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Cocoa Certification in Cameroon: Socioeconomic Determinants and Performance of Producers in Mbam Division, Center Region

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Aims: The present research aimed to analyse the constraints and challenges of the certification of cocoa in the mbam division, center region of cameroon.
Study Design: In this study, the simple random sampling method was used for the selection of cocoa farmers in the study.
Place and Duration of Study: The study was conducted in the ombessa and bokito sub divisions of the mbam and inoubou division, center region of cameroon in 2022.
Methodology: A total of 300 respondent cocoa farmers were randomly selected from two different sub divisions: ombessa (170) and bokito (130) farmers. Other stakeholders, exporters and agricultural extension experts were also consulted.

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Results: Field findings revealed that 66% of cocoa farmers in mbam have adopted certification against 34% who have not yet adopted with regards to gender, there is a high proportion of adopters of cocoa certification (65.96% for men and 66.67% for women) than the non-adopters (34.04% for men against 33.33% for the women). furthermore, majority (80%) of the respondents who have adopted cocoa certification are below 35 years of age against 20% who have not adopted. regarding the level of education, field findings also revealed that 100% of respondents with university studies have adopted the certification while a greater percent (80%) of those who have never been to school have not adopted. the results also show that majority (39%) of the respondents have an experience of 21 to 30 years in cocoa farming. Furthermore, it was found on the field that the production of certified cocoa is a decreasing function of the area exploited; it is 83.33% at less than 5ha, to 54.17% for farms of more than 10ha. majority (70.83%) of the adopters of cocoa certification here belong to producer organizations (gic, cooperatives) against 53.57% who adopted without belonging to any producer organizations. furthermore, findings also show that producers of both certified and non-certified cocoa have a better total income with an average of 5,578,812.5 fcfa, than those who produce only certified cocoa and non-certified producers.
Conclusion: The study concluded that there is an inverse relationship between the size of the cocoa plantation and the adoption of certification. it also shows that the producers of certified cocoa have a better technical and economic performance than the others. The study therefore recommends that institutions should multiply financial incentives and other facilities for certified cocoa producers so that the remuneration for their effort is fair and equitable to enable them live a decent life.

Keywords: Cocoa; cocoa certification; adoption; cocoa producers; Cameroon.

1. INTRODUCTION

Today, most cocoa orchards in Cameroon are aging and seeing their productivity decline, while environmentally friendly practices are rapidly disappearing [1,2] and the majority of producers are men [3]. It is in an attempt to overcome these challenges that cocoa certification was launched in Cameroon in 2012. There are local or international certification bodies whose purpose is to guarantee the quality or conformity of a product, a service or system. This is the case of the ISO (International Standard Organisation) which is the repository of ISO certifications. The most known ones are ISO 9001, which certifies quality assurance and ISO 14001, which certifies the environmental compliance of the service or product [4].

Certification, long confined to organic farming and fair trade, has become more democratic [5]. In the late 2000s, there was a rush towards sustainable cocoa certification in southern producing countries [6]. However, the sustainable cocoa market is still embryonic, and represents only 5% of the total volume of world marketed cocoa [1,7].

The certification of products and productions by the labels “Agriculture Biologique”, “fair trade”, “UTZ”, “Rainforest Alliance”, dates back to the beginning of the 20th century [8]. Certification is “a procedure by which a third party gives written assurance that a person, service, product or process conforms to specified requirements” [9]. In Cameroon, adopted by a few farmers today, certified cocoa represents only 3% of national cocoa production and, as such, the country risks being banned from sales on the international market if all its cocoa production is not certified by 2025 [10,2].

Since the merger in 2018, the UTZ certification program has partnered with the Rainforest Alliance program to promote responsible cocoa production that benefits the producer and the market [2]. Rainforest Alliance/UTZ requires that producers follow certain agricultural practices as well as social and environmental criteria and help cocoa producers to practice farming systems that protect the environment [11-13,7].

During the 2015-2016 campaign, 20,000 tons of certified cocoa (labels combined) were exported by the country, an increase of 100% compared to the previous campaign, at the end of which 10,000 tons of certified cocoa had been exported [14]. Despite this, the quantity of certified cocoa and the number of cocoa farmers participating in certification programs remain low; certified cocoa represents only 3% of national cocoa production [6]. Certification schemes such as Organic, Fair Trade, UTZ Certified and Rainforest Alliance have recently gained recognition and popularity

among consumers of coffee, cocoa, bananas and other staple crops [15]. However, certification remains underdeveloped in Cameroon [13] because in fact, in 2016 certified cocoa represented only 3% of national cocoa production [16].

This study is therefore aimed at analysing the constraints and challenges of Cocoa certification in the MMFA. More Specifically it is to identify the factors that influence the adoption of certification by MMFA cocoa farmers and compare the technical and economic performance of certified and non-certified cocoa farms.

2. MATERIALS AND METHODS

The study used a multi-stage approach, which included two empirical research phases. Interviews were made to three agents of the cocoa exporting companies TELCAR, AMS and SIC CACAO of certain experts (3). Initially, in collaboration with the Divisional delegations of the Ministry of Agriculture and Rural Development we choose the Sub Divisions in which cocoa production is experiencing a real emergence. secondly, Structured interviews were also conducted with 300 producers including 170 in OMBESSA sub division and 130 respondent cocoa farmers in BOKITO sub division.

The survey data was analyzed using the software Excel 2016. Besides descriptive statistics for basic analysis of frequencies, non-parametric testing of survey data was used. Finally, statistical results were again triangulated with qualitative research results.

3. RESULTS AND DISCUSSION

3.1 Proportion of Farmers who have Adopted Certification

The socio-economic characteristics of respondents are important because they provide a better understanding of the distribution of the target population. Beyond aspects of gender, age and marital status, others such as level of education, membership of the farmer's organisations, experience in cocoa farming, age of the farm and area of the farm are analyzed here, and their influence on the adoption of certification is also presented. Fig. 1 shows that 66% of cocoa farmers in Mbam have adopted certification and against 34% who have not yet adopted, with the most widespread certification system being UTZ / Rainforest certification (98%). These results were similar with the work of [17] which states that adoption is generally described as a continuous process occurring in stages: knowledge (learning a new technology), persuasion (when the adopters are convinced to accept the new technology), decision (deciding to adopting the technology), implementation (putting the technology into practice), and confirmation (the adopters reaffirm or reject their decision to adopt a technology).

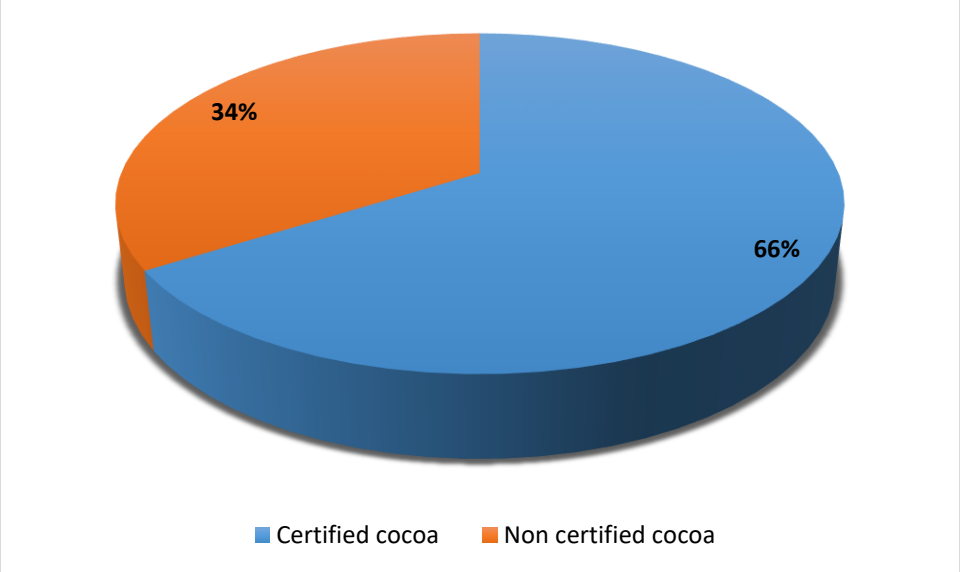

Fig. 1. Adopters and no adopters of certification

3.2 Proportion of Cocoa Farmers who have Adopted Certification According to Gender

Table 1 shows the distribution of respondents by gender and level of certification adoption. Despite the high presence of men in cocoa farming, gender does not affect the adoption of certification because the proportion of respondents who have adopted cocoa certification is higher (65.96% for men and 66.67% for women) than that of non-adopters (34.04% for men against 33.33% for the women).

3.3 Proportion of Cocoa Farmers who have Adopted Certification According to Age

It is observed that for producers under 35 years old, 80% have adopted the certification against 20% who have not adopted; between 35 and 50 years old, the adoption rate drops to 63.16% while the percentage of non-adopters increases to 36.84%; in the 51-65-year-old bracket, the adoption rate rises to 72.73% and that of non-adopters drops considerably at 27.27%; at over 65, the percentage of adopters drops to 46.15% and that of non-adopters is increased to 58.85%. This result can be explained by the fact that the young people of Mbam have even more strength than the old and can therefore committed to respecting the conditions of production of certified cocoa.

3.4 Proportion of Cocoa Farmers who have Adopted Certification by Level of Education

The data collected shows that 100% of respondents with university studies have adopted the certification, while 80% of those who have never been to school have not adopted it. The percentage of adoption of the certification for a secondary level of education is 56.52% and 73.68% for the primary education. This can be explained by the fact that Mbam cocoa farmers who have been to university are more aware of the issues of certification. In addition, the certification process requires greater vigilance on product labels, which requires a minimum of education. However, those with primary education have a remarkable seniority in cocoa farming and have for the most part been made aware of the certification requirements for almost 10 years.

3.5 Proportion of Cocoa Farmers who have Adopted Certification Based on Experience in Cocoa Farming

The proportion of producers with an experience of 21 to 30 years is the highest (39%). Those who total less than 10 years of experience and those who have between 31 and 40 years of experience each represent 14%.

Regarding the adoption of the certification, the following table provides information on the level of adoption.

3.6 Proportion of Cocoa Farmers who have Adopted Certification According to the Area of the Farm

The production of certified cocoa is a decreasing function of the area exploited; It is 83.33% at less than 5ha, decreases to 75% between 5 and 10ha then to 54.17% for farms of more than 10ha. This is explained by the fact that the application of good agricultural practices relating to certification is more difficult, especially with the scarcity of labour. In the study, only 12% of producers have farms of more than 10 hectares. The study is in line with [8], which states that the participation of smallholders remains very low in Cameroon because they cannot meet the sustainability standards imposed by certification systems. This is as a result of their ageing plantations, their small size, the isolated nature of their farmlands and the lack of material resources. Moreover, the price and premium for certified cocoa is far too low to convince small producers to invest in improving their production techniques.

3.7 Proportion of Cocoa Farmers who have Adopted Certification According to Membership of Producer Organizations (POs)

In Table 3, we see that 70.83% of producers who adopted certification belong to producer organizations (GIC, COOPERATIVES) of Mbam against 53.57% who adopted without belonging to producer organizations.

The main reason that can justify this result is that the certification support structures contract primarily with POs; also, this can be understood by the fact that it is easier to support the producers together than those evolving alone; because the pooling of efforts to comply with GAP is more evident within a PO than when one

is evolving alone. This is line with the findings of Romani., [9], who revealed that belonging to a PO is a determining factor in the level of adoption of an agricultural innovation on the one hand and Fongang. [18], who declared that in the 2000s (there 22 years ago) there has been an expansion in the creation of farmers' organizations (POs) which have benefited from the supervision and support of the various State programs on the other hand. The strong membership of POs can be justified by the work of Fongang. [18], because those who joined POs in the 2000s are currently in the category of those with more than 20 years of experience. Nlend Nkott., [16], already showed that it is necessary to belong to a PO to take part in the certification process;

3.8 Analysis of the Performance of Certified and Non-Certified Cocoa Farms

To achieve this objective, an analysis of the level of performance of the three categories of producers (certified; non-certified; and certified and non-certified).

Table 1. Breakdown of adopters by gender

Gender	Non certified Cocoa (% respondents)	Certfied cocoa (% respondents)
Male	34.04	65.96
Women	33.33	66.67

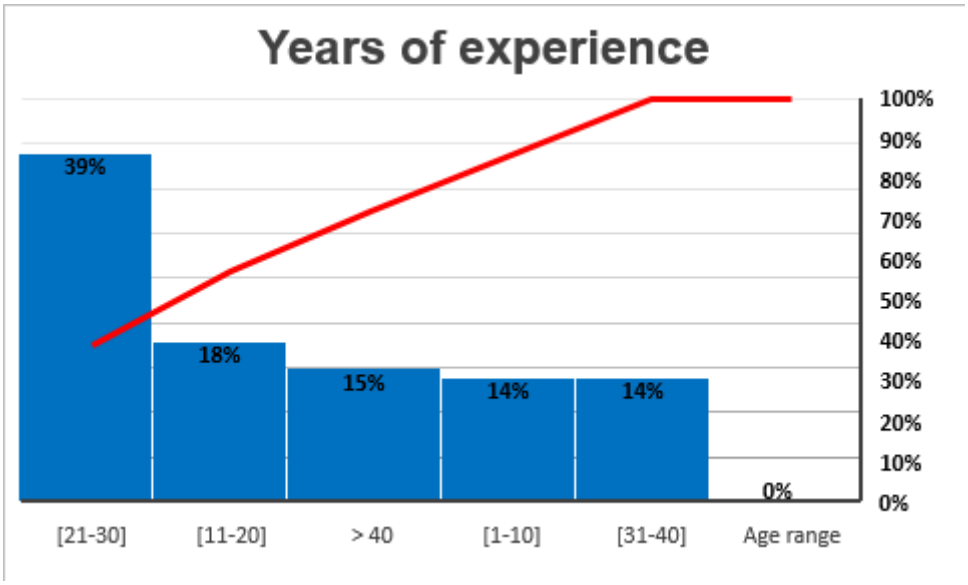

Fig. 2. Distribution of the farmers according to experience in cocoa farming

Table 2. Proportion of certification adopters according to experience in cocoa cultivation

Experience in cocoa cultivation	Total sample (%)	Uncertified cocoa (% respondents)	Certified cocoa (% respondents)
<10 years	30,00	50,00	50,00
10-20 years old	66,00	40,91	59,09
>20 years	117,00	10,26	89,74
>30 years	87,00	55,17	44,83

Table 3. Breakdown of adopters and non-adopters according to FO membership

Membership of a PO	Uncertified Cocoa (% respondents)	Certified Cocoa (% respondents)
Not a member	46,43	53,57
Member	29,17	70,83

Table 4. Performance of cocoa farmers

Performance indicator	Production of Non-certified cocoa (n=99)		Production Certified cocoa (n=153)		Production of Certified and non-certified cocoa (n=48)	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Yield in kg	2028,1	2176,7	4665,7	5725,3	5387,5	4020,7
Total charges	492584,85	455923,44	1198698	2446102,5	1847693,8	1434238,6
Cocoa recipe	2069082	2352148,3	4771578,4	6050532,4	5431906,3	5108160,7
Another recipe from the plantation	122818,18	233860,56	295382,35	411583,74	146906,25	184136,54
Total revenue	2191900,2	2518634,2	5066960,8	6380832	5578812,5	5260639,3
Profit	1699315,3	2122322,8	3868262,7	4286513,1	3731118,8	4088906,5
B/C ratio	3,1363982	2,649939	5,4601195	5,2414722	2,0944289	1,3673103

The performance indicators used in this study are the production of beans (kg), production costs, cocoa revenue, other plantation revenue, total operating revenue, profits, and the benefit-cost ratio. The results obtained at the end of this analysis shows that the most technically and economically efficient farms are those producers who combine certified and non-certified cocoa in their farms and have the best yield (average 5387.5 kg) followed by certified producers with an average yield of 4665.7 kg and non-certified producers with an average yield of 2028.1 kg. Similarly, with regard to total production costs, producers who combine certified and non-certified cocoa have the highest production costs, followed by certified producers and non-certified producers with an average total production cost which amounts to 1847693 FCFA, 1198698 FCFA and 492 585 FCFA respectively.

The results presented in the table also shows that the income from the sale of cocoa is higher for producers who combine certification and non-certification, followed by those who produce only certified cocoa and non-certified producers with receipts which amount on average to about 5431906 FCFA, 4771578 FCFA and 2069082 FCFA respectively. Other receipts from other agricultural products from the plantation are higher for producers who make only certified cocoa (295,382 FCFA) followed by producers who combine certified and non-certified (146,906 FCFA), and non-certified producers (122818 FCFA).

The results also show that respondents who produce both certified and non-certified cocoa have a better total income in the plantation with an average of 5,578,812.5 FCFA in income, followed by those who produce only certified cocoa and non-certified producers. However, the descriptive analyses show that respondents who produce only certified cocoa have the highest profit margin with an average profit of 3868262.7 FCFA followed by those who produce both certified and non-certified cocoa (3731118FCFA) and those who produce non-certified cocoa (1699315 FCFA).

The descriptive analysis of the B/C ratio shows that producers who produce only certified cocoa have the best ratio (5.46) followed by non-certified producers (3.14) and finally by those who produce both certified and uncertified cocoa (2.09). Since certification implies GAP, Collectively, or individually, farmers have an incentive to adopt GAPs to protect themselves against market externality effects from other poorly managed farms [19-21].

4. CONCLUSION

The study highlighted the links that exist between the adoption of certification practices and factors such as gender, level of education, age of the farm manager, their experience in cocoa farming, membership of a PO. However, we note that there is an inverse relationship between the area of the plantation and the adoption of certification. The study shows that the producers of certified cocoa have a better technical and economic performance than the others.

The study recommends that institutions should multiply financial incentives and other facilities for certified cocoa producers so that the remuneration for their effort is fair and equitable to enable them live a decent life.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Fairtrade. Explanatory document for the fairtrade fair trade standard for small producer organizations. Fairtrade International (FLO), Bonner Talweg, Bonn, Germany; 2012.
2. ICCO (International Cocoa Organization). Cocoa year 2015/2016. Quarterly bulletin of cocoa statistics. 2016;XLII:74–86.
3. Saïdou C, Tchemtchoua E, et al. Post-harvest system and quality of cocoa beans in the Southern Region of Cameroon, European Journal of Nutrition & Food Safety. 2021;13(12):1-7.
   DOI: 10.9734/EJNFS/2021/v13i1230466
4. Salamitou J. Environmental management: ISO 14001 standard. Engineering techniques, industrial engineering treatise; 1998.
5. Seydou O. Issues of the certification of cocoa produced in Côte d'Ivoire. Canadian Journal of Tropical Geography (RCGT). 2015;2(2):43-51.
   ISSN: 2292-4108
6. Ruf F, N'Dao Y, Lemeilleur S. Cocoa certification, high risk strategy. Rural Development Inter-Networks. 2013;7.
7. Jaza Folefack AJ, Darr D. Promoting cocoa agroforestry under conditions of separated ownership of land and trees: Strengthening customary tenure institutions in Cameroon. Land Use Policy. 2021;108(105524):1–18.
   Available:https://doi.org/10.1016/j.landusepol.2021.105524.2021
8. Kuit M, Waarts Yuca. Small producers, certification systems and private standards: Is the system profitable? Wageningen: CTA. 2015:157.
9. Romani PM. Quality and qualification: Terroir and diversity. Fres interdisciplinary seminar; University of Corsica; 2010.
10. Mbougha E. Financial and socio-environmental evaluation of Rainforest Alliance certification in the cocoa sector: Case of producers monitored by SIC CACAOS in the regions of Center and West Cameroon. End-of-study dissertation with a view to obtaining the degree of Agricultural Engineer (Option Rural Economy and Sociology); Faculty of Agronomy and Agricultural Sciences, University of Dschang, Cameroon. 2015:102.
11. ICCO (International Cocoa Organization). Study on the costs, advantages and disadvantages of cocoa certification (phase I). Consulting Report, Global Business Consulting Company (GBCC), Abidjan, Ivory Coast; 2012.
12. Jaza-Folefack AJ. Descriptive and logistic regression approaches for analysing the factors affecting the adoption of cocoa agroforests by farmers in the Centre region of Cameroon. Russian Journal of Agricultural and Socio-Economic Sciences. 2016;5(53):125–134.
    Available:http:
    //dx.doi.org/10.18551/rjoas.2016-05.17.
13. Nlend-Nkott AL, Mathé S, Temple L. Multi-level analysis of the obstacles to the adoption of cocoa certification in Cameroon. Rural Economy. 2021;370.
    Available:https://doi.org/10.4000/economierurale.7282
14. Kamogne E. Cameroon- Exports of certified cocoa doubled in 2016.
    Available:http://www.financialafrik.com/2016/09/13/cameroun-lesexportations-de-cacao-certifie-ont-double -in-2016
    Access on April 16, 2023
15. Paschall M, Seville D. Certified cocoa: Scaling up farmer participation in West Africa. New Business Models for Sustainable Trading Relationships Case Study Series; 2012.
16. Nlend Nkott Anne Lucrèce. Institutional and organizational determinants to the development of cocoa certification in Cameroon: case of the UTZ certification system in the Center region. Montpellier: Montpellier Sup Agro, Master's thesis 2: Economics of agricultural development, environment and food (EcoDEVA): Montpellier Sup Agro. 2017:99.
17. Ng'ang'a SK, Owuso Essegbey G, et al. Cost and benefit analysis for Climate-Smart Agricultural (CSA) practices in the coastal savannah Agro-Ecological Zone (AEZ) of Ghana; 2017.
    Available:https://hdl.handle.net/10568/83464
18. Fongang G. Agricultural producer organizations in West and Central Africa: diversity, dynamics, role of public policies. The case of Cameroon. Cameroon: Foundation for Agriculture and Rurality in the World (FARM). 2012:38-43.
19. FAO. Incentives for the adoption of Good Agricultural Practices, Background paper for the FAO Expert Consultation on a Good Agricultural Practice approach, Rome, Italy; 2003.

20. Jaza-Folefack AJ, Eboutou LY, Degrande A, et al. Benefits from tree species' diversification in cocoa agroforests in the Centre region of Cameroon. Russian Journal of Agricultural and Socio-Economic Sciences. 2015;11(47):3–13. Available:http://dx.doi.org/10.18551/rjoas.2015-11.01.

21. Lescuyer G, Bassanaga S. Positive influence of certification on the financial performance of cocoa production models in Cameroon. Frontiers in Sustainable Food Systems. 2021;5:743079. DOI: 10.3389/fsufs.2021.743079

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