SCALING UP ORGANIC COCOA IN GHANA -

FINAL PROJECT REPORT

Covering the Project years 2011 - 2016

Jörg Sollberger (Verein Yayra Glover),

Jens Soth (HELVETAS Swiss Intercooperation)

Reviewed Version 14. 06 .2017

Table of content

Abbreviations:

COSA:	Committee on Sustainability Assessment
ICS:	Internal control system
ISSER:	Institute of Statistical, Social and Economic Research
FBO:	Farmer based organization
LBC:	Licensed buying company
YGL:	Yayra Glover Limited

List of figures

1. Executive Summary

The project “Upscaling of organic cocoa in Ghana” started in 2013 with a lot of enthusiasm. The business plan was, to deliver already in 2014 with 7500 certified farmers the amount of 3600t cocoa beans. In 2017 we count 5532 farmers with estimated 800t delivered beans.

Thus the numbers of farmers are close at original target.

This shows that a very solid base of trained, motivated farmers has been achieved. Very good training material is available and used within a continuous education scheme. The certification process is well established.

This is the most relevant achievement of the project. It enables a fair number of households to generate a more sustainable income. As soon as the remaining problems described below are solved the number of participating farmers can easy be increased.

The production of delivered beans to Yayra Glover LTD. as the organic LBC is lagging strongly behind expectations. This is a result of the constant struggle to get enough trade capital. Farmers sell beans to other LBC’s just to have money at hand, disregarding that they do not get a premium for these beans. This situation has to be solved for the future as the number one problem.

YGL needs approximately 1500t of delivered beans to reach breakeven.

At the beginning COCOBOD supported the project strongly on the warehousing side and declared to make organic cocoa an important part of their future strategy. The later disappeared completely and YGL is facing many issues with COCOBOD. To re-establish the interest in organic cocoa and harmonize relation to the state institute is very important for the future.

Felchlin AG is still the main customer of YGL.
But there are a local and other overseas customers building up (e.g. Touton from France).

Despite the remaining problems we think that the project is a success. The chain from certified farmers in Ghana to local and overseas customers and therefore consumers is well established. On this path the necessary growth can be realized.

2. Project background and report structure

The report at hand summarizes the activities, achievements and lessons learned from the project Up-scaling of organic cocoa in Ghana for the period of 2011 till 2015 and a prolongation year 2016 to allow.

The project activities were conducted by a consortium of private sector and NGO-partners and funded by the Swiss State Secretariat of Economic Affairs (SECO) in form of a Public-Private-Partnership.

The consortium partners are:

- The Ghanaian Cocoa Licensed Buying company (LBC) Yayra Glover Ltd
  (the main entity for implementing the up-scale activities)
- The Swiss Premium chocolate producer Max Felchlin AG
  (importer of the produced beans and advisors for key elements of the bean quality)
  Max Felchlin AG also guaranteed the purchase of all beans for the first couple of years.
- HELVETAS Swiss Intercooperation for the Technical Assistance.
- PAKKA AG , project initiator in Switzerland and responsible for the project until 31.06.2013
- The "Verein Yayra Glover" responsible for the project management from 01.07.2013 onwards.

The disruption of the project in 2013 was unfortunate and had a negative impact for at least one year. A new approach to project management was introduced with corresponding, appropriate documentation. As physical meetings amongst the partners were not possible a Steering Committee was introduced (The newly elaborated project structure is described in Annex 1).

The project was externally evaluated using the COSA methodology with two surveys on more than 123 project farms and 128 control group farms in four villages in 2013 and 2016. Both COSA reports are an integral part of this report, but separate documents aiming to keep the report at hand at a comfortable size.

The report is structured as follows:

- The two overarching objectives of the project (documentation of manuals and processes and feasibility of an organic LBC) are assessed and evaluated in the beginning with occasional references to key figures of the project.
- Than the results COSA studies will be summarised and commented (chapter 4)
- A detailed listing of project activities and their individual achievements will be presented in chapter 5, where also major lessons learned will be embedded as sub-chapters.

3. Achievement of overarching project objectives

3.1. Overarching objective 1: Documentation of processes and manuals

At the time of the project start hardly any other organic cocoa project existed, where an independent local organisation, like Yayra Glover Limited, operated as key project actor. The major projects were all either run by larger companies or closely related to a company operating in from a cocoa consuming country. The following table visualizes main countries and actors for organic cocoa.

Table 1: Selected actors for organic cocoa projects and the corresponding countries

Key actor	Headquarter of main actor	Producing country
Tradin	Netherlands	Dominican Republic
Ritter Sport	Germany	Nicaragua
Biolands International ltd. (100% owned by Barry Callebaut)	Switzerland	Ivory Coast, Sierra Leone, Tanzania
Gebana	Switzerland	Dominican Republic, Togo

It was therefore an overarching objective for the project to create manual and extension material that could serve as a guidance for other actors interested to establish an organic cocoa entity.

3.1.1. Structure of the elaborated documentation, manuals and extension material

During the project a complete documentation for all key operations of Yayra Glover Ltd as formal entity licensed by the Ghanaian Cocobod to purchase organic cocoa from cocoa producers in Eastern Region and in Volta Region was created. Figure 1 shows the 4 components of this documentation and how the different project stakeholders relate to each component.

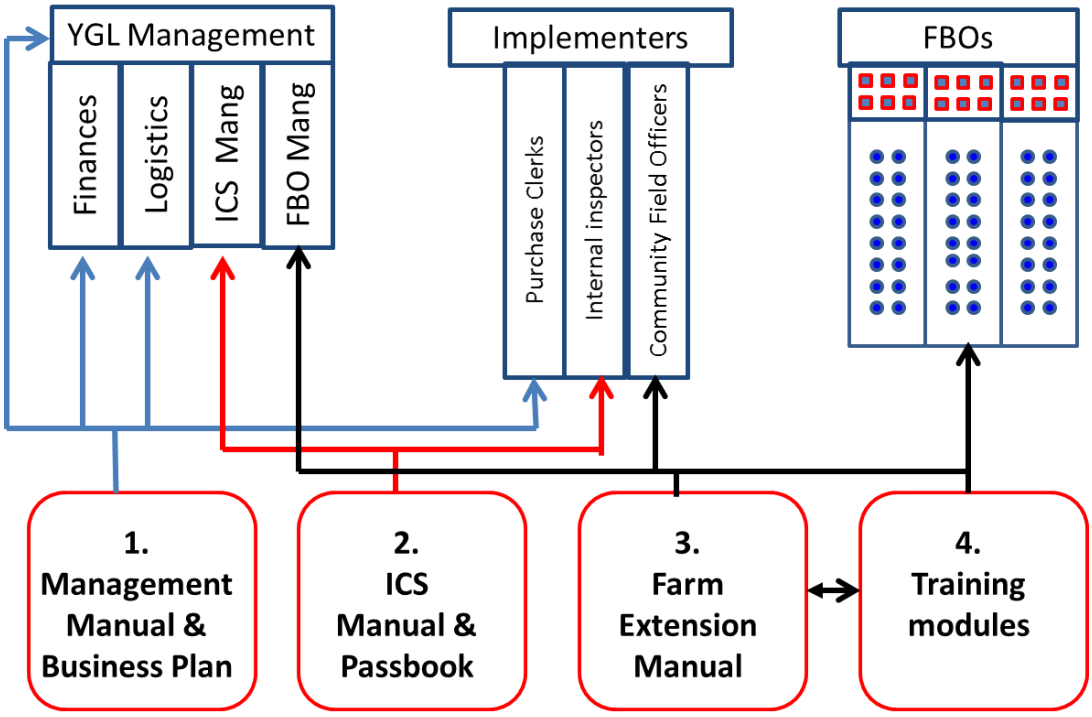


Figure 1: Coherence of manuals and documents for the YGL operations

Figure 2 exhibits the title pages of the extension modules. Each of these modules show key extension messages in cartoon format thereby aiming to be clear and comprehensible for conducting training sessions and field days.

Figure 2: Title pages of the extension modules used by the Field officers for the farmer training

The modules are printed in large format (approx. DIN A2) and laminated to have visible and durable material for the Field Officers at hand. If the corresponding conditions allow, the modules can also be presented via Mini-Beamers. The latest version of such Mini-Beamers contains a battery and a memory. The presentation thus neither requires any AC/DC cable nor a laptop (see Figure 3).

Figure 3: Modern LED Mini-Beamer allowing presentation of modules even in remote places without electricity or laptop

3.1.2. Results and achievements

The documentation of the processes and the guidance given by the manuals turned out to be of high internal value for YGL. Since the livelihood conditions for trained YGL staff in the rural areas are demanding, the project faced a high brain drain. The availability of manuals that describe the key operations facilitates the introduction of new staff.

Furthermore particularly the training modules and the farmers' passbook have been used by many other Ghanaian actors and cocoa projects and the electronic version of the manuals have been downloaded from the YGL Website overall 424 times by February 2017.

Since many Ghanaian actors tend to cut out the logos (SECO, Felchlin, YGL) to utilize the material for their own purposes, it is suggested to add the reference towards the creative commons to at least stimulate a proper referencing of the source of the material (see example in Figure 4 below).

Figure 4: Example of copied extension material with logo cut-out and changed ("sourcetrust" is the local implementer for the Lindt Farming Programme)

At present the training modules are published on the YGL website and are used at seminars and conferences with local educational units when YGL is participating. The relation to COCOBOD was under the leadership of Mr. Opuni rapidly deteriorating. COCOBOD had no real interest anymore in the fostering of organic grown cocoa beans. Therefore they are not active in distributing any manuals.

3.2. Overarching objective 2: Feasibility of an organic LBC

A second overarching objective of the project was to demonstrate the organisational and economic viability of an organic LBC.

The core activities of the project were to

- support to the company YGL in their management capabilities and strengthening project management and implementation (implemented by Verein Yayra Glover),
- establish a direct response with regard to the bean quality and the corresponding shipments (implemented by Felchlin AG),
- assist the staff of YGL with organic certification and production knowledge (implemented by HELVETAS Swiss Intercooperation).

During the implementation of these core activities the following factors were identified as fundamental for the economic sustainability of a successful Organic LBC:

- well trained, motivated farmers (see chapter 3.2.1),
- access to trade capital with a moderate interest rate (see chapter 0),
- enough organic cocoa volumes (tons) to achieve a sustainable income (see chapter 3.2.3),
- efficient organization of the LBC (see chapter 3.2.5).

Results and achievements for each of these factors are summarised in the following sub-chapters.

3.2.1. Well trained and motivated farmers:

A high number of farmers particularly in Eastern Region were registered at an early stage of the project. Due to many different problems the YGL was not able to increase the number of farmers participating in the project substantially, therefore the volumes were also not developing in the envisaged way. The biggest problem was the lack of trade capital to purchase large quantities of beans at any time. Other LBC's were always able to divert big quantities of beans, as money at hand was a fundamental reason for the farmers to sell beans to other companies. This is still a serious problem today.

Furthermore the motivation to adhere to the very strict rules of "organic production and certification" was not given everywhere, resulting in the loss of the organic certification for the season 2013/14.

With the engagement of the Verein Yayra Glover in June 2013 the overall situation improved and positive signs are seen since season 2014/15: The certification could again be achieved and a new split of the premium was introduced. (see also next chapter and Annex 12: "Premium Sharing Regime for Organic Cocoa Farmers") The farmers get now 30% , what is a big motivation factor since season 2014/15. The resulting increase of farmer numbers is thus visualised in Table 2.

3.2.2. Access to trade capital with a moderate interest rate

Interest on trade capital is very high in Ghana. Until season 2014/15 YGL had to pay between 28 and 32% interest rate. It is obvious that this kills all efforts to become economical. Due to constant talks to Cocobod, YGL was able to improve the situation. For the season 2014/15 YGL received 1.7 Mio GHC from Cocobod with 18% interest, the remaining 0.5 Mio from NIB for the usual 28%.

3.2.3. Enough organic cocoa volumes to achieve a sustainable income

Obviously a viable LBC needs a critical mass of cocoa volume to handle in order to become a stable and sustainable business. The last officially published COCOBOD report is listing 41 officially licensed and registered LBCs active in Ghana. According to this official ranking by volume YGL is ranked no. 26 in this list (season 2013/2014 with 465 tons), thereby being positioned in the middle class of LBCs operating in the country. The overall quantitative evolvement of key project figures is summarised in the following Table 2.

Table 2: Overview of key project figures according to cocoa seasons

Season	No of farmers registered	No of farmers certified as organic and in conversion	Acreage certified as organic	No of farmers certified as Utz	Acreage certified as Utz	Total shipment of beans (all certifications)	Remarks
Unit	[no]	[no]	[ha]	[no]	[ha]	[Mt]	
2008 / 2009	300	300	563			63	
2009 / 2010	5000	804	1703	646	1210	175	1
2010 / 2011	4500	1015	1903	804	1679	238	1
2011 / 2012	4500	1478	1903	804	1679	217	1
2012 / 2013	4513	2239	5762	804	1679	300	1
2013 / 2014	2767	1149	2832	1367	3002	465	2, 4
2014 / 2015	2222	1115	2745	843	1674	636	2
2015 / 2016	2339	1312	3806	964	1901	650	2
2016 / 2017	5532	3140	8684	855	1768	625	3, 5

Remarks:

1: The numbers of farmers at the beginning of the project included all interested farmers. Comparisons are only valuable from 2014 onwards.

2: The number of farmers and therefor the acreage varies as farmers are dropped or added according to their performance.

3: The big increase is due to the extension in the Eastern Region and Volta Region.

4: 465t is the official figure as per Annual Report of COCOBOD (Ghana Cocoa Board 2014). All other figures as per project monitoring by YGL.

5: only up to May, season still goes until September

The table allows the following conclusions:

- Although the volume of dried cocoa beans purchased by YGL form their registered farmers increased over the years, the tonnage is still below the original planning figures of 2010.
- YGL still needs to grow substantially to achieve the volume which is necessary to break even. According to our present know how YGL needs 1500 mt of organic certified beans.
- The deterioration of the business relation between *Pakka AG* and YGL in the years 2012/13 had a very negative impact on the organization and the numbers of farmers participating in the pro-

ject was stagnant until season 2013/2014. In July 2013 the *Verein Yayra Glover* took over the project from *Pakka AG* and made since all efforts to terminate the remaining business links in a, for both sides, fair and acceptable way.This was finally achieved in summer 2015, when import of cocoa was changed to Walter Matter AG, a professional cocoa importer. Therefore the season 2014/15 is the first one where no "historical queries" are hindering "normal business", which is in any way very demanding.

3.2.4. Efficient organization of the LBC

The basis for a good functioning "Organic licensed buying Company" is a well structured Management System and corresponding underlying manuals and guidances for the staff.

Efficiency is crucial, as all activities related to become and remain "organically certified", have to be financed with a part of the "premium". The organic premium as to be added on the export price was fixed by the Cocobod and was in season 2014/15, for

- Organic certified cocoa : 600 USD/ton of dried beans
- Organic in transition cocoa : 300 USD/ton of dried beans

In the first years of the project the split of this was not favourable for the LBC (Yayra Glover Ltd.) and the farmers, as Pakka AG deducted a part of the premium for their activities in Switzerland and subsequently the local actors were not happy with this situation.

This has been changed since season 2014/15 and the premium is distributed solely between the LBC (YGL) and the farmers. This might be regarded as a "must criteria" for the success of an Organic LBC.

The Management Manual was introduced with the support of the *Verein Yayra Glover* and a student from Switzerland, Daniel Keller from the "Ecole supérieure technique agroalimentaire Fribourg".

Daniel Keller spent three months in Ghana and introduced, guided by the *Verein Yayra Glover*, an overall management guidance for YGL.

A Management Manual (First Edition, September 2013) and a corresponding basic structure for a "Business Plan" were elaborated (First Edition Business Plan, September 2013) and integrated accordingly into the documentation of the YGL operations as visualised in Figure 1 on page 6.

Both documents have to be updated on a regular basis to achieve the requested efficiency for the LBC. Without that efficiency the farmers will get only a smaller portion of the premium and that will lead evidentially to an unsatisfactory situation.

3.2.5. Remaining Challenges

There are challenges all over and big efforts are necessary to cope with it. But the overall challenge is, to get into a stable way of doing business. That means no resignation of key personnel, a team, which is capable of using the available tools in an efficient manner.

This will lead to an increased number of farmers participating, with higher volumes purchased, which is crucial for the economy of the business.

Access to higher trade capital with low interest rate, otherwise too much money is lost to the banks.

Nevertheless one has to keep in mind, that the organization is still very young. Two key employees responsible for farmers' extension and ICS are with the company only since November 2013. A new financial manager joined in summer 2014 only. That means that though the manuals are available, time is still needed to achieve a smooth work flow.

3.2.6. Outlook

The outlook for YGL's future is positive, despite all the challenges remaining. Technology and Management tools are available and the personnel situation is stable. Very important is to stabilize the expansion into Volta Region. Otherwise the necessary volumes of purchased cocoa beans will not be generated.

Areas of high attention :

- Relation to COCOBOD : Make sure that COCOBOD is again supporting the growth of organic production of Cocoa beans in Ghana in an active way. E.g. : Purchase of bio-insecticides, purchase of organic fertilizers etc., all things they do for conventional farmers.

- Trade Capital : Intensive talks to COCOBOD and banks.

- Find new customers, as Felchlin AG is not taking anymore all produced beans.

4. Key results of the COSA studies

4.1. COSA Background and method used within the project

Since 2005 a multi-stakeholder initiative of donors, private sector actors, development NGOs was looking for a common set of indicators to evaluate the impact of commodity projects in a harmonised and comparable way. The resulting "Committee on Sustainability Assessment" (COSA) is registered in the US as independent public research organisation since 2012.

In Ghana the Institute of Statistical, Social and Economic Research at the University of Ghana was trained by the COSA team in Washington to conduct impact studies according to the COSA

The project was assessed by experts from the ISSER using the COSA methodology with two surveys on more than in 2013 and 2016.

For the purposes of comparative assessment, the farmers were put into two main groups; project farmers (referred to as treatment group) and non-project farmers (also referred to as control group). Overall, a total of 269 farm households from four communities (138 project and 131 non-project farm households) were interviewed at the baseline study (also referred to as Round 1) in October 2013.

The follow up study (referred to as Round 2) was conducted in September 2016 and 123 project and 128 control or non-project farm households were interviewed.

The reports of both surveys are a component of this final project report. Owing to the multitude of findings only the most striking and relevant parameters are commented in the report at hand. All further details can be assessed in the study reports themselves.

To understand the findings of the COSA studies, one has to take into account additional framing aspects of the Ghanaian cocoa sector, which cannot be captured by the COSA method itself (see the following chapter 4.2).

4.2. Ghanaian cocoa sector developments influencing the project

4.2.1. Management turmoil at the Board of Cocobod

The new Chief Executive, Dr. Stephen Opuni, who took over in November 2013, enacted some detrimental changes to the operations of LBCs and cocoa farmers. Despite intensive efforts of project actors to convince him of the benefits of organic cocoa production and despite his personal confirmations (see Figure 5 on following page) that he will strongly support the niche of organic cocoa production within the Ghanaian cocoa sector, the actual activities turned out to be strongly counteractive.

The project had to face an exchange of key management staff of Cocobod that took care of the specific requirements of the organic produce and its corresponding handling and certification. Subsequently warehouse handling and corresponding payment actions for organic cocoa were delayed thereby putting additional burden on the YGL management to realize the shipments.

Figure 5: Zurich, March 2014 – Dinner meeting with Cocobod organised by Verein Yayra Glover

On the opportunity of the ICCO Annual Meeting in Zurich the Verein Yayra Glover organised a dinner with the Cocobod delegation with the – at that time – rather new Chief Executive Dr. Stephen Opuni.

4.2.2. Support for Bio-pesticides discontinued

The second very influential change came with the fact that the support for the biological plant protection spraying was discontinued, whereas the subsidies on conventional plant protection was still going on via the treatments conducted by the Cocoa Health and Extension Division (the former Cocoa Swollen Shoot Virus Disease Control Unit).

Since YGL did not have the financial strength to cover the bio-agent applications by themselves, the farms were left untreated and thus had to face increased pest pressure by capsids. Furthermore the discrepancy towards conventional farmers is widening, when they receive subsidies in form of free sprays. On top of that some farmers who might be concerned to loose yield have applied pesticides on their own thereby acting non-compliant to the organic rules and had to be de-certified.

4.2.3. More LBCs operating in Eastern Region

Eastern Region used to be less attended by LBCs due to the well-known fact that plantations over-aged and less productive. The newly developed motorway between Accra and Kumasi and the fact that the more productive cocoa regions in Western Ghana face strong competition for farmers among LBCs leads to visibly more LBCs being active in Eastern Region. Thus farmers receive various promises, have more options to sell their cocoa, but also get contradicting messages from all kinds of extension workers with regard to sustainable production or organic production. That can lead to the fact that farmers get confused with regard to reasonable and permitted practices and which LBS or project there are participating in.

4.3. Key findings of the COSA studies

Table 3 visualizes the most relevant parameters of both studies and thus allows a comparison in three dimensions:

- a development within the project farming households over time,
- a comparison of project and non-project farmers within the same year,
- a comparison of trends between project and non-project farmers.

Aiming to allow a rapid overview that Table 3 also operates with a colour code. A green colour of the parameter depicts a favourable trend or a better situation as compared to non-project farmers, whereas a yellow marking depicts either a deteriorating trend or worse situations as compared to the non-project farmers.

Table 3: Summary of selected indicators of the COSA studies

Round 1 = 2013, Round 2 = 2016; Treatment = project farmers, Control = Control group

Green colour shows advantages in relation to the comparison group or improvement trends

Yellow colour shows disadvantages in relation to the comparison group or deteriorating trends

No in 2nd COSA report	Description	Unit	Round 1		Round 2		Details see chapter
			Project farmers	*Non-project farmers*	*Project farmers*	*Non-project farmers*	
2.1.1	Female headed households	%	16	14.6	21.1	12.5	4.3.1
2.1.2	Area under cocoa cultivation	acre	6.8	7.6	7.1	8	4.3.1
2.2.1	Yields per acre	Kg	135.6	157.9	128.5	171.3	4.3.2
2.2.4	Proportion of farmers selling cocoa to one LBC	%	95.4	11.8	46.8	21.3	4.3.2
2.3.2	Proportion of cocoa affected by pests	%	58.4	77.1	74	69.5	4.3.2
2.3.3	Perceptions of cocoa quality	%	49.4	50.6	55.9	44.1	4.3.3
2.5.1	Price knowledge-always	%	73.8	71	38	47.2	4.3.2
2.6	Economic perceptions-good	%	47.2	38.2	30.1	14.8	4.3.3
4.1	Proportion of households without days of skipped meals	%	77.6	83.3	70.3	57.3	4.3.3
4.5	Perception in life quality-good	%	44	37.5	47.2	28.4	4.3.3

4.3.1. Farm household characteristics

Overall the survey shows that the sizes of cocoa farm in Eastern Region are rather homogenous with cocoa acreages ranging between 6 to 8 acres and further land (e.g for maize, taro or cassava) ranging between 1.5 to 2.5 acres.

The differences between project and non-project farmers are marginal with project farmers having slightly smaller land holdings thereby underlining the fact that the organic production is more attractive to farmers with smaller land holdings.

The number of female farmers increased over the years with meanwhile 21% female farmers within the project farmers being significantly higher than the 12.5% of females in the non-project farmer group. This could indicate that the organic production method that avoids handling agro-chemicals is more attractive to female farmers. A fact that could be proven with organic farming projects in West Africa, too.

4.3.2. Farm yields and productivity

The study shows an alerting trend of declining yields in the group of project farmers, whereas the non-project farmers have a slight yield increase. Project and non-project farmers differ by 25% (128.5 to 171 kg/ac) in 2016 whereas the difference in 2013 was only 14% (135.6 to 158 kg/ac).

The following scenario calculation shows that the cocoa income hardly reaches official income wages as defined by the Ghanaian Minister of Employment and Labour Relations of 8,80 GHS per day as of December 2016 (Wageindicator Foundation 2017):

An average cocoa holding size of 7 acres with the identified yields of 2.0 bags/ac in organic (128.5 kg/ac) and 2.7 bags/ac in conventional (171.3 kg/ac) gives around 14 bags organic cocoa and about 19 bags conventional cocoa. With a producer price of 475 GHS in conventional 600 GHS in organic the annual farming income from cocoa would be around the same amounting to actually 8400 GHS in organic and 9025 GHS in conventional production per season. Divided by 365 days the farming household would have around 23.00 GHS/day in organic and 24.75 GHS/day in conventional cocoa. Divided by 4 household members both figures do not reach the officially announced minimum wage.

This scenario calculation does neither take into account production inputs on the cost side nor further income sources like other crops or non-farm income. It shall just make aware of the fact that the productivity is on a critically low edge for any of the production systems.

Overall the project has been working on promising approaches to improve the productivity situation: The pruning shall reduce yield losses due to fungus diseases and increase the number of pods per tree, whereas the nursery activities are crucial to counteract the overaging of the plantations. Both approaches need more time to be visible in the average figures of the farm performance. Individual results collected via the field officers show a promising outlook and also the farmers are keen to participate in both of the approaches.

Three other comments have to be added to the productivity situation:

- The figures may already demonstrate signs of the non-availability of bio-applications in the last two seasons (see also chapter 4.2.2) due to the discontinued Cocobod support.
  The yield differential between project and non-project farmers was much smaller in 2013 (14%).

- The figures may also be distorted by figures the farmers give to the surveyors of the COSA study. Since the project farmers are aware that they should try to give yield data that are in line with the recordings in their passbook for the organic certification, they may not give the full amount of beans, when they may have sold a part to other LBCs. A hint that is also proven with the answers to the cocoa bean selling part of the survey. The project farmers that sell only to YGL have basically halved (from 95.45 to 46.8%) and the level of their understanding of the pricing has also nearly halved (from 73.8 to 38%). These are clear proves of strongly increased activities of other LBCs in the YGL area (see also chapter 4.2.3).

  If YGL has enough trade capital at any time to purchase all beans available from certified farmers this situation would change rapidly.

- Scientific publications that researched the yield differences between organic and conventional cocoa quote a difference of 30% (see e.g. Mahrizal et al. 2012, Gockowski 2008, Phuoc 2011). In light of these figures the project farmers perform better than the scientifically published figures, which would be a promising sign despite the rather grim income scenario given above. It can be assumed that with an expansion of the pruning the differential will shrink further.

4.3.3. Quality, livelihood and food security improvement within the project

Regardless of the productivity figures the COSA studied revealed very encouraging results, when it comes to bean quality, the livelihood of the farmers and even to food security.

The bean quality – as perceived by the farmers – improved with project farmers but diminished with non-project farmers. The figures show are clear result of quality training measures of the project team.

Also project farmers perceive their economic outlook as well as their life quality outlook significantly better than non-project farmers. This hints to manifold further benefits of organic farming ranging from avoidance of agro-chemicals (no purchase, no handling) to the diversification and resilience of the entire production system (including non-cocoa acreage).

The most outstanding difference is occurring with regard to food security, so that it is worthwhile to quote the corresponding figures from the COSA study: Figure 6 is visualizing the number of days in a year where farmers had to skip meals due to food or financial shortages.

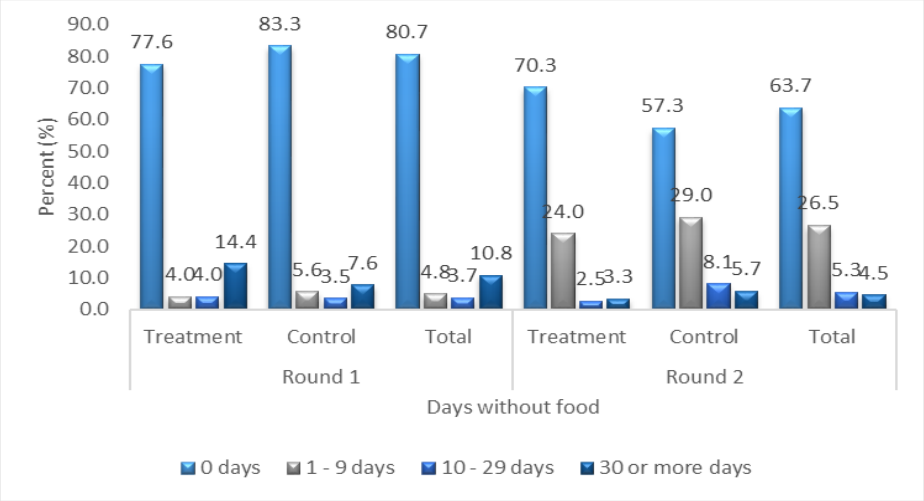


Figure 6: Summarised results of food security situation - number of days without meals

Treatment group = project farmers; Control group = non-project farmers

Round 1 = 2013, Round 2 = 2016 COSA study

- The project farmers were found in 2013 to be in a much worse food-security situation than the non-project farmers. 18.4% of them had to skip meal for more than 10 days in a year (14.4% even for more than 30 days, 4% for more than 10 days) as compared to 11.1% of non-project farmers (3.5% more than 10 days, 6.6% for more than 30 days).

  During the last three project years the situation reversed with only 5.5% (2.5 > 10 days, plus 3.3% > 30 days) of project farmers being for more than 10 days without meals as compared to 13.8% of non-project farmers (8.1% > 10 days and 5.7% > 30 days).
- Whereas the proportion of project farmers without any day of meal shortage shrunk from 77.6% to 70.3% indicating also a slightly more severe situation, the number of non-project farmers without any day of meal shortage diminished drastically from 83.3% to 57.3%.

Although the COSA study survey questions did not explore the details behind this significant and relevant tendencies, the potential reasons behind this strong statement for the organic project are:

- ✓ The farmers are trained in a holistic manner to apply the organic production approaches and thereby elements of food-security are integrated into the trainings. Crop diversification within the plantations and on the non-cocoa plots are demonstrated and encouraged. Subsequent achievements are exchanged between farmers during field days and thus the likelihood of replication is high.
- ✓ The project farmers are trained in keeping farming records and are also learning simple elements of financial literacy (training modules “agriculture as a business”) as well as being attentive to household expenses throughout the year (see Figure 7 below).
- ✓ Non-project farmers who occasionally may also visit field days of other LBCs that entered into Eastern Region may have been trained about cocoa production technologies, but lacked training in more holistic and resilient farming practices, thereby not being able to adhere to food-security components.

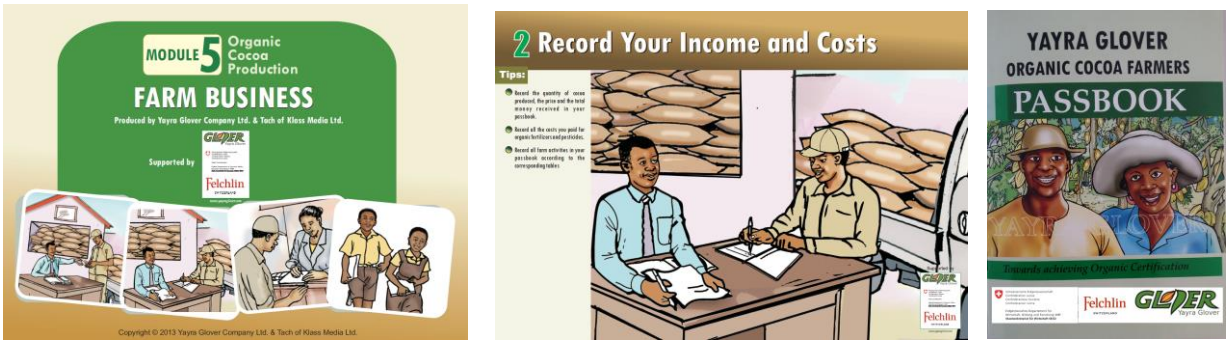


Figure 7: Components of the Farm Business training module encouraging farmers to monitor and record expenses according to recording templates in their passbook

5. Accomplishment of detailed project objectives

5.1. Overview of the detailed project activities

The following chapter summarizes the accomplishments for the activities planned at the very beginning of the project in beginning 2011 aiming to visualize the evolvement within the various project components as well as to identify the innovative elements and lessons learned of the project.

Key activities followed the time table of the project developed by the Verein Yayra Glover.
Many were conducted in parallel and thus interlinked different components of the project.

Summarised these key activities are:

- Recruitment and training of extension workers and field officers
- Identification of farmers
- Develop training material including pictorial standards
- Conduct regular trainings that do not only contain the production and processing measures, but including the record keeping via the organic passbook
- Install “Farm based Organizations” (FBO) in all participating communities

An example of the implemented project management work tool and the sequence of the described activities can be seen for the years 2015 / 2016 as Annex 13 (“project work table”).

5.2. Capacity building and extension

Activities

The capacity building of the different employees with particular focus on the Field Officers and their superiors was one of the key activities realized with the project support.

Results and achievements

On top of the direct training on the job and corresponding detailed job descriptions the elaborated management manuals (see Figure 1 on page 6) describe the key operations of the company. Meanwhile the organizational structure of the company YGL looks as depicted in Figure 8.

For the function of purchase clerks a clear contract was developed that includes sanction clauses for non-compliance with the contractual duties.

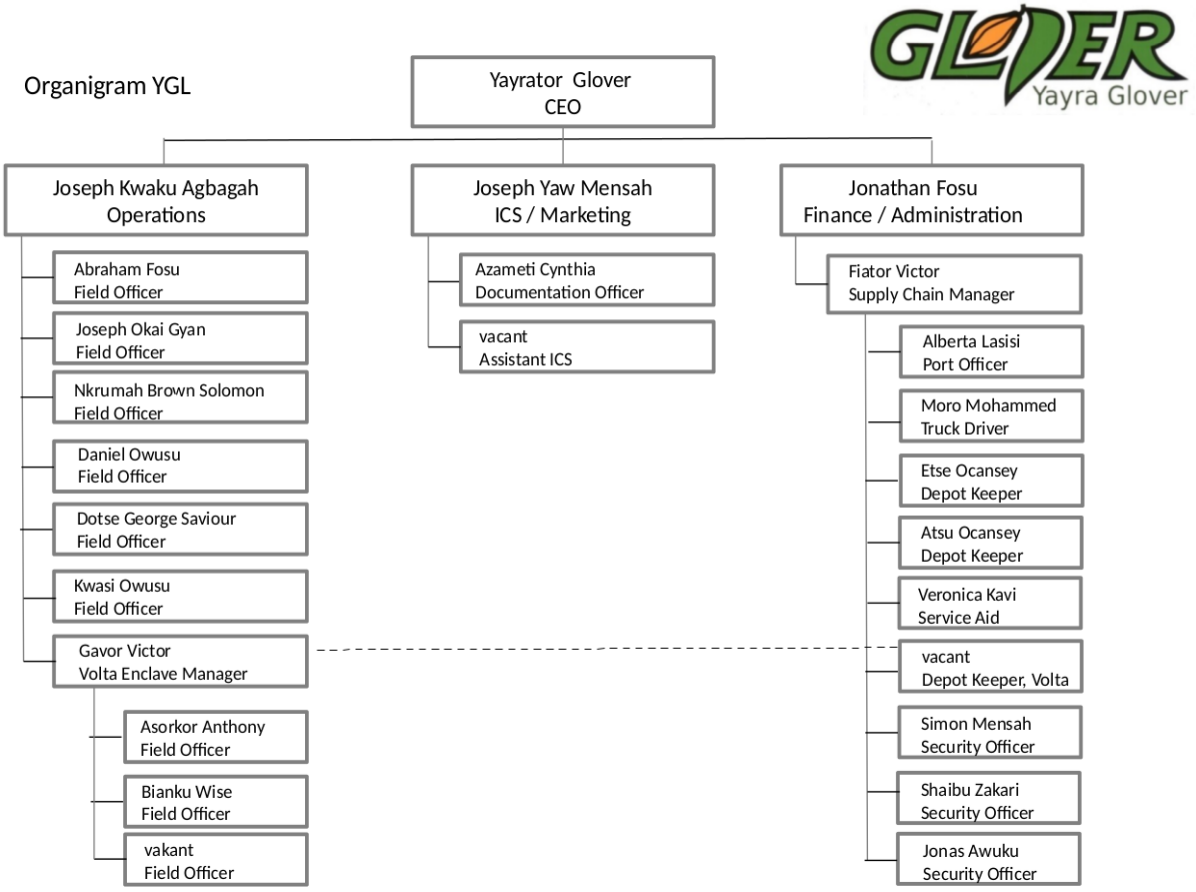


Figure 8: Organigram of YGL as of end of 2016

Lessons learned

One of the most demanding challenges of the project was the continuous "brain drain" of key personnel. Keeping young and skilful professionals in a small company operating in a rural town like Suhum in Eastern Region is a difficult task and salaries above the local average will not even be sufficient, if the people see opportunities in the capital or in Kumasi.

The knowledge established in key positions of the project particular in the field of certification and ICS management are skills which face a very high demand in West Africa. The position of the ICS Manager had to be replaced 5 times during the project. Four of them left either for certification bodies, large LBCs or agricultural banks, one person received a grant from a UK University to pursue a higher education. None of these jobs were in any rural area. All these people were very much aware that the skills they acquired within the project were essential milestones for their career opportunities.

Potential risk mitigation measures are an early development of management manuals which defines the positions and their interaction with each other clearly and the development of a reasonable HR plan that gives employees a clear perspective for further career options with the company of the project context.

5.3. Farmer identification and training

Activities

Establishing a strong link towards farmers and their village communities and training these farmers in organic production are obviously crucial success factors for an organic LBC.

To have a systematic approach to the trainings coherent training material was developed (see Figure 1 on page 6 and Figure 7 on page 18).

Results and achievements

The overall result is a successful certification and the corresponding shipment of certified beans of high quality. On top of the organic certification the certification agency also issued a recommendation letter to prove that the operations are conducted in a fair manner (since fair trade demand is lacking from the market side). The corresponding document is attached as Annex 2.

All aspect of the various activities, including available records of farm data and the corresponding trainings, are checked by the certification auditors. YGL is certified by Control Union Certifications B.V. (CUC), a Dutch company, operating worldwide. Annexes 3 and 4 are showing examples of the received certificates, whereas Table 2 on page 10 shows the quantitative results for the main performance indicators.

Lessons learned

Having a licence to operate as LBC, install a good farmer extension system and paying timely and competitively is unfortunately still not sufficient to keep farmers strongly tied to one LBC. The results of the COSA study show the strong counteractive influences of other LBCs operating within the same region (see chapter 4.2.3).

A disrupted availability of trade capital for timely payment is strongly undermining not only the continuous shipment, but also the fidelity of farmers.

Potential mitigation measure are

- a reasonable financial base that allows to operate without being dependant on the high interest of local trade capital.
- a minimum critical size allowing to adhere economies of scale of the operations. Based on the experiences and the existing draft business plans of YGL this minimum size is around 1’500 tons.

5.4. Value chain support I– strengthening of FBOs

Activities

The original idea was to establish registered FBOs aiming to keep operating costs of the LBC low and to foster ownership of farmers and farmers’ groups thereby also creating a certain social pressure among farmers to comply to organic rules. At the time the project was planned this idea of strong FBOs was very vibrant in Ghana and several donors (e.g. GIZ or SNV) were building strongly on this idea. Within YGL entire training modules were developed around this very idea and integrated into the field extension officer education. Model business plans were elaborated and the corresponding modules were branded with the term “agriculture as a business”.

The reality over the years showed that the fluctuation of people in the cocoa producing regions is much too high and the dynamics of change are too strong to reach FBOs that would operate without continuous support and efforts by YGL. Additionally the COSA studies show that the competition between LBCs is high and farmers assign themselves to different groups at the same time or change deliberately.

Results and achievements

On top of the developed training modules the farmers registered in the two operating regions of YGL in Eastern and Volta region are assigned to 34 (as of mid 2016) registered FBOs.

Key performance indicators for a functioning FBOS were developed based on a five star rating system (details see in the related concept document in Annex 5). The registration itself, the maintenance of a group nursery (see following chapter) and the bean qualities are part of this rating systems.

Lessons learned

The concept of FBO can be pursued, but only with close interaction of local chiefs and social networks thereby aiming to achieve some stability and continuity. The aim of linking farmers to FBOs

and reaching FBOs that take over key functions of extension and bean purchase is not reasonable. To ensure reliability and timeliness of operations these function cannot be delegated from the LCB to the FBOs.

5.5. Value chain support II – Establishment of nurseries

Activities

Overaged plantations are one of the main reasons for low productivity of the cocoa production regions of YGL and particularly in Eastern Region. Planting young cocoa trees and establishing the corresponding nurseries was one of the major activities of the project. The related training modules and components were integrated in the Farm Extension Manual used to train field extension officers and even as basis module to train people operating nurseries themselves (see Figure 9).

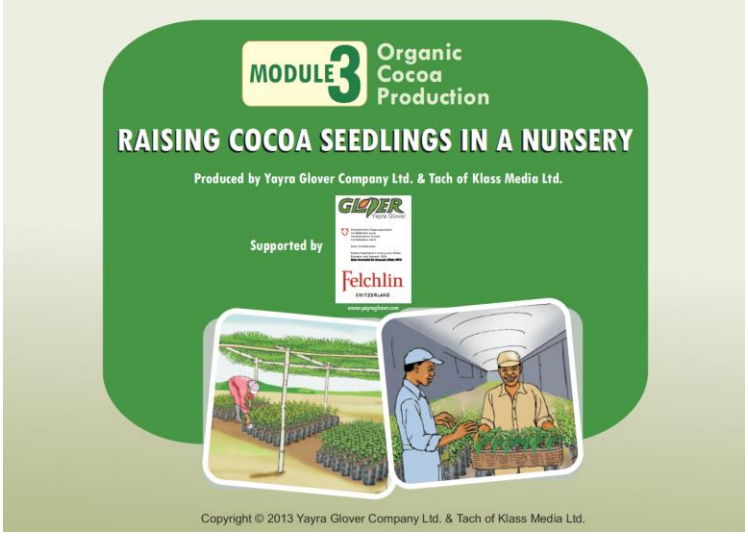


Figure 9: Title page of training module for nursery operations

Results and achievements

Two approaches for the management and ownership of nurseries were developed: FBO managed and privately managed nurseries. Gives a visual impression for both. Business plans and cost calculations for both types of nurseries were developed. Until Mid 2016 nurseries were established in 16 FBOs that produced a total number of 41’800 cocoa trees.

Figure 10: Privately run (left side) and FBO managed (right side) nursery.

The visual difference is representative – privately run nurseries show generally a better performance. Particularly women have the necessary fine motoric skills and feeling for managing the sensitive young saplings.

Despite these encouraging achievements, the original concept to have nurseries had been dropped, because COCOBOD decided in 2014 to supply seedlings to all farmers out of their own nurseries. The corresponding impacts required some time to manifest, but around 2016 this message and corresponding saplings had reached many villages. Nevertheless YGL together with SchenkART still organizes shade trees, seedlings and other useful items which are beneficial to the farmers. All farmers may benefit of this program, as long as they do the necessary preparations for it.

Lessons learned

Privately run nurseries, particularly if managed by women, are one of the most relevant components to address the low productivity of cocoa production. Favourably it can be combined with giving young women a reasonable income perspective, if the economic basis can be provided. This vision, which also was taken over by other sustainable cocoa projects (e.g Solidaridad, FarmStrong Foundation, etc.) is now strongly counteracted by the Cocobod plans. It has to be attentively watched, whether the Cocobod management will stick to their far reaching nursery plans after CEO Dr. Opuni was discharged form his executive position in January 2017.

5.6. Value chain support III – Ensure standard compliance

The activities to ensure the compliance to the organic standards of EU, US and Switzerland is strongly intertwined with the activities to train farmers (see also chapter 5.3 and Annexes 2 and 3). The value chain part of the standard compliance is to ensure the external audits and the corresponding audit transaction certificates for the shipment.

5.7. Value chain support IV Implementation of smartphone based certification

Activities

Whereas the handling the recordings for 100s of organic or Utz farmers for certification based on Excel tables and paper based forms might still seem feasible, such a systems reaches its limits with farmer numbers reaching the 1000s.

The smartphone based App “farmforce” was selected to be utilized for making certification recordings and corresponding data handling more efficient. In April 2014 a training by the Kenyan *farmforce* team was conducted to introduce 6 Field extension officers into the handling of the device.

A database / dashboard interface for YGL office staff was developed and the data of 337 farmers in Volta region and their related 18 FBOs were migrated into this database. Templates for the inspection visits, violation reports and attendance of farmer trainings were elaborated. Details of this work are described in the *farmforce* Training Report in Annex 6.

Results and achievements

The kick-off for operating the farmer recordings of the 337 electronically registered farmers was foreseen for October 2014. But due to lack of trade capital the purchase activities in Volta Region and likewise the internal inspection activities were disrupted. The *farmforce* implementation was not further pursued aiming to focus on the activities most essential for the YGL operations.

The established templates and database will nevertheless be a relevant foundation and still valid, when YGL has sufficient funds to leverage the further implementation of the system.

Lessons learned

The redundant operations of a paper based and an electronic system for a pilot ties too much management capacities to be reasonable. The implementation of the system should be planned in a way that it can immediately cover one entire operating region of YGL (either Volta or Eastern).

Although the trainers from *farmforce* were Africans, the digital divide between the rather digitally literate Kenya and the less digitally evolved Ghana revealed to be larger than expected. The corresponding trainings and system implementing efforts are much higher than originally planned.

5.8. Value chain support V – Implementation of mechanized pruning

Activities

The innovative idea to use forestry pruning machines turned out to be a real game changer to manage plantation rejuvenation combined with giving young adults with no access to land a vision for an income opportunity resp. new profession of plantation pruning and management service (including potentially mechanized weeding, too).

Based on didactical concept elaborated by HELVETAS Stihl and CRIG provided an intensive training for 14 YGL staff members and selected staff of CRIG for safe operation and maintenance of pruning machines. The corresponding report is attached as Annex 7.

The trained teams conducted intensive pruning campaigns since 2014.

Results and achievements

The effectiveness of the mechanized pruning was carefully monitored. The resulting report is attached as Annex 8. A team of 6 trained operators handling 3 machines in rotations managed to prune 23’000 cocoa trees on 60 farms within 20 days of a pruning campaign.

The recognised corresponding publication in the development Journal R21 is presented in Annex 9.

Figure 11: Visual difference of a pruned and an unpruned farm.

Influx of light and air will not only have a direct effect on the yield,
but also indirectly via suppression of fungus diseases

It was expected that farmers will not easily adopt the pruning service particularly, if their plantation has been neglected and a radical pruning was necessary thereby leading to reduced yields in one season directly after a radical pruning. The response by farmers nevertheless has been overwhelming and demand for the pruning service turned out to be strong. YGL is right now underway to elaborate cost sharing models for the service thereby being a foundation also for the development of pruning service SMEs in a later step.

A more scientific evaluation of the results of the pruning with special focus on its contribution to reduce Phytophtora infestation was elaborated and planned to be conducted by field team of scientists from CRIG. Albeit the dwindling support from the Cocobod management to the project prevented its realization.

Lessons learned

The mechanized pruning is one of the innovations of the project which were taken up by other sustainable cocoa projects, too (e.g. Continaf in Nigeria, Farmstrong Foundation and Mondelez, etc.).

YGL can offer these services in Eastern and Volta Region still uniquely and have thereby a strong argument to convince farmers to stick to their programme.

A particular project component with a targeted creation of a pruning service SME would have given clearer figures of the economic viability within a private sector approach.

5.9. Value chain support VI – Improved warehouse scheme

Activities

The renovation and proper management of warehouses are in integral component of delivering beans which can fulfil the high quality standards of Felchlin AG. The technical assistance of Felchlin AG was crucial to identify and rule out any potential quality diminishing factor in the processing, storing and delivery chain.

Results and achievements

With the additional loan support of the *Verein Yayra Glover* a range of high quality warehouses could be established, that also comply to the rules of separate storing and handling required by the Utz and the organic standard.

Lessons learned

At the beginning of the project several warehouses were granted by Cocobod as project contribution. With the change of attitude with the new Cocobod CEO also the warehouse situation of YGL became more difficult. Luckily the *Verein Yayra Glover* could help.

A reasonable learning and mitigation measure is, that written agreements for the project contributions by Cocobod would be a relevant factor for the project success.

5.10. Integration of national and international value chain actors and stakeholders

Activities and achievements

The project created reasonable national and international visibility and a multitude of events and conferences invited the YGL team to present or engage in discussions regarding national poverty alleviation strategies or plans to combat child labour (national ILO campaigns, etc.). Particularly the Ghana National Standard Authority involved key staff of YGL within the national consultations to elaborate the upcoming ISO standard for sustainable cocoa (draft ISO 19083ff).

The range of resulting presentations, publications (an example is presented as Annex 10) and academic thesis is long. Especially the academic sector relied very much on YGL's close relation to farmers when it turned out that the LBCs they wanted to integrate for interviews have not very close relation to the rural areas and that their access to real "plantation information" is actually weak.

Aiming to capitalize on the manifold insights and lessons learned the *Verein Yayra Glover* elaborated an outreach concept, which is attached as Annex 11.

6. Literature cited

Ghana Cocoa Board 2014: 45th Annual Report and financial statements for the year ended 30. Sept .14. COCOA HOUSE. 41 Kwame Nkrumah Avenue. Accra, Ghana

Gockowski, J., et al: 2008: Interlinkages in the agricultural credit and cocoa markets of West Africa (Sustainable Tree Crops Program Working Paper Series No. 8). Accra, Ghana: International Institute of Tropical Agriculture.

Mahrizal, L. et al 2012: Necessary Price Premiums to Incentivize Ghanaian Organic Cocoa Production: A Phased, Orchard Management Approach. In: HORT. SCIENCE, Vol 47 (2012), Issue 11, Page 1617 – 1624

Phuoc, P.H., L.M. Ngoc, N.C. Trung, D. Valenghi, and N.L. Giang. 2008. Feasibility study organic and fairtrade cocoa in Vietnam. Hanoi, Vietnam: Helvetas Vietnam. 15 June 2011.

Potts, J., J.V. Meer, and J. Daitchman. 2010. The state of sustainability initiatives review 2010: Sustainability and transparency. 15 June 2011. http://www.iadb.org/intal/intalcdi/PE/2010/07439.

WageIndicator Foundation 2017: Quote of the Ghanaian Ministry of Employment and Labour Relations for December 23, 2016. www.wageindicator.org accessed 15.02.2017

Victor, A.-S., J. Gockowski, N.F. Agyeman, and K.A. Dziwornu. 2011: Economic cost-benefit analysis of certified sustainable cocoa production in Ghana. Proc. of the 3rd African Association of Agricultural Economists (AAAE) and 48th Agricultural Economists Association of South Africa (AEASA) Conference, 19–23 Sept. in Cape Town, South Africa. Nov. 2011.

7. Annexes

Annex 1 Steering structure of the project

Annex 2: Recommendation Letter by Control Union proving the fairness and professionality of YGL operations

Annex 3: Example of EU Certificate

Annex 4: Example of Utz Certficate

Annex 5: 5 star grading concept

Annex 6: *Farmforce* Training report

Annex 7: Training report mechanized pruning

Annex 8: Monitoring report mechanized pruning

Annex 9: Mechanised pruning publication Rural 21

Annex 10: National publication concerning Swiss PPP

Annex 11: Outreach Concept

Annex 12: Share of premium

Annex 13: Project work table

Annex 1

Project
Steering Structure

Verein
Yayra Glover

Scaling up Organic and Fair Trade Cocoa in Ghana: Steering Structure, Reporting, Annual Program for the year 2014 and onwards

1. Steering Structure

The Steering Committee should consist of:

- SECO Bern: H.P.Egler
- SECO Ghana: B.Cuendet
- HELVETAS: J.Soth
- Yayra Glover Ltd: Y. Glover
- VereinYayra Glover Switzerland: J.Sollberger
- Max Felchlin AG: F. Inderbitzin

As not all members of the Steering Committee will be able to meet physically decisions should be prepared and taken by electronic tools. See also “Reporting”.
Once a year the main stakeholders (Y.Glover,J.Soth,J.Sollberger,B.Cuendet) should meet in Ghana to revisit achievements and future actions.
Written proposals shall be issued prior to important decision taking, respectively support the annual program.
The Steering Committee approves the “Annual Program” and the budget associated with it.
Once a year, when Yayra Glover is visiting Switzerland, a meeting with SECO Bern, H.P.Egler, should be organized.

2. Reporting

Reporting is a very important tool to keep everybody on the same information level.
Following reports shall be issued:

- Activity-table: every three to four month by the VereinYayra Glover. It will always contain all relevant information on current activities with financial budget and costs figures.
- Trip Reports: For every visit to Ghana clear objectives (TOR) should be distributed before the visit and a trip report within a month after the visit. Yayra Glover should have the final right to determine the timing of a visit, including postponing it, as every visit has a major impact on the daily business of the company.
- Annual Report: Will be issued in February by the VereinYayra Glover

3. Annual Program

The “Main Program” is given in the project documentation done by Pakka AG.
The today situation is reflected in the “Activity table”, the basic structure from the past has been taken over by the Verein Yayra Glover. The future implementation steps shall be documented on a yearly base, with first half year having a solid budget background and the second half year more of a development character.
The budget for 2014 will be issued in December 2013 by the VereinYayra Glover.

Rheinfelden, December 2013

Jörg Sollberger
Projektleiter
Tannenweg 43
CH – 4310 Rheinfelden

Telefon +41 (0) 61 831 45 93
Mobile +41 (0) 79 209 14 79
joerg.sollberger@bluewin.ch
www.yayraglover.ch

Annex 2

Recommendation Letter by Control Union proving the fairness and professionality of YGL operations

CONTROLUNION

Dear Sir/Madam

TO WHOM IT MAY CONCERN

Yayra Glover is contracted with control Union since the beginning of 2014. CU undertakes both organic (EU, NOP and JAS) and UTZ code of conduct audits with this client.
The project number registered in our system is PRJ 833223.
We wish to herewith confirm that, as opposed to conventional farming systems, the company leans on the principles of organic farming which among others keeps the welfare of every player in mind including the principles of health, fairness in farm situation and in trade, ecology and care.
As observed by the auditors on the field, generally, the farmers have adequate training in Good Farm / Agricultural practices. Record keeping and management, good practices to protect the environment and they are provided good ambience and working conditions to be able to work in a happy and efficient way.
All activities at Yayra Glover as per our audit findings are conducted in a very professional and fair manner. Control Union will therefore not hesitate to recommend this company to any of its clients as a company that holds the principles of fairness very high!

Yours Faithfully,

Ransford S. Nyarko
Director, CU Ghana.

Control Union Certifications
Meeuwenlaan 4-6, 8011 BZ Zwolle, P.O. Box 161, 8000 AD Zwolle, Netherlands
Tel: +31 (0)38 - 426 0100, Fax: +31 (0)38 - 423 7040, E-mail: certification@controlunion.com

Annex 3:

Example of Utz Certificate

CERTIFICATE

CERTIFICATE No: C833223EU-01.2015
REGISTRATION No: CU 833223

Field of attention:
Organic production methods
Organic EU

Issued to:
Yayra Glover Limited
Suhum , GHANA
Project in:GHANA

Standard:

Control Union Certifications Production Standards and Regulation (EC) No 834/2007 and Regulation (EC) No 889/2008 on organic production of agricultural products and indications refering thereto on agricultural products and foodstuffs, including the amending regulations, and Control Union Certifications (CU) Inspection Regulations.

Valid until: 18 December 2016

Control Union Certifications declares to have inspected the unit(s), and/or product(s) of the above mentioned client, and have found them in accordance with the standards mentioned above.
This certificate covers the unit(s), and/or product(s) as mentioned in the authenticated annex of this certificate.This document has been issued on the basis of Article 29(1) of Regulation (EC) No 834/2007 and of Regulation (EC) No 889/2008. The declared operator has submitted his activities under control, and meets the requirements laid down in the named Regulations.
Labelling of the product must state CUC CB code number.
This certificate is in force until further notice, provided that the above-mentioned client continues meeting the conditions as laid down in the client contract with Control Union Certifications. Based on the annual inspections that Control Union Certifications performs, this certificate is updated and kept into force.

GH-BIO-149
Date of certification:
02 December 2015
Last date of inspection: 19 August 2015
Place and date of issue:
Addis Ababa, 02 December 2015

PRODUCTS
RvA C 417

Declared by:

On behalf of the Managing Director

Mrs. Wubie

Certifier
Control Union Certifications
Meeuwenlaan 4-6
8011 BZ ZWOLLE
The Netherlands
http://www.controlunion.com
tel.: +31(0)38-4260100

Annex to CERTIFICATE No: C833223EU-01.2015
REGISTRATION No: CU 833223
Organic production methods
Organic EU

Yayra Glover Limited
P.O. Box SU 391, Organic Hill
Suhum
GHANA

This certificate covers the following PRODUCT(S) which meet(s) the criteria of the Regulation (EEC) No. 834/2007 and 889/2008 including the amending regulations, which are applicable to the below indicated status:

Certified products

Product no.	Name of product	Single/ Multi-ingredient	Processing unit(s)
P 030149	Cocoa	single	
P 031429	Cocoa - Dried Beans	single	PRC 048986

* parallel production of this product takes place
** organic:
in accordance with Regulation 834/2007 and 889/2008 and CU inspection regulation.

*** in convérsion:
in accordance with article 62 of Regulation (EEC) No. 889/2008.
This certificate covers the following PRODUCTION / AQUACULTURE UNIT(S) which meet(s) the criteria of the Regulation (EEC) No. 834/2007 and 889/2008 including the amending regulations, which are applicable to the below indicated status:

Small farmer groups

Unit no.	Name of unit	Unit ref.	Organic ** ha	Organic ** farmers	In conversion *** ha	In conversion *** farmers	Products
PRD 052306	Ateibu	F-01	200.93	109.00	0.00	0.00	Cocoa
PRD 052307	Kromameng	F-02	172.96	118.00	0.00	0.00	Cocoa
PRD 052311	Achiansah	F-03	1,268.73	342.00	0.00	0.00	Cocoa
PRD 052312	Aboabo	F-04	48.86	73.00	0.00	0.00	Cocoa
PRD 052313	Nsuta -wawase	F-05	346.21	166.00	0.00	0.00	Cocoa
PRD 052314	Anum Apapam-Asuogya	F-06	577.41	163.00	0.00	0.00	Cocoa
PRD 052315	Kokoteasua	F-07	331.64	70.00	0.00	0.00	Cocoa
PRD 052316	Pinto	F-08	85.79	32.00	0.00	0.00	Cocoa
PRD 052736	Yayra Glover Limited-inconversion farmers	F-09	0.00	0.00	774.12	239.00	Cocoa
			3,032.53	**1073**	**774.12**	**239**	

This certificate, referred to in the licensee contract as scope certificate, covers the following PROCESSING UNIT(S) and PROCESSES, which meet(s) the criteria of the Regulation (EEC) No. 834/2007 and 889/2008 including the amending regulations, which are applicable to the below indicated product category:

Processing units

Annex to CERTIFICATE No: C833223EU-01.2015
REGISTRATION No: CU 833223
Organic production methods
Organic EU

Unit no.	Name of unit	Unit ref.	Address	Processes
PRC 048986	Yayra Glover Limited		P.O. Box SU 391, Organic Hill Suhum , GHANA	Drying, Internal control system (ICS), Trading

This certificate including the annex remains property of Control Union Certifications and can be withdrawn in case of terminations as mentioned in the licensee contract, or in case changes or deviations of the above mentioned data occur. The licensee is obliged to inform Control Union Certifications immediately of any changes in the above mentioned data. Only an original and signed certificate is valid.

Date of certification:
02 Dec 2015

Authenticated by

Place and date of issue:
Addis Ababa, 02 December 2015

On behalf of the Managing Director
Mrs. Wubie
Certifier

This certificate cannot be used as guarantee certificate for delivered goods!

Annex 4:

Example of
Utz Certficate

CERTIFICATE

CODE OF CONDUCT – COCOA

Based on an audit according to the regulations stated in the UTZ Certified Certification Protocol version July 2015 and a signed contract, Control Union Certifications herewith certifies that the areas/sites listed below are found in compliance with the UTZ Certified Core Code of Conduct for Group and multi-group certification and the Cocoa Module, version 1.0 July 2015 .

Member information

Name: YAYRA GLOVER LIMITED
UTZ Certified member ID: UTZ_CO1000000105
Address: P.O Box 391, Suhum, Eastern Region, GHANA

Production information

Total certified area (Ha.): 1879.44

	Year	Volume
Certified volume of current certificate year:	2015/16	743 125 kgs +
Carry-over* of past certificate year:	2014/15	0 kgs
		==========
Total certified volume of current certificate year:	2015/16	743 125 kgs

** Carry-over: the physical stock remaining from the previous certificate and that is added to the volume of a new certificate of a producer or producer group*

Certificate information

Names of certified sites or groups*: YAYRA GLOVER LIMITED

Validity of certificate starts: **01/01/16**
Validity of certificate ends: **30/09/16**

Date of first UTZ Certified certification: 01/10/11
** If the member is a multi-site or a multi-group*

Issued by

Name of the Certification Body:Control Union Certifications
Certification Body certificate number: C833223. UTZ 2015.01
Issue date of certificate: 05/11/15
Name of the Certifier:Kalkidan Wubie Signature of the Certifier:

Control Union Certifications is accredited for ISO 17065:2012 by RvA and approved by UTZ Certified.

The certificate is the proof of compliance with the requirements of the UTZ Certified Core Code of Conduct and Cocoa Module, however please be aware that in order to be able to trade UTZ certified products, an approved license by UTZ Certified is required. The license validity dates can be verified in the UTZ traceability system (Good Inside Portal).

Annex 5:

5 star grading concept

Yayra Glover Cocoa 5 star scheme to success.

April, 2014

Yayra GloverLimited
P.O. Box SU 391 Organic Hill-Suhum
Ghana

Office Location:
Organic Hill, Suhum
Ghana

Phone Nr.: *+233 246 488 119*
E-mail: *yayrator.glover@yayraglover.com*
Homepage: *www.yayraglover.com*

1.0 Background

Yayra Glover Ltd (YGL) is a licensed organic cocoa production and buying company. YGL in its quest to meet high standards demanded by the niche market, buys high quality certified organic, organic in conversion, and UTZ certified chemical residue free dry cocoa beans for export. The organic cocoa beans production and buying operations of YGL are organized and structured to involve Farmers belonging to designated small holder groups in various communities.

Numerous strategies have been developed for trading cocoa between growers and the licenced cocoa buying companies (LBCs). For example, some companies obtain their supplies by just buying through purchasing clerks as (intermediaries) and may not necessarily have a direct relation with growers. Their interest lie in just buying cocoa beans.

However, Yayra Glover ltd. in its quest to reduce poverty and improve the livelihoods of farmers is developing this scheme to keep farmers motivated in working as a group in order to maintain the high standards set in the production of premium quality cocoa beans.

We define this five star out-grower scheme as a motivational partnership between YGL FBOs (growers) and Yayra Glover ltd. for the production of quality organic or UTZ chemical residue free cocoa.

2.0 Objectives

2.1 Main Objective

The main objective is to motivate FBOs in order to attain easy certification and good quality cocoa beans through a healthy competition among YGL FBOs.

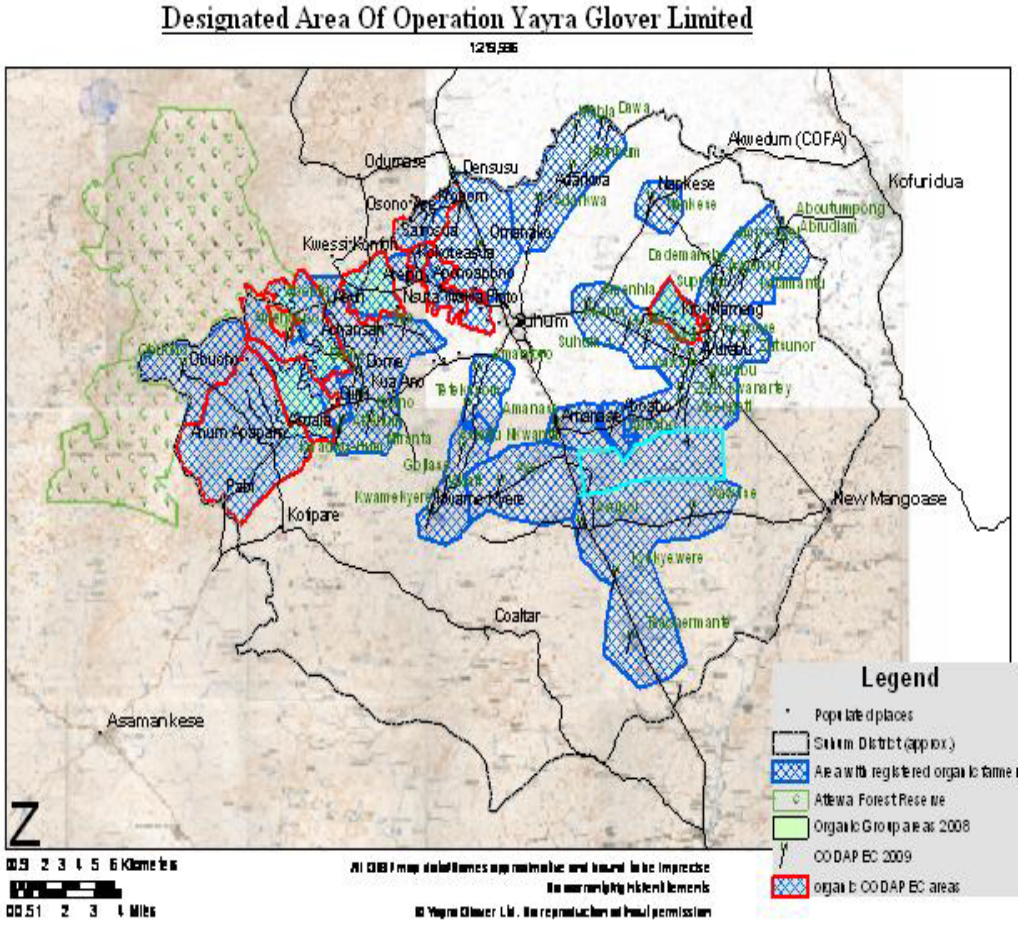
2.2 The specific objectives of the Award scheme are;

1. To increase average yield per acre from current 2.5 bag to maximum of 8 bags per average per acre per farmer.
2. To motivate FBOs in a healthy competition to achieve higher yields.
3. Induce farmers to adopt good agricultural practices.
4. Attain higher premiums for adhering to scheme standards

Management of YGL has agreed to establish the 5 star award schemes to its FBOs in both Suhum district and cocoa growing districts in the Volta region to bring healthy competition among themselves from 2014/2015 cocoa season onwards.

3.0Methodology

3.1. Map of operational areas.



3.1 sampling (who qualifies)

All FBOs Under both UTZ and organic areas are required to be on the scheme. This will include

UTZ AREAS	
No of communities	50
Total no. of FBO	81 but 66 certified
Total no of farmers in FBOs	1658
ORGANIC AREAS	
No of communities	9
Total no. of FBO	70
Total no of farmers in FBOs	1192

The FBOs will be sensitized on the award scheme through the extension and ICS staff.

3.2 Standards for which Best FBO will be selected.

Every member of the FBO will be required to adhere to the Good Agricultural Practices, Post-harvest Practices and Handling, Biodiversity and Environmental Protection, Child Labor and Labor Right Issues, Health and Safety Issues, Records Keeping, Agriculture as Business (AAB). These are all part of the EU, Bio Suisse standards, and internal organic standards, participate in nursery programme

3.3 Grading criteria

The grading criteria will be made clear and transparent. To avoid mistrust and conflicts arising from the famer base organization. The next grade always include the criteria of former ones.

1 star: FBOs is formed and has joined YGL family, all personnel appointed.

2 star:all farmers are at least C2 and UTZ certified/ organic in conversion.

3 star: all farmers are organic and UTZ certified, Yield above XX bags/acre, Nursery …. Shed

4 star: yield above yy bags/acre, Good nursery

5 star: yield above zz bags/acre, Very good nursery, Pruning center

3.4 Sharing of premium

At the end of every season a grand durbar shall be convened in a central point in one of the communities. At This durbar the awarding team shall confer on to FBOS their performance base on which star won. The Share of premium shall be as follows; 5 star 45% of original premium per bag, 4 star 40% of original premium per bag and 3 star 2 star 1 star 35% of original premium per bag

4.0 Benefits to farmers

- Scheme has incentive to get up the ladder being paid higher premiums to ¾ and 5 star FBOs
- Expanding future supplies from cocoa farms and for that matter YGL volumes
- Certificates would be issued
- Increasing the number and willingness of growers to participate in extension activities.
- Providing broad social and economic enrichment for the individuals and communities involved.

Award schemes provide a way to stimulate activity and spread good practice at a local, national or even international level. They can be set up by any organization from a local community group to an international agency.

Annex 6:

Farmforce Training Report

Training of Community Field Officers on Farm Force Mobile Application.

April, 2014

Yayra GloverLimited
P.O. Box SU 391 Organic Hill-Suhum
Ghana

Office Location:
Organic Hill, Suhum
Ghana

Phone Nr.: *+233 246 488 119*
E-mail: *yayrator.glover@yayraglover.com*
Homepage: *www.yayraglover.com*

Farm Force Training Report

Tasks Completed

1. We were able to setup the followwing static data for the pilot phase;

- Upload 337 farmers onto the farmforce system.

- Registration of 6 Community Field Officers(CFOs) and confirmation of their individual farmers onto the farmforce system.

- 18 Farmer Based Organisations were registered and their respective regions

- Surveys that will be used by the CFO to record annual inspections (2), violation reports (1) and attendance list for farmer training (1).

2. We were able to test entering data following YGL cocoa outgrowers production process using the farmforce platform. The document prepared (data entry process for CFOs) should be used as a guideline (manual) for the CFOs when entering the production data using farmforce.

3. We were able to do the process of conducting a sale of cocoa using farmforce. Which you should be able to train the YGL purchasing officers.

4. You were able to understand the benefit of using the farmforce test tenant (testygl.farmforce.com) on the farmforce mobile application which basically will be used during the retraining of CFOs and purchasing officers. Once you complete the 2nd training of the CFOs and purchasing officer and YGL is ready to go live to use the farmforce sytem, please ensure ALL mobile handsets are switched to farmforce main tenant (ygl.farmforce.com) on their individual mobile device. This would mean they should start entering data when the main season begins in October 2014.

Pending Tasks

1. The chemical and fertilizer list needs to be updated with the following information below as shown on the attached document;

- Recommended Dosage per acre

- Recommended Water Dilution per acre

- PHI (Post Harvest Interval)

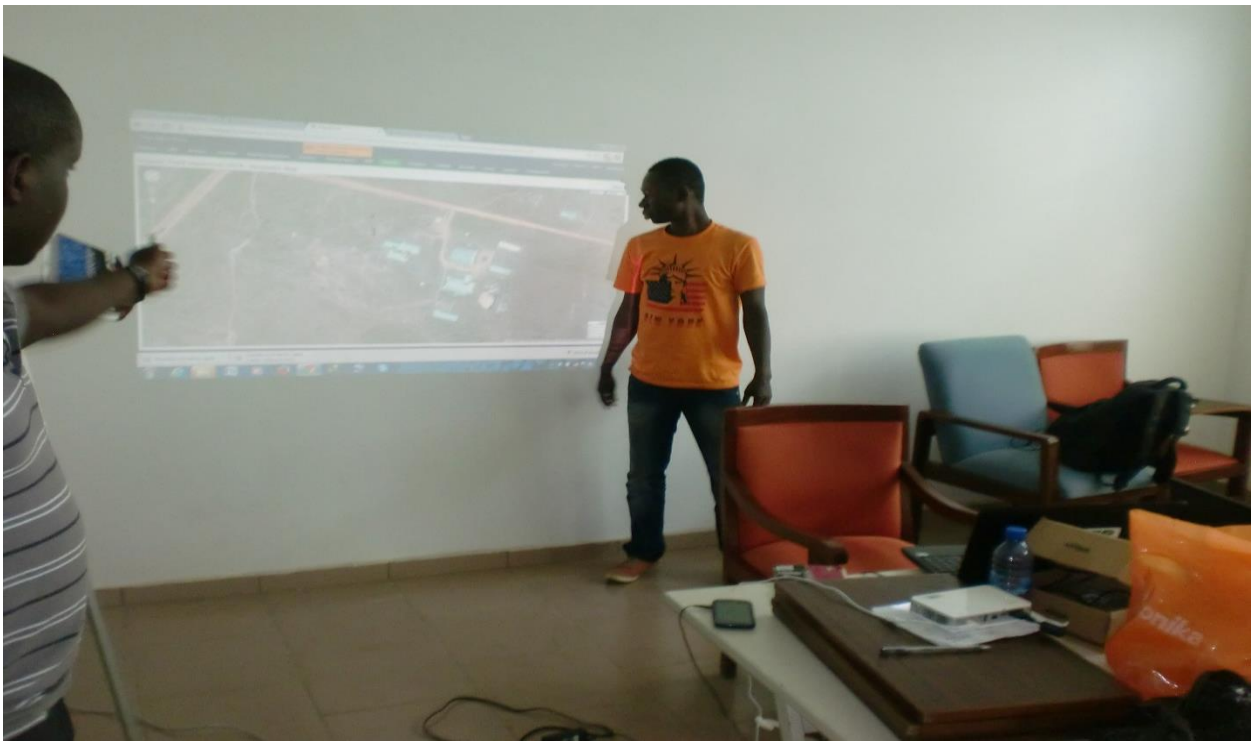
- Maximum Application

- Minimum Application Interval

2. Record of each individual farmer's plot in acres. I should be able to help you upload these data onto the farmforce system once you have it ready.

3. Confirmation date of the retraining of CFOs, though we set a proposed date of 20th August 2014.

4. Confirmation date when YGL will go live using farmforce to record production data for the 337 farmers. The proposed date set was 15th October 2014 when the main cocoa season begins.



Conclusion.

The training was very successful, there is no thought the farmforce application would save the company lots of paper work for that matter cash.

We intend to conduct another training before going live from the start of the 2014/2015 cocoa main season. The famers would be presented for certification in July 2015 by which time enough information and training would be done on the Volta farmers.

Annex 7:

Training report mechanized pruning

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs FDEA
State Secretariat for Economic Affairs SECO

HELVETAS
Swiss Intercooperation

STIHL

C. WOERMANN

Cocoa pruning course based on the Stihl machine HT 75

Bunso College, Eastern Region, Ghana

February 03 – 06, 2014

GLOVER
Yayra Glover

Ghana Cocoa Board
Poised to Maintain Premium Quality Cocoa

Picture report

Jens Soth, HELVETAS Swiss Intercooperation
Accra , February 09, 2014

Table of content

Acknowledgement

True innovations especially those in the context of rural poverty stricken smallholders consist not only of an invention itself , but out of its thoughtful implementation into the reality. To tackle the inherent complexity it requires the effords and creativity from actors from different sectors. In this sense the innovation pursued with the course described in this report is a true innovation with a promising potential to address key issues of West African cocoa production. The author wishes to thank all parties and individuals that have contributed to the first significant step of this innovation.

Mr. Tei Quartey, COCOBOD,
Dr. Anthony Cudjoe, Cocoa Reseaech Institute Ghana (CRIG)
Axel Rowedder and his team from C. Woermann
Volker Roehlich from Stihl
Emmanuel Ahia Clottey from Bunso College
Brigitte Cuendet, SECO, Accra
Anne Schick and Hans-Peter Egler, SECO, Berne
Yayrator Glover and his team from Yayra Glover
Jörg Sollberger and Evelyne Räz from Verein Yayra Glover

1. Background

The Ghanaian cocoa plantations particularly those in Eastern Region show suboptimal productivity. Major reasons are fungus diseases, capsids and mirids and generally neglection of the farms, because the cocoa farming population tends to be over-aged.

Pruning of the trees and removal of mistletoes is seen as a relevant measure to counteract the major factors suppressing productivity. The plantations would have a much better aeration thereby reducing black pod. The efficacy of plant protection can be increased, because the agents can really reach its targets rather. Furthermore the overall sanitation of the plantation is facilitated, if the trees are less high and all crossing branches are cut.

Nevertheless pruning with hand-tools and cutting out mistletoes in plantations that have been neglected for years is a tedious, dangerous and hardly efficient task.

Therefore the application of the Stihl machine HT 75 is seen as major breakthrough to address this issue. The operator can reach heights of up to 5 meter comfortably and safely. The accomplishment of pruning and mistletoe efforts that takes hours with hand-tools can be achieved in minutes with the machine. Furthermore this innovation could be a vision for a new profession for unemployed young people that could be phrased as plantation rehabilitation executed as professional service to increase the productivity of neglected farms.

This new job vision requires a thoughtful capacity building: The person has to know how to operate the machine efficiently and safely and on top how to maintain it properly to achieve a long life-span of the implement. But machine knowledge would not be sufficient. The operators also has to “develop” an eye for efficient action in the plantation based on a strong basis of the cocoa tree biology and the plantation.

Several actors joined forces to realize this kind of capacity building for the first time in West Africa ever. The seminar “cocoa pruning based on the Stihl machine HT 75” was conducted from February 03 – 06 at Bunso Cocoa College in Eastern Region.

All actors present as logos on the title page have undertaken considerable efforts to make this innovative approach a big success with regard to the motivation and knowledge acquisition by the participants and the prove of efficiency for the right handling of the machine.

The following paragraphs visualize the major components of the training.

2. Agenda of the seminar

The major breakthrough of the seminar was achieved by combining the expertise in the machine handling with outstanding and practical cocoa pruning knowledge. Furthermore the seminar contained a high amount of practical exercise to give participants the opportunity to get acquainted with the machine. The agenda thus looked as presented in the following table:

Monday, February 03		
09:00 – 10:00	Welcome word and kick-off Introduction of participants and lecturers	Emmanuel Ahia Clottey, Principal Bonsu College Mike Owusu Manu, Director of Research , Monitoring and Evaluation, COCOBOD Yayra Glover, YG Ltd. Moderation: Dr. Anthony Cudjoe
10:00 – lunch break	Introduction into the machine	Lecturer: Volker Roehlich, Stihl
12:30 – 13:30 Lunch break		
Afternoon – till 16:45	Correct assembly of machines, correct starting preparation (groups of 5 per machine)	Lecturers: Volker Roehlich, Stihl Axel Rowedder, C. Woermann
16:45 – 17:00	Wrap-up of the day	Moderation: Jens Soth, Helvetas

Tuesday, February 04		
09:00 – lunch break	Introduction into pruning and mistletoe removal	Lecturer: Dr. Cudjoe, CRIG
12:30 – 13:30 Lunch break		
Afternoon – till 16:45	Cutting exercises with wood logs Exercise: Mistletoe removal in the plantation	Lecturer: Volker Roehlich, Stihl Lecturer: Dr. Cudjoe, CRIG
16:45 – 17:00	Wrap-up of the day	Moderation: Jens Soth, Helvetas

Wednesday, February 05		
09:00 – lunch break	Maintenance of the machine: (Ensure efficient and safe handling of the machine and its longevity)	Lecturer: Volker Roehlich, Stihl
12:30 – 13:30 Lunch break		
Afternoon – till 16:45	Practical exercises: Mistletoe removal in teams	Lecturers: Volker Roehlich, Stihl and Dr. Cudjoe, CRIG
16:45 – 17:00	Wrap-up of the day	Moderation: Jens Soth, Helvetas

Thursday, February 06		
09:00 – lunch break	Pruning of cocoa	Lecturer: Dr. Cudjoe, CRIG
12:30 – 13:30 Lunch break		
Afternoon – till 16:15	Practical exercises in plantation	Lecturer: Dr. Cudjoe, CRIG
16:30 – 17:00	Wrap-up of the day, handing out course certificates	Moderation: Jens Soth, Helvetas

Day 01: Introduction to the machine

Volker Roehlich, Stihl is explaining the assembly of the machine when unpacked from the box. Supervised by Axel Rowedder, C. Woermann (the company importing Stihl machines in Ghana) and Volker Roehlich the participants assemble the machines used in the following days jointly.

Correct assembly of bar and chain by participants.

Day 02: Mistletoe removal and cutting exercises

Highly practical and at the same time based on solid scientific facts: Dr. Anthony Cudjoe is explaining the relevance of mistletoe removal to the participants.

Cutting exercises in small groups to achieve a reasonable practicing time at the machine for each participant. Supervision by the lecturers from Stihl and C.Woermann ensure the safety of the action.

Mistletoe removal in a neglected plantation. In order to allow participants exercise the machine handling in the plantation the first task is to focus on mistletoe removal.

Blossoms of red mistletoe cut down from 4 a height of 4 meters. The work that takes hours with hand-tool can be performed with the machine in minutes

Day 03: Machine maintenance

Performance comparison of blunt and sharp chain: Volker Roehlich, Stihl, is demonstrating the impressive difference with a practical experiment.

Saw-chips dust from a sharp chain: thin and even

Chain sharpening exercise under supervision by the teams of C.Woermann and Stihl.

Both air filters removed for demonstration purposes. The machine is designed for tough working conditions – the envisaged maintenance requirements are few and easy to perform.

Day 04: Pruning of cocoa trees and wrap-up

Comparison of outreach of machine and hand pruner. Even the slightly shorter machine is reaching higher than the optimal height of a cocoa tree would require.

Participants in action in the plantation: The operation shall be conducted in teams. A long hook is increasing the machine efficiency even more, because it helps to hold the branch for an efficient cut and to pull out

Typical “maze” of branches in a neglected cocoa plantation. Hand-tools are hardly efficient to address this issue.

the branches after cutting them off.

Successful participation in the course is proven by a certificate for the participants.

Group picture with the participants and lecturers. The first operators of the Stihl HT 75 machine are successfully trained and ready to take action in the cocoa plantations of Eastern Region

3. Participants of the course

No.	Name	Role	Organisation
1	Kofi Mark	field officer	FBO Nusta Wawase
2	Alex Ansah Koi	field officer	FBO Akorabo
3	Kofi Gbetsivi	field officer	FBO Ateibu
4	Daniel Larbi	field officer	FBO Achiansah
5	Forster Yaw Ofori	field officer	FBO Ayitey
6	Baba Kassim	field officer	FBO Akorabo
7	Jeremiah Kumedzina	field officer	FBO Achiansah
8	Ernest Senyo	FBO representative	FBO Suhum
9	Safiu Yakubu	mechanic	FBO Suhum
10	Bobby Homowoo	district Co-ordinator	CSSVD
11	Yayrator Glover	CEO	Yayra Glover Limited
12	Joseph Agbagah	extension manager	Yayra Glover Limited
13	Joseph Yaw Mensah	ICS manager	Yayra Glover Limited
14	Joseph Okai Gyan	FBO manager	Yayra Glover Limited

Annex 8:

Monitoring report mechanized pruning

REPORT ON PRUNING AND MISTLETOE REMOVAL WITH THE MOTORIZED STHIL HT 75 POLE-PRUNER.

March, 2014

Yayra GloverLimited
P.O. Box SU 391 Organic Hill-Suhum
Ghana

Office Location:
Organic Hill, Suhum
Ghana

Phone Nr.: *+233 246 488 119*
E-mail: *yayrator.glover@yayraglover.com*
Homepage: *www.yayraglover.com*

Contents

TABLE OF FIGURES

LIST OF TABLES

REPORT ON PRUNING AND MISTLETOE REMOVAL WITH THE MOTORIZED STHIL HT 75 POLE-PRUNER
FOR THE MONTH OF MARCH, 2014 - SUHUM DISTRICT

INTRODUCTION

This report covers activities of a pilot project for the removal of mistletoe and pruning of cocoa trees done with the new STIHL motorized pole pruner in Suhum District. This pilot project is jointly being run by Yayra Glover Co. Ltd and Ghana Cocobod.

Before the pilot program began, twelve personnel's who would be using the motorized pole pruners were trained by representatives from C. Wormann and Mr. Volker Röhlich, (Senior Instructor, ANDREAS STIHL AG & CO. KG, Waiblingen - Germany) at Bunso Cocoa College from 03th to 06th of February Participants were trained on the following:

- Correct assembly of pruner and cutting attachment
- Safe and ergonomic use of the motorized pruner
- Application training
- Service and maintenance of the motorized pruner
- Maintenance and sharpening of bar and chain
- Principles of cocoa tree pruning and plantation rejuvenation
- Efficient removal of mistletoes

This pilot program if successful will go a long way in boosting outputs of farmers as it seeks to tackle some production risk of cocoa farmers such a black pod, mistletoe and dense canopies.

Mistletoe which is one of the major parasite to the cocoa tree is usually left unattended to because of the following reasons;

- Since the parasite usually develops on tall trees, removal with a standard pruner is not always easy
- Most farmers are usually aged and are not able to climb the trees to remove mistletoe
- Farmers are not able to afford the cost of standard pruners

Figure 1 Cocoa Tree Infested with mistletoe

In Eastern Region and Suhum District to be specific, black pod disease is caused by P. palmivora a less virulent pathogenic strain and can be largely controlled by regular phytosanitary procedures (i.e., removal of diseased pods, canopy management to control shade and reduced humidity etc.)

Farmers confirm that black pod disease is the most important cause of crop loss and this is most evident during farm visits in the district. Due to activities of community extension agents in the district, farmers are well informed of the causes of black pod disease, factors leading to its rapid spread, preventive and control measures. Despite farmers knowledge about black pod, the disease is very evident in their farms. Upon further probing, it proved that many farmers in the district are aged and are not able to climb the

cocoa trees to prune and break the very dense canopies formed by branches and leaves overlaying each other in order to reduce excessive shade, humidity and invariably control the black pod disease.

The Motorized Stihl Pole Pruner is the key to all the above stated problems of farmers.

It is capable of pruning low-hanging branches or trimming up high. It has a very good cutting performance and is gasoline-powered. The STIHL motorized pole pruner allows an operator to quickly adjust between 7.6 inches and 11.6 inches shaft lengths to bring down those hard-to-reach branches. It is able to cut the thickest cocoa branch within a matter of seconds. Even at full extension, this pruner is easy to control and feels well-balanced in hand.

Figure 2 Disinfestation of cocoa tree with motorized pruner

Figure 3 Clean Cut by motorized pruner

METHODOLOGY

Three communities namely Achiansa, Ateibu and Nsuta-Wawasi were selected for the project.

In all 60 farms with different hectarages were randomly selected from the three communities (i.e 20 farms from each community) for the pilot program

Three motorized STHIL Pole Pruners were used for the project with a pruner in each community and two trained persons handling a pruner.

Data were collected and tabulated as below.

Table 1: Farm and Farmer Details

Farmers Name	No of Trees Pruned	Age Class of farm	Acreage pruned (Ha)	Net Working Time (Hr)	Spare parts Replaced	Date Pruned	Quatity of Fuel Used(L)	No. of Chain sharpening

Supervisors from CSSVD-CU monitored the pruning activities to ensure that accurate data were collected.

Data collected sought to determine the following:

i. Rate of trees disinfested per hour with respect to age classes of cocoa
ii. Hectarage pruned per hour per age class
iii. Rate of fuel usage per hour per with respect to age classes

Table 2: Age Class Ranges

Age Class	Range
A-Class	0 – 7
B Class	8 - 16
C Class	17 – 30
D Class	31 and above

ANALYSIS AND DISCUSSION OF DATA

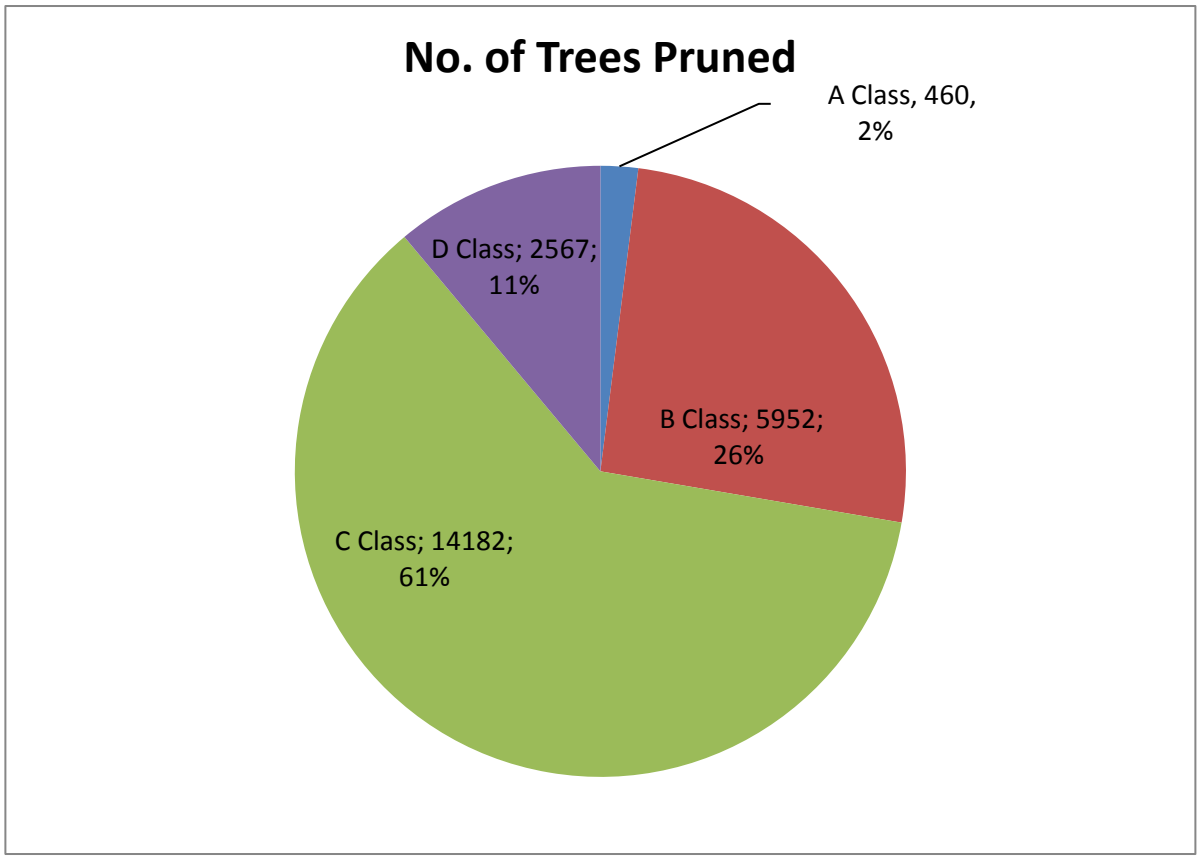


Figure 4 No of Trees Pruned
Source: Field Data

Out of a total of 23,161 trees pruned, the following breakdowns were observed;

A-Class cocoa trees pruned and cleared off mistletoes were 460 representing 2% of total trees

B- Class cocoa tress pruned and cleared off mistletoes were 5,952 representing 26% of total trees

C-Class cocoa tress pruned and cleared off mistletoes were 14,182 representing 61 % of total trees

D-Class cocoa trees pruned and cleared off mistletoes were 2,567 representing 11 % of total trees

It was observed that most of the cocoa trees pruned were B and C class and farms were also dense. Few A-Class farms were pruned because they were not infested with mistletoes. Pruning could easily be done

with a cutlass as the heights of A-class trees were within reach. Also the motorized pole pr4uner works very fast and could prune unintended branches

Number of Trees Pruned per Hour

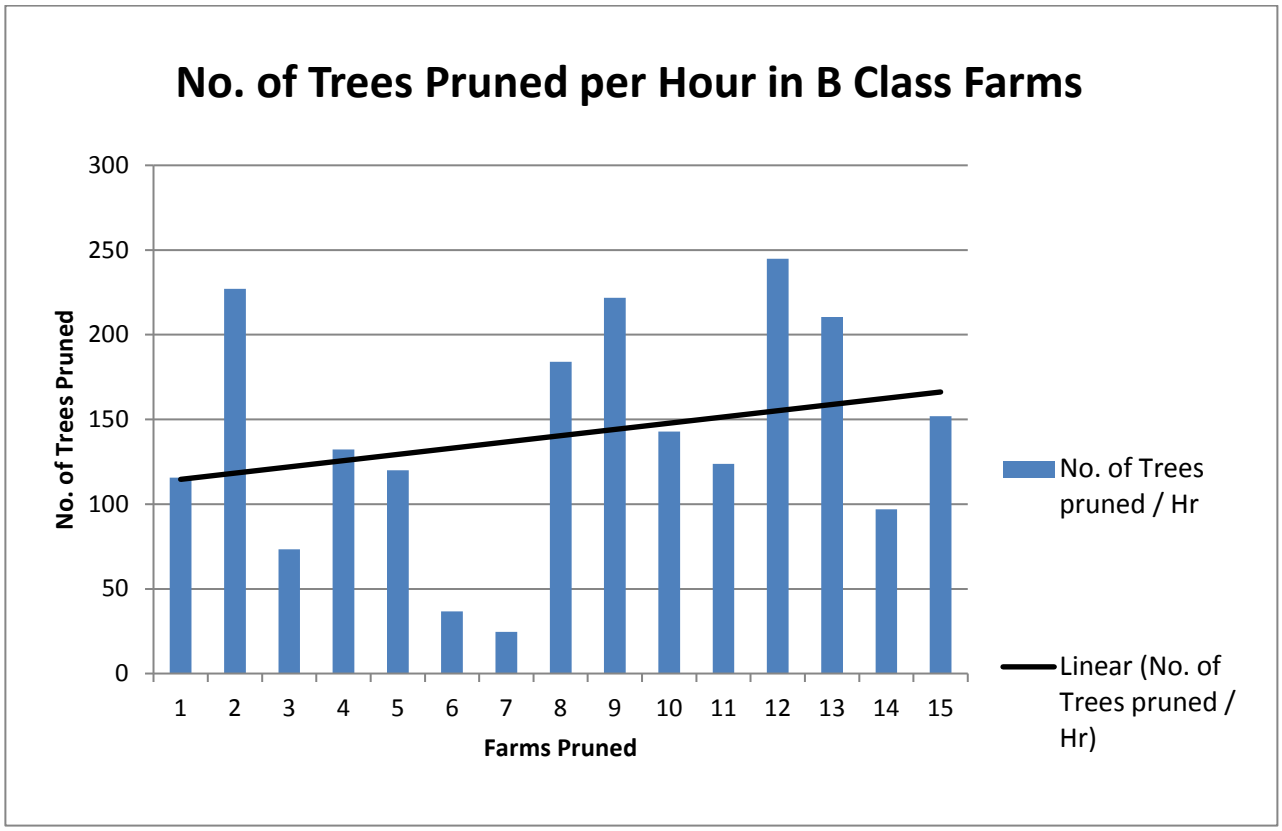
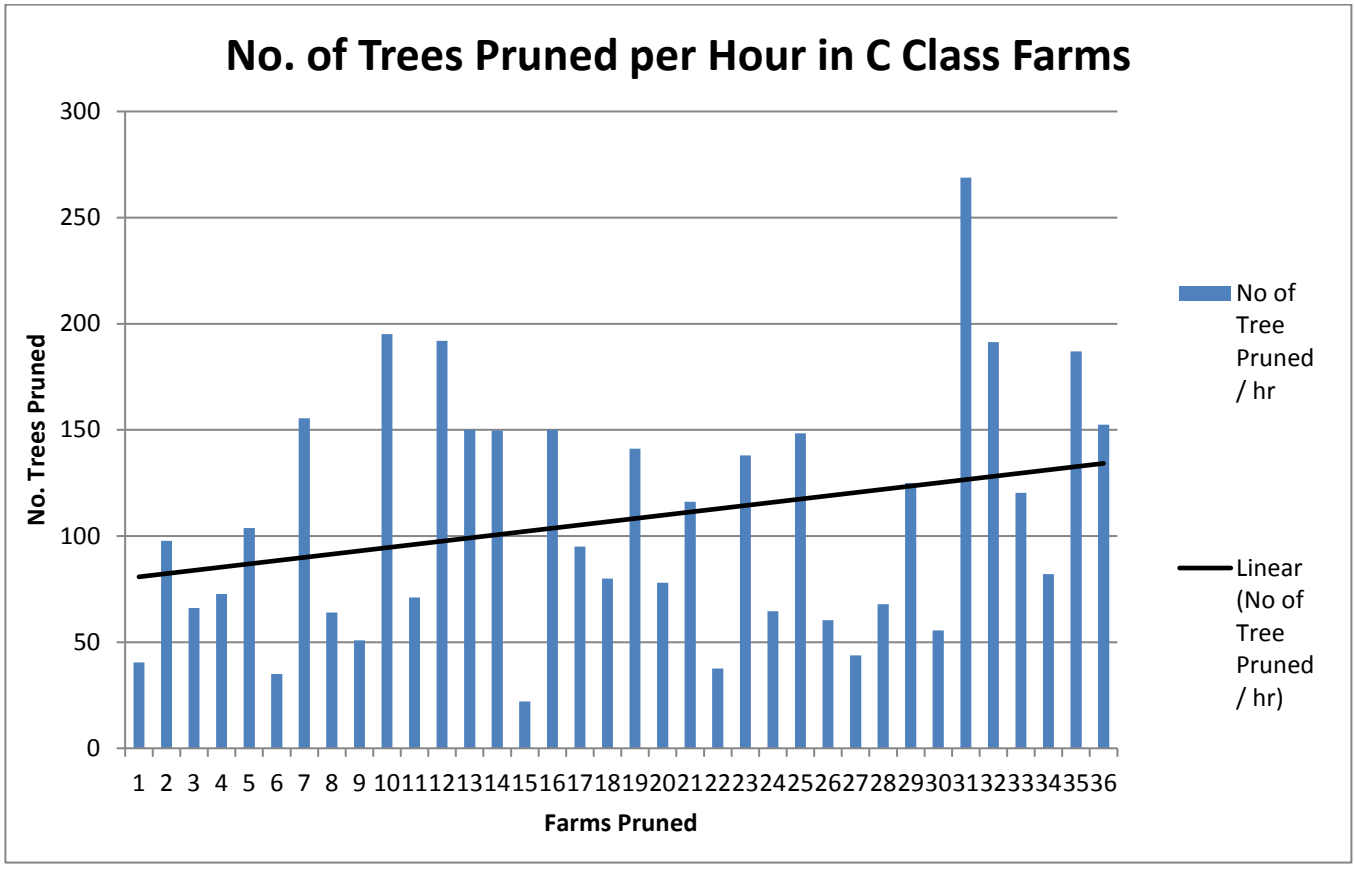


Figure 5 B-Class Farms Pruned
Source: Field Data Farms Represented In the Graph Have been Arranged Chronologically

With two trained persons handling a motorized Stihl Pole Pruner, pruning and mistletoe removal rate averaged at 140 trees per hour in B Class farms

B Class farms with lower age rages (8 to 12 years) were pruned at a faster rate whereas B Class farms with upper age rages (13 -16 years) were pruned at a lower rate

The positive linear gradient in the graph shows the steady increase in rate of pruning per hour as days went by. Handlers of the pruner gained experience as they pruned continuously as such the rate of pruning kept on increasing.



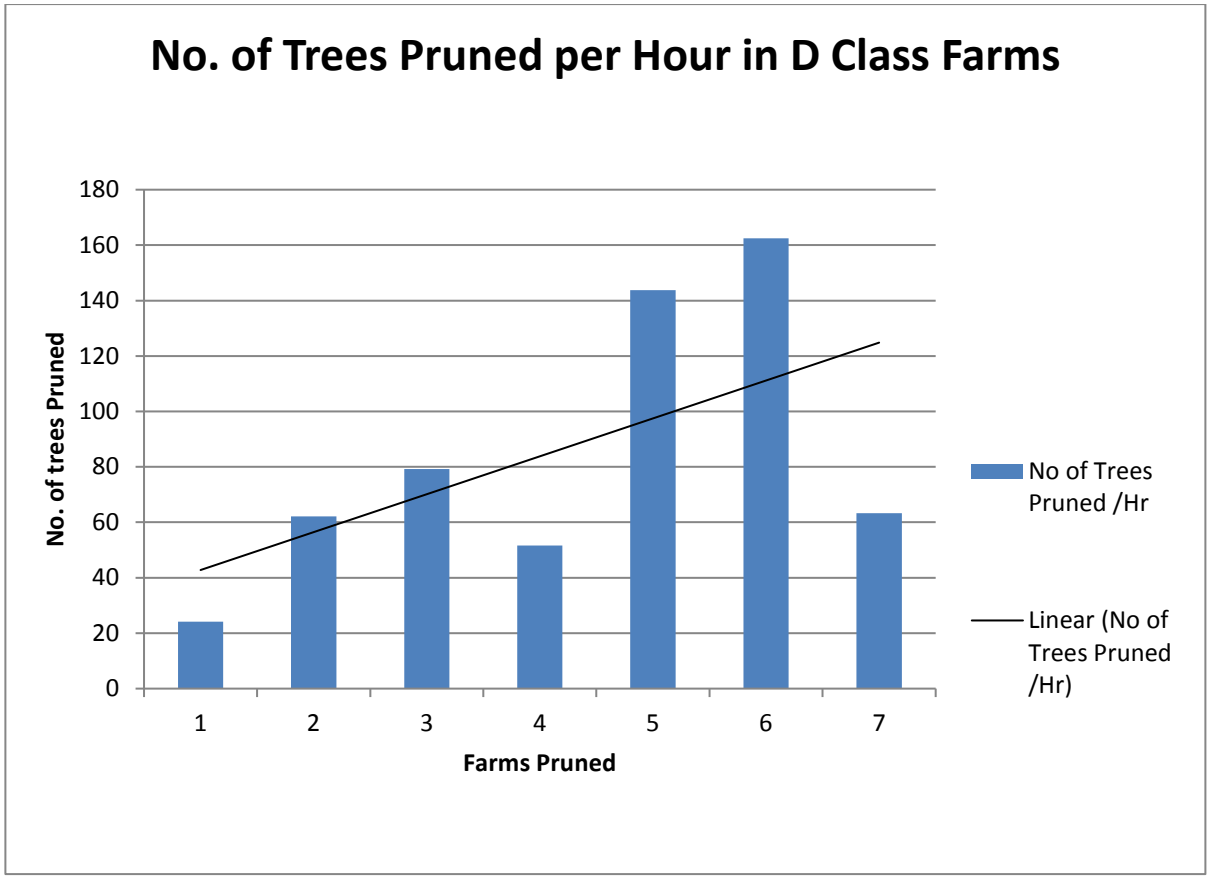
Source: Field Data **Farms Represented In the Graph Have been Arranged Chronologically**

Figure 6 C-Class Farms Pruned

With two trained persons handling the motorized Stihl Pole Pruner, pruning and mistletoe removal rate averaged at 107 trees per hour in C Class farms

C Class farms with lower age rages (17 to 23 years) were pruned at a faster rate whereas B Class farms with upper age rages (24 -30 years) were pruned at a lower rate. The positive linear gradient in the graph

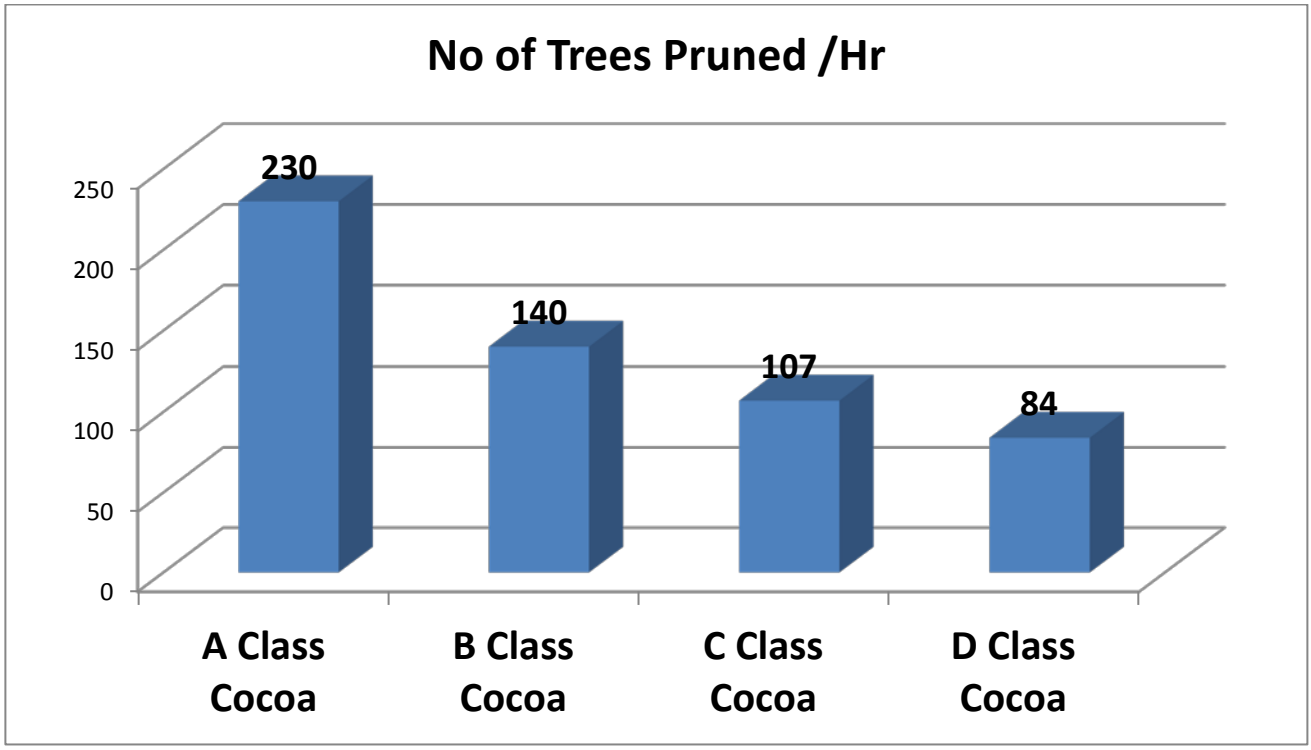
shows the steady increase in rate of pruning per hour as days went by. Handlers of the pruner gained experience as they pruned continuously as such the rate of pruning kept on increasing



Source: Field Data Farms Represented in the Graph Have been Arranged Chronologically

Figure 7 D-Class Farms Pruned

With two trained persons handling the motorized Stihl Pole Pruner, pruning and mistletoe removal rate averaged at 84 trees per hour in D Class farms. It can be observed in the graph above that the fifth and sixth pruned farms have an exceptionally higher pruning rate than the other farms. This is due to the fact that the farms in question had fairly been maintained even that they still had mistletoe infection. Both farms were also of a lower D -Class age range.



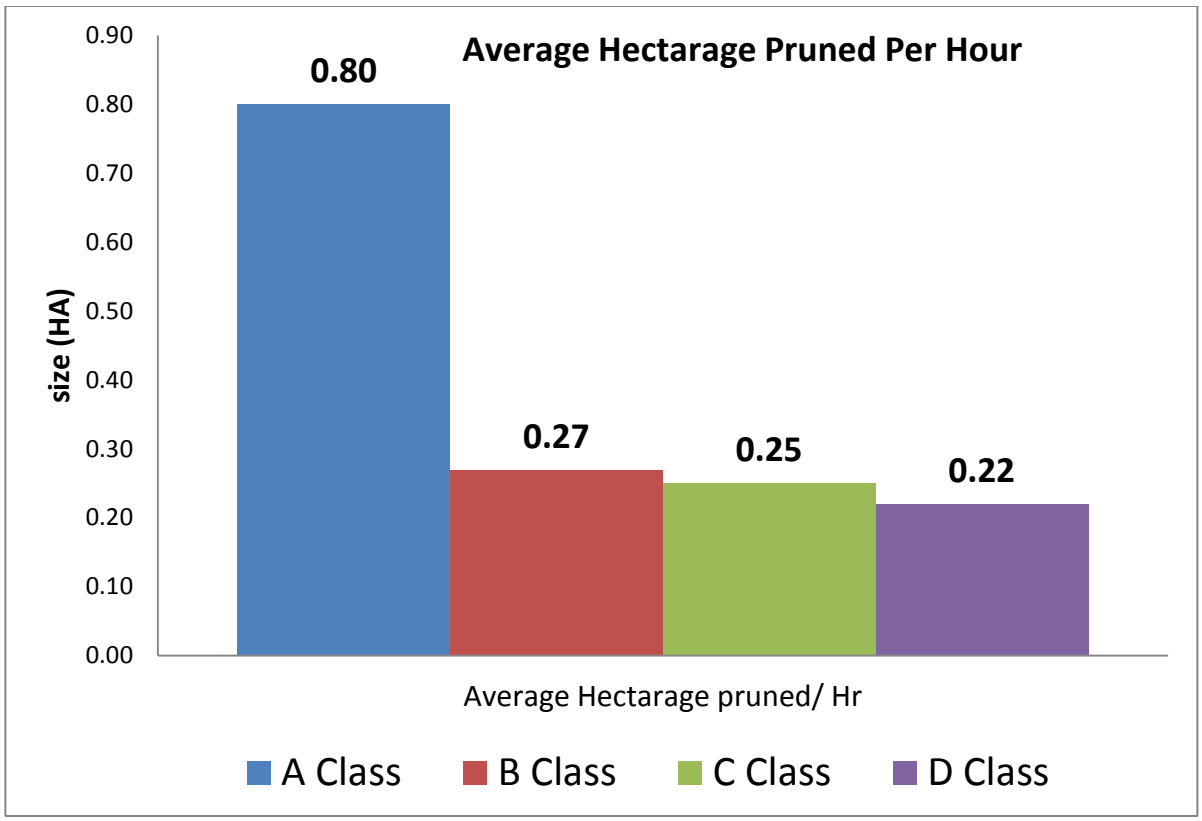
Source: Field Data

Figure 8 Average No. of Trees Pruned per Hour

It was observed that as the age class of cocoa farms increased, pruning rate of motorized pruner decreased as described in the diagram above.

A-Class cocoa farms had the highest pruning rate of 230 trees per hour whiles D-Class farms were pruned at 84 trees per hour on the average.

Isolated D class farms should be left unpruned as motorized pruner was not efficient in pruning D Class farms. But in cases where D Class farms were located in the mist of other younger classes of farms, farm must be pruned and farmer encourage to replant the farm.



Source: Field Data

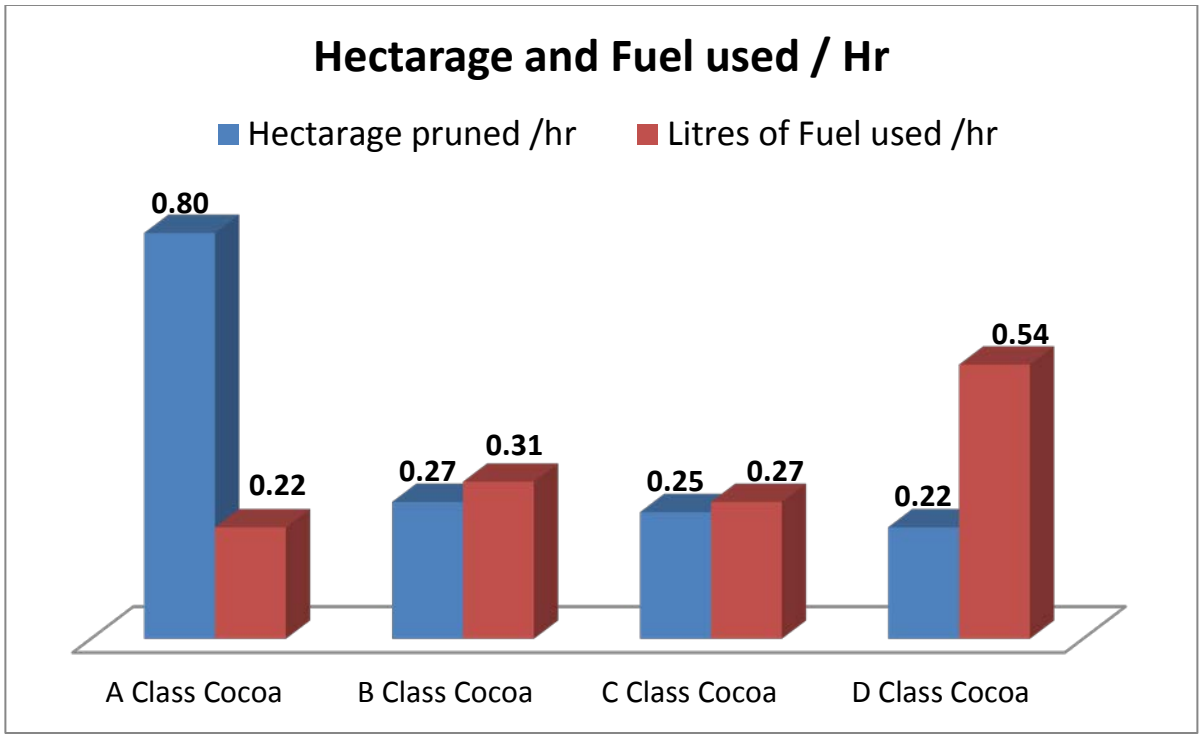
Figure 9 Average Hectarage Pruned Per Hour

A Class farms were pruned at 0.80 ha per hour

B Class farms were pruned at 0.27 ha per hour

C Class farms were pruned at 0.25 ha per hour

D Class farms were pruned at 0.22 ha per hour



Source: Field Data

Figure 10 Hectarage and Fuel used per Hr

From the above figure;

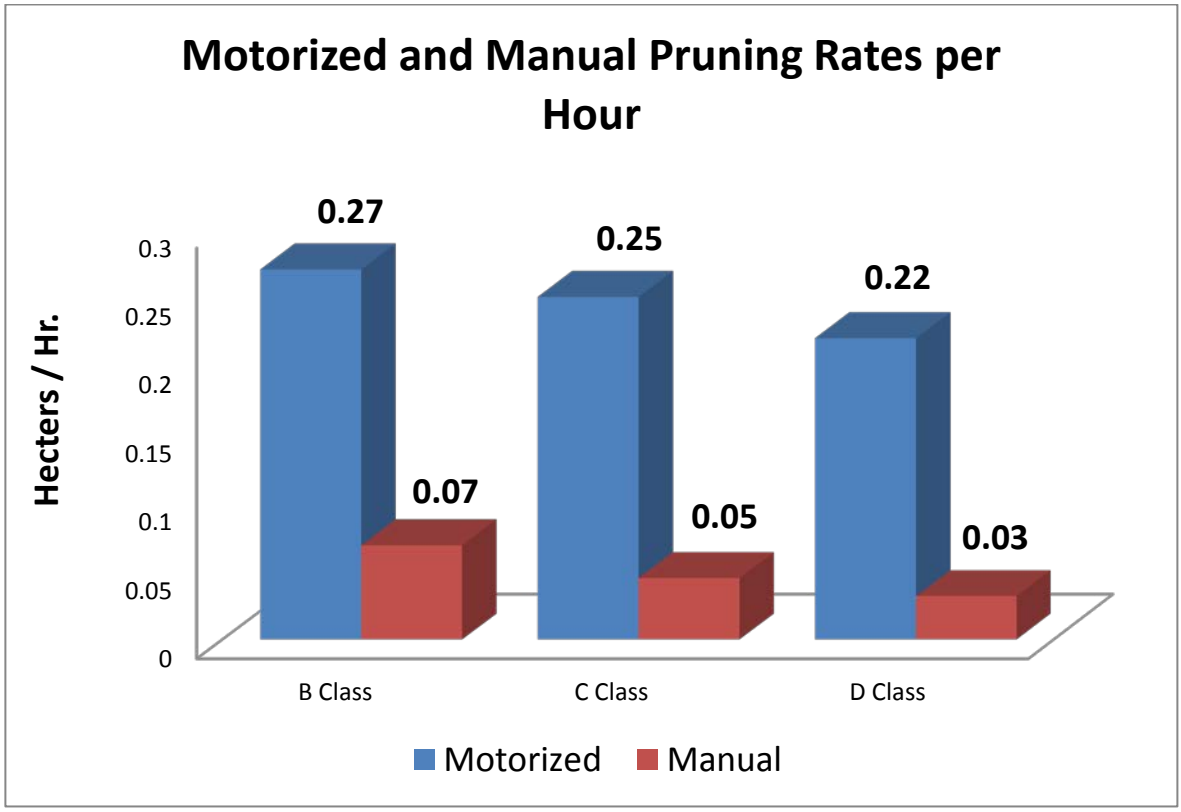
A- Class cocoa farms were pruned the fasted at a rate of 0.80ha/hr with fuel consumption rate of 0.22L/hr.

B-Class farms were pruned at a rate of 0.27ha/hr with fuel consumption rate of 0.31L/hr.

C- Class farms were pruned at a rate of 0.25ha/hr with fuel consumption rate of 0.27L/hr.

D- Cass farms were pruned at a rate of 0.22ha/hr with fuel consumption rate of 0.54L/hr.

From the above, it can be concluded that "A" to "C" class cocoa farms are economically viable to prune.



Source: Field Data

Figure 11: Comparison of STHIL H 75 pole pruner with manual pruners.

In Achiansah where manual pruners were provided by Yayra Glover Ltd to community Farmer Based Organizations. The following comparisons were made with the STIHL machine and the manual pruners. The manual pruners with two (2) people using it to prune farms works at a rate of 0.07 Ha in B Class farms, 0.05Ha in C Class farms and 0.03 Ha in D Class farms..

This means that the STIHL Pole pruner can prune 5.5 time faster than the manual pruner. It must be emphasized that handlers of the motorized pruners have only had a month's experience. As such it they will be able to prune 6 time faster than the manual pruner when their experience it up to about 6 months.

It is therefore clear that considering how laborious and difficult it is to prune cocoa farms with the manual pruner, the STIHL pole Pruner is the most affective less laborious and simple way to remove mistletoe and keep good farm hygiene with the resultant increase in yields.

Appendix 1

Motorized Pruning

S.NO	Farmers Name	No of Trees Pruned	Age Class of farm	Age of Farm(Yrs)	SIZE pruned (Ha)	Net Working Time (Hr)	Spare parts Replaced	Date Pruned	Fuel Refills	Fuel (L)	Chain sharpening
1	Anobi Mantey	283	C	30	0.96	7	Non	04-03-14	4	1.76	3
2	Ayisi Eric	169	D	37	0.56	7	Non	04-03-14	3	1.32	1
3	Ayisi Abey	391	C	30	2.4	4	Non	05-03-14	2	0.88	1
4	Awuku Francis	347	B	15	1.2	3	Non	06-03-14	2	0.88	2
5	Alex Djabgatey	218		25	0.8	3	Non	07-03-14	2	0.88	1
6	Ayenatey Lawrence	230	A	6	0.8	1	Non	07-03-14	0.5	0.22	1
7	Kudorgi Awusayo	293	B	15	1	4	Non	10-03-14	2	0.88	1
8	Kudorgi Awusayo	135	B	9	0.4	1.02	Non	10-03-14	1	0.44	1
9	Joseph Nyade	288	C	20	1.04	4.5	Non	11-03-14	1	0.44	1
10	Samuel Tetteh	320		15	0.8	4.5	Non	12-03-14	1	0.44	1
11	Amoako Rechard	420	B	10	0.8	3.5	Non	13-03-14	2	0.88	1
12	Kwaku Joseph	524		30	1.6	3.5	Non	14-03-14	2	0.88	2
13	Ofori Abedi	380	C	30	0.8	4	Non	15-03-14	2	0.88	1
14	Alex Koranteng	360	C	30	0.8	4.5	Non	17-03-14	2	0.88	1
15	Emmanuel T. Adade	480		15	1.36	3.4	Non	18-03-14	2	0.88	1
16	Comfort Appiah	395		30	1.2	3.4	Non	19-03-14	2	0.88	2
17	Emmanuel A. Kwadwo	345		20	0.8	2.5	Non	20-03-14	2	0.88	2
18	Ransford Lartey	520	B	16	0.80	4.2	Non	24-03-14	2	0.88	3
19	Debora Amankwa	460	D	40	0.80	3.2	Non	25-03-14	2	0.88	2
20	Debora Amankwa	390	D	40	0.80	2.4	Non	27-03-14	2	0.88	2
21	Tei Abrham	435	D	31	1	7	Non	04-03-14	3	1.32	1
22	Tei Abrham	475	D	32	1.2	6	Non	05-03-14	3	1.32	2
23	Adu Festus	227	B	10	0.6	1	Non	07-03-14	1	0.44	1
24	Nana Adjei Ababio II	182	C	30	0.6	5.2	Non	10-03-14	3	1.32	2
25	Comfort Larbi	305	C	25	0.8	6	Non	11-03-14	3	1.32	1
26	Stephen Tei	258	D	36	1	5	Non	12-03-14	3	1.32	1
27	Abudulai Moro	183	B	13	0.4	5	Non	13-03-14	3	1.32	1
28	Ernest Appiah	110	C	30	0.4	5	Non	14-03-14	2	0.88	1

29	Agnes Awisi	152	B	15	0.6	6.2	Non	17-03-14	3	1.32	2
30	Samuel Larbi	312	C	25	1	4	Non	18-03-14	3	1.32	2
31	John Ernest Larbi	188	C	25	0.6	5	Non	19-03-14	2	0.88	1
32	Anane Evans	420	C	20	1.2	6.5	Non	20-03-14	4	1.76	2
33	Florence Adubea	302	C	30	0.8	5	Non	21-03-14	3	1.32	1
34	Seth Adjei	241	C	30	0.48	5.5	Non	24-03-14	2	0.88	1
35	Isaac Tei Abreadu	408	C	20	1.2	6.01	Non	25-03-14	2	0.88	1
36	Comfort Asare	300	C	30	0.6	5.4	Non	26-03-14	2	0.88	1
37	Fred Sowah	380	D	50	1.8	6	Non	27-03-14	2	0.88	2
38	Tetteh Moro	410	C	30	2.28	5	Non	31-03-14	3	1.32	2
39	Kofi Mark	231	C	29	1.32	3.5	Non	05-03-14	2	0.88	1
40	Ayematey Lawrence	230	A	6	0.80	1	Non	07-03-14	1	0.44	1
41	Larbi Francis	623	C	25	0.73	6	Non	07-03-14	4	1.76	2
42	Alex Adu Mintah	933	C	28	0.88	6	Non	10-03-14	2	0.88	1
43	R.S.A Mintah	683	C	26	0.72	3.5	Non	11-03-14	2	0.88	1
44	Michael Kofi Adei	480	C	20	0.88	2.5	Non	12-03-14	2	0.88	1
45	Kwaku Boateng	525	C	25	0.92	3.5	Non	13-03-14	2	0.88	1
46	Akua Esi	300	C	25	0.58	2	Non	14-03-14	2	0.88	1
47	Nicholas Odame	598	B	14	0.44	3.25	Non	17-03-14	2	0.88	1
48	H.A Larbi	721	B	15	1.20	3.25	Non	18-03-14	3	1.32	1
49	Sampson Asante	500	B	13	1.00	3.5	Non	19-03-14	2	0.88	1
50	Albert Aboah	445	C	28	0.80	3	Non	20-03-14	3	1.32	1
51	Abena Asiedua	612	B	12	0.60	2.5	Non	24-03-14	2	0.88	1
52	Abena Okromea	300	C	27	0.44	2.4	Non	25-03-14	2	0.88	1
53	Charity Kumi	421	B	12	0.56	2	Non	26-03-14	2	0.88	1
54	Opayin Kwesi Awere	1210	C	26	1.72	4.5	Non	27-03-14	3	1.32	1
55	Kwame Oduro	421	C	26	0.72	2.2	Non	28-03-14	1	0.44	1
56	Kwedwo Safro	301	C	23	0.40	2.5	Non	28-03-14	2	0.88	1
57	Sampson Yirenkyi	291	B	16	0.76	3	Non	29-03-14	2	0.88	1
58	Amuzu Lawson	187	C	24	0.40	1	Non	31-03-14	2	0.88	1
59	Kwaku Mensah	532	B	12	0.91	3.5	Non	01-04-14	2	0.88	1
60	Kwame Safo	381	C	22	0.7	2.5	Non	02-04-14	2	0.88	1

Appendix 2

Manual Pruning B Class Farms

S/No.	Size (Ha)	Time (Hr)	Time (Days)	Hec pruned /hr
1	1.1	13	1.625	0.08
2	1.5	21	2.625	0.07
3	0.78	10	1.25	0.08
4	0.92	13	1.625	0.07
5	2.38	31	3.875	0.08
6	2.47	32	4	0.08
7	0.87	11	1.375	0.08
8	2.1	29	3.625	0.07
9	0.45	5	0.625	0.09
10	0.66	7	0.875	0.09
11	0.48	29	3.625	0.02
12	0.95	12	1.5	0.04
13	0.45	7	0.875	0.09
14	0.98	18	2.25	0.03
15	0.84	12	1.5	0.08
16	0.34	3	0.375	0.11
17	0.45	22	2.75	0.02
	Average			0.07

Appendix 3

Manual Pruning C Class Farms

S/No.	Size (Ha)	Time (Hr)	Time (Days)	Hec pruned /hr
1	2.1	50	6.25	0.04
2	2.54	52	6.50	0.05
3	0.87	19	2.38	0.05
4	0.84	13	1.63	0.06
5	2.48	51	6.38	0.04
6	2.47	52	6.50	0.04
7	0.87	18	2.25	0.04
8	2.25	49	6.13	0.04
9	2.94	59	7.38	0.05
10	2.54	54	6.75	0.05
11	1.41	29	3.63	0.05
12	0.75	18	2.25	0.04
13	1.08	23	2.88	0.05
14	0.81	18	2.25	0.05
15	**0.96**	20	2.50	0.05
16	0.98	22	2.75	0.04
17	1.48	32	4.00	0.05

Appendix 4

Manual Pruning D Class Farms

S/No.	Size (Ha)	Time (Hr)	Time (Days)	Hec pruned /hr
1	1.2	30	3.75	0.04
2	1.5	44	5.5	0.034
3	2.1	69	8.625	0.03
4	1.2	39	4.875	0.03
5	0.21	7	0.875	0.03
6	0.14	4	0.5	0.035
7	1.1	29	3.625	0.037
8	0.26	12	1.5	0.021
9	0.27	7	0.875	0.038
10	0.78	24	2.25	0.033
11	0.36	29	3.625	0.012
12	0.39	12	1.5	0.022
13	0.48	14	0.875	0.06
14	1.6	18	2.25	0.02
15	0.89	27	3.375	0.014
16	0.15	3	0.375	0.05
17	0.78	22	2.75	0.035
	Average			0.03

Annex 9:

Mechanised pruning publication

“Rural 21”

Sorting out the cocoa maze with pole pruners

A simple pruning machine could help West African smallholders maintain healthy cocoa plantations and enhance yields. However, a pilot project has shown that if innovation is to bear fruit on a sustainable basis, right from the start, education and training is just as important as looking for the right implementation model.

Cocoa producing countries all over the world face similar challenges: An over-aging rural population is maintaining over-aging cocoa plantations. Productivity is low and farmers hardly have the chance to develop out of poverty. The factors contributing to this low productivity are little or no investments into inputs, no replanting and neglect of the plantation. Once the plantation has reached a low level of yields, it is very difficult to convince the farmers to engage themselves again in cocoa farming. In light of these challenges actors from an organic cocoa project in Ghana decided to take direct action. The Swiss State Secretariat of Economic Affairs (SECO) encouraged stakeholders to look for creative solutions to combat the particularly challenging aspect of neglected plantations and supported the identified innovation financially.

In neglected plantations, trees have frequently grown taller than 6 metres, whereas around 2.5–3 metres is regarded as reasonable height for a well-maintained plantation that is easy to manage and harvest. In a neglected plantation canopies form a "maze" of cocoa tree branches and epiphytic plants like mistletoes. Since light, air and sun hardly reach the plantation, fungus diseases occur frequently. Unsurprisingly, the yields in such plantations are disappointingly low. 250–400 kg of dried cocoa beans per hectare is reported as typical for the Eastern region in Ghana, whereas the potential of a well-managed plantation can be around 1 ton or even more.

Jens Soth
Agricultural scientist and environmental engineer
HELVETAS Swiss Intercooperation
Zurich, Switzerland
jens.soth@helvetas.org

Pole pruners: easy to handle and environmentally friendly

Hand-tools for pruning do exist, and their use is being taught by several cocoa research and extension organisations throughout West Africa. Nevertheless, the adoption rate of systematic pruning activities by farmers is extremely low, and most of the trees remain unpruned. The work with hand tools is tedious, and at the end of a tough pruning day, progress in the plantation is frustratingly hard to see. The innovation of the mentioned cocoa project was to initiate an experiment with mechanised pruning machines. The German company Stihl, recognised for their quality tools for forestry and gardening, had developed small and robust chain saws (the blade is just 30 cm long) on a 3.5 metre shaft. Originally invented for forestry, these so-called pole pruners turned out to be light and easy to handle in dense cocoa plantations. Unlike hand tools, they allow different sizes of branches to be cut rapidly and large amounts of epiphytic biomass to be removed even when difficult to access. Avoidance of any climbing increases the efficiency of the operations and their safety. But as with many mechanisation innovations, the pole pruners themselves are only one component in a complex socio-economic and institutional setting. The project actors were aware of the essential role of education and training from the very beginning. Therefore many actors (see online version of this article at www.rural21.com) joined forces to organise a training course for 14 participants from farmer-based organisations, Yayra Glover Ltd (the company implementing the mentioned organic cocoa project) and from the governmental cocoa extension service. The course had to master the challenge of balancing the gaining of experience on the machines with profound knowledge of cocoa pruning and machine maintenance. Four days were deemed suitable to teach these practical and theoretical elements in order to prepare the participants for their first real-life mechanical pruning season.

Sixty farms from the Yayra Glover organic cocoa project were selected from a much higher number of farmers willing to participate as pilots to be pruned after the harvesting season 2013/2014. Smallholders are well aware that their plantation management is sub-optimal and appreciate any help coming from familiar and reliable partners.

The pole pruner in action in a cocoa plantation. The long extension of the shaft ensures efficient handling and keeps the operator away from the falling biomass.
Photo: J. Soth

Since cocoa trees need more than one vegetation period to recover from a radical pruning intervention, only half of the acreage of any of the participating farms was pruned, with the other half to be left unpruned. One reason was that farmers should still have the opportunity to generate income from the unpruned acreage in the season following the pruning. The other reason was the better comparability of the pruning results on the farm itself. Whereas the full results regarding the reduction of fungus disease infestation and productivity gains will only be quantifiable after the harvesting season 2015/2016 (the evaluation report of the SECO funded project will compile these results), the participating farmers as well as many other project farmers are asking for mechanised pruning options. They know their plantations well enough to be aware of the long-term benefits even though the detailed results of the pilot are not yet available.

The pilot has already turned out to be very successful from the point of view of efficiency of the machines in comparison to hand implements. In a period of 20 working days, three trained teams of two people each took turns operating the machines and managed a stunning amount of 23,000 pruned trees, reaching an average of 45 to 65 trees per hour per team. Of cause the state of neglect among plantations varies considerably, limiting the transferability of this average figure. Nevertheless, one can conclude that the pole pruners can reach an approximate tenfold increase in the effectiveness of pruning operations as compared to hand-tools. Furthermore the pilot revealed the success of the thoughtful training. Throughout the entire pilot phase and despite the intensive use of the machines, there has not been any damage to the machines beyond the usual wear of chains and guide bars.

Implementation models

Based on the encouraging results of this pilot, the project partners developed three different models of how the mechanised pruning could be implemented on a wider scale on smallholder cocoa farms in West Africa. Whereas buying a machine for the average one-hectare plantation would mean considerable over-mechanisation and would by no means be affordable to smallholders, the following models were developed with a view to the social and organisational contexts in which such a mechanisation could work:

Farmer group model. A farmer-based organisation buys a machine jointly. Several people in the group are trained in machine handling, maintenance and pruning. However, this model requires an established and well-organised farmer group.

Rural service centre. Small businesses are created that could offer pruning as a payable service to the surrounding smallholder farms. The interesting aspect is that such a micro-enterprise could offer much more than pruning alone. One could think of land preparation and cleaning for new plantations, selling tree seedlings or providing plant protection services. Since the ideal pruning phases are limited time windows during a vegetation period, such a broader range of services might be very suitable. This model requires a good understanding of agronomics on a cocoa farm to find suitable price ranges for the various services that are accepted and embraced by the farmers.

Service by the licensed buying company. The company licensed to buy cocoa in a region could also have trained teams moving from village to village to perform the pruning as a service to "their" farmers. Indeed, the companies are looking for such additional benefits to raise farmers' loyalty towards them. Nevertheless, this model bears the risk that farmers could be selling to other companies and the investment of pruning teams would be lost. This is the model practised right now by Yayra Glover Ltd. Since they have made efforts to establish a trustful relation to the farmers for years, they can offer this service without having to fear that the farmers are selling aside.

Regardless of advantages and challenges of these different models, the pilot also revealed another big opportunity for such a mechanisation approach: the idea of a professional plantation or pruning service creates a new vision for young people to engage in the cocoa sector. In many rural areas the temptation for young people to migrate to the cities is high, even though the outlook for reasonable job opportunities might be grim. A concept of a new profession that is not only economically interesting, but also locally appreciated, will be a very welcome element for the social cohesion in the rural areas of the West African cocoa belt.

The participants of the training course get acquainted with the pole pruners. The training has to combine elements of machine handling and maintenance as well as correct pruning of the cocoa trees.
Photo: J. Soth

Annex 10:

Ghanaian National publication concerning "Swiss PPP"

THE SWISS PUBLIC-PRIVATE PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

Yayra Glover Limited (YGL) is a pioneer and a Licensed Organic Cocoa Producing and Buying Company (OLBC) in Ghana. We believe that any dream is achievable through hard work, trust and partnership. Our aim is to penetrate the food industry with our organic produce and maintain a healthy market share locally, while tapping into the international food markets. Our strategy for success hinges on the Swiss success secrete, which is quality, originality and trustworthiness - values that have become very important in the food market where emotional responses contribute immensely to what people eat. Several studies indicate that organic food production is a growing business with good long-term prospects. Though attention is heightened, organic agricultural produce accounts for less than 2% of the total food production even in the developed regions of the world. With the support from our Swiss partners, we continue to contribute significantly to an increase in the share of organic food in the global food market.

We at YGL believe that crop yield should not be at the expense of human health and the lives of other living organisms who by nature have such plantations as their habitat. Unfortunately, the trend in Ghana shows massive use of chemicals from the nursery of crops to the preservation of the harvest. Certainly, this has devastating long term effect not only on the land, but other natural resources, like water pollution and also human health.With the support of our Swiss partners, we have diversified our activities into the supply of organic based farm inputs ranging from pesticides, herbicides and fertilizers to farmers which can also be used for lawns, gardens and landscaping. These has resulted in a massive crop yield and a healthy ripple effect on the environment.

YOUTH EMPOWERMENT

Professional qualification, experiential know-how and the right skill set of employees are extremely critical factors to look at when considering the development of products and new farming techniques. A lack in any of these attributes may be a limitation to the attainment of a company's objectives and goals.

In our quest to be well positioned in the high-value-added produce sector, YGL recruits, trains and equip young enthusiastic agricultural college graduates at all levels of our operational chain. We have by this, provided jobs and absorbed a good number of young graduates, thereby contributing to poverty reduction in Ghana. Human Resource is in essence the greatest asset of a company and the quality of employees it has plays a significant role in positioning a company in competitive markets like the Swiss market in the long term.

To maintain and improve on our hard won reputation in the Swiss premium organic market, we have, with the support of Swiss Secretariat for Economic Affairs (SECO), started discussions to enter into a partnership with educational institutes, professional agricultural training colleges to ensure that graduate profiles are suited to the prime needs of the sustainable premium organic agricultural economy and the challenges faced by premium organic agricultural and food businesses on a daily basis.

PARTNERSHIP

Yayra Glover Association and Max Felchlin AG of Switzerland are partners whose strive to thrive in an industry almost dominated by chemical means of production and preservation has been a tough one. However, our strict adherence to fair trade practices and the exclusive usage of organic inputs in every stage of the crop life cycle has won the company some partnerships, that have contributed significantly to the achievements made over the years.

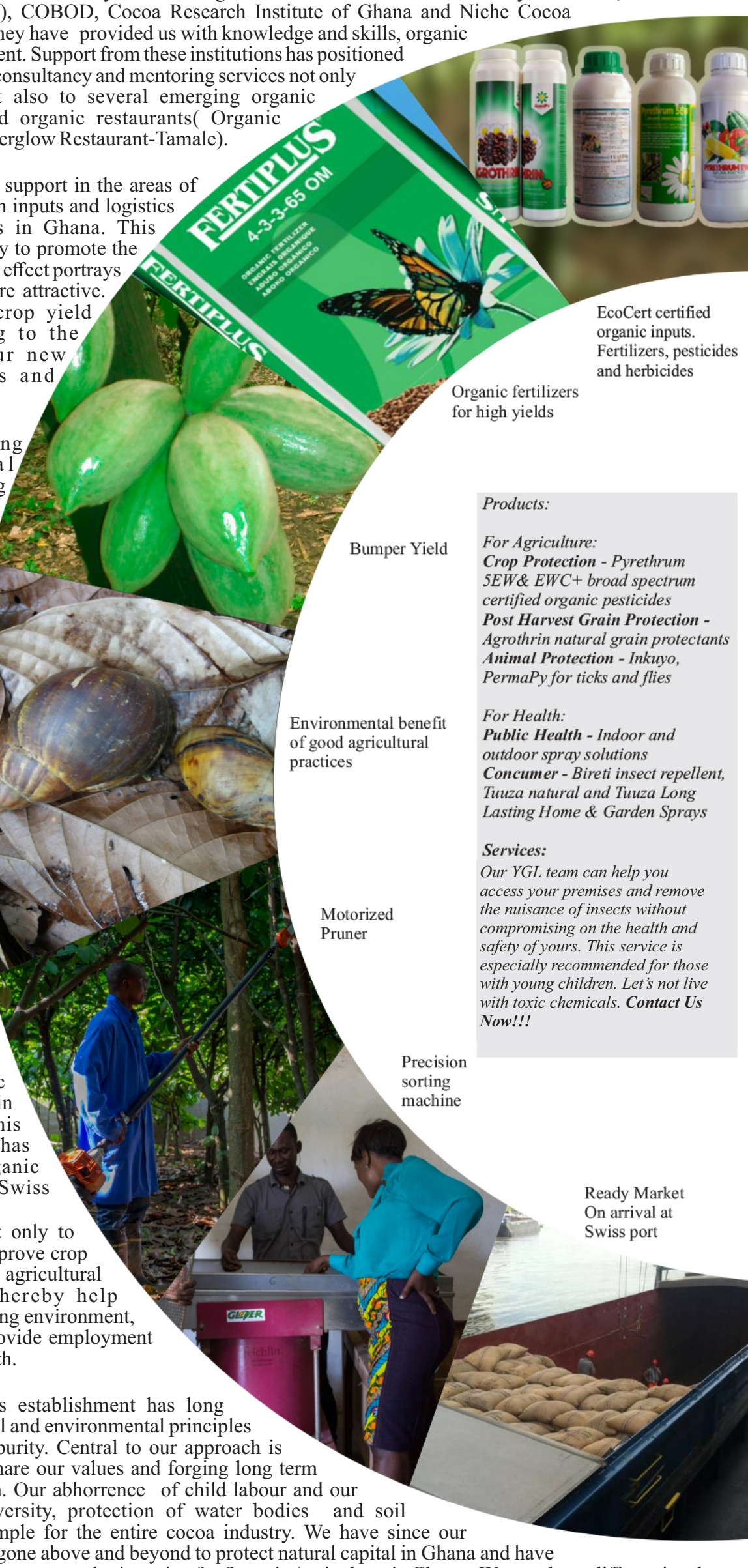
We have gained a strong standing and a reputable presence in the global competitive organic cocoa market as a result of the contributions made by the Swiss government and the Swiss embassy in Ghana, National Investment Bank (NIB), COBOD, Cocoa Research Institute of Ghana and Niche Cocoa Limited respectively. They have provided us with knowledge and skills, organic inputs and farm equipment. Support from these institutions has positioned us to provide financial, consultancy and mentoring services not only to cocoa farmers, but also to several emerging organic vegetable farmers and organic restaurants(Organic Agrofields-Sege and Everglow Restaurant-Tamale).

We have also provided support in the areas of extension services, farm inputs and logistics to over 2000 farmers in Ghana. This support goes a long way to promote the company's vision and in effect portrays organic farming as more attractive. We have improved crop yield significantly, owing to the effectiveness of our new farming techniques and practices.

This involves pruning using our special mechanized pruning machine provided by our sponsors. Selection of the right size of beans from the lot is done with the use of a Swiss precision machine. The use of these machines and other practices enable us to strictly adhere to the right standards at all levels of our operations. Our organic cocoa beans are well sort after in the processing of cocoa products generally, but mainly in chocolate production.

With the support of our Swiss partners, our first few bags of organic cocoa safely landed in Switzerland. Since this historic event, YGL has supplied tons of organic cocoa beans to the Swiss market.

We are committed not only to maintain but also to improve crop yield through organic agricultural farming practices thereby help improve the local farming environment, farmers income and provide employment opportunities to the youth.



Products:

For Agriculture:
Crop Protection *- Pyrethrum 5EW& EWC+ broad spectrum certified organic pesticides*
Post Harvest Grain Protection - *Agrothrin natural grain protectants*
Animal Protection - *Inkuyo, PermaPy for ticks and flies*

For Health:
Public Health - *Indoor and outdoor spray solutions*
Concumer - *Bireti insect repellent, Tuuza natural and Tuuza Long Lasting Home & Garden Sprays*

Services:
Our YGL team can help you access your premises and remove the nuisance of insects without compromising on the health and safety of yours. This service is especially recommended for those with young children. Let's not live with toxic chemicals. ***Contact Us Now!!!***

Indeed, YGL since its establishment has long adhered to strong ethical and environmental principles and ensures produce purity. Central to our approach is finding partners who share our values and forging long term relationships with them. Our abhorrence of child labour and our commitment to biodiversity, protection of water bodies and soil protection sets an example for the entire cocoa industry. We have since our establishment in 2007 gone above and beyond to protect natural capital in Ghana and have become a centre of competence and orientation for Organic Agriculture in Ghana. We produce differentiated cocoa in a way that protects the rainforest, encourages birds to flourish and improves livelihoods - measures that put all our rivals in the shade!

Organic farming methods is possible!!!

Organic Agrofields Limited which also receives consultancy and monitoring services and organic input supply from Yayra Glover Limited.

Buyers can contact Nana Ama Kitcher on
+233246390049 / nanaama.kitcher@gmail.com

Contact:
YAYRA GLOVER LIMITED
+233246488119
Email:yayraglover@yayraglover.com

Annex 11:

Outreach and Knowledge Dissemination Concept

KNOWLEDGE DISSEMINATION CONCEPT ON ORGANIC COCOA PRODUCTION.

MARCH, 2016

Office Location:
Organic Hill, Suhum
Ghana

Phone Nr.: *+233 246 488 119*
E-mail: *yayrator.glover@yayraglover.com*
Homepage: *www.yayraglover.com*

Issued by: Joseph Y. Mensah & Joseph K. Agbagah *Approved by: Yayrator Glover*

Executive Summary

Agriculture is a principal foreign currency earner for Ghana and over 60% smallholder farmers in the country produce non-certified agricultural produce. Indeed, Ghana exports various agricultural produce to other parts of the world. Unfortunately, in the face of surging demand for sustainable and traceable produce in recent years, agricultural production of in Ghana still remains largely inorganic.

Despite the opportunity created as a result of high demand for organic foods producers and processors in Ghana rarely take advantage of the opportunity to produce high volumes due to lack of technical know-how in organic production. The business challenge therefore is how to ensure that farmers focus more on the production of organic rather than on the production of inorganic foods.

In order to take advantage of better prices, it is necessary to motivate farmers to change from inorganic to organic farm practices. There is the need to improve farm management practices for higher yields so as to give farmers a bargaining voice. Other ways to ensure sustainable yields of organic production also requires, technical and management support services to farmers so that they can sell their produce at premium prices and earn more income per unit than conventional producers.

In the face of the aforestated challenges, Yayra Glover Limited Company was registered and licensed by the Ghana COCOBOD to recruit and train farmers to produce organic cocoa for export through the Ghana Cocoa Marketing Company. Since the inception of its operations in 2007, the company has become a model 21st century Company in which farmer participation meaningfully combined with institutional, social, and ecological sustainability. This has led to Ghana gaining an enviable position as producer of organic cocoa to its valued customers in the West, with consequential positive impact on job creation, more dividends for organic farmers and better technique for organic farming among others. The activities of the company is indeed an incentive to farmers in the Eastern and Volta Regions of Ghana and is contributing to curbing rural urban migration and excessive smuggling of our cocoa beans out of Ghana. It is also giving some sustainability to cocoa farming by attracting the youth into farming.

This experience and knowledge in organic cocoa production needs to shared and disseminated to ensure that sustainable cocoa production is introduced to more farmers. This will ensure that the principle of fairness, health, ecology and care will reach our agricultural institutions with positive effects on society.

1.0 Introduction

Background of the project

In recent years an increasing amount of attention is being given to managing food safety risks and addressing concerns associated with the social and environmental dimensions of food production and other rural-based industries, the cultivation and processing of cocoa, not an exception. Greater consumer awareness of the environmental consequences of food production has among others led to a growing demand for organic or sustainably produced cocoa. There is therefore a rising consumer demand for labeling chocolate with the country of origin in order to be able to determine the origin of the products and ensure that the produce are produced according to standards.

In the light of the prospects of Organic and Social Impact Cocoa Production in Ghana, YGL entered into an agreement with the Ghana Cocoa Board to recruit and train farmers to produce organic cocoa for export to Switzerland. Indeed, the project has enabled a significant and growing number of farmers in Eastern and Volta Region cocoa growing districts of Ghana to improve their livelihoods in a sustainable way.

Ghana in recent times had various conventional agricultural products rejected in the EU and some parts of Asia for high levels of chemical residues. This led to financial losses to individual exporters and the country as a whole.

The harmful effects of pesticide use go beyond the impact on Ghana's farmers, and include the consumers of food. Residues from six banned or restricted chemical pesticides -DDT, endosulfan, lindane, aldrin, dieldrin and endrin –have been found in food samples in recent academic studies.

Academic studies in the past five years show the presence of pesticide residues in fish, water, sediments, fruit and vegetables, meat and human fluids (blood and breast milk) in Ghana.

A leading academic working on crop science in Accra says that 'pesticide residue levels are probably in virtually everything we eat from farms'. Yet just as there is no systematic testing for the impacts of pesticides on farmers, there appear to be no routine tests conducted on the food available in Ghanaian markets. (Northern Presbyterian Agricultural Services and Partners April, 2012)

Yayra Glover Ltd been a pioneer in the organic cocoa sector has therefore decided to carry out a knowledge desimatintion project. This is to ensure that our esperience in the susutainable agricultural sector is shared with others who aspire to go into sustainanble agriculture. There is the need to affect change in our academic system espacially at the levels where students after their education, can affect society.

2.0 Project Objectives

The main objective of the project is to disseminate information on organic production in Ghana so as to effect policy change.

The specific objectives of the Project are:

- To facilitate strong and vibrant Agricultural graduates as a conduit for education and behaviour change for farmers to accept and practice the internationally recognised safety standards for the production of premium organic agricultural produce;
- Build capacity of agricultural students in Ghana in premium organic and Social Impact Production;
- To affect academic and institutional change in organic agricultural policy

3.0 Methodology

Target groups.

- Senior high schools (general agriculture option)
- Farm institutes (certificates)
- Agricultural colleges/ training colleges (diploma)
- Polytechnics
- Universities and research institutions

Activities

Presentation and seminars on organic production in target schools. Interactions with students and provide positions student project work in the field.

4.0 Unique Selling points

The Unique Selling Points are:

- Traceability of Agricultural products;
- Special origin yet lacking in key markets;
- Ghanaian quality and export standards;
- Strong & multiple environmental, social and fair-trade standards (organic and UTZ certification);

Business ethics: supporting thousands of small-scale farmers in an area of wide-spread poverty

5.0 Planned Implementation Steps

Dissemination of knowledge concept goals, strategies, and activities will be conceptualized and carefully considered. The following strategies such as: conferences, workshops, academic courses, meetings, computer-based discussions, and products, such as: reports, video tapes, organic platform and YGL websites are primary tools that will be used to reach our target audiences. The organic platform would be used to shear information and promote organic Agriculture in Ghana.

All target groups will be involved in planning programmes and will be encouraged to actively participate. One selected target group will be visited every quarter.

6.0 Conclusion

It is in furtherance of the quest to achieve unprecedented, quality and sustainable yields in the Agricultural production in Ghana that, YGL is embarking on this strategic knowledge dissemination.

The direct beneficiaries of this project is ultimately farmer and young men who intend to go into sustainable agricultural production.

This project is based on the fundamental belief that, organic certification combined with social and fair-trade certification ensures that globally accepted values are applied in the local context.

By implementing these standards, the beneficiaries improve their overall living standard through better income, higher awareness of critical social values, and a safer and healthier working and living environment.

Annex 12:

Share of premium

PREMIUM SHARING REGIME FOR ORGANIC COCOA FARMERS

MAY, 2015

(Yayra Glover ICS Department)

Organic Hill-Suhum
Republic of Ghana

Suhum, May, 2015.

YGL PREMIUM MANAGEMENT

Introduction

Yayra Glover Limited (YGL) was registered and licensed in Ghana in the year 2007 as a limited liability company, incorporated primarily to recruit and train farmers to produce organic cocoa beans to attract premium for the farmers and YGL

Objective of premium:

1. To serve as additional income for the farmers as well as their households.
2. To support YGL Operations
3. To support extension and certification.

Distribution of Premium.

The premium sharing will be based on dollar to cedi prevailing market rates.

- 30 % of the total premium will go to the farmers.
- 40% of the total premium will be used to support YGL operations.
- 25% of the total premium will be used to support extension and certification.
- 5% of the total premium will be used to support YGL social responsibilities in its operational communities.

Farmer's 30% distribution.

- 25% of the 30% will go to the farmers' direct as cash.
- 1% of the 30% will go to PC's
- 1% of the 30% will go to community Field Officers (CFO)
- 1% of the 30% will be used to print some T-shirts for PC's, CFO, and farmers based on PC's recommendation.
- 1 % of the 30% will be used to buy incentives like Cutlasses, spraying machines and Wallington boots to motivate credible farmers/FBOs.
- 1% of the 30% will be used to transport inputs like fertilizers, Pyrethrum to various communities.

Annex 13:

Project
work table

Extension of SECO Project 2015/16 : Project Working Table (Update, May 2017 for Final Report)

Activity	Main Resp.	Sept 15	Oct 15	Nov 15	Dec 15	Jan 16	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16	Dec 16	Jan 17 - Mar 17
Employment of additional people (7.1.1)	YGL																	
Employ Volta District Manager and Field Officers		xxxx	xxxx															
Employ Depot Keepers			xxxx															
Employ Security Officers			xxxx															
Management expert input (Verein YG 5.1.5)	VYG																	
Visit of E.Räz to support project execution		x	x															
Visit of J. Sollberger to support project execution						xx												
Visit of E.Räz + J. Sollberger to support project execution									xx									
Education and training (2.2.3)	YGL																	
Printing of remaining educational material			xxxx			xx												
Printing of materials and templates for Internal Inspection			xxxx							xxxx								
General Training of all farmers in all areas			xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Chemical Residue Analysis (MRL)					xxx				xxx									
Preparation In-Transition - Certification Osiem & Ekoso (2.2.6)	YGL																	
Training of internal inspectors and conducting internal inspection			xxxx	xxxx	xxxx	xxxx												
Training Purchasing Clerks - Osiem & Ekoso				xxxx	xxxx													
In-Transition Certification- Osiem & Ekoso						xxxx			xxxx									
Corrective measures for non conformities - Osiem & Ekoso							xxxx	xxxx		xxxx	xxxx							
Preparation In-Transition - Certification Volta (2.2.6)	YGL																	
Training of internal inspectors and conducting internal inspection			xxxx	xxxx	xxxx	xxxx												
Training Purchasing Clerks - Volta				xxxx	xxxx							xxxx	xxxx					
In-Transition Certification - Volta						xxxx			xxxx									
Corrective measures for non conformities - Volta							xxxx	xxxx		xxxx	xxxx							

Achievments in red

Extension of SECO Project 2015/16 : Project Working Table (Update, May 2017 for Final Report)

Activity	Main Resp	Sept 15	Oct 15	Nov 15	Dec 15	Jan 16	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sept16	Oct 16	Nov 16	Dec 16	Jan 17 - Mar 17
Extension Logistics (1.3.2)	YGL																	
Buying Motorbikes for Field Officers			xxxx															
Buying drying mats (Tarpaulin)			xxxx															
Buying Aqua boy (Device to measure water in beans)			xxxx	xxxx		xxxx												
Buying Cars for Extension Managers					xxxx													
Gender Aspects and Child labour (5.3.1)	YGL				x	x	x	x	x	x	x	x	x	x	x	x	x	x
Conduct training in all FBO's					x	x	x	x	x	x	x	x	x	x	x	x	x	x
Expert input by Jens Soth, Helvetas (5.1.1)	S.																	
Visit to initiate COSA and discuss Crig Survey								xx	xx									
Visit to discuss COSA study results at Embassy															xx	x		
Both trips : Discuss Strategy influence Cocobod with								x							x			
Pruning survey by CRIG (2.5.1)											xxx	xxx	xxx					
COSA Study (5.2.1)											xxx	xxx	xxx	xxx				
Concept for dissimination of knowledge																		
International publication part (J. Soth)	Jens S.						x	x								x	x	
Local part with High Schools and Universities	YGL					xx	xx	xx	xx									
Reports and Audits																		
Annual Report 2015 (5.1.5)	VYG						xxx											
Interim Report 1st Semester 2016 (5.1.5)	VYG												xxx	xxx				
External Project Audit	?																	xx
Final Project Report	VYG & Jens S.																	xxxxxxx
Pro Memoria, not part of Extension Project :																		
Certification old areas in Suhum	YGL																	
Preparation UTZ-Certification								xxxx	xxxx	xxxx	xxxx	xxxx						
UTZ-Certification													xxxx					
Preparation Bio-Certification								xxxx	xxxx	xxxx	xxxx	xxxx						
Bio Certification													xxxx					

Achievments in red