



Stakeholder perceptions about the drivers, impacts and barriers of certification in the Ghanaian cocoa and oil palm sectors

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Abstract

This perception mapping exercise elicits and synthesizes the perceptions of the main relevant stakeholder about the drivers, impacts, and challenges of cocoa and oil palm certification in Ghana. Through an institutional analysis, we identify the main stakeholders and elicit their perceptions through 36 expert interviews. Perceptions are rather diverse, reflecting stakeholder position in (and knowledge of) the certification processes for the two commodity crops. Most stakeholders perceive that market-related factors drive standard adoption, and financing-related constraints challenge their wide adoption. There are major trade-offs and power asymmetries in certification processes, manifesting differently, due to variations in the implementation approaches and overall regulations of the two value chains.

Keywords Sustainability impact · Cocoa · Oil palm · Market-based instruments · Voluntary schemes · Sub-Saharan Africa

Introduction

The production of commodity crops such as cocoa, coffee, cotton, oil palm, and sugarcane has expanded significantly across the global South for very diverse reasons and through different narratives and discourses (Ahmed and Gasparatos 2021). From the post-colonial era to the recent land rush (Cotula 2012), many developing countries have actively promoted commodity crop production to (a) boost their national economy (e.g., through Foreign Direct Investments

or foreign exchange generation), (b) modernize their agricultural sectors, and/or (c) accelerate rural development (e.g., through rural employment/income generation, infrastructure development) (Ahmed and Gasparatos 2021).

However, commodity crops are major agents of ecological, agrarian, socioeconomic, and institutional transformation (Ahmed and Gasparatos 2021). For example, commodity crops have been linked with many context-specific positive and negative sustainability impacts such as deforestation (Vijay et al. 2016; Warren-Thomas et al. 2018), biodiversity loss (Ahrends et al. 2015; Savilaakso et al. 2014), climate change (Achten et al. 2011; Blagodatsky et al. 2016), changes in water availability and quality (Filoso et al. 2015; Chiarelli et al. 2020), income/employment generation (Matenga and Hichaambwa 2017; Castellanos-Navarrete et al. 2020), food security (Jarzebski et al. 2020; Hervas and Isakson 2020), social conflicts (Sabogal 2013; Ahmed et al. 2019a), and social/gender inequality (Potter 2020; Fonjong 2017; Lamb et al. 2017), among others. However, the type, magnitude, affected actors, and mechanisms through which these impacts manifest depend on the crop, production model, local context, and institutions governing their production, processing, and trade (Ahmed and Gasparatos 2021).

As a response to the negative sustainability impacts of commodity crop value chains, large producers, processors, and final buyers (often multinational companies)

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increasingly adopt Corporate Social Responsibility (CSR) strategies and company-driven sustainability initiatives to improve the environmental and socioeconomic performance of commodity crop production, processing, and trade (Barry Callebaut 2020; CEFS and EFFAT 2019; Krauss and Barrientos 2021).

Issues such as food safety, pollution, and social justice have tended to dominate CSR strategies and company-driven sustainability initiatives in most commodity crop value chains (Toussaint et al. 2021; Barry Callebaut 2020; Falck and Heblch 2007; Bartikowski and Berens 2021). The underlying goal of such initiatives has often been framed as an effort to mitigate the environmental burdens of commodity crop value chains, while at the same time contributing to the sustainable economic benefits of all affected stakeholders, including plantation workers, smallholders, surrounding communities, and the broader society (Krauss and Barrientos 2021; Silva et al. 2018; Rao and Bernaz 2020; Ingram 2015). For example, integral elements of the CSR strategies of multinational companies such as Barry Callebaut seek to ensure sustainable crop supply, improve farmer livelihoods, and reduce child labour and environmental pollution ('Forever chocolate program') (Barry Callebaut 2020). Although many CSR processes have been influenced by social activism and consumer demand for responsible production practices (Mirzaei and Hosseini 2019; Ramdani and Lounela 2020; Toussaint et al. 2021), some of these efforts in the cocoa, oil palm, or sugar industry have been perceived more "pragmatic", namely a means of obtaining social license, filling up governance gaps, and ensuring long-term crop supply and business sustainability (Barry Callebaut 2020; Sugino et al. 2015; Ingram et al. 2018; Ahmad and Nomani 2015; Offermans and Glasbergen 2017; Krauss 2018).

For many of the companies operating in the commodity crop space, the adoption of voluntary certification standards has been a major avenue to meet some (or even most) of their CSR commitments (Ingram et al. 2018; UNCTAD 2012; Bianco 2020; Krauss and Barrientos 2021). In this context, the adoption of certification standards entails the adoption of environmentally and socially responsible practices for crop production, processing, and trade (e.g., RSPO 2020; Bonsucro 2017). However, standards adoption can have very diverse outcomes, with recent meta-analyses suggesting very differentiated environmental, livelihood, and food security impacts due to the variability between crop value chains (and often for the same crop), certification contexts, and institutions and institutional arrangements governing the different standards (Oya et al. 2018; deFries et al. 2017; Schleifer and Sun 2020).

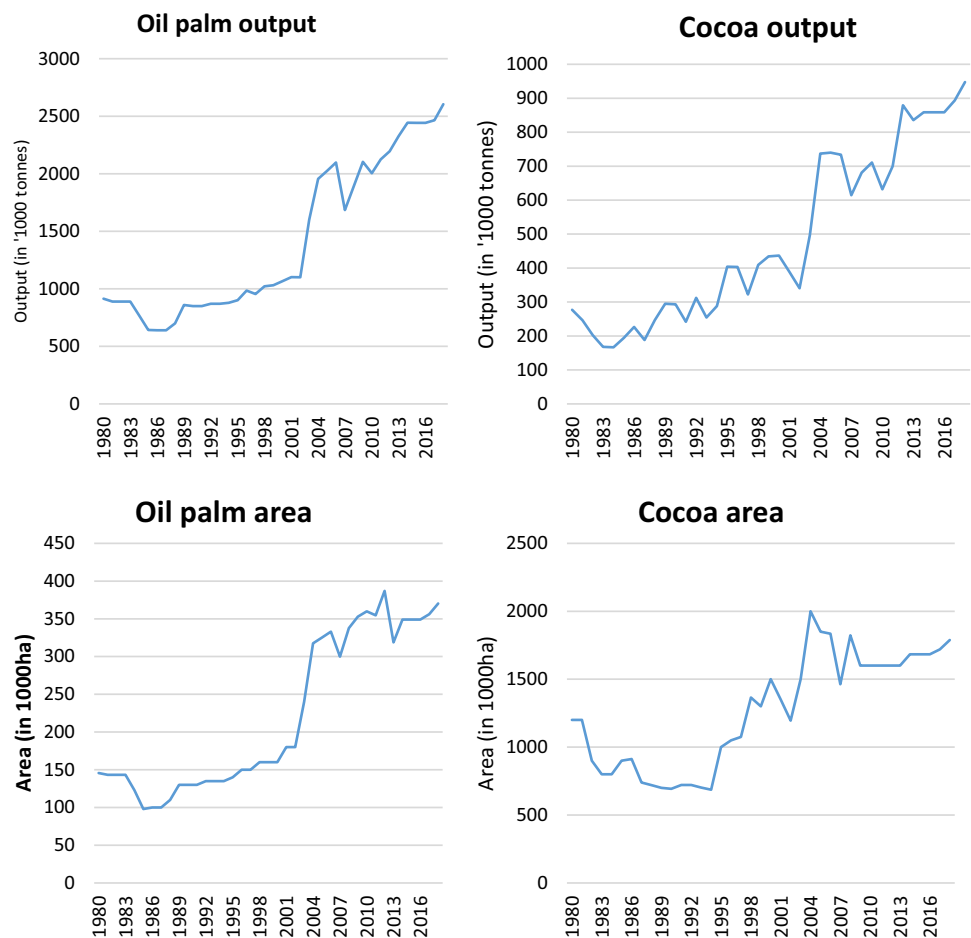
Beyond producers and processors, certification processes involve multiple other actors that are linked in diverse ways across value chains. This includes a constellation of other actors such as government agencies regulating

the agricultural sector; Non-Governmental Organizations (NGOs) promoting the standards, supporting farmers, or advocating for environmental and social goals; as well as companies overseeing the proper adoption and implementation of standards. It is not uncommon for these stakeholders to have radically different perceptions about the modalities, importance, validity, implementation and impacts of certification standards, and related sustainability initiatives (Moreno-Penaranda et al. 2015; Ansah et al. 2020; Krauss 2017). In fact, there can be rather divergent perceptions which, combined with inherent power asymmetries, can affect the acceptability, legitimacy, and actual success of certification processes (Marin-Burgos et al. 2015; Abdul-samad et al. 2015).

Despite the substantial literature on the modalities and impacts of certification outlined above, there are still many important gaps. For example, it is unclear what are the optimal approaches, modalities, and ramifications when promoting certification standards through different top-down or bottom-up processes (e.g., Grabs et al. 2016). Furthermore, although many studies have argued strongly for the need to understand the perceptions of multiple stakeholders about critical aspects of certification processes, most of these studies tend to focus on single commodity crops (e.g., Moreno-Penaranda et al. 2015) or limited aspects (e.g., Okereke and Stacewicz 2018). In some geographical contexts multiple commodity crops "compete" for land and resources, and multiple certification systems "compete" for adopters. In such contexts, comparative analyses could offer valuable insights about points of divergence and convergence that can facilitate the identification of contentious topics.

Ghana is one of the countries where many of the issues outlined above intersect. On the one hand, the national economy depends substantially on commodity crops (ISSER 2012). Actually, Ghana is the 2nd and 8th largest global producer of cocoa and oil palm respectively (FAOSTAT 2020). Pre- and post-independence governments have implemented multiple policies to promote their cultivation (Kolavalli and Vigneri 2017) (Fig. 1), making Ghana a major target for multinational companies. Due to the large number of smallholders involved in cocoa and oil palm production, both crops are cornerstones of rural livelihoods and have been linked to efforts to alleviate poverty and improve food security (Ahmed et al. 2019b). However, cocoa and oil palm production has also been associated with some negative environmental and socioeconomic impacts, such as biodiversity loss from land use change/deforestation (Ofori-Bah and Asafu-Adjaye 2011; Acheampong et al. 2019), pollution from extensive fertilizers/agrochemical use (Fosu-Mensah et al. 2016), unfair compensation and labour practices (Ingram et al. 2018; Myzabella et al. 2019), child labour (Luckstead et al. 2019), and land tenure conflicts (Ahmed et al. 2019c).

Fig. 1 Output and cultivated area of cocoa and oil palm in Ghana. Source (FAOSTAT 2020)



However, there are marked differences between the value chains of the two crops. Cocoa is almost completely produced by specialized smallholders or smallholders that produce it jointly with other crops in family farms (Danso-Abbeam and Baiyegunhi 2018). Conversely, oil palm is mostly produced in hybrid systems consisting of large plantations operated by private companies and surrounded by hundreds or even thousands of smallholders that are either contractually linked to plantations (i.e., outgrowers) or sell it independently (i.e., independent growers) (MASDAR 2011). Certification has gained traction for both crops in the country as a means of ensuring their sustainable production and guaranteeing mutual benefits across their respective value chains. Currently, various sustainability standards target the two value chains, including Fairtrade, UTZ, Rainforest Alliance (RA) (UTZ and RA were separate entities), Organic, and Roundtable on Sustainable Palm Oil (RSPO).

Considering the centrality of the two crops in Ghana's agrarian system and the growing importance of certification standards to ensure their sustainable production, it is crucial to understand in-depth the perceptions of the different stakeholders involved in certification processes. These perspectives may shape how stakeholders engage with certification

processes, thus facilitating or hindering the adoption of certification standards, or the implementation of different interventions seeking to improve certification performance. This deeper understanding of stakeholder perceptions can facilitate the identification of converging and diverging opinions, ultimately helping to build a shared understanding of key aspects of certification processes. With most studies on commodity crop certification in Ghana focusing on the adoption and impact of certification standards (Fenger et al. 2017; Djokoto et al. 2016; Ingram et al. 2018; Dompreeh et al. 2021a; 2021b; Ansah et al. 2020), there is a relative lack of comprehensive studies seeking to unravel the perceptions of the different relevant stakeholders about key aspects of certification processes.

The aim of this paper is to elicit and synthesize stakeholder perceptions about the drivers, sustainability impacts, and challenges of cocoa and oil palm certification in Ghana. Following an institutional analysis, we elicit these perceptions through interviews with 36 stakeholders that represent the main aspects of certification processes in Ghana. We initially outline the methodology used to identify respondents and collect and analyze data (Methodology). In the Results, we present the certification institutional landscapes for each

crop, as well as stakeholder perceptions about the main (a) drivers of adoption, (b) impacts and (c) barriers/challenges for effective certification. Finally, the Discussion synthesizes the key findings of this perception mapping exercise, and identifies some general themes and policy/practice recommendations to improve the performance of commodity crop certification in Ghana and beyond.

Methodology

Research approach and theoretical framework

We employ a combination of institutional analysis (Stage 1) and expert interviews (Stage 2) to identify the main stakeholders in the Ghanaian oil palm and cocoa sector and elicit their perceptions about the drivers, impacts, and challenges of certification.

During Stage 1, we develop the institutional landscapes of oil palm and cocoa certification, especially focusing on (a) the policies mediating certification processes and (b) certification stakeholders and the connections between them. For the purpose of this paper, we adopt a broad definition of institutions that includes policies (Hindriks and Guala 2015) and organizations (Hodgson 2006). Collectively this encompasses “the rules used by individuals for determining who and what are included in decision situations, how information is structured, what actions can be taken and in what sequence, and how individual actions will be aggregated into collective decisions” (Kiser and Ostrom 2000:56). In this sense, certification standards are institutions in that they prescribe a series of actions that need to be taken to ensure the sustainable production, processing and trade of commodity crops (see “Introduction”). At the same time, many of the processes encompassed in sustainability standards are dictated by a myriad of other formal and informal institutions that interact during their design, adoption and implementation (Lambin and Thorlakson 2018).

During Stage 2, we identify the main drivers, impacts, and challenges related to certification through the qualitative analysis of interviews with experts representing the main organisations involved in oil palm and cocoa certification processes in Ghana. As mentioned in the Introduction the main rationale for eliciting the perceptions of multiple organisations is that they often hold very different legitimate perspectives about key aspects and outcomes in certification processes, which might affect the acceptability, adoption, legitimacy and performance of certification standards (Moreno-Penaranda et al. 2015; Ansah et al. 2020; Krauss 2017; Marin-Burgos et al. 2015). Understanding the perspectives of different stakeholders is a key element of transdisciplinarity in sustainability science (Lang et al., 2012),

and has been used widely to study different development interventions (e.g. Ahmed et al. 2019a; Karanja et al. 2020).

Data collection and analysis

For Stage 1, we identify relevant stakeholders through the critical reading of the main policies, regulations, guidelines, and other relevant official documents associated with oil palm and cocoa certification (and broader value chain aspects). The documents were collected through the portals of relevant organizations (e.g. Ministry of Food and Agriculture) and were supplemented from the academic literature. We consolidate this information in tables and schematic diagrams that summarize the main policies and relations between stakeholders.

For Stage 2, we selected some of the key organisations identified during Stage 1. During the interviews, we actively sought to represent organisations from different stakeholder groups to obtain a very complete picture of the perceptions underpinning certification processes in Ghana. The selected organizations are categorized into seven groups reflecting their different interests, roles and knowledge of certification processes (Table 1).

Overall, thirty-six (36) respondents were interviewed reflecting a wide variety of organizations that have a central role in certification processes in Ghana. In particular we interviewed respondents from Government Agencies ($n=7$), Private Sector ($n=5$), Non-Government Organizations (NGOs) and Civil Society Organizations (CSOs) ($n=11$), Technical Institutions/Licensed Buying Companies ($n=5$), Research Institutions ($n=2$), Certification Agencies ($n=3$), and Farmer Groups ($n=3$) (Table 1).

The selection criteria were (a) centrality and relevance of organization in certification processes; (b) representation of a wide and legitimate set of perspectives; (c) comprehensiveness of answers. The above breakdown of organisations offers a wide representation of legitimate views on certification processes since all key institutions within stakeholder groups were interviewed (Criteria a and b). As the aim of the study was to elicit the totality of the different perspectives about the drivers, impacts and barriers to certification, we interviewed organisations until no more new perspectives could be obtained (Criterion c).

To triangulate whether the selected organisations were the most appropriate, we asked respondents during the expert interviews to indicate the organisations they perceived to be key players to certification processes in Ghana. This allowed the research team to have a constant reality check that the most relevant stakeholders in each group were interviewed.

The individual respondents in each organization were either directly involved in certification or their mandates related strongly to the cocoa and oil palm sector. In each of the selected organisations, we identified and interviewed

Table 1 Characteristics of expert interview respondents

Organization	Department	Position	Reference code
Government agencies			
Ghana Cocoa Board (Main)	Research, Monitoring and evaluation	Principal Research Officer Senior Research Officer	GOV1
Ministry of Food and Agriculture	Directorate of Crops Services, Tree Crops Unit	Senior Agric. Officer	GOV2
Environmental Protection Agency	Agriculture Unit	Chief Programme Officer	GOV3
Ghana Standards Authority	Product Certification	Head	GOV4
Forestry Commission Ghana	Climate Change	REDD+ Knowledge Management/ Stakeholder Consultation Specialist	GOV5
Ministry of Food and Agriculture	Plant Protection and Regulatory Service Directorate	Director	GOV6
Ghana Cocoa Board	Quality Control	Manager	GOV7
Large companies			
Ghana Oil Palm Development Company	Health, Safety and Environment	Manager	COM1
Touton	Cocoa Sustainability Sourcing	Manager	COM2
Serendipalm	Internal Control Systems	Manager	COM3
Benso Oil Palm Plantation	Oil Palm Development Association (OPDA) Interpretation Taskforce for RSPO	Group Manager President Chairman	COM4
Ghana Sumatra Limited	Marketing	Manager	COM5
Technical companies/licensed buying companies			
Cocoa Abrabopa	Extension	Technical Trainer	TECH1
Agro Eco-Louis Bolk Institute	Cocoa	Project leader	TECH2
Yayra Glover	Internal control systems	Manager	TECH3
Transroyal Ghana Limited	Project and sustainability	Manager	TECH4
Cocoa Merchants Ghana Limited	Sustainability	Manager	TECH5
Research institutions			
Oil Palm Research Institute	Commercialization and Information Division	Research Scientist	RES1
Cocoa Research Institute	Cocoa Research Institute of Ghana (Social Science)	Agricultural Economist	RES2
Certification agencies			
Fairtrade	Fairtrade Africa	Business Development Advisor	CERT1
Rainforest Alliance	West Africa Landscapes and Livelihood	Senior Manager	CERT2
Control Union, Ghana	Control Union, Ghana	Managing Director	CERT3
CSOs/NGOs			
General Agriculture Workers' Union	Industrial Relations	Head	NGO1
International Cocoa Initiative	International Cocoa Initiative	Deputy National Coordinator/ Programme Coordinator	NGO2
Proforest	Africa Practitioner's Network	Programme Director	NGO3
Technoserve	Technoserve	Programme Manager	NGO4
Friends of the Earth	EU-CiSoPFLEG Project	Project Facilitator	NGO5
Community Land and Development Foundation	Community Land and Development Foundation	Executive Director	NGO6
Ghana Wildlife Society	Ghana Wildlife Society	Executive Director	NGO7
Nature and Development Foundation	Nature and Development Foundation	Operations Director	NGO8
Conservation Alliance	Cocoa Certification	Project Coordinator	NGO9

Table 1 (continued)

Organization	Department	Position	Reference code
Solidaridad	Oil Palm	Programme Manager	NGO10
Nature Conservation Research Centre	Programs and Research	Director	NGO11
Farmer groups			
Benso Oil Palm Plantation Scheme Smallholders Association	Benso Oil Palm Plantation Scheme Smallholders Association	President	FAR1
Norpalm Scheme Smallholders Association	Norpalm Scheme Smallholders Association	Group Executive	FAR2
UTZ-RA Certified Cocoa Farmers	UTZ-RA Certified Cocoa Farmers-Ghana Camp	Group Executive	FAR3

senior personnel who were considered to be experts/authorities in certification processes in Ghana (e.g., directors, senior managers, senior bureaucrats). This was necessary to ensure that respondents had both a good grasp of certification processes and could indeed convey well the position of their organization, rather than their personal opinion (Criteria a and b).

As the aim was to capture the breadth and totality of stakeholder perceptions regarding the drivers, impacts, and challenges of certification (Criterion c), we used mostly open-ended questions to allow respondents to elaborate freely on their answers. Most questions were the same for all respondents to allow some level of consistent perception elicitation between organisations. We have selectively used follow-up probe questions to extract some of the specific knowledge that the different respondents have regarding certification and agricultural systems in Ghana.

Most interviews were conducted face-to-face (31), though five (5) interviews were conducted remotely through telephone and skype. All interviews were conducted between August 2017 and January 2020 and were audio-recorded after securing the consent of each respondent. The interviews were transcribed verbatim, and the transcripts were used to undertake content analysis using NVivo software. We follow an inductive approach to draw out the themes and categories from the data. The themes and keywords used for the content analysis were informed by the reviewed literature on the drivers, barriers, and impact of cocoa and oil palm certification in Ghana and the processes of cocoa and oil palm certification standards (RSPO 2020; UTZ 2014; SAN 2017).

Acknowledgements and limitations

The perception mapping exercise presented in this paper elicits and synthesizes the perceptions of stakeholders with different roles and vested interests in oil palm and cocoa certification processes. Studies in very different contexts have discussed that stakeholder perceptions are sensitive to the partial knowledge of the stakeholders about the explored

issue, as well as their vested interests (e.g., Rahman 2017; Kokx and van Kempen 2010; Peloza et al. 2012). In this perception mapping exercise, we elicit the totality of these perceptions rather than qualify responses based on being “true” or “facts”. Although this is not a limitation per se, as understanding this panorama of perceptions could be extremely valuable in multi-stakeholder contexts, it should be acknowledged to avoid misrepresenting the outcomes of this study. In any case, to ensure the quality of answers, we selected stakeholders affiliated with the main organisations engaged in certification processes in Ghana and identified and interviewed senior personnel who were considered to be experts/authorities in certification processes (see previous section).

A limitation of this perception mapping exercise is the indirect inclusion of smallholder farmers through the representatives of farmer groups (Table 1). We resorted to this decision because the representative selection of smallholders would be difficult even in the same area due to their high variability in terms of income, land ownership, demographic/socioeconomic characteristics, and recruitment and engagement processes. Beyond selection issues, there is a possibility that some individual farmers might lack the capacity to engage critically with broad questions on certification. However, we believe that farmer group representatives have a sufficiently broad and informed understanding of farmer issues related to certification.

Results

Institutional landscape of oil palm and cocoa certification

Both the cocoa and the oil palm certification systems involve multiple stakeholders from, among others, the government, civil society, and the private sector operating at the international, national, and local levels (Table S1, Supplementary Electronic Material). Their involvements are not isolated, but they are connected in multiple ways (Figs. 2, 3). However, the configuration of these connections is rather

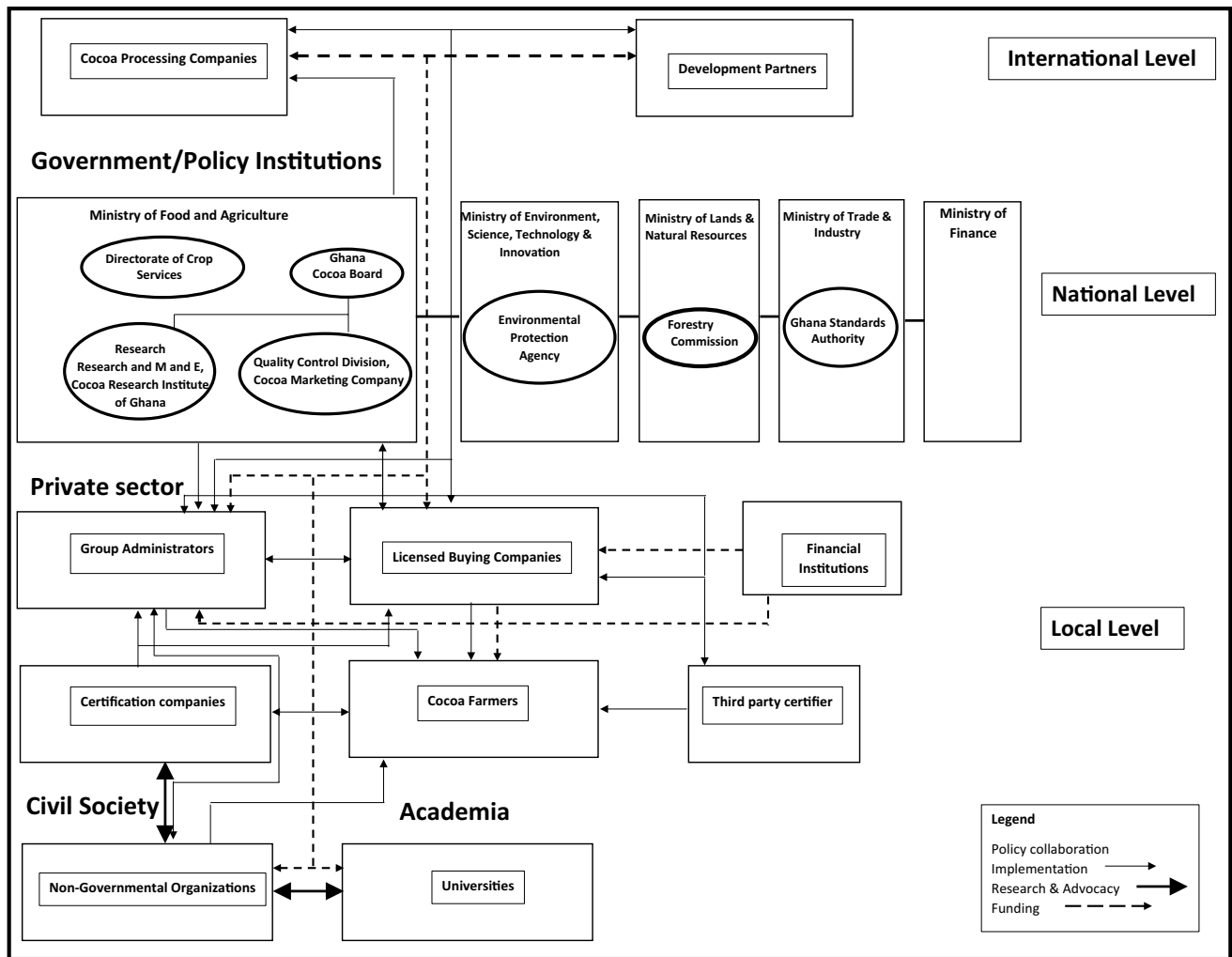


Fig. 2 Institutional landscape of cocoa certification in Ghana

different between crops, largely reflecting the very important underlying differences in how cocoa and oil palm standards are promoted and adopted. In particular, even though for both crops “pressure/demand” from international buyers (i.e., international/multinational companies) and eventually consumers “make the case” for the adoption of standards, there is a rather stark difference in how national producers end up adopting them (Figs. 2, 3).

In the oil palm sector, the large companies (e.g., GOPDC, Benso Oil Palm Plantation) are the starting points of certification by adopting the standards initially for their core plantations and mills (pers comm: COM4) and subsequently for the out-growers that are contractually linked to their operation (pers comm: COM4). This leads companies to collaborate closely with oil palm certification bodies such as the Roundtable on Sustainable Palm Oil (RSPO). Different CSO/NGOs then promote the standards to other independent smallholders operating around these large oil palm operations (pers comm: NGO10).

For cocoa certification, the situation is rather different, largely due to the fact that independent smallholders produce practically all cocoa in Ghana. In this case, the decision to adopt standards rests on individual farmers and is usually influenced by market signals and internal household decisions (pers comm: TECH3; TECH4). However, the cocoa smallholders that want to get certified usually have to form farmer groups (associations) through the support of Licensed Buying Companies (LBCs) and/or Group Administrators (GAs). LBCs are private sector entities mandated to buy cocoa in Ghana, while Group Administrators mobilize and support farmers through extension services and credit, including training about certification standards and good agricultural practices. LBCs usually work closely with certification agencies to promote their standards to cocoa smallholders (pers comm: TECH1).

A constellation of government agencies and institutions support in different ways the cocoa and oil palm production, and as a result interact in different ways with certification

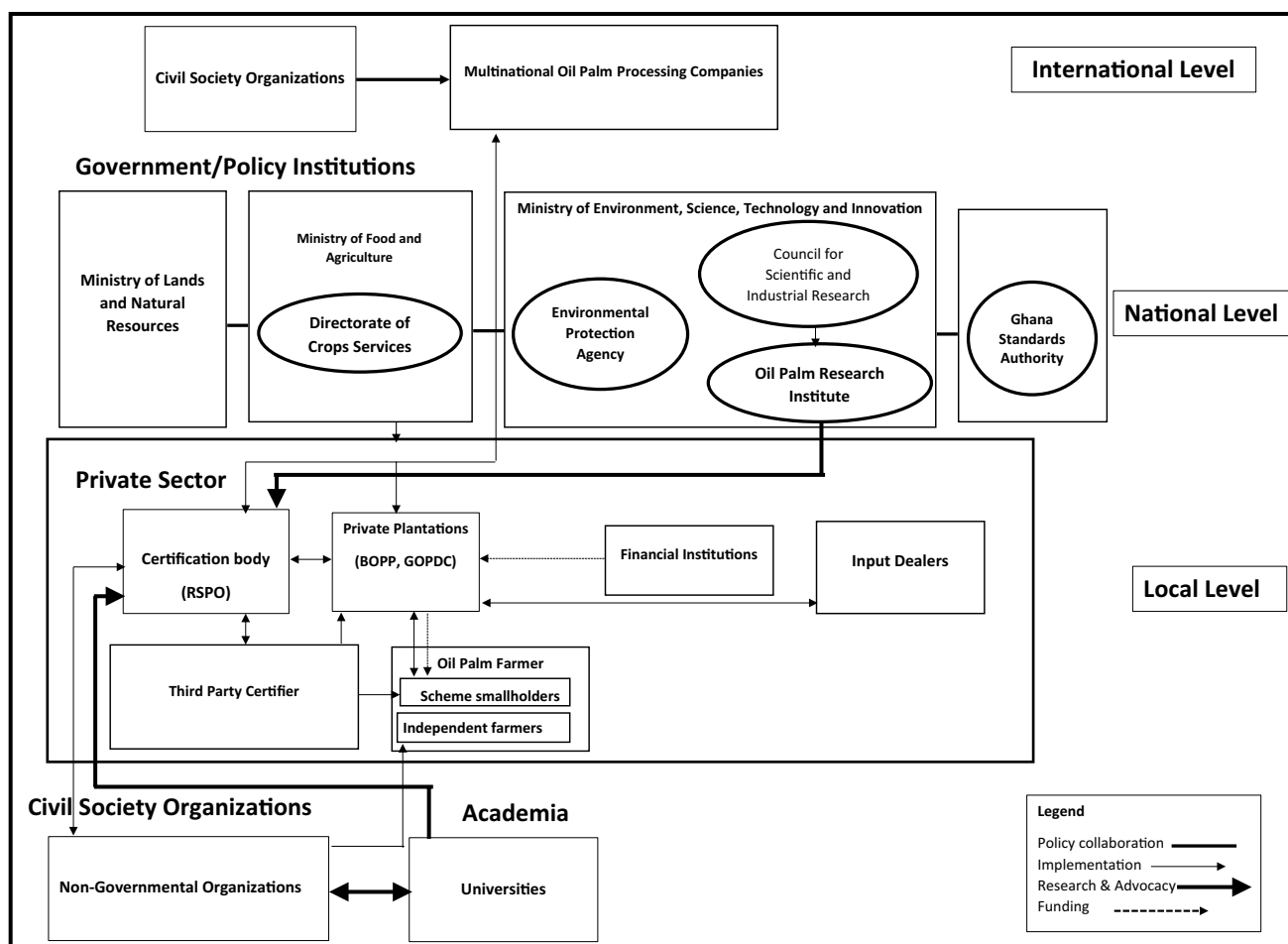


Fig. 3 Institutional landscape of oil palm certification in Ghana

through policy development and implementation (see the major policies and links to certification in Table S2, Supplementary Electronic Material). The Ministry of Food and Agriculture, through its different agencies, currently takes the lead in policy development and coordination, while other ministries/agencies play supporting roles for specific interventions and research (Tables S1–S2). It is worth mentioning that due to the large prominence of cocoa in the national economy there is a designated agency, the Ghana Cocoa Board, which holds custody of the policy development and management of cocoa-related interventions and policies. This includes the purchase of cocoa at set prices (including certified cocoa), and the registration and overseeing of LBC and GAs. In this respect, the implementation of cocoa certification is managed by the Board and to ensure that all relevant parties abide by responsibilities and receive the benefits associated with certification.

Civil Society Organizations (CSOs) and Non-Governmental Organizations (NGOs) play a major role in implementing certification, through advocacy, farmer training, research, and sometimes even offering funding directly at the local level to

support certification adoption. This requires the close cooperation of CSOs/NGOs with certification bodies, LBCs, and the producers themselves (whether smallholders or large companies). Finally, other important players include (a) financial Institutions (e.g., banks) that provide funding to LBCs and GAs, (b) third-party certifiers that inspect/audit certified farms and LBCs to confirm compliance with standards, and (c) research organizations that are independent (e.g., universities) or affiliated with government (Figs. 2–3; Table S1).

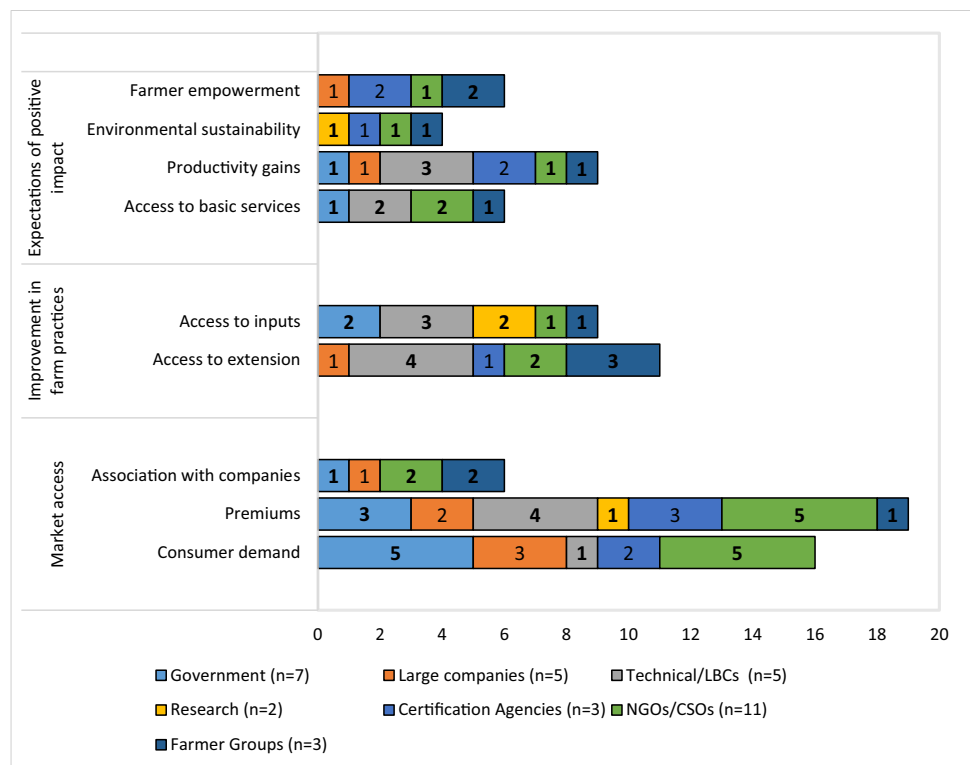
Drivers of certification adoption

Adoption among smallholders

Respondents suggest that very diverse but interrelated factors dictate the adoption of certification standards by smallholders. These include factors related to (a) market access and stability, (b) improvement of farming practices, and (c) expectations of positive impacts (Fig. 4).

There are three major market-related factors affecting certification adoption, namely premiums, consumer demand

Fig. 4 Perceived drivers of oil palm and cocoa certification adoption by smallholders in Ghana



and market linkages. Many respondents suggest that premiums are perhaps the most important drivers of certification adoption among cocoa smallholders (pers. comm. CERT1; TECH4; TECH5; FAR3).¹ This is because cocoa smallholders perceive premiums (no matter how low) as a reasonable reward for the invested time and resources to train and implement the standards (pers. comm: NGO4; CERT2; FAR3). Even though premiums are not supposed to be the main factor for influencing smallholders to engage in certification schemes, it is gradually becoming a major factor (pers. comm: TECH2; TECH5). Conversely, premiums do not play any role in oil palm smallholder certification, as there are simply no premiums at all (pers. comm. COM4; NGO8; FAR1; FAR2). Possible factors for the lack of premiums in the sector are the facts that certification is driven by large companies and the high national demand for palm oil (pers. comm. COM4) (see also below). National consumers

¹ Premiums are an extra payment to compensate/incentivize cocoa smallholders for ensuring sustainable cocoa production. The Ghana Cocoa Board sets the price for both conventional and certified cocoa beans, with the premiums for certified cocoa paid either directly to farmers (through their farmer group accounts) or through LBCs (Sect. 3.1). The actual modalities of premium payment and use depend on the standard, e.g., use a pre-determined fraction of the premium for direct payment to smallholders, commit premium funds into development projects (e.g., schools, clinics, standpipes), or use premiums to purchase agricultural inputs (pers. comm, TECH2, CERT1).

are perceived as having laxer standards for oil palm production practices, and as a result, local processors readily buy oil palm fruits regardless of the underlying production practices (pers. comm: COM4).

International consumer demand and linkages with larger companies are two somewhat different but highly interconnected market-related factors affecting smallholder certification adoption. As outlined in the first sub-section of the Results, international consumer pressure plays a critical role in certification adoption, as the increasing consumer awareness and demand for sustainable agricultural commodities have a trickle-down effect on smallholder production practices. This is especially evident in the oil palm sector (pers. comm.: COM2), as certification can provide an opportunity to access markets that would have been otherwise unavailable to conventional producers considering the large negative publicity of conventional oil palm production (personal comm.: NGO1). However, as large companies drive oil palm certification in Ghana (partly due to concerns over consumer backlash), their scheme smallholders are also essentially “forced” to adopt certification standards by virtue of their association with the large companies (pers. comm.: COM4; NGO10; FAR2; FAR3).² On the other hand, independent

² Some stakeholders perceive this as a form of coercion, considering that out-growers do not have any choice over certification adoption due to their contractual agreements with the large oil palm companies (pers. comm.: GOV2).

oil palm smallholders might decide not to adopt certification standards, which may have some medium to long-term effects. In the medium-term, such independent smallholders might be able to sell only to smaller mills that pay lower prices than the larger certified mills, while in the long-term they might face market exclusion (personal comm.: NGO3).

In terms of farm practices, the most prominent drivers of certification adoption relate to access to extension Services/capacity building and agricultural resources. Both should be put into perspective of the difficulty that many Ghanaian smallholders face in reliably accessing extension Services and farm inputs. Cocoa certification standards have strong provisions for capacity building, e.g., Rainforest Alliance guidelines mandate GAs to support smallholders (pers. Comm. Cert2). This is particularly useful to most cocoa smallholders that have little to no training and extension support, as it exposes them to sustainable production practices and knowledge on how to tackle plant diseases and pest infestation (pers. comm: NGO9; TECH5; TECH4; FAR3). The high cost of fertilizers and agrochemicals and the need for upfront payment place large financial burden on smallholders (especially cocoa farmers) and further erodes their overall income (pers. comm. GOV2; GOV7; FAR3). Often, they lack collateral to purchase inputs on credit or access loans (pers. Comm. TECH1; FAR3). By joining certification schemes, smallholders usually obtain better access to agricultural inputs in many ways. For example, (a) some farmer groups can serve as collateral to access inputs on credit and service this debt after harvest (pers. comm. TECH5; RES2; FAR1; FAR2; FAR3), (b) some GAs purchase inputs and distribute to farmers per their farm requirement (pers. Comm. TECH1), (c) some smallholders directly use their premiums to buy agricultural inputs (pers. Comm. TECH4; FAR3), and (d) some smallholders may access loans from LBCs or GAs to buy input (personal comm: NGO9; FAR3).

The expectation of various positive economic, social, and environmental sustainability impacts is the third major driver of smallholder certification adoption. The most important expectations in terms of economic impacts relate to increasing farm productivity and income, which is directly linked to some of the drivers outlined above (i.e., premiums, access to knowledge/inputs) (pers. Comm. TECH4; TECH5; RES2; FAR3). It is worth mentioning that cocoa smallholders perceive the possible income increases through the lens of premium payments (rather than increased productivity) (pers. Comm. NGO4; NGO8; FAR3), while oil palm smallholders through the lens of better access to agricultural inputs through association with large plantations (pers. comm.: COM1; COM4; FAR1; FAR3).

In terms of social impacts, the expected access to social amenities (e.g., clinics/hospitals, schools, potable water, roads) and farmers' empowerment are the major drivers of certification adoption. Access to infrastructure for cocoa

smallholders is linked to better income (pers. Comm.: TECH3; FAR3) or the corporate social responsibility (CSR) initiatives of buying companies and GAs³ (pers. comm: TECH3; TECH1; CERT1; FAR3). Conversely, the expected access to basic services is not a driver of certification adoption in the oil palm sector, as large plantations already have well-established corporate strategies for contributing to surrounding communities and allowing them to identify priority projects for company support (personal comm.: COM4). At the same time, there are multiple avenues to empower certified smallholders financially, socially, and in terms of gender. For example, certified smallholders are trained on issues pertaining to gender and child labour (pers. Comm.: CERT1; NGO2). Furthermore, cocoa smallholder can determine organizational and financial matters in their farmer groups, as democratic principles are integral parts of certification schemes (pers. Comm.: CERT1; FAR3). Smallholders can also advocate for their interest, improving supply chains (personal comm: CERT1). Despite these different pathways to empowerment, the facilitation of empowerment processes is compulsory for GAs (pers. Comm.: CERT1; TECH3).

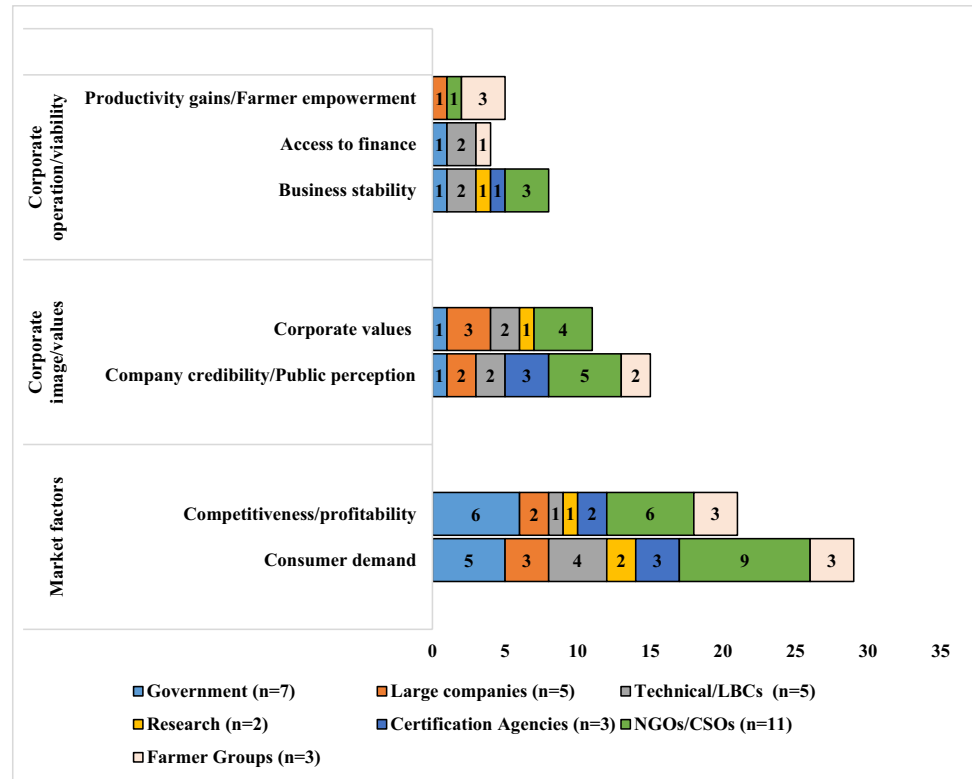
Finally, environmental impacts are rarely a consideration for certification adoption for smallholder farmers (personal comm: GOV5; RES2; FAR3). In those cases that environmental sustainability is indeed a minor factor influencing certification adoption for cocoa smallholders, GAs have the task of re-orienting farmer perceptions to improve the visibility of the overall benefits of sustainable production (personal comm: CERT1). On the contrary, environmental issues are much more visible in oil palm certification for large companies and to an extent they can be considered indirect drivers of certification adoption for oil palm smallholders given that companies play a much stronger role in oil palm certification (pers. Comm.: COM3; COM4).

Adoption among large producers

Large companies tend to engage in certification due to various interrelated factors linked to (a) market access and profitability, (b) company image and core values, and (c) company operation and viability (Fig. 5). Even though this affects cocoa and oil palm companies from the producer side, these factors have significant bearing for some companies

³ GAs have to “implement and document activities to support identified needs and priorities of the *community*, such as support for local schools or other institutions, environmental education, or collaboration on emergency preparedness” (SAN 2017). Although these initiatives do not only serve the interest of participating farmers, it provides incentive for farmers to adopt certification schemes when they learn of such initiatives from neighboring communities (pers. Comm. TECH1).

Fig. 5 Perceived drivers of oil palm and cocoa certification adoption for large companies in Ghana



further down the value chain, such as international buyers (pers. Comm. COM2; CERT2).

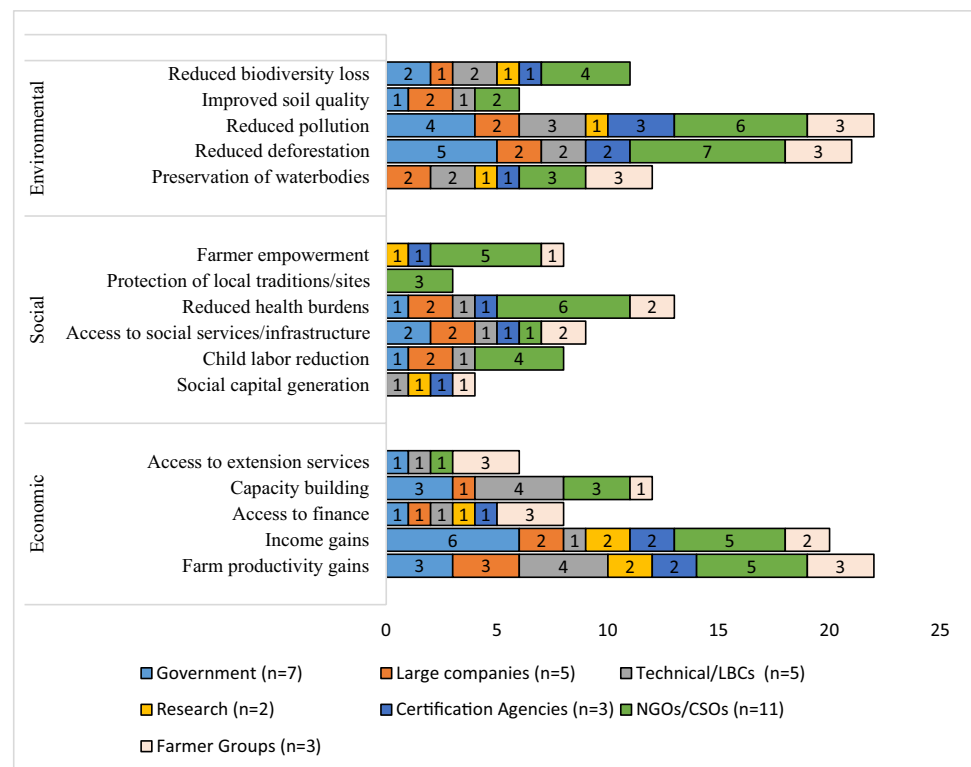
The major market-related factor driving certification adoption among large producers and other major companies relates to consumer demand for certified products. Consumer demand dictates the production and marketing of certified cocoa and oil palm products by large firms (pers. Comm.: NGO10; NGO3; NGO8; FAR1; FAR2; FAR3; COM3; COM4), as it provides final consumers with some sort of confidence that environmentally and socially sound production practices were adopted during their production (pers. comm.: TECH4; TECH5; CERT1; COM4; COM5). The production and marketing of certified palm oil have become “almost mandatory” for large oil palm companies that envision growth, especially internationally (pers. comm.: RES1; GOV2; FAR1; FAR2; COM1; COM2). When considering the many different oil palm and cocoa products available in the market, some stakeholders perceive that by meeting consumer demand for sustainable products large companies can diversify their market options and thus remain competitive (pers. comm.: GOV5; COM3; COM1) and enhance their profitability (pers. Comm. CERT3; NGO1). Furthermore, considering that certified products usually fetch higher prices (pers. comm.: NGO4; NGO7; GOV5), it is perceived that this can further enhance company profitability (pers. comm.: NGO1; NGO3; COM3; COM5).

Company image relates to a large extent to public perceptions and can be key to company branding, growth, and

sustainability. Many respondents stated that public perceptions (and their possible backlash) drive certification adoption by large companies, both within the cocoa and oil palm sectors (pers. comm. NGO3; NGO11; TECH5; FAR1; FAR2; COM1; COM4). In this respect, certification adoption can help cultivate the image of a sustainable brand/company and foster its good reputation (pers. comm. TECH3; COM4; CERT2), by preventing community and civil society agitation triggered by unsustainable production practices (pers. comm. TECH5; NGO6). This can offer credibility and improve public perception towards such companies (pers. comm.: COM1; COM4; CERT2; NGO8; TECH5; FAR1; FAR2). However, for some companies, sustainability is a core value, as they are public entities or have shareholders with strong convictions about sustainability (pers. comm.: GOV2; COM4; COM1). In this case, by adopting certification standards such as Fairtrade and RSPO, companies can ensure that oil palm and cocoa production is socially responsible and environmentally sound (pers. comm.: COM2; TECH4). Through the adoption process, they gain an independent view on how to implement effectively sustainable production practices (pers. comm.: COM4; CERT2; NGO8). The periodic audits offer crucial opportunities for continuous improvement in operational practices, as they are always followed with recommendations on how to enhance operational efficiency (pers. comm.: COM4).

When it comes to company operation and viability, the adoption of certification standards entails the use of best

Fig. 6 Perceived impacts of oil palm and cocoa certification in Ghana



production practices, which is linked to improvements in yield and quality (pers. comm. TECH1; FAR1; FAR2; FAR3). This is particularly important for companies relying on smallholders for the continuous supply of cocoa/oil palm, either totally or to operate at full capacity (mainly large oil palm companies) (pers. comm.: TECH4; TECH2; NGO6). In this sense, by enhancing the reliable supply of high-quality oil palm and cocoa from smallholders, many companies also seek to boost their long-term viability and harmonious coexistence with local communities (personal comm.: GOV1; TECH5). Similarly, some companies consider the adoption of certification, and the accompanying support to their smallholder supply base as a central element of their CSR activities, and an avenue of maintaining strong connections with their supply base (pers. comm.: TECH5). Finally, by adopting certification standards companies undertake substantial investments to re-orient their production practices. It can be argued that this is a subtle way to access finance by conveying the efforts taken for the long-term stability of companies considering the large cost of certification, thus offering some trust about payback ability (pers. comm.: GOV3; COM3).

Patterns between stakeholder groups

Stakeholder perceptions regarding the drivers of certification are quite varied, possibly reflecting their positions and roles within the certification processes. According to Fig. 4, GAs

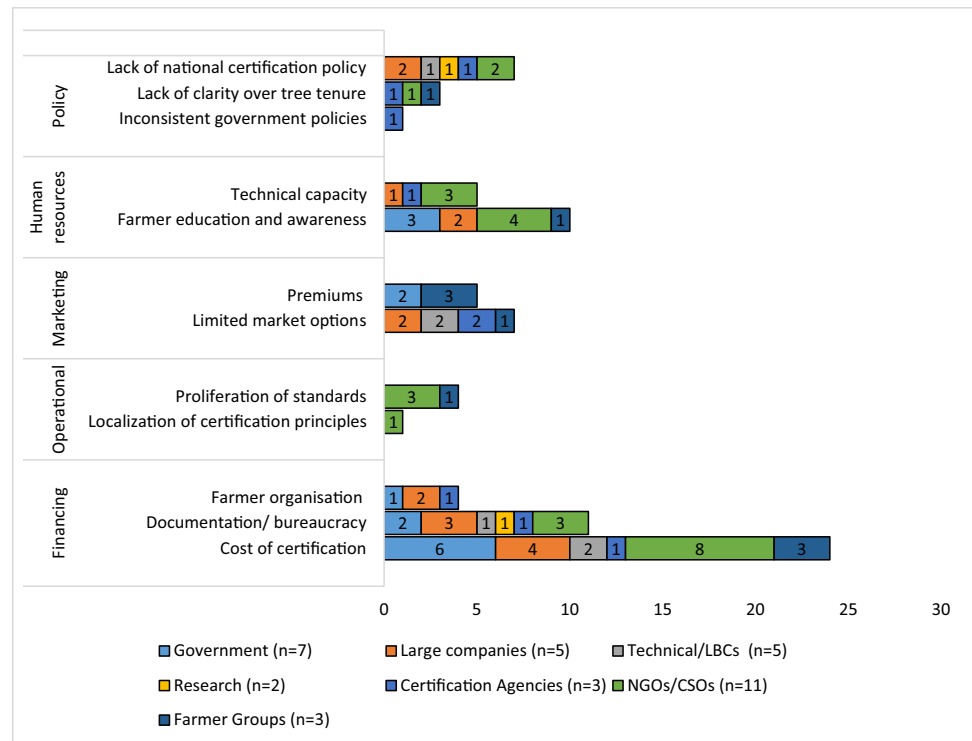
and LBCs consistently consider issues related to improved farm practices, productivity, and premiums as major drivers of certification adoption. This reflects their major supporting role in such activities through extension, input provision, and cocoa purchase. Drivers related to market access feature more prominently in perceptions of respondents from the private sector, highlighting the important links between certification adoption and market access (Figs. 4–5). Figure 5 points that market-related drivers are perceived as the particularly significant among large companies, followed by corporate image, core values, and company viability.

Impact of certification adoption

Table 2 and Fig. 6 present the main perceived impacts and underlying mechanisms as reflected in the interviews. The most widely mentioned positive impacts include reduced environmental pollution ($n=22$), farm productivity gains ($n=22$), reduced deforestation ($n=21$), income gains ($n=20$), reduced health burdens ($n=13$), capacity building access ($n=12$), preservation of waterbodies ($n=11$), and reduced biodiversity loss ($n=11$) (Fig. 6).

Similar to the drivers of adoption, stakeholder perceptions regarding the impacts of certification are quite varied, also possibly reflecting their position and role within the certification processes. It is worth noting that NGOs perceive challenges among all major impact categories, possibly due to their role as a “watchdog” in the sector, which seems to

Fig. 7 Perceived barriers to oil palm and cocoa certification in Ghana



allow them a better grasp of the different impacts of certification adoption.

Barriers to certification

The expert interviews suggest that various financial, operational, marketing, capacity and institutional factors pose major barriers to the widespread adoption of certification in the oil palm and cocoa sector (Fig. 7). These barriers are largely common between the two sectors, and unless otherwise stated, they are discussed jointly below.

The main financial barrier to certification relates to the high cost of certification (pers. comm.: NGO5; NGO8; FAR1; FAR2; FAR3). The high cost of certification affects both smallholders and large companies and is closely related to some of the barriers discussed below. In particular, large companies must undertake major changes to their operations to internalize the processes stipulated in certification standards, which usually requires huge financial commitments that may be beyond the financial capacity of some companies (pers. comm. NGO10; TECH4). Furthermore, large companies often need to recruit dedicated staff to steer in-house certification processes and train existing staff to implement certification standards, which both require substantial financial capital (pers. Comm.: NGO4; CERT3) (see below). Similarly, the cost that smallholders, may incur to make adjustments to farm operations might be prohibitive (e.g., to change labor and agricultural practices) (personal comm.: TECH3; NGO4; NGO10; NGO3). Apart from costs

associated with changes in internal operations, certification adoption entails external auditing from third-party certifiers, which can further increase costs for large companies and smallholders (pers. Comm. COM4). As a means of reducing the high certification costs, smallholders often organize into groups to undertake certification jointly, but still costs might be prohibitive (personal comm.: GOV6; NGO8; NGO11; GOV3).

The operational barriers to certification tend to revolve around the heavy bureaucracy, lack of farmer organization, challenges in localizing certification principles, and the confusion that the proliferation of certification schemes brings. In more detail, many respondents pointed to the extensive documentation of certification principles, guidelines, and criteria (pers. comm. TECH3; TECH4; TECH5) as well as the toll of bureaucracy when dealing with national authorities (pers. comm.: RES1). Securing the right documents and navigating the overall process often puts a heavy toll on farmers and companies (pers. comm.: RES1; TECH3), e.g., for documenting and compensating properly all certified plots (pers. comm.: COM1) (see also below). Operationalizing locally some of the certification principles and guidelines is also challenging as some are rooted in international agendas and debates rather than national realities (pers. comm. NGO6). For instance, even though RSPO standards stipulate that oil palm growers and millers should demonstrate legal ownership/lease, history of land tenure, and the actual legal land use, most Ghanaian farmers lack official land titles (pers. comm.: NGO6). The lack of farmers'

organization often adds to the time and effort for locally implementing certification standards (pers. comm.: COM5). GAs, LBCs and other stakeholders have to put extensive effort towards organizing farmers into groups, which usually becomes more complicated due to intra-group dynamics and personal agendas during decision-making processes (pers. comm.: CERT1). Finally, the proliferation of certification schemes (with their different guidelines, criteria and principles) tends to confuse many smallholders on how to implement the various guidelines (pers. comm.: NGO4; NGO2; NGO5; FAR3). For instance, a single cocoa smallholder may be signed to more than three certification schemes that have slightly different guidelines and indicators, making their effective implementation difficult and laborious (pers. comm. NGO4).

Marketing barriers to certification include the two inter-related issues of premium payment and market demand for certified products. Even though premiums are a major driver of certification adoption (especially for cocoa smallholders), some LBCs and GAs reduce drastically (or even do not pay at all) premiums due to low market demand for certified products (pers. comm.: GOV7). Conversely, oil palm certification is still in its infancy, with no premium paid to smallholders (pers. comm.: COM4; FAR1; FAR2). Issues related to premium payment often boil down to the fact that certified production often exceeds demand (pers. comm.: TECH4; COM2; CERT2). In this case, some certified products end up being sold as conventional products in global markets, despite the added effort/cost for their production (pers. comm. TECH4; FAR3). This has immediate ramifications for premium payment (pers. comm. CERT1), and puts an extra burden on GAs/LBCs to secure potential buyers and erodes their trust (pers. comm. GOV7; TECH5).

In terms of capacity, the farmers' low education and lack of technical know-how put further barriers to certification. For example, low farmer education often constrains effective smallholder training for implementing the otherwise highly technical certification principles (pers. comm.: GOV3). This makes it difficult for farmers to appreciate/apply certification concepts and increases their frustration, sometimes catalyzing dis-adoption (pers. comm.: GOV2; GOV1). Certification also requires extensive record-keeping (e.g., farm activities, auditing) but very few smallholders can read and write (pers. comm.: TECH3; TECH4; FAR3). Conversely, companies often need specialized staff to implement the highly technical standards (pers. comm.: NGO4; CERT3). However, as the existing staff often lacks capacity in sustainability management (pers. comm.: NGO3), companies have to build capacity either through training or recruitment, which are both time- and resource-demanding (pers. comm. COM4). External auditors are usually highly specialized and in short demand, thus mostly come from abroad (pers. comm.: NGO5), further compounding the high cost of auditing.

Finally, various policy factors constrain certification adoption and effective implementation, including inconsistent government policies, lack of clarity over tenure, and, most importantly, the lack of a comprehensive national certification policy. As discussed, certification is voluntary and mostly private sector-led, but government policies establish the boundaries within which (and impact on how) certification systems function. For instance, government policies on input subsidies to cocoa farmers are not consistent between years (and are often affected by the government of the day), complicating the advanced planning of farming activities and the effective implementation of certification requirements related to agrochemical use (pers. comm.: CERT2). Such inconsistencies also affect GAs and other stakeholders that are tasked to support smallholders, e.g., by affecting input support schemes and related input payments (pers. Comm.: CERT2). Furthermore, apart from the challenges posed by prevailing land tenure rules (see above), aspects of tree tenure are also contentious. In particular, cocoa farmers have been encouraged to incorporate shade trees,⁴ but according to timber exploitation policies, farmers need to go through a lot of tedious processes to exploit planted trees thus partly disincentivizing certification adoption (pers. comm.: CERT2; NGO3; FAR3). Finally, a major policy gap is the lack of a national comprehensive policy for certification promotion and implementation (pers. comm.: TECH1; RES2). This prohibits, to some extent, the widespread adoption of a sustainability agenda, as there are still strong incentives to produce uncertified cocoa and oil palm (pers. comm.: TECH1).

Figure 7 suggests that most stakeholders identify financing barriers as the major hurdle to certification adoption, with the most consistent responses in each stakeholder group. Conversely, only government agencies indicate non-payment of premiums as a major barrier, possibly because they are the major avenue for lodging complaints to LBCs and GAs. It is also worth noting that only NGOs identify operational barriers to certification, possibly due to their role in supporting farmer groups and observing the challenges that farmers experience when choosing or implementing certification standards.

Discussion

Synthesis of the perception mapping exercise

The institutional analysis highlights the large diversity of stakeholders involved in oil palm and cocoa certification

⁴ The incorporation of shade trees is also part of many certification guidelines as a means of mitigating deforestation rates.

processes in Ghana, as well as their tight interconnections. Similar to other geographical contexts and types of agricultural commodity certification systems, these interconnections take multiple forms such as policy formulation and implementation, research, advocacy, and funding (Troster and Hiete 2018; Buliga and Nichiforel 2019). Smallholders occupy a central part in the certification processes for both sectors, despite the fact that some elements of the institutional landscape are rather different between them, largely due to the central role (and power) of large oil palm producers (Figs. 2, 3). However, the inherently low capacity of both oil palm and cocoa smallholders in Ghana in terms of resources and knowledge (Danso-Abbeam and Baiyegunhi 2018), necessitates the involvement of various organizations to promote certification among smallholders. This has also been observed for other commodities and geographical contexts around the world (Bravo-Monroy et al. 2016). Currently, various LBCs, GAs, and NGOs organize, manage, or provide support to smallholder farmer groups and cooperatives to engage in certification processes, especially in the cocoa sector (Fenger et al. 2017).

However, the large diversity of stakeholders involved directly and indirectly in certification processes gives rise to radically different perceptions about the drivers, impacts and challenges of certification (Moreno-Penaranda et al. 2015). By “mapping” these divergent perceptions, this paper argues that they need to be understood well to enhance the adoption and performance of certification processes in both sectors. Below we summarise the most important aspects of this perception mapping exercise.

First, rather different factors drive certification adoption among smallholders and large companies. Most stakeholders perceive that mostly market-related factors such as premiums and market demand influence certification adoption among smallholders (Fig. 4). This reflects a plethora of studies demonstrating that premiums are quite appealing to smallholders and that, if designed properly, could be major incentives for certification adoption (Furumo et al. 2020; Ansah et al. 2020). Some respondents also perceived farm productivity gains (and associated impacts) as important drivers, albeit to a lesser extent (Fig. 4). Arguably, this notion that premiums play the most important role in driving certification adoption among smallholders possibly reflects a perception among respondents that there is either a lack of efforts to expose farmers to the multiple positive outcomes of certification beyond the obvious extra payment through premiums or an inability to convey such messages well.

Conversely, almost all stakeholders perceive that large companies engage in certification processes mostly due to consumer demand for certified products and that by catering to this demand they can improve competitiveness (Fig. 5). Many scholars have indeed suggested that such market-related drivers influence large producers of agricultural

commodities to improve their production practices (Moreno-Penaranda et al. 2015; Akoyi and Maertens 2018; Krauss 2017). Company image and core values are also perceived as strong drivers of certification among large producers in Ghana, though to a lesser extent (Fig. 5). This is despite the fact that globally many large commercial producers of agricultural commodities steadily embrace a more sustainable image to guide their operations, viewing certification as a potential avenue to meet their CSR goals (Krauss and Barrientos 2021; Rao and Bernaz 2020; Ingram et al. 2018; Fenger et al. 2017) (see [Introduction](#)).

Second, most stakeholders perceived that certification has positive economic and environmental impacts. Improved farm productivity, income gains, and capacity-building opportunities were perceived as the most important economic impacts (Fig. 6). This reflects well the fact that the cocoa productivity in Ghana is normally below global averages, with cocoa farmers always searching for avenues to improve cocoa yields and income (Danso-Abbeam et al. 2012), or access otherwise scarce extension, capacity-building, and funding opportunities in rural Ghana (Danso-Abbeam et al. 2018; Asiedu-Darko 2013). In terms of environmental impacts, most stakeholders perceive that certification has a positive impact in reducing deforestation, pollution and biodiversity loss (Fig. 6), through, for example, planting shade trees, avoiding indiscriminate logging, and controlling/rationalizing agrochemical use (Table 2) (Asare et al. 2019). On the social side, some stakeholders perceived impacts related to reduced health burdens, farmers’ empowerment, and awareness over child labor awareness but to a lesser extent over other impact categories (Table 2; Fig. 6). Positive social impacts are mostly associated with the strict use of PPEs and other health-related protocols during farm operations. It is worth mentioning that stakeholders had relatively different perceptions as to the extent that these positive impacts materialized and none explicitly mentioned any negative impacts.

Finally, stakeholders perceived multiple financial, operational, marketing, capacity, and institutional barriers to the adoption of certification in both sectors, though to different extents (Fig. 7). Financing was perceived as the major barrier considering the high costs for training, altering operations, setting up internal control systems, and undertaking regular audit, which many farmers and companies cannot bear. This echoes many studies in Ghana and other parts of the world (Fenger et al. 2017; Djokoto et al. 2016; Chiputwa et al. 2015). There is also a perception that certification processes entail heavy documentations and bureaucracies, especially considering the rather low level of farmers’ education and capacity (Asamoah et al. 2013). In fact, to overcome the lack of capacity deficiencies, farmers have to undergo several rounds of training and practical demonstrations to master certification principles, which increases costs (both

Table 2 Perceived impacts and underlying mechanisms associated with oil palm and cocoa certification

Dimensions	Impact category	Impact mechanisms	Stakeholders
Economic	Farm productivity	<ul style="list-style-type: none"> -Adoption of good agrochemical use practices (type and quantity) -Timely access to agricultural inputs -Cultivation of improved varieties -Adoption of improved agricultural practices 	TECH1;TECH2;TECH3; TECH4;GOV1;GOV2; GOV3;NGO3;NGO5;NGO8;NGO9;NGO10;NGO11;CERT1;CERT2;CERT3;COM2;COM5;FAR1; FAR2; FAR3; RES1
	Income	<ul style="list-style-type: none"> -Receipt of premium (extra payment) -Higher farm output/higher yields -Engagement in other income generation activities (e.g. trading, oil palm processing) 	GOV1;GOV2;GOV3;GOV5;GOV6;CERT1;CERT2;NGO2;NGO3;NGO4;NGO5;NGO8;COM1;COM5;FAR1;FAR3;RES1;RES2;TECH3
Social	Access to finance	<ul style="list-style-type: none"> -Better access to credit and financial schemes -Pooling of financial resources by farmer groups 	TECH1;RES2;GOV3;GOV7;COM3;FAR1;FAR2;FAR3
	Capacity-building	<ul style="list-style-type: none"> -Access to dedicated extension staff/services -Access to routine training on best management practices 	TECH1;TECH3;TECH4;TECH5;GOV1;GOV3;GOV5;NGO3;NGO5;NGO6; COM3;FAR3
	Social capital	<ul style="list-style-type: none"> -Pooling of financial resources by farmer groups -Creation of strong social bonds through farmer groups 	TECH2; TECH3;CERT1;FAR3
	Child labor	<ul style="list-style-type: none"> -Established mechanisms to monitor child labour violations -Awareness creation by extension officers -Mechanisms to enroll children back to school 	TECH2;GOV5;NGO2;NGO4;NGO5;NGO8; COM1;COM2
	Social services/infrastructure	<ul style="list-style-type: none"> -Infrastructure built by certification companies/technical companies -Premium can be used to build facilities 	TECH2;NGO1;NGO2; GOV6;CERT2; COM2;COM3;FAR2; FAR3
Health	Health	<ul style="list-style-type: none"> -Mandatory use of protective equipment 	TECH1;TECH5; NGO1; NGO4; NGO8;NGO10; GOV1;GOV3;GOV5;FAR2;FAR3;COM5;CERT2
	Local traditions/rights Farmer empowerment	<ul style="list-style-type: none"> -Adoption of good agrochemical use practices (type and quantity) -Guidelines to guarantee and respect local rights and traditions -Ensure that land-users have documentation -Allowing farmer voices (pricing, use of premiums, infrastructure, etc.) 	NGO5;NGO7;NGO10 NGO2;NGO4;NGO7;NGO10;GOV2;FAR3;RES1;CERT1
Environment	Waterbody conservation	<ul style="list-style-type: none"> -Develop buffer zones -Adoption of good agrochemical use practices (type and quantity) -Plant shade trees around water bodies 	NGO2;NGO3;NGO5;NGO6;NGO10;FAR1;FAR2;FAR3;CERT1;COM1;RES1;TECH1
	Deforestation	<ul style="list-style-type: none"> -Plant shade trees on farms -Monitor deforestation rates by GAs, extension agents, and auditors -Awareness generation for clean cooking options 	GOV1;GOV2;GOV3;GOV4;GOV6;CERT3;CERT1;NGO1;NGO2;NGO3;NGO5;NGO7;NGO8;NGO9; NGO11; FAR1; FAR2;FAR3;COM1;COM5;TECH3
Soil quality	Pollution	<ul style="list-style-type: none"> -Adoption of good agrochemical use practices (type and quantity) -Knowledge about the negative impacts of uncontrolled agrochemical use -Increased use of organic manure (e.g. cocoa pods) 	TECH2;TECH3;TECH4; TECH5;GOV1;GOV3;GOV4;GOV5;CERT1;CERT2;CERT3;NGO2;NGO3;NGO4;NGO5;NGO10;COM1;COM2;FAR1; FAR2;FAR3;RES1
	Soil quality	<ul style="list-style-type: none"> -Adoption of good agrochemical use practices (type and quantity) -Reduced soil erosion -Increased use of organic manure (e.g. cocoa pods) to build organic matter stocks 	GOV1;GOV3;NGO3;COM3;TECH4;RES1
Biodiversity	Biodiversity	<ul style="list-style-type: none"> -Prohibition of hunting on farm areas -Plant shade trees on farms and around water bodies -Ban of slash-and-burn agriculture -Reduced cutting of trees 	TECH2;TECH3;NGO1;NGO2;NGO3;NGO5;COM1;COM3;COM5;GOV3;CERT1;

direct and opportunity costs), creating a vicious cycle that hampers adoption (Ansah et al. 2020; Chiputwa et al. 2015). Interestingly, some stakeholders also indicated the lack of a clear national policy on certification as barrier to certification adoption, partly due to the notion that if farmers are not mandated to adopt any standard, they have no motivation to do so.

Reflections from the perception mapping exercise

Although this study focused on mapping the perceptions of the main stakeholders engaged in oil palm and cocoa certification processes in Ghana, it is possible to make some wider reflections. Below, we discuss some critical points surrounding the (a) relative “invisibility” of government agencies in certification processes, (b) trade-offs and implications of top-down and bottom-up approaches to certification, (c) differentiated power distribution channels across the two certification value chains.

First, similar to some other certification contexts, public institutions are quite invisible in the current certification processes and discourses in Ghana (Moreno-Penaranda et al. 2015). Indeed, the institutional landscapes suggest the relatively peripheral position of government institutions in certification processes for both crops (Figs. 2–3). However, there are some major differences. The cocoa sector is highly regulated by the government through the Ghana Cocoa Board, which oversees the LBCs that both buy cocoa from farmers (to sell to international buyers) and facilitate certification adoption (Ansah et al. 2020). Thus, although the government does not directly dictate policies on certification it has a rather significant indirect influence on certification processes through its strong regulation of the cocoa sector. Conversely, the oil palm sector lacks such a strong government regulation, with processes at times being closer to a *laissez-faire* mentality, with little intervention between producers and buyers (whether national or international). As discussed below these differences in the role and involvement of the national government mediates some of the trade-offs and power asymmetries observed in the certification processes of the two sectors.

Second, the current certification modalities and outcomes in the oil palm sector suggest that the rather top-down approach to certification in the sector can greatly increase the speed and reach of standards’ adoption among smallholders compared to the more conventional bottom-up approaches characterising the cocoa sector. Indeed, large oil palm companies essentially “force” their outgrowers to adopt certification standards rapidly, without paying premiums. This is facilitated by the vertical structure of these oil palm companies, low demand for certified palm oil, and the generally little regulation in the oil palm sector, compared to cocoa as outlined above. As mentioned in “Introduction”,

certification has been a critical avenue for commodity crop companies to meet their CSR commitments, but also their bottom-lines (Rao and Bernaz 2020; UNCTAD 2012; Bianco 2020; Krauss and Barrientos 2021). This is obvious considering that for large oil palm companies, market-related factors are strong motives for engaging in certification (Fig. 5). This creates interesting trade-offs between “profitability”, “sustainable production”, and “fairness”, in that the “mandatory” adoption of certification by outgrowers improves the market position of the large companies that contract them. In theory, this improves the sustainability of oil palm production through standards adoption but does little to compensate these outgrowers directly. Mindful that premiums are just one of the benefits of certification to smallholders (but possibly one of the smaller ones) (Dompheh et al. 2021a), this still begs the question of whether this approach to certification is actually sustainable.

Conversely, in the cocoa sector, it is practically impossible to avoid paying premiums partly due to the well-developed certification system, higher consumer demand, and the strong regulation of the LBCs from Ghana Cocoa Board. Furthermore, smallholders have the voluntary right to not adopt or even dis-adopt certification standards without suffering personal consequences (except for being excluded from certified cocoa marketing channels) (Ansah et al. 2020). However, such certification processes might be more time-consuming, complicate compliance monitoring, include more middlemen, and suffer from other questionable corporate practices such as the manipulation of premium payments or predatory recruitment (Ansah et al. 2017; Dompheh et al. 2021a). Again, this creates complicated trade-offs, which are quite different from those outlined for the top-down approaches to certification observed in the oil palm sector.

Ultimately many of these trade-offs depend on the nature of the commodity crop value chain and the level of regulation but arguably affect both the adoption and performance of certification standards. Top-down approaches may help companies exert a better control of standards’ adoption and may achieve good certification outcomes. However, such top-down approaches might underperform as observed in other certification contexts (e.g., Buliga and Nichiforel 2019), or reduce the ownership of the certification process by smallholders, as they may be seen as an external imposition, thus negatively affecting their wide adoption (Ouyang et al. 2020). Such trade-offs need to be considered when promoting certification standards, whether through top-down or bottom-up approaches, if certification is to enhance the sustainability of commodity crop production.

Third, the above suggest some commonalities and differences in the power distribution and dynamics underpinning certification processes across the two value chains. As in most certification contexts, final consumers (usually large

companies in developed countries) exert disproportionate power in commodity value chains and related certification processes (Abdulsamad et al. 2015). This clearly manifests and in our case as consumer demand is perceived as a major driver of certification adoption, both for smallholders and large producers (Figs. 3, 4). However, the way this power is exerted to smallholders is rather different in the two value chains. The relative lack of strong regulation in the oil palm means that the power exerted from international consumers to large domestic producers to adopt certification is transmitted almost unfiltered to outgrowers that are “forced” to adopt certification standards, having little saying in the process. Conversely, the power of large international consumers to cocoa smallholders is buffered by the strong overseeing role of the government to the LBCs (that recruit smallholders to adopt standards) through the Ghana Cocoa Board. Understanding these power asymmetries and how power is exerted is beyond the scope of the current perception mapping exercise but should be explored in greater length. Better understanding of these power dynamics could help in ascertaining whether certification processes can indeed benefit smallholders beyond the bottom-line of large domestic producers and international buyers and what modalities can be put in place to achieve this.

Policy and practice implications

First, while premiums are perceived as the most important driver of certification adoption among smallholders, they are beset with many problems (e.g., low levels, payment delays, unilateral change in payment sums) disincentivizing cocoa farmers in the process (pers. Comm, GOV7; FAR3). The situation is even worse in the oil palm sector, considering the current lack of premium payment to smallholders. Arguably, both increasing premium levels and improving their design and payment modalities could offer a good incentive for the wider adoption of certification standards among smallholders. However, most smallholders tend to concentrate on the modest direct payments from premiums, not considering or even understanding the wider benefits of certification. By “fixating” on premium, smallholders run the risk of “seeing the tree rather than the forest”. Hence, there should be significant efforts towards farmer education and training regarding the wider sustainability benefits of certification, conveying that premium is just one of these benefits.

Second, certification costs should be reduced (especially for smallholders), without, of course, compromising the effectiveness of the standards. Investing in training and/or subsidizing related fees could reduce some direct costs. However, such training can go beyond certification practices to, for example, cover possible investment options for the premiums to increase further farm output (e.g., re-investment to agricultural inputs), reduce production costs,

or both. Building national expert capacity (e.g., for auditing) could reduce more broadly certification costs in the sector (e.g., decrease reliance on highly paid international auditors).

Third, as certification is voluntary, it is not regulated through a centralized policy framework. Indeed, despite the strong overseeing role of the Ghana Cocoa Board in the cocoa sector (and as an extension on cocoa certification), there is no dedicated policy mandating or regulating directly both cocoa and oil palm certification. Considering this a major policy gap, some stakeholders have called for the development of a cohesive policy framework to centrally regulate certification processes, e.g., by mandating the adoption of some minimum sustainable production practices (pers. Comm. CERT2; TECH1; RES2). However, for any such effort there should be extensive prior deliberation between all relevant stakeholders about its scope and mandate, coupled with robust research about its possible format and modalities.

Conclusion

Very diverse stakeholders engage in cocoa and oil palm certification processes in Ghana. These stakeholders have very different agendas and perspectives on the drivers, impacts, and challenges/barriers to certification. Yet, most stakeholders identify market-related factors such as premiums, consumer demand and competitiveness as the main drivers of certification adoption among smallholders and large companies. The adoption of certification standards is associated with positive economic and environmental impacts such as income generation, farm productivity gains, and reduced deforestation and pollution. However, multiple financial, operational, marketing, capacity, and institutional constraints are perceived to pose major barriers to certification adoption. It would be necessary to solve such challenges and constraints and create stronger synergies within each sector to improve the uptake and performance of certification standards. Some of the most promising options include to (a) improve premium design and payment modalities and build smallholder capacity to appreciate the wider benefits of certification, (b) reduce certification costs (especially to smallholders), and (c) explore the feasibility of a nationally mandated approach to certification.

Interestingly, due to differences in the crop production systems, market channels, and regulations, there are some differences in certification modalities between crops, with oil palm certification processes being rather top-down and cocoa certification being more bottom-up. Furthermore, even though power asymmetries are similar in the two value chains, power dynamics are mediated through rather different processes. The trade-offs of different approaches to

certification and the power dynamics underpinning them need to be appreciated better to not only ensure the widespread adoption of certification standards but that their wide adoption would be translated into positive sustainability outcomes.

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Author contributions EBD: conceptualization, software, formal analysis, writing—original draft, visualization, data curation, and methodology. RA: supervision, writing—review and editing, visualization, resources, and methodology. AG: conceptualization, methodology, supervision, writing—review and editing, and resources.

Declarations

Conflict of interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

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