



Report of ADP Support Unit visit to Ghana October 14 -22, 2023

Background to this paper

This document reports the main findings and three key takeaways of a one week visit by Thijs Pasmans of the Amsterdam Declaration Partnership (ADP) Support Unit to Ghana. The visit forms part of an ongoing dialogue between the ADP Support Unit, The Ghana Cocoa Board (COCOBOD), the Ghana Standard Authority (GSA), and IDH Sustainable Trade Initiative leading the Cocoa & Forest Initiative¹. The purpose of the visit was to enhance the understanding of the ADP support Unit regarding the cocoa sector in Ghana, and discuss opportunities and constraints with stakeholders on the synergy between the European Deforestation regulation (EUDR), the Corporate Sustainability Due Diligence directive (CSDDD), and the African Regional Standard (ARS 1000) on sustainable cocoa.

Questions addressed with stakeholders during the visit:

- How to implement the requirements?
- What counts as proof of compliance?
- Who will facilitate questions & answers?
- Where is more support needed?

This policy brief does not reflect the view or position of any ADP country, nor does it commit a country to next steps, financial support or certain actions. The findings presented here reflect the discussions between stakeholders and the Support Unit. The report has been reviewed for inaccuracies and stakeholders participating in the visit have had the opportunity to comment.

The ADP Support Unit thanks IDH, The Sustainable Trade Initiative, Tropenbos Ghana and the Embassy of the Kingdom of The Netherlands in Ghana for their support, time and efforts to make this visit happen.

¹ <https://www.worldcocoafoundation.org/initiative/cocoa-forests-initiative/>

Key takeaways

1. Alignment between the EUDR, the UK Environment Act and ARS and support for legal compliance provides an opportunity to address the issue of illegal cocoa farms in forest reserves and halting illegal deforestation (ongoing).
2. An overview of ongoing ADP country (plus multi-lateral) supported programmes in the cocoa sector is needed to discuss and enhance synergy and impact to the benefit of the smallholder farmers and the sector at large.
3. A more transparent calculation and discussion throughout the cocoa sector is needed regarding premiums for rewarding sustainability, production costs, and pricing to enhance the livelihood of the producers and determine what is fair.

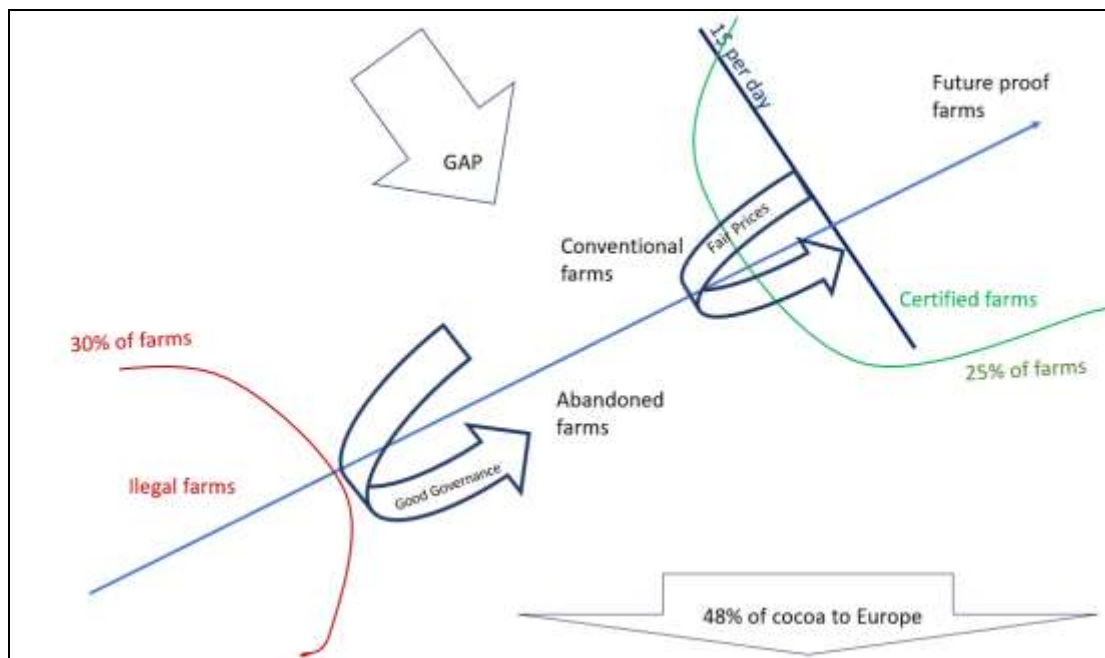
Background report of the visit

Structure of report

On page 2 the three key takeaways were presented that deserve further discussion by the ADP to achieve sustainable, inclusive and deforestation free cocoa. These key takeaways are derived from discussions, examples and learnings during the visit. The rest of the report provides some background information underpinning these takeaways. To provide a broader picture, the report first gives a simplistic overview of the current situation of cocoa farms in Ghana. Derived from this overview the report introduces a triangular approach of good governance, fair prices and good agricultural practices (GAP) to explore pathways towards sustainable, future proof cocoa. This approach is further elaborated upon by using examples encountered in the field. We conclude by combining existing solutions and opportunities for synergy into recommendations to ADP. To provide more context the three take aways of the beginning of the report are supported with background information.

Towards sustainable, future proof cocoa farms in Ghana: a general overview

The cocoa farms in Ghana can be roughly subdivided in three categories (see figure below). At the moment prices and premiums below costs of production and inadequate enforcement withhold farmers from producing sustainable, future proof cocoa. Although COCOBOD, companies and certification standards supply free seedlings and information/training on Good Agricultural Practices (GAP), farms risk remaining stuck as conventional, or sliding off to abandoned farms or by adding land from within protected areas to become illegal farms.



1. Future proof farms

Climate-proof and sustainable farms. Farms, often organised in Cooperatives, with a various land sizes, that provide > 1\$ income per household member, yield optimal cocoa that is produced without deforestation and using agroforestry to mitigate climate change impact

	<p>Certified farms: A percentage of these farms are organised in a cooperative – often supported by sourcing companies – and certified according to RA or FT requirements: 16% of the 850.000 cocoa farms in Ghana are RA certified and 12% Fairtrade certified.</p>
2. Conventional farms	<p>Individual farms with various land sizes and not organised in a Cooperative, that struggle to reach optimum yields. Farms often are legally compliant and will meet the EUDR cut-off date of deforestation, but they likely will struggle to proof legal compliance of for example ‘use right’ – all tenurial arrangements are acceptable in law in Ghana. There is no law in Ghana that prohibits farming on a land without land title.</p> <p>Abandoned farms: Farms and farmers that performed poorly (e.g. due to climate change or lack of good practices). Potential output no longer favours the input (fertiliser, labour) needed. Cocoa trees might be harvested to collect beans that grow despite the cocoa trees are being neglected.</p>
3. Illegal farms	<p>13% of Ghanaian cocoa is linked to illegal deforestation². This trend is increasing with 45% of clearing for cocoa took place illegally³ and primary forest loss in Ghana increased by 71%, mostly in protected areas.</p> <p>4.5% to 14.5% of Ghana’s protected areas are identified as cocoa farms: these include farms that encroached into protected forest reserves⁴ (because of land scarcity) either starting a new farm or as an extension of the already established ‘admitted farms’⁵.</p> <p>These farms are illegal under Ghanaian law and will not comply with the ARS. They will therefore also not comply with EUDR/UK legality requirements.</p>

Joint action to stop deforestation in Ghana is needed urgently. The latest [World Resource Institute](#) analysis reports an 71% increase of primary forest loss over the past 5 years. And while although Ghana’s contribution to global tropical forest loss is ‘[only 1%](#)’, previous deforestation has be so extensive that forest are [only left](#) in national parks and protected areas. In neighbouring Côte d’Ivoire [Mighty Earth \(2018\)](#) described a similar situation.

To prevent more conventional farms from slipping into abandoned farms or becoming illegal, supportive actions should include a combination of good governance, sustainable

² In Côte d’Ivoire illegal cocoa is [40%](#)

³ For more information on methodology and definitions of reference see [Illicit-Harvest-Complicit-Goods_rev.pdf \(forest-trends.org\)](#)

⁴ There are issues with boundaries and lack of official documents of admitted farms that make estimation of encroachment difficult.

⁵ This expansion takes place in a context of increasing population. For references see page 2 of [\(PDF\) Drivers of cocoa encroachment into protected forests: Case of three forest reserves in Ghana \(researchgate.net\)](#)

purchase and good agricultural practices: this triangular⁶ approach that creates a stronger basis for compliance of both European and Ghanaian standards with a more positive impact on forest protection and the livelihood of the farmers and their communities.

These approach should be implemented in synergy with an enabling environment, law enforcement, landscape level visions and supportive programmes. Isolated actions risk not being effective, shifting the problem to other landscapes or negatively affect other farmers.

EXAMPLE: Support and training in Good Agricultural Practices are useless if a farmer cannot subsequently afford the fertiliser needed, or if no access to the free high-quality shade tree seedlings . These shade tree seedling are also often not planted because farmers fear future illegal destruction of their trees (and thus the cocoa farm) by loggers.

It is also in the commercial (resource security), and climate interest of European cocoa buying countries and companies to focus on this synergy beyond the scope of their current Ghanaian import volume: (48% of Ghana’s cocoa export). Not only are (the domestic) trade patterns dynamic and is a certain stretch in compliant supply needed to guarantee consistency and affordability, looking beyond the 48% is necessary to reach ‘compliance with impact’ – e.g. protect tropical forest and mitigate negative impact on cocoa farmers. The EU also stated its wants to have a wider positive impact beyond the direct scope of the European supply chain.

Such a broader scope would also consider the context why farmers move into forest areas in the first place. This includes understanding (illegal) deforestation in a [critical context](#) that looks beyond EUDR alone as deforestation is also associated to mining, logging, fire and agricultural expansion for other crops. This not only stresses the need for better implementation of commitments or regulations, but also safe-guarding rural livelihoods that do not require deforestation.

Observations from the field

Observation	Relation to Good governance	Relation to Good agricultural practices	Relation to Sustainable purchase
<i>Farmers move into protected areas</i>	<p>Forest reserves protection is not adequate or enforcing illegal activities and corruption.</p> <p>Amnesty is not considered as a solution⁷, but illegal cocoa trees are not being removed.</p> <p>EUDR is an incentive to stop encroachment, but</p>	<p>Information on GAP and hybrid seedlings are available, but labour and (organic) fertiliser is not affordable, available or applied in a wrong way.</p>	<p>Farmers lack investment capital to implement GAP. This means low yielding farms remain and pushes expansion into new land if they want more income.</p> <p>Farmers depend heavily on cocoa as a source of income. Diversification does not necessarily provide better rewards.</p>

⁶ This approach is inspired by the Living Income Compendium paper [220920-Cocoa-Barometer-Living-Income-Compendium.pdf \(voicenetwork.cc\)](#)

⁷ The topic of amnesty in protected areas was discussed during the ADP roundtable meeting where Ghanaian stakeholder made it clear this was not an option considered by the Ghanaian government.

	not a solution for existing farmers in these areas. Nor does it address other drivers such as mining, fire and other crops.		
Existing solutions	<ul style="list-style-type: none"> • ARS has the potential to develop into a legality definition of cocoa - the ARS does not allow cocoa farming in forest reserves. • Degraded areas are being restored with afforestation and community farming under the Taungya system • CFI commitments to prevent further deforestation...xx • Climate smart cocoa as part of Ghana's national implementation of Ghana Cocoa Forest REDD+ Programme (GCFRP) 		
Opportunities for ADP	<p>Address illegal cocoa farms in protected forest reserves as a common challenge for both ARS and EUDR/UK by:</p> <ul style="list-style-type: none"> • looking beyond the scope of current EU/UK cocoa import from Ghana • looking beyond (cocoa) farm level support measures and include better institutional capacity, inter-government alignment and enforcement at governmental level 		
Background	<p>At the moment about 85% of Ghana's forest has been degraded by agriculture and unsustainable logging. Overexploitation already started in the colonial era which led to the creation of Ghana's forest reserves between the 1920s and 1940s – Ghana now has 256 forest and nature reserves. However, deforestation continued with an annual rate between 0.4% and 0.7% per annum between 1990 and 2015.</p> <p>Drivers include agriculture for food crops and cocoa, but also fire, logging and mining. Underlying reasons are population growth, infrastructure development and the need for new land because of declining productivity. New forest land serves as an 'input' of fertile soil as farmers are not able to buy farm inputs to enrich their soil. This encroachment takes the form of a gradual process where farmers intercrop their food crops with cash crops such as cocoa. When the cocoa trees close the canopy farmers move into adjoining forest land to cultivate food crops. This process of planting food crops, interplanting of cocoa until a closed canopy is formed is repeated every 5 years.</p> <p>Weak enforcement, lack of coordination and contradictions: policies have created an environment that encouraged farmers to continue expanding into protected areas without serious repercussions. Forestry officials fail to make use of their already limited capacity to patrol, make arrests or start drone piloting. Opposition or inaction of political or local elite, low fines and corruption and unprofessional attitudes of staff. Poor coordination between COCOBOD and the Forestry Commission creates tensions between policy goals to increase both Ghana's cocoa production and protect forest at the same time. Farmers also feel secured when matured trees strengthen their claim and use of land under customary land tenure.</p>		
Further reading	<ul style="list-style-type: none"> • Deforestation is driven by agricultural expansion in Ghana's forest reserves - ScienceDirect • Insights, motives, and means of overcoming forest offenses in Ghana's forestry sector: The case of the Bibiani Forest District - ScienceDirect • Detecting cocoa plantations in Côte d'Ivoire and Ghana and their implications on protected areas (sciencedirectassets.com) • How much cocoa is coming from illegally deforested lands? - Forest Trends (forest-trends.org) 		

<p>Farmers hesitate to plant shadow trees</p>	<p>Timber companies enter cocoa farms with logging permits <u>without reaching informed consent</u> or offering compensation to claim timber.</p> <p>In fear of conflict and of farm destruction farmers chose to not plant shade trees at all.</p>	<p>Information of the importance of shadow trees or providing seedlings alone are not sufficient.</p> <p>Farmers are aware, but decide to plant or cut down trees based on other – non GAP - factors as well.</p>	<p>Lack of shadow trees puts cocoa trees more at risk to climate change i.e. high soil temperatures and direct hot sun light, reducing cocoa yield.</p>
<p>Existing solutions</p>	<ul style="list-style-type: none"> • Initiatives to register trees on are ongoing. However, recommendations for full ownership of both native and planted trees are being suggested by NGOs. • ARS protects ‘large’ trees on cocoa plantations 		
<p>Opportunities for ADP</p>	<ul style="list-style-type: none"> • Look beyond GAP and capacity building and include measures that support farmers right and entitlements. 		
<p>Background</p>	<p>Ghana law makes a <u>distinction</u> between land and natural resources such as timber. Logging companies can be granted formal rights to access timber on farmland. Agreement and/or compensation with the landowner and farmer, are officially needed. Only timber planted privately is formally recognised as belonging to the person who planted it. Native trees belong to the state.</p> <p>In my conversation with the farmer – a lead farmer demonstrating agroforestry cocoa to other farmers – he said farmers are reluctant to plant or keep shadow trees standing . The fact that a logging company brings with him a formal ‘government’ permit gives him a certain leverage to put pressure on farmers to agree to the logging and accept the, arbitrary, compensation fees suggested. Farmers also fear destruction of their cocoa trees by logging companies using heavy machinery⁸.</p>		
<p>Further reading</p>	<ul style="list-style-type: none"> • Illegality%2520and%2520inequity%2520in%2520Ghana%2527s%2520cocoa-forest%2520landscape_FINAL_AUTHORCOPY.pdf (reading.ac.uk) • (PDF) DOES TREE REGISTRATION PROVIDE A FEASIBLE OPPORTUNITY FOR ON- FARM TREE TENURE SECURITY IN COCOA AGROFORESTRY SYSTEMS IN GHANA? (researchgate.net) • Cocoa agroforestry in West Africa. Experiences from the private sector and opportunities for collaborative action - Tropenbos International 		

⁸ [Hirons, et al. \(2018\)](#) confirms this as farmers prefer using the informal ‘chainsaw’ system to sell their timber: ‘formal’ timber contractors destroy much more cocoa trees compared to ‘informal’ chainsaw operators. Where the latter ‘slice’ the timber into lumber on the farm which is then carried out by teams of carriers. Large-scale companies fell the tree with chainsaws and then drag the whole tree out of the farm using a heavy machinery. Informal systems would also give farmers greater control and better benefits of their timber.

<i>Farmers, even those certified, do not break even with cost of production</i>	<p>Farm gate prices are fixed annual according to 70% of Free-On-Board⁹ prices.</p> <p>No overview of premium prices and lack, limited or undermined policies that regulate prices in balance with cost of production.</p>	<p>GAP capacity building risks not being implemented. This leads to low yielding or even abandoned farms.</p>	<p>Ghana has minimum wages for agricultural labourers but not for the farmers themselves.</p> <p>GAP require additional cost for labour, fertiliser, agrochemicals in addition to transport.</p> <p>See annex 2 for calculation of farm in- and output.</p>
Existing solutions	<ul style="list-style-type: none"> • ARS includes registration of premium fees. • Sustainable purchasing is included in EUCSDDD proposals 		
Opportunity for ADP	<ul style="list-style-type: none"> • At EU level: support EUCSDDD and regulations that improve transparency in costs, price and premiums for (cocoa) smallholder farmers to address the living income gap. • At farm & landscape level: support holistic initiatives that address farmers and communities' concern and at the same time improves the 'enabling conditions'. 		
Background			
Further reading	<ul style="list-style-type: none"> • 220920-Cocoa-Barometer-Living-Income-Compendium.pdf (voicenetwork.cc) • Statistics - International Cocoa Organization (icco.org) 		
<i>Land ownership rights are not always in written form</i>	<p>Multiple forms of land tenure systems difficult to integrate in due diligence compliance</p>	<p>Farmers who are not involved in certification are not organised or required to register / formalize land tenure system</p>	<p>Difficulty in demonstrating compliance makes farmers more vulnerable to exclusion to the EU/UK market.</p>
Existing solutions	<ul style="list-style-type: none"> • ARS aims to include all cocoa farmers into registered entities 		
Opportunity for ADP	<p>Make use of national standards such as ARS to asses, monitor and ensure legal compliance as a proxy for the farmer' providing legal compliance documents. This would meet the intention and requirement of the EUDR/UK while it does not burden the smallholder farmer too much. Requirements could be:</p> <ul style="list-style-type: none"> • Proof of legal use and tenure • Farm location information • The ARS system is transparent to the extent needed and is regularly assessed by independent parties on its operations and effectiveness. 		
Background	<p>On my question to a farmer – owning 4 ha, certified RA and producing 20 bags per hectare - I visited whether he owned the land he replied: “yes”. If he had a document to prove it he replied: “no”. He explained that his father <u>bought</u> the land for him, from his grandfather, and he now owned it. This was recognised as such by the community.</p> <p>This relates to the different ways how farmers relate to land: land can be private, stool/kin (under chief custody) , family or government. Documentation of rights to use this land be written, oral or by witness (the community knows) and spread over multiple individuals. Evidence whether a person owns land is also provided in such a</p>		

⁹ The FOB (Free On Board) price is the price of goods at the frontier of the exporting country or price of a service provided to a non-resident. It includes the values of the goods or services at the basic price, the transport and distribution services up to the frontier, the taxes minus the subsidies.

	away (the community states so). In Ghana, ‘ownership’ is also a more ambiguous word compared to western understanding as the Traditional Chiefs ‘own’ all the community land. Land that is ‘in use’ because of agriculture or trees gives a farmer more security over his land than when it is fallow. Perennial tree crops such as cocoa in this way secure access to land not only for the farmer, but also for his children.
Further reading	<ul style="list-style-type: none"> • Smallholders and Land Tenure in Ghana: Aligning Context, Empirics, and Policy by Isabel Lambrecht, Sarah Asare :: SSRN

1. Cooperation and alignment between EUDR and ARS implementation

The ARS 1000 is a series of African standards for cocoa to achieve economic, social and environmental sustainability in cocoa. This includes requirements on child labour and no deforestation, but also on cocoa bean quality, traceability and premiums. The ARS is developed as a certification standard that is implemented and enforced by the regulator (COCOBOD for Ghana). Other African producers such as Cote d’Ivoire, Cameroon and Nigeria also plan to implement the ARS.

Status and approach ARS

The ARS aims to include all cocoa farmers. The Ghanaian guidelines for the ARS have been published for public consultation in May this year. The final version is expected to be published in a few weeks. In implementation COCOBOD takes a ‘gradual approach’. Pilots starting at the end of this year will first target the ‘low hanging fruits’, the future proof farms mentioned and especially those certified by Fairtrade or Rainforest Alliance. Especially the existing organisation of these farmers in cooperatives or farmer groups is a major advantage. ARS requires farmers who cannot comply with requirements on their own to become organised in ‘registered entities’. Contrary to cocoa farmers in Côte d’Ivoire, Ghanaian cocoa farmers have limited history¹⁰ of cooperative organisation. According to COCOBOD this is one of the main challenges to reach and implement the ARS among all Ghanaian cocoa farmers.

The gradual approach means that eventually all cocoa farmers will have to comply with ARS but targets, milestones and deadlines are not defined as COCOBOD wants to have flexibility for ‘learning and adapting along the way’. This of course does not align with legal requirements of the EUDR/UK Act. The ARS standard is also set up in such a way that farmers do not have to comply with each requirement from the start: it is a process of continuous improvement whereby farmers move from bronze, to silver and gold in 10 years’ time. This aligns with the process thinking on due diligence of the OECD and EU. However, the EUDR & UK-Act do require legal compliance as of the date of entering into force. More advanced farmers are able to comply to gold standard in an earlier phase.

Alignment in implementation: illegal deforestation

Stopping deforestation and illegal practices are a common objective of the ARS and the EUDR/UK. Although requirements and definitions differ – especially on ‘forest’ and deforestation of secondary forest that is being allowed when legal by the ARS, but not by the EUDR – the illegal encroachment of cocoa farms into Ghana’s protected forest reserves is not acceptable.

¹⁰ There is history of cocoa cooperatives set up by the colonial administration in the first half of the 20th century [ResearchGate](#)

Because the EUDR and UKACT require imported cocoa to be produced according to the legislation of the country of production, the illegal cocoa originating from the forest reserves are prohibited to import. The link is with the requirement of legal compliance, not the cut-off date of deforestation. If Ghana would provide legal amnesty to these producers, they would be legal and could export. This point has been raised in earlier ADP discussions. But such a legal amnesty could lead to serious image issues and probably does not help Ghana to meet its climate and biodiversity ambitions.

According to a local COCOBOD District Officer these farms are not eligible for free seedlings or cocoa tree disease treatment offered by COCOBOD. The farms have been condoned for a very long time. The new regulations will exclude them from the European market. They are to an unknown extent already excluded because they cannot be certified. The Cocoa & Forest Initiative has been working on this issue. But, because smallholder inclusion and poverty reduction are our goals as well, we need to discuss what will happen to these farmers and families. What are solutions? Mere exclusion will probably mean more illegality and insecurity in forest reserves rather than less.

Alignment in implementation: demonstrating legal compliance

Making use of national standards such as the ARS to ensure legal compliance can help European competent authorities to determine levels of risk to their requirement on legal compliance to the legislation of the country of production. It not only takes away the burden on the smallholder to document land use rights to get access to the EU market, but also respects the role and added value of informal and customary tenure systems.

Working in synergy with the ARS is also an entry point to address the issue of illegal farms and non-certified farms that will not or have more difficulty accessing the European market. Allowing Europe to implement its regulation with an impact on forest and securing a larger volume of compliant cocoa in the future.

Further exchange to what extent and when ARS could work as a proxy is needed. The fact that ARS focusses on 'low hanging fruits' first makes sense, but might not have the highest priority if we want to stop illegal cocoa and prevent exclusion of conventional farms.

African potential for synergy with European due diligence legislations

The ARS is not limited to cocoa or Ghana. Developed by the ARSO: the African Regional Standard Organisation it has a broader scope that is significant for (increasing) African exports of other commodities such as coffee (eastern Africa), natural rubber (Cote d'Ivoire), soy (Togo) and palm oil (western Africa).

2. Improve overview of ongoing ADP interventions in cocoa to assess synergy and impact

During the visit I have been asked multiple times 'what the ADP is doing or going to do?' to support sustainable cocoa. It is difficult to answer this question without an overview of ongoing ADP cocoa support programmes could improve the coordination and results of the programmes objectives.

The last overview dates from 2019¹¹. Such an overview would not only be convenient to answer questions, but also allows for further discussions regarding policy coherence, synergy and broader impact.

ADP supported projects related to topics discussed in this report are:

- GIZ supporting COCOBOD piloting traceability
- Tropenbos work on agroforestry
- CFI...
- ..
- ..

3. Start discussion on how to get better transparency on calculations behind costs, pricing and premiums

Living income has become a common goal in sustainable cocoa. Discussions moved from measuring living income towards strategies to close the Living Income Gap. To be effective, transparent information is needed on the cost of production, cocoa revenues and household income and cost of living for different type of cocoa farmers.

During my visit I was able to sit down with a farmer and make some basic calculations for his farm and livelihood (see Annex 2). The calculations and following discussion with the farmer highlights the importance of transparency in cocoa market prices and sustainability premiums. The financial input needed to run a well yielding cocoa farm do not seem to break even if we want farmers to earn > \$1 dollar per day per household member. In addition, the certification premium does not cover the costs of the additional work and input needed. That is why certification is mostly financed by civil society organisations or companies.

The ARS requires companies and farmers to inform the regulator on the premium fee for sustainability certification. This should improve the overview of certification costs versus certification premiums, and hopefully prevent insufficient premiums. It is unclear if this also includes premiums other than ARS – and how ARS should be marketed.

Annex 1- list of meetings and participants

- Roundtable between Ghanaian cocoa stakeholders and ADP and EU representatives at the Embassy of The Kingdom of The Netherlands in Ghana
- Cocoa & Forest Initiative biannual update meeting
- Bilateral meetings with Rainforest Alliance and GSA
- Field visit with Tropenbos Ghana to cocoa farms, COCOBOD seed production unit, COCOBOD district office and forest reserves in Wiawusu area, western region Ghana.

¹¹ <https://ad-partnership.org/wp-content/uploads/2019/04/COCOA-activities-West-Africa-v2019-0403.pdf>

Annex 2

Example input vs output cocoa farmer in Ghana - excluding own labour input		
Input	Application per acre	Costs (GCD)
Insecticide	4 sprays per year	200
Bag for spraying	15 fills per spray (4x a year)	60
Petrol for mistblower	4x a year	320
Fertiliser	3 bags per year	750
Fungicide	60 sachets 6 times a year	360
Labour picking cocoa pods	2 days 4 times a year	560
Labour breaking cocoa pods	3 persons during 1 day, 4 times a year	600
Carrying of bags from farm to road	20 bags per year	200
Transport to drying station	4 load a year	200
Drying carpets	Once every 2 years new	300
TOTAL per acre per year		3550
TOTAL per hectare per year		8875
Output	Per hectare	Revenu (GCD)
Harvest	20 bags each 64 kg = 1280 kg per ha	
	Farm gate price 20943 GCD per tonnes	26807.04
Certification premium	50 GCD per bag	1000.00
Income (GCD)		18932.04
Income per house hold member (hhm)	Average 5 members	3786.41
Income per day per hhm		10.37
\$ Income per day per hectare per hhm		1.04