs and equipment. The range of farmer and community investments, including services that L&S provides, is wide. To avoid situations whereby farmers apply for (free) services, without the ability or commitment to actually make use of them, selection mechanisms could be put in place to streamline supply and demand of services. Such criteria can also help to bring in transparency on who has access to what, on the basis of what, etc.. This might encourage farmers to meet such criteria.
- 5** Intensified training on GEP and climate-smart practices. To build resilient livelihoods, it is key to build farmers' capacity to mitigate against climate change and encourage zero-deforestation.
- 6** Access to markets for food crops and business. 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 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 or canned perishable food crops could be further explored.
- 7** Facilitate savings, financial services and payments (e.g. premium) outside the cocoa main season. It is not uncommon that farmers are heavily indebted before the main cocoa season which suggests that, without savings, current loan practices destabilize rather than make livelihoods more resilient. Moreover, the main purpose of loans is to pay for the costs involved in education, and to a lesser extent to pay for emergencies, rather than for making investments that have a return. We therefore recommend putting more effort on bundling credit with saving

services, and enabling farmers to make better choices when it comes to taking a loan. The VSLAs are already a proven concept and we suggest L&S focusing their future efforts on them.

- 8** Taking a household approach. Promoting income diversification and savings will impact on household roles, benefits, decision-making and relations. To be effective, and to avoid doing harm, it is key to expose both male and female household members to gender training and invest in gender-awareness campaigns in communities. We recommend that such trainings and awareness raising are done throughout the whole supply chain.
- 9** Inclusive and tailored approach. Currently, male-headed, typical farmers (< 4 ha) benefit significantly more from the L&S program. Impact on female-headed households or male-headed, large households lags behind and requires customized strategies. For example, the average yields of female-headed households were 493 kg/ha and of male-headed, large households 412 kg/ha, while the yields of male-headed, typical households were 726 kg/ha. In addition, the program currently has a bias towards farm owners living in villages (or even in towns) and has less focus on sharecroppers, laborers and youth. Future programming can benefit from an increased focus on farmer segmentation and customized services to act on the existing socio-economic inequalities and differences in aspirations among farming household categories.
- 10** Avoid a 'one size fits all approach'. Such an approach is likely to result in a rather unstructured way of offering services: potentially offering less of what would benefit most (and, in a worst case scenario, even doing harm). For the purpose of future evaluations, intentional design of how (and to whom) services are offered will help to measure what has been effective (and for whom). This will facilitate prioritization of services and decision-making.