

Extended summary

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Monitoring and evaluation of post-harvest cocoa processing  
and farmers' support centers in Soubré, Côte d'Ivoire

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This report is dedicated to all cocoa farming families and employees of cocoa cooperatives in Côte d'Ivoire.

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*The fermentation center of the cooperative SCOPACI/CABOZ.*

# 1 Introduction

Within the frame of the Swiss Platform for Sustainable Cocoa, CABOZ AG started in collaboration with the Sustainable Agroecosystems Group (SAE) and the Transdisciplinarity Lab (TdLab) of ETH Zurich the SECO funded project “Village post-harvest processing and farmer support centres” in 2019. The project aims at countering risks along the cocoa value chain, implementing sustainability programs and becoming a full-service provider for cocoa farmers in Côte d’Ivoire by implementing village post-processing and farmer support centers (competence centers) in rural areas. The key elements of the competence centers are 1) the establishment of fermentation centers, 2) the establishment and maintenance of a shade tree seedling nursery, 3) the provision of trainings about Good Agricultural Practices (GAP), 4) the establishment and support of village saving groups, and 5) the establishment of farming inputs shops. Expected outcomes are improved agricultural training effects, increased income for farmers, new rural jobs for young people, more effective risk management and higher cocoa quality.

The project was implemented and managed by SCOPACI (cooperative of CABOZ AG) Côte d’Ivoire and evaluated by ETH Zurich. The goal of the monitoring and evaluation was to study the effects of the competence centers, considering social, economic and ecologic indicators. The whole evaluation consists of a baseline study (January 2020), a midline study (January 2021) and an endline study (January 2022). This extended summary reflects the findings of the three studies.

## 2 Methods and procedure

Qualitative and quantitative methods were used to monitor and evaluate the project and compare farmers using the centers with those not using them. The qualitative and quantitative data were collected over a three-year period through 286 interviews with farmers in 21 different villages, six focus group discussions in three villages, and six interviews with cocoa buyers, called ‘pisteurs’. Furthermore, a master’s thesis was conducted to better understand the factors determining shade tree incorporation into cocoa farms.

The survey included different indicators to assess if the goals of the project were achieved. The indicators were constructed based on the logframe of the project, the ‘Monitoring, Evaluation and Learning Framework of the Swiss Platform for Sustainable Cocoa’ developed by the Research Institute of Organic Agriculture (FiBL), and on further literature.

The surveys were conducted in the region around Soubré, where the fermentation centers are located. A quasi-experimental design was used to form three groups: (1) a group that participates in the project

(delivers cocoa to the fermentation center), (2) a group that works with CABOZ but does not participate in the project (not delivering cocoa to the fermentation center) and (3) a group that is also UTZ certified (that now became Rainforest Alliance), but does not work with CABOZ and is located in a different geographical area. The goal of working with three equally big groups was not reached in the baseline study, mainly because the fermentation center was not completely ready at the beginning of the big harvest 2019 and therefore, not many farmers already participated and delivered their cocoa to the fermentation center. Furthermore, not all farmers from the control group stated to be certified during the baseline study. To ensure continuity, we decided to interview the same farmers again in the second and third data collection session. Figure 1 shows the movements of farmers between the different groups over the three years. The filled arrows show the movements between the groups and the dashed arrows show the number of drop-in and drop-outs.

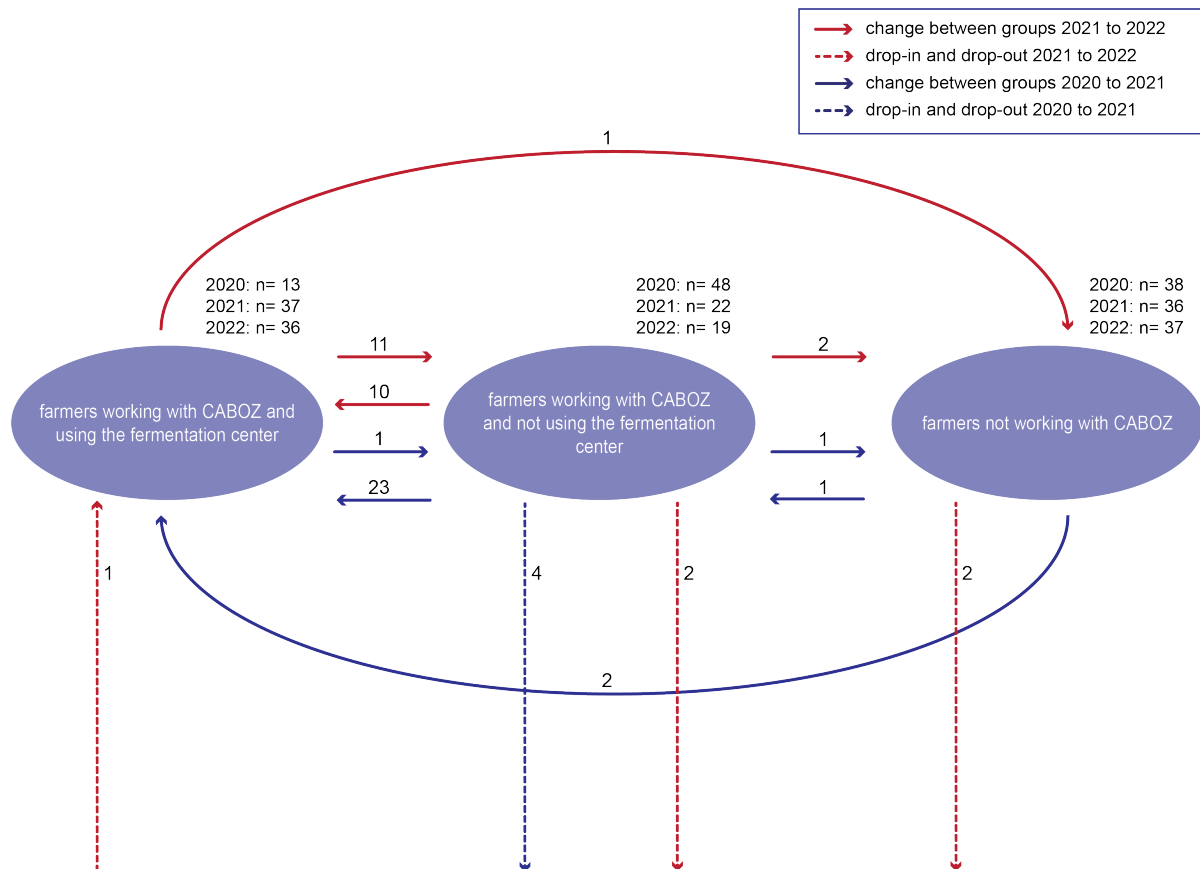


Figure 1: Movements between the groups over the three years.

From the 92 farmers that participated in all three data collection sessions, 47 farmers remained in the same group over the three years, all the others changed groups.

The data processing and analysis was done with IBM SPSS Statistic Version 26© and QSR International NVivo Release 1.2©. The quantitative analysis of the data was done using descriptive statistics and inferential tests. The qualitative data were coded to find patterns in the data. All the answers of the

farmers were looked at individually and code names were given to capture the essence of the sentences. The coding process was done in two cycles, starting with a very broad coding in the first cycle moving on to a recoding process to generate categories, themes, and concepts in the second cycle. After coding the data of the last data collection session, a third coding processing cycle was added to obtain a further reduction of codes and hence, a clearer overview of the mentioned themes and concepts.

## 2.1 Sample description

The interviewed farmers have similar socio-demographic profiles. Some differences could be observed between the groups and over the years, however, no trends identified. Most interviewed farmers are between 40 and 50 years, are male, and have a primary education or no education. They usually plant cocoa on less than 6ha and have between one and two cocoa farms with an age of over 30 years. More than one third of the farmers have a village certificate or a land title for their fields. Interestingly, the number of cocoa farms increased over the three years in the group of farmers working with CABOZ and using the fermentation center.

## 3 Key messages

The following section describes the key messages of the three studies. To make the changes over time visible, results of all three years are shown.

### 3.1 Trust and collaboration

Over the three years, the interviewed farmers stated slightly different reasons why they sell their cocoa to a specific cocoa buyer. The most mentioned reasons are connected to trust and benefitting from certain advantages. In all three years, farmers working with CABOZ mentioned reasons connected to trust more often than farmers not working with CABOZ. Next to reasons connected to trust, reasons of receiving benefits, like receiving premiums or agricultural inputs were also mentioned often. However, some farmers said that they work with the specific cocoa buyer because they have no other option.

When talking about trust in specific groups of people (people in general, family members, neighbors, cocoa farmers, extension officers, and cocoa buyers), the answers do not substantially differ among the three groups of farmers but are different for the different groups of people. In all three years, the picture looked similar, farmers trust family members, other cocoa farmers, and extension officers more than they trust people in general and extension officers more than they trust cocoa buyers. In

2022 however, farmers working with CABOZ stated to trust extension officers more than farmers not working with CABOZ.

Looking at the open-ended question why or why not cocoa buyers are as trustworthy as anyone else one can see qualitative differences among the three groups and years. In all three years, most farmers mentioned reasons connected to distrust (in all three groups). The most often mentioned reasons why farmers distrust cocoa buyers are that they take the cocoa and don't pay for it, that they are simply not trustworthy, and that cocoa buyers are not keeping their promises.

As can be seen in Table 1, farmers working with CABOZ had in all three years more farmers that stated that they specifically do not want to change cocoa buyer and less farmers that stated that they specifically want to change buyer compared to farmers not working with CABOZ. The biggest difference over the years can be seen in the group of farmers working with CABOZ and using the fermentation center, compared to 2020, more farmers explicitly don't want to change cocoa buyer and less farmers explicitly want to change cocoa buyer.

Table 1: Explicitly (not) wanting to change cocoa buyer.

explicitly (not) wanting to change cocoa buyer	working with CABOZ and using the fermentation center			working with CABOZ and not using the fermentation center			not working with CABOZ		
	2020 (n=13)	2021 (n=37)	2022 (n=36)	2020 (n=48)	2021 (n=22)	2022 (n=19)	2020 (n=38)	2021 (n=36)	2022 (n=37)
explicitly not wanting to change cocoa buyer	15%	40%	41%	35%	23%	26%	26%	19%	19%
explicitly wanting to change cocoa buyer	15%	5%	3%	8%	13%	5%	42%	39%	27%

### 3.2 Education of children and future of cocoa farming

Some differences in school enrollment can be seen between the different groups. In all three years, more farmers working with CABOZ said that all their children are regularly going to school. However, over the three years, the number of farmers saying that all their children are regularly going to school decreased. In the group of farmers working with CABOZ from 49% to 25% and in the group of farmers not working with CABOZ from 26% to 22%. At the same time, less farmers said that none of their children are going to school. Many farmers indicated that not all their children are going to school, because some are still too young for school, because some children did not want to continue school anymore and hence, stopped, or because there is a lack of money to send all children to school. Most farmers that send their children to school want them to become waged laborers, or simply to get an education, to succeed in life, to be autonomous, and to have a better future. Some of the changes in school enrolment in 2021 and 2022 can potentially be explained by the Covid-19 pandemic.

The share of farmers that want their children to continue cocoa farming decreased over the years. More than half of the farmers do not want their children to continue cocoa farming. In 2020 and 2021,



the group of farmers working with CABOZ and using the fermentation center had the highest share of farmers that want their children to continue cocoa farming (54% and 32%). In 2022, the group of farmers not working with CABOZ had the highest share of farmers that want their children to continue cocoa farming (27%). The most mentioned reasons for continuing cocoa farming were in all three years related to tradition and family. As reasons for not wanting the children to continue cocoa farming, farmers mentioned in all three years that cocoa farming has no future. There are no forests left that could be used for conversion to cocoa farming and the available land is scarce or depleted. For many, cocoa farming is seen as a plan B, they only want their children to do it if they do not succeed in school.

### 3.3 Cocoa quantity, certification, and premiums

No substantial differences or trends in yield could be found among the three groups of farmers for the three years (the mean yields vary from 210 to 526 kg/ha). However, farmers working with CABOZ stated to have had a higher yield in 2021 than farmers not working with CABOZ. When looking at the last three years, farmers had the lowest yields in 2021. Different numbers stated for the yields of the same year indicate that not all farmers really know their exact yields. When asking farmers about the factors influencing cocoa yields, they mention a good treatment of the plantation, having had a good weight, and enough rain as causes of good yields; and an inadequate treatment of the plantation, the presence of diseases, climate change, lack of money, and the age of the plantation as causes of bad yields.

Over the years, more farmers (almost 100%) working with CABOZ and using the fermentation center stated to be certified and receive premiums than farmers not working with CABOZ (slightly over 50%). While in 2020, the number of farmers saying that they are certified was in all three groups higher than the number of farmers saying that they are receiving premiums, this difference decreased, and in some cases disappeared in 2021 and 2022. In the data collection years 2020 and 2021, the amount of total premiums received and premiums per kilogram did not differ among the three groups of farmers. Only in the data collection session of 2022, farmers working with CABOZ and using the fermentation center stated to have received more premiums in 2020 than farmers not working with CABOZ. However, this difference cannot be observed anymore when comparing the premiums received per kg of cocoa, which partly debunks the assumption that the higher premiums could be a result of the higher premiums received at the fermentation center. It could also be a result of different farm sizes and different yields, or simply of unreliable data. The mean stated premiums range from 30-60 CFA/kg. When asking the farmers for what they are receiving the premiums, the majority says that it is due to their loyalty to the cocoa buyer. Farmers often indicate the name of their cooperative as their

certification, and only few mentioned UTZ/Rainforest Alliance as their certification. In general, farmers have a predominantly positive attitude towards the certification. Most farmers stated that it is a good thing, that they are satisfied with the certification, and that they like the certification because they receive premiums. Only very few farmers (mainly farmers not working with CABOZ) highlighted that they are not satisfied with the certification, because the premiums are not paid at all or are unsatisfactory.

As for the variable yield, differences in indicated premiums for the same year and high standard deviations show that not all farmers really know/remember the exact number of the premiums they receive. The results of the quantitative and qualitative data point out that farmers do not totally understand the concept of certification and premiums and have a certain lack of knowledge about certification. The majority says that certification is a good thing, while often not stating concrete arguments why they perceive it in this way. Even the most mentioned argument of receiving premiums was used less than the explanation that the certification is simply a good thing. This might be a result of the nature of the UTZ/Rainforest Alliance certification, where the cooperative as a whole gets certified and not every individual farmer. Over the years however, the farmers seem to understand the concept of certification a bit better.

### 3.4 Risks and losses on the cocoa farm

All farmers were asked about the risks connected to fermenting cocoa on the farm. In 2020 and 2021, the group of farmers working with CABOZ and using the fermentation center had a higher share of farmers perceiving theft as biggest risk than the group of farmers not using the fermentation center. These results seemed to indicate that the perceived risk of theft could be one of the reasons why farmers participate in the fermentation center; meaning that farmers who perceive a high risk of theft are more likely to deliver their cocoa to the fermentation center. However, this difference could not be observed anymore in 2022. The risk of theft seems to be different in different regions and change over time, with having periods where more theft occurs and then periods with less theft.

The main mentioned reasons for losses on the cocoa farm are cocoa diseases, especially the cocoa swollen shoot disease, lack of agricultural inputs, aging of cocoa trees, climate change (drought and changing raining seasons), soil depletion, and lack of money (to buy agricultural inputs).

### 3.5 Income, investments, and savings

As seen in Table 2, some differences in total income and share of income coming from cocoa could be observed. In 2021, farmers working with CABOZ and not using the fermentation center had a higher income from cocoa and total income than farmers not working with CABOZ. In 2022, farmers working with CABOZ and using the fermentation center had a higher income from cocoa than farmers working

with CABOZ and not using the fermentation center and farmers not working with CABOZ. No differences could be observed for the share of income coming from cocoa, all farmers have the greatest part of their income coming from cocoa farming.

Table 2: Total income and income coming from cocoa.

variable	yr	N	working with CABOZ and using the fermentation center			working with CABOZ and not using the fermentation center			not working with CABOZ			K-W
			n	M	SD	n	M	SD	n	M	SD	
income from cocoa (CFA)	2020	93	11	1'179'613.6 <sup>1</sup>	1'510'501.9	46	1'658'402.7 <sup>1</sup>	2'603'218.3	36	1'057'890.3 <sup>1</sup>	862'923.0	0.221
	2021	77	29	1'519'137.9 <sup>1</sup>	1'793'381.6	20	1'540'500.0 <sup>1</sup>	1'110'744.1	28	1'073'571.4 <sup>1</sup>	1'320'788.1	0.047**
	2022	89	34	1'420'452.2 <sup>1</sup>	1'465'110.3 <sup>1</sup>	19	638'802.6 <sup>1</sup>	454'736.2 <sup>1</sup>	36	796'033.3 <sup>1</sup>	693'633.6 <sup>1</sup>	0.022**
			K-W		0.383	K-W		0.004***	K-W		0.340	
total income (CFA)	2020	93	11	1'250'068.2 <sup>1</sup>	1'527'950.6	46	1'736'076.6 <sup>1</sup>	2'602'555.4	36	1'135'668.1 <sup>1</sup>	864'264.8	0.275
	2021	81	29	1'723'551.7 <sup>1</sup>	2'263'781.8	20	1'595'800.0 <sup>1</sup>	1'089'845.3	32	1'004'125.0 <sup>1</sup>	1'288'491.7	0.006***
	2022	89	34	2'262'981.6 <sup>1</sup>	5'221'791.3 <sup>1</sup>	19	726'960.5 <sup>1</sup>	492'386.0 <sup>1</sup>	36	932'019.4 <sup>1</sup>	695'980.9 <sup>1</sup>	0.056
			K-W		0.504	K-W		0.008***	K-W		0.462	
share of income coming from cocoa	2020	93	11	0.941	0.146	46	0.936	0.113	36	0.920	0.135	0.637
	2021	76	29	0.920	0.151	20	0.950	0.099	27	0.923	0.164	0.671
	2022	89	34	0.896	0.172	19	0.902	0.188	36	0.860	0.230	0.838
			K-W		0.407	K-W		0.958	K-W		0.619	

\*\* significant at 5% probability level, \*\*\* significant at p 1% probability level

Most of the interviewed farmers made some investments in their farms in all three data collection years, but no differences could be observed between the groups (Table 3). Some differences in investments in specific areas, like investments in agricultural inputs or tools could be observed among the years, but no clear trends identified. Most differences among the years indicate that farmers invested more in their farms over the course of the three years. In general, the standard deviations for income and investments are very high which could be because the individual farmers really are earning and investing very different amounts of money, or because they don't really know how much they are earning and investing and hence, state an invented/estimated number.

Table 3: Investments in farm.

variable	yr	N	working with CABOZ and using the fermentation center			working with CABOZ and not using the fermentation center			not working with CABOZ			K-W
			n	M	SD	n	M	SD	n	M	SD	
total investments in farm	2020	99	13	291'653.8 <sup>1</sup>	314'444.4	48	310'284.4 <sup>1</sup>	44'008.7	38	308102.9 <sup>1</sup>	516'666.4	0.925
	2021	93	37	384'766.2 <sup>1</sup>	540'649.6	22	400'631.8 <sup>1</sup>	409'318.9	34	251'941.2 <sup>1</sup>	211'878.1	0.676
	2022	92	36	629'122.9 <sup>1</sup>	2'291'790.8	19	387'773.7 <sup>1</sup>	721'196.4	37	255754.1 <sup>1</sup>	394034.5	0.300
			K-W		0.881	K-W		0.511	K-W		0.656	

\*\* significant at 5% probability level, \*\*\* significant at p 1% probability level

<sup>1</sup> West African CFA; 1USD = 584.0 XOF (31 January 2022)

Table 4 shows the number of farmers saving money, the number of farmers being part of a village saving group, and the number of farmers that already received a loan from a saving group.

Table 4: Saving money and saving group participation.

				working with CABOZ and using the fermentation center		working with CABOZ and not using the fermentation center		not working with CABOZ		Pearson Chi-Square
variable	yr	N		n	valid%	n	valid%	n	valid%	
saving money	2020	99	no	9	69.2	19	39.6	23	60.5	0.061
			yes	4	30.8	29	60.4	15	39.5	0.313
	2021	95	no	13	35.1	10	45.5	19	52.8	
			yes	24	64.9	12	54.5	17	47.2	
	2022	92	no	19	52.8	11	57.9	19	51.4	0.895
			yes	17	47.2	8	42.1	18	48.6	
				Chi <sup>2</sup>	0.077	Chi <sup>2</sup>	0.397	Chi <sup>2</sup>	0.691	
saving group participation	2020	99	no	1	7.7	15	31.3	31	81.6	<0.001***
			yes	12	92.3	33	68.8	7	18.4	<0.001***
	2021	95	no	6	16.2	3	13.6	29	80.6	
			yes	31	83.8	19	86.4	7	19.4	
	2022	92	no	3	8.3	2	10.5	22	59.5	<0.001***
			yes	33	91.7	17	89.5	15	40.5	
				Chi <sup>2</sup>	0.513	Chi <sup>2</sup>	0.097	Chi <sup>2</sup>	0.050	
loan received from saving group	2022	66	no	8	23.5	3	17.6	8	53.3	0.327
			yes	26	76.5	14	82.4	7	46.7	

\*\* significant at 5% probability level, \*\*\* significant at p 1% probability level

Between 30 and 60% of the farmers stated to save some money with no substantial differences between the three groups. While the majority said that they save a minor part of their income, only few indicated that they are saving a substantial part of their income. Most farmers that save money do that on their mobile money accounts, save it at the bank, keep the money on themselves or save it at home. Farmers that do not save money cannot do it because of their little income combined with high expenses. The main mentioned expenses are health care, expenses for education, school fees and other family expenses, like funerals.

Farmers working with CABOZ were in all three years more often part of a saving group. These results point out that SCOPACI/CABOZ's efforts of setting up saving groups show an effect, even though only in saving group participation and not (yet) in form of actively saving more money. However, one reason for this discrepancy could be that farmers see a saving group more as a place to invest money, than a place to save money. The farmers that already took a loan from a saving group did that mainly to invest in their plantations and pay for agricultural inputs, to start a commerce (for themselves or for their wives), like selling clothes, rice, fish, fuel or other consumer goods, or to pay for school fees. Some farmers also took loans to diversify their income by planting other cash crops.

### 3.6 Diversification

Most of the farmers grow besides cocoa staple crops and vegetables, mainly yam, manioc, rice, and plantain. The main vegetables grown are chili, eggplants, and okra. Some farmers also grow other cash crops, mainly rubber trees, and to a smaller extent coffee, oil palm, and cashew nuts. Other farming activities are mainly animal keeping, like chicken farming, goat farming and sheep farming. Some farmers also mentioned liquor and palm wine production as other farming activities. Mentioned off-farm activities were commerce, buying and selling cocoa, being a craftsman, being a contractual worker, or being a community (health) worker. While all farmers grow staple crops and vegetables, some differences between the groups and years could be observed for growing other cash crops, engaging in other farming activities, and off-farm activities. However, no trends could be identified. When there is not so much work on the cocoa farm, most farmers use the time for activities related to subsistence crops, like cleaning the land for the yam and rice production, planting crops, taking care of them, and harvesting them. If farmers can save time by delivering cocoa to the fermentation center, one can expect that in future they will use some of this time to cultivate subsistence crops or to diversify the income.

### 3.7 Shade tree seedlings

Most farmers have shade trees on their farms, over half of the farmers receive shade tree seedlings and very few produce their own shade tree seedlings. No substantial differences in number of shade trees and number of produced shade trees could be observed between the groups and over the years. When looking at the number of received shade tree seedlings some differences between the groups could be observed, farmers not working with CABOZ received more shade tree seedlings than farmers working with CABOZ. These results indicate that SCOPACI/CABOZ is not the only cooperative/cocoa buyer that is distributing shade tree seedlings to farmers, others do that as well. In the control group of this evaluation other cocoa cooperatives/cocoa buyers distribute – if they distribute – more shade trees seedlings per farmer. Even though SCOPACI/CABOZ distributed the same number of shade tree seedlings to the farmers, the stated number of received seedlings differs quite a bit, indicating that the persons in charge of the distribution of the seedlings did not distribute them equally, or that the farmers do not remember anymore how many seedlings they received. Further information on shade tree seedlings survival rates can be found in the master's thesis of Nathalie Windlin.

### 3.8 Farmers' perception of fermentation center

Experiments showed that the weight of dry cocoa is one third of the weight of wet cocoa, a ratio that made farmers very skeptical, especially at the beginning of the project. Trust in the weight difference

plays an important role, because SCOPACI/CABOZ is only paying for one third of the cocoa weight when buying fresh cocoa (but with the same price/kg as for dried cocoa). Over the years, farmers have better understood the weight difference between wet and dry cocoa. Farmers using the fermentation center know the weight difference best, and farmers not working with CABOZ worst. Table 5 shows the most mentioned reasons for participating and for not participating in the fermentation center.

Table 5: Reasons for participating in the fermentation center.

reasons for participating in the fermentation center	working with CABOZ and using the fermentation center			reasons for not participating in the fermentation center	working with CABOZ and not using the fermentation center		
	2020 (n=13)	2021 (n=37)	2022 (n=36)		2020 (n=48)	2021 (n=22)	2022 (n=19)
less work, more time	54%	35%	36%	recent start of project	71%	9%	5%
interest, novelty	46%	16%	8%	logistics	17%	23%	21%
loyalty	23%	19%	17%	skepticism, novelty	8%	14%	-
negative experience	23%	-	6%	weight and price difference	10%	23%	32%
fast payment	8%	11%	28%	too much work	-	9%	11%
reducing risk of theft	8%	-	-	depends on owner of the plantation	-	5%	-
receiving premiums	-	19%	19%	no certification code	-	5%	-
receiving benefits	-	14%	8%	no reason	-	5%	5%
have been convinced	-	14%	19%	not always around	2%	-	16%
better cocoa quality	-	5%	-	not enough cocoa	-	-	26%
good thing	-	3%	6%	not interested	4%	9%	16%
during raining season	-	3%	3%	'pisteur' only buys dry cocoa	-	5%	-
evaluation team recommended to try	-	-	3%				

Having less work and more time for other things was over all three years the most mentioned reason. Participating because it is a novelty, an option of receiving a fast payment, or doing it out of loyalty to SCOPACI/CABOZ was also mentioned in all three years. While at the beginning of the project many farmers participated out of interest, this reason became less important in the subsequent years. Using the fermentation center to reduce risk of theft was only mentioned in the first year. From 2021 onwards farmers also mentioned receiving benefits and premiums as a reason to participate. Some farmers furthermore highlighted that they have made negative experiences using the fermentation center. In general, most farmers do not see a specific benefit of fermenting the cocoa on the farm. However, few pointed out that there are less logistical problems when fermenting cocoa on the farm, or that fermenting on the farm is better because there is no weight and price difference. When asking the participating farmers why they think others are not participating, in all three years most of them said that it is because of the weight and price difference. Some also mentioned logistic problems, problems with the vehicles of SCOPACI/CABOZ, the additional work of removing the cocoa pulp (placentas), or skepticism and distrust as possible reasons for not participating. Most participating farmers only deliver one part of their cocoa to the fermentation center and want to keep doing both, selling wet and dry cocoa.

In the first year of the project, farmers not delivering cocoa to the fermentation center said that it is because of the recent start of the project. In the following years, the most mentioned reasons were logistic problems and the weight and price difference, or that it is too much work to deliver cocoa to the fermentation center and they do not have enough cocoa. When asking the non-participating farmers why they think others are participating, most mentioned having less work and more time and the benefits one receives by participating, like receiving premiums, fertilizers, and a fast payment.

In 2022, all farmers working with CABOZ were asked what the premium for wet cocoa should be and how logistics should be organized for them to start selling cocoa to the fermentation center or start selling all their cocoa to the fermentation center. 41% said that the premiums should be 100 CFA/kg, 16% that the premiums should be higher than 100 CFA/kg, 21% that the premiums should be between 50-100 CFA/kg, and 21% said that the amount of the premium does not matter to them. When asking the farmers about the logistics of the fermentation center, most said that SCOPACI/CABOZ should have more vehicles to pick up the cocoa and improve the infrastructure, like roads and bridges to facilitate the transport of cocoa or reimburse the costs of the transport if the farmers transport the cocoa to the fermentation center themselves.

### 3.9 Cocoa buyers' perception of fermentation center 2021 and 2022

Cocoa buyers, the so called 'pisteurs' are the intermediary between the cocoa producers and the cooperative. They are in charge of buying cocoa from the farmers and delivering it to the cooperative and hence, work closely with both, cocoa farmers and the cooperative. For this work, they receive a margin per kilogram (25 CFA<sup>1</sup>). Usually the 'pisteurs' get a pre-financing from the cooperative at the beginning of the harvest, so that they have enough cash to buy cocoa from the farmers. Employees from SCOPACI/CABOZ think that these 'pisteurs' strongly influence the farmers' decision on whether to participate in the fermentation center or not. Depending on their self-interest they either recommend the fermentation center or not. Semi-structured interviews were held with two different 'pisteurs' in 2021 and with four different 'pisteurs' in 2022 to better understand their perception of the fermentation center. The interviewed 'pisteurs' do not think that the fermentation center has changed their work much, despite making certain tasks easier, reducing the risk of being robbed, having less transport expenses, and reducing the risk of re-drying cocoa before selling it to the cooperative. They do not really see any disadvantages for them. However, they highlighted the challenge of transporting fresh cocoa, the lack of vehicles to pick up the cocoa right away, the lack of bags to transport wet cocoa, and the financing at the center that is oftentimes not sufficient, and farmers must wait several days for their money. The 'pisteurs' mentioned some improvements that should be done at the fermentation center, like increasing farmers' awareness of the center,

increasing the premiums for farmers and 'pisteurs', providing more vehicles for the transport of wet cocoa, and increasing the pre-harvest financing of the 'pisteurs. In any case, all 'pisteurs' reported recommending to the farmers they work with to deliver cocoa to the fermentation center. The interviewed farmers support this statement, most of them said that their 'pisteurs' think positively about the fermentation center and encourage them to deliver cocoa to the center. Unlike expectations, the results suggest that the interviewed 'pisteurs' are not the reason for why farmers are not delivering their cocoa to the fermentation center.

## 4 Conclusion

Of the 92 farmers who participated in all three data collection sessions, 47 farmers remained in the same group over the three years, all others changed groups. The largest movement from not participating in the fermentation center to participating was observed after the first year. After the second year, fewer farmers joined the project as they did after the first year. A similar number of farmers started using the fermentation center as stopped using it again. These results show that delivering wet cocoa is not for everyone and that it is difficult to change an age-old habit. Despite the difficulties, however, the study shows that awareness of and interest in the fermentation center are slowly growing. However, this interest seems to be very much related to the amount of premiums received at the fermentation center and to how well the logistics of selling wet cocoa are organized. Contrary to expectations, the results suggest that the interviewed 'pisteurs' are not the reason why farmers are not delivering their cocoa to the fermentation center.

Despite the higher premiums obtained at the fermentation center, no impact on farmers' income and investments can (yet) be observed. However, the very high standard deviations indicate that the data on income and investments should be treated with caution. The same applies for the data on yield. Here, too, no substantial differences could be found between the different groups of farmers.

Results suggest that close collaboration of SCOPACI/CABOZ staff with cocoa farmers increase the farmers' trust. In all three years of data collection, more farmers working with CABOZ said they trusted their cocoa buyer. In addition, more farmers using the fermentation center do not want to change their cocoa buyer, which is another indication that farmers are satisfied with the projects implemented by SCOPACI/CABOZ. However, this satisfaction is not reflected in the farmers' perception about the future of cocoa farming. The percentage of farmers who want their children to continue cocoa farming has decreased over the years in all groups. In 2021, it looked like farmers using the fermentation center were more likely to see a future in their own cocoa plantations. However, this difference did not prove to be a trend. In all three years, more farmers working with CABOZ reported that all their children are regularly attending school. Most farmers who send their children



to school do so not because they want them to become better farmers, but rather because they want them to have a better future outside cocoa farming.

In general, the project shows some positive impacts on the farmers, however, for many outcomes it is still too early to draw conclusions, some impacts need longer periods of time to become visible. We suggest that our results can be used to show tendencies in the development of the project, although there are some limitations in terms of measurability, reliability, and validity of the data.