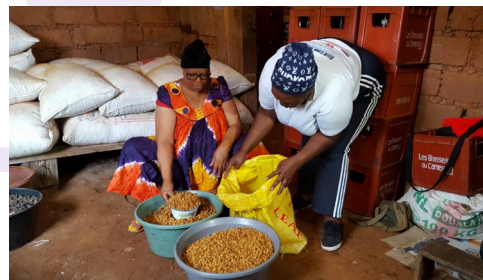
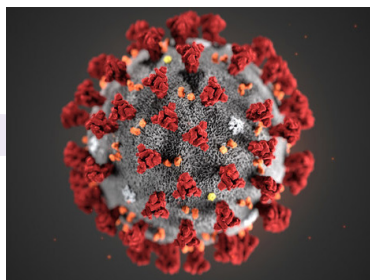


# Effect of COVID-19 on rural community enterprises: Case of community forest enterprises in Cameroon

*Piabuo SM, Tsafac S, Minang PA, Foundjem-Tita D, Guimke G, Duguma L*





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**Correct Citation:** Piabuo SM, Tsafac S, Minang PA, Foundjem-Tita D, Guimke G, Duguma L. 2021.  
*Effect of COVID-19 on rural community enterprises: the case of community forest enterprises in Cameroon.*  
Working Paper 314. Nairobi, Kenya: World Agroforestry (ICRAF). DOI: <http://dx.doi.org/10.5716/WP21007.PDF>.

The titles of the Working Paper Series are intended to disseminate provisional results of agroforestry research and practices and to stimulate feedback from the scientific community. Other World Agroforestry publication series include Technical Manuals, Occasional Papers and Trees for Change.

Published by World Agroforestry (ICRAF)  
PO Box 30677, GPO 00100  
Nairobi, Kenya  
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USA +1 650 833 6645  
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## **Abstract**

The COVID-19 outbreak has been a big shock to the entire world. The global economic slowdown and loss of human life have been highlighted as immediate impacts of the virus. Rural forest communities and their enterprises have also been affected in different ways. This study seeks to extend the current understanding of the impacts of COVID-19 by evaluating how it has affected rural community forest enterprises (CFEs) in Cameroon. A sample of 13 CFEs makes up the study. Focus-group discussions with a well-structured interview guide were used for data collection. Descriptive statistics were used for analysis. The results reveal that CFEs dealing in perishable products suffered more from the effects of restrictive government measures to contain the virus than enterprises dealing in non-perishable products. Transport costs for most activities doubled for all enterprises; labour supply was reduced by 72.5% for CFEs dealing in perishable products and 50% for enterprises dealing with non-perishable products. The commercialization of CFEs' products was also adversely affected: market prospects reduced by 100%; sale prices of products reduced by 57% for perishable products and by 60% for non-perishable products; and global commercialization costs increased by 100%, for all CFEs. With the virus outbreak, CFEs also were challenged engaging with their partners, especially donors, technical support organizations and the private sector. The study recommends exploiting value-addition options through the processing of perishable products to improve enterprise resilience to such exogenous shocks.

**Keywords:** Community forest enterprise, COVID-19, sustainability, adaptation

## **Acknowledgements**

The study was conducted with the generous support of UK Aid, Department for International Development, and implemented by ICRAF and partners. We are also grateful for the support received from the CGIAR Research Program on Forests, Trees and Agroforestry. The authors also thank participants and implementing organizations, such as Environment and Rural Development Foundation, Centre D'appui aux Femmes et aux Ruraux, Cameroon Ecology and Coopérative Agroforestière de la Trinationale (Cameroun) for their support during data collection. Special thanks also go to Yvonne Baraza, communications specialist for the Landscapes Governance research group of ICRAF for editing and formatting. The authors also thank the reviewers for their comments.

## Résumé

L'épidémie de COVID-19 a frappé le monde entier. Le ralentissement économique mondial et les pertes en vies humaines sont apparus au rang des impacts immédiats du virus. Les communautés forestières rurales et leurs entreprises n'ont pas été épargnées. La présente étude examine les impacts de la COVID-19 sur les entreprises de forêts communautaires (EFC) au Cameroun. Un échantillon constitué de 13 EFC a été retenu. La collecte des données faite à travers des groupes de discussion s'est servie d'un guide d'entretien structuré. Des statistiques descriptives ont été utilisées lors de l'analyse des données. Les principaux résultats révèlent que les EFC spécialisées dans l'exploitation des produits périssables ont plus souffert des mesures de restrictions édictées par le gouvernement pour limiter la propagation du virus. Les coûts de transport de la plupart des activités ont doublé pour tous les types d'entreprises. L'offre en main-d'œuvre a été réduite de 72,5% pour les EFC exploitants les produits périssables et de 50% pour celles exploitants les produits non périssables. La commercialisation des produits des EFC a également été affectée. En effet, les prospections de marché ont été presque réduites à néant, les prix de vente des produits baissés de 57% pour les produits périssables et de 60% pour les non périssables. Par ailleurs, toutes les EFC ont connu une augmentation au double (100%) des coûts de commercialisation de leur produit. Suite à ladite pandémie, les EFC ont aussi été éprouvées dans la collaboration avec leurs partenaires, surtout avec ceux financiers, les organisations d'appui technique ainsi que le secteur privé. L'étude recommande que les possibilités d'amélioration de la valeur ajoutée à l'exemple de la promotion de la transformation des produits périssables soient explorées afin d'améliorer la résilience des entreprises face à de pareils chocs exogènes.

**Mots clés :** Entreprise de Forêt communautaire, COVID-19, durabilité, adaptation.

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## **Acronyms**

<b>DRYAD</b>	Financing Sustainable Community Forest Enterprises in Cameroon project
<b>CFs</b>	Community forests
<b>CFEs</b>	Community Forest Enterprises
<b>WHO</b>	World Health Organization
<b>ILO</b>	International Labour Organization
<b>UN</b>	United Nations
<b>MEKOM</b>	Le Comité de Développement villageois de Mekom
<b>COVID-19</b>	Coronavirus Disease
<b>UNDP</b>	United Nations Development Programme



## 1. Context

The outbreak of the COVID-19 virus in Wuhan Province, China in December 2019 was a pacesetter for global change in how affairs are run. Three months later, the World Health Organization (WHO) declared the virus a pandemic after recording more than 170 000 cases in 146 countries with about 6500 deaths (Zhou et al 2020). With the growing number of cases globally and with 10 cases diagnosed in Cameroon by March 2020, Cameroon's Government took measures (Table 1) to prevent the spread of the virus. On the 18 March 2020, a Government decree closed Cameroon's land, air and sea borders, issuance of entry visas to Cameroon was suspended, and all public and private schools and training centres closed. The gathering of more than 50 people was prohibited nationwide; bars, restaurants and other entertainment venues were closed from 6pm. Inter-urban transport was restricted to emergency cases, meanwhile, overloading by urban bus drivers, taxis and motorbikes was strictly prohibited, with law enforcement officers stationed to ensure compliance. These measures added to WHO's global recommended measures of social distancing, wearing of facemasks, regular handwashing, and avoiding close contact.

**Table 1.** Timeline of Government action to contain COVID-19 in Cameroon

Date	COVID-19 highlight
6-Mar-20	First COVID-19 case confirmed
13-Mar-20	Authorities implement entry restrictions
18-Mar-20	Authorities' close borders
3-Apr-20	Coronavirus containment measures extended
10-Apr-20	Authorities announce mandatory facemask use in public places
24-Apr-20	Police forcibly disperse mosque congregants
1-May-20	Government partially relaxes restrictions nationwide
23-May-20	Over 4000 cases confirmed
5-Oct-20	Schools reopened amid easing of restrictions

Despite these measures, the number of cases recorded increased rapidly between January and July 2020: the country officially recorded more than 15 000 cases (Coronavirus Statistiques 2020). At that time, Cameroon was among the 19 most-affected Sub-Saharan African countries. The figure below shows the overall evolution of COVID-19 in Cameroon in terms of cumulative cases recorded, new cases and evolution of deaths; reference is made to cumulative and new cases. The graphs below show that after the relaxation of control measures by 1 May 2020, the number of new cases increased significantly, reaching a peak at 6933 in June 2020. With continuous effort, the number of new cases saw continuous reduction.

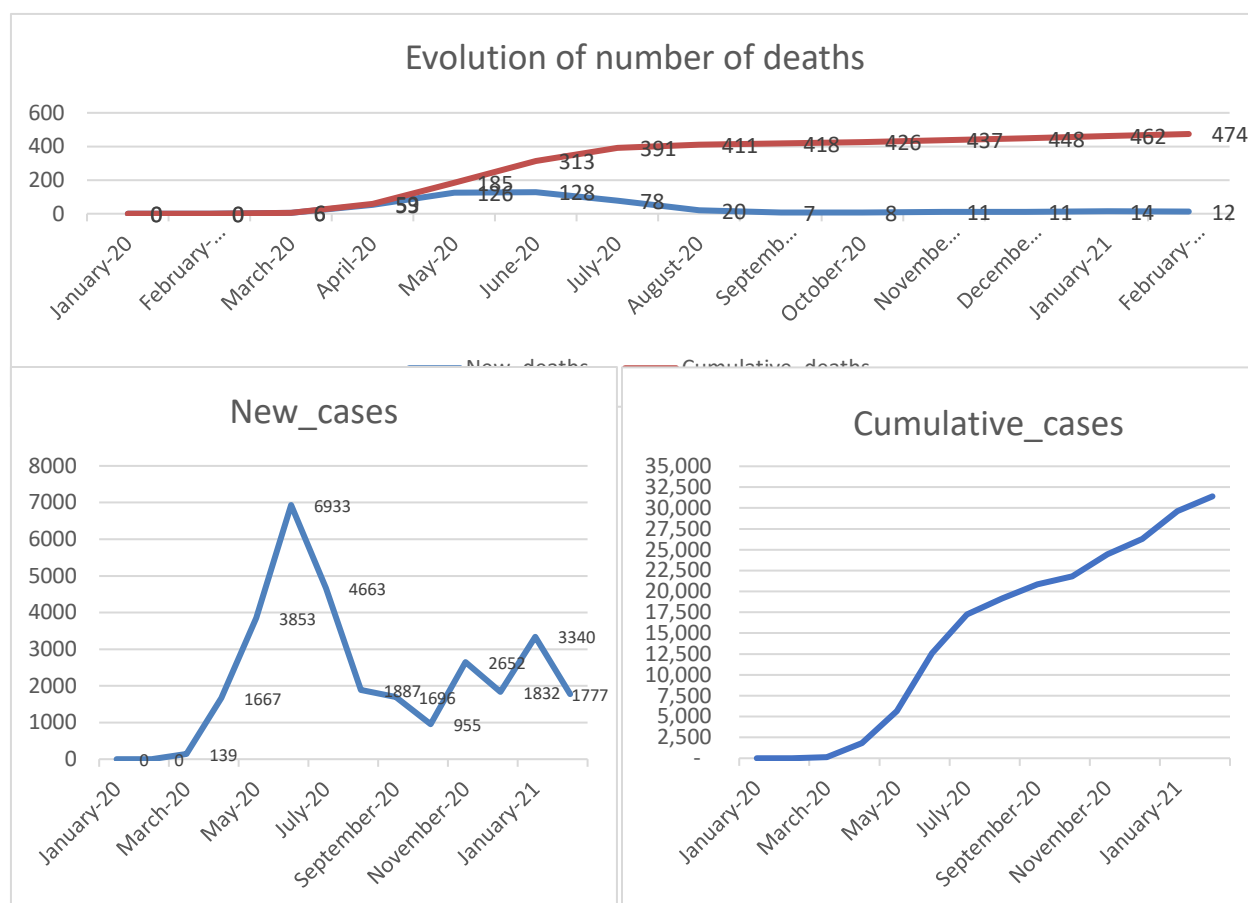


Figure 1: Evolution of COVID-19 cases in Cameroon

Source: Worldometer COVID-19 data

The outbreak of COVID-19 coupled with Government measures to contain the virus has had serious health, economic, social and environmental effects at micro- and macro-levels (Sohrabi et al 2020, WHO 2020a). Different studies have evaluated the impact of COVID-19 on critical sectors: economic activity in the primary sector reduced by 3%; the secondary sector reduced by 1.9%; while the tertiary sector reduced significantly by 4.5% (UN 2020). ILO (2020) performed a rapid evaluation of the effects of COVID-19 on the employment and labour markets in Cameroon. The findings revealed that about 80% of business owners in the formal sector experienced a significant or moderate slowdown in activities. The slowdown was even higher for businesses in the informal sector, affecting 82.6% of sampled business owners. The Cameroon Government took measures to contain the virus's unforeseen adverse effects on the economy and businesses. UNDP (2020) highlighted that nine out of ten businesses were affected negatively. Sectors such as education, banking, insurance, electricity,

water, gas and sanitation, agriculture, hotels and catering, forestry, extractive industries, livestock and fishing were affected negatively by the crisis. ILO (2020) highlighted that restrictive measures to contain the virus had more devastating effects on the economy: 76% of business owners confirmed a reduction in customer demand because of public-gathering restrictions. A further 66.7% confirmed that they could not secure products from abroad and 70.2% had difficulties paying charges. With these challenges, businesses reduced their workforce: 66.2% of small-to-medium-sized enterprises (SMEs) confirmed they reduced their workforce while 55.9% of larger enterprises also reduced. These studies have underscored how COVID-19 has affected SMEs, large enterprises and entire economies (Mishra and Kumar 2020, ILO 2020).

March–August 2020 coincided with the highest number of cases, deaths and the Government's declaration of a total lockdown. This period also coincided with the agricultural calendar for most crops and was the peak period for timber exploitation owing to limited rainfall. This period also coincided with peak exploitation and commercialization of forest resources, thus, enterprises within this sector stood a high chance of being affected differently from traditional SMEs. However, the effect on community-based enterprises were not well covered in the literature. Studies in Cameroon of forest-sector enterprises were even more challenging to find.

Our study aimed to extend the current literature by investigating how COVID-19 affected community forest enterprises (CFEs) in Cameroon. The study sought to identify short-term and potential medium- and long-term impacts of the crisis and possible actions to address within the CFE set-up.

## **2. Brief context of Community Forest Enterprises in Cameroon**

Community forest enterprises (CFEs) are defined by Macqueen (2008 p3) as an

*... entity that undertakes commercial business based on forests or trees. A credible representative body oversees it. The enterprise can claim legitimacy within a self-defining community in terms of people and area, and it generates and redistributes profits within that community.*

These enterprises emerged in Cameroon as the outcome of a public policy to devolve forest management to rural communities. This came with the enactment of the 1994 law (p. 10,) that allocates part of the non-permanent forest domain to neighbouring forest communities for sustainable management and improvement of their livelihoods, subject to a management agreement over 25-years, renewable. This law and the 1995 law of application gives forest communities the right to exploit all forest resources (timber, non-timber, fauna and water) in line with a simple management plan for the benefit of the community (MINFOF 2009). This means that the village community can conveniently develop different forms of income-generating activities within their community forest

(CF) provided they are in line with the plan (MINFOF 2009). This aimed to increase the potential of Cameroon's substantial forest resources — economic, political and social — particularly the lowland, humid, timber-rich forests covering 58% of the total surface area of the country (Cerruti et al 2009).

Since 2015, through a project, Financing Sustainable Community Forest Enterprises in Cameroon (Dryad), funded by the-then UK Department for International Development, ICRAF developed community forest enterprises (CFEs) as a pathway to sustainable forest management, coupled with long-term economic, social and environmental benefits to community members.

Dryad was the first to develop CFEs in Cameroon from business ideas to complete enterprises with revenue streams, using a performance-based system. The CFEs financed by the project were used as the population for this study, from which a sample was drawn.

The enterprises were developed under the canopy of the community forest, with the management committee of the community forest acting as the board of directors. Enterprises are headed by a manager and other staff who ensure the day-to-day running of the enterprise. The enterprise renders an account to the management committee. The committee is accountable to the community.

Profits from the enterprises are not shared but used for community development through investment in projects, such as health, improved access to water, education and roads. The enterprises are based on resources within the community forest and ensure the sustainable management of these resources.

Dryad supported 34 CFEs covering different typologies of forest products, such as agriculture and food processing (16 CFEs), timber (3 CFEs), non-timber forest products (11 CFEs), aquaculture (1 CFE), and wood processing (3 CFEs). They are characterized by their remoteness and are managed by community members.

### 3. Methodology

#### 3.1 Data collection

Data was collected from a sample of 13 CFEs dealing in different products. The map below shows the distribution of the sampled CFEs in four regions of Cameroon. Figure 2 describes the sampled CFEs.

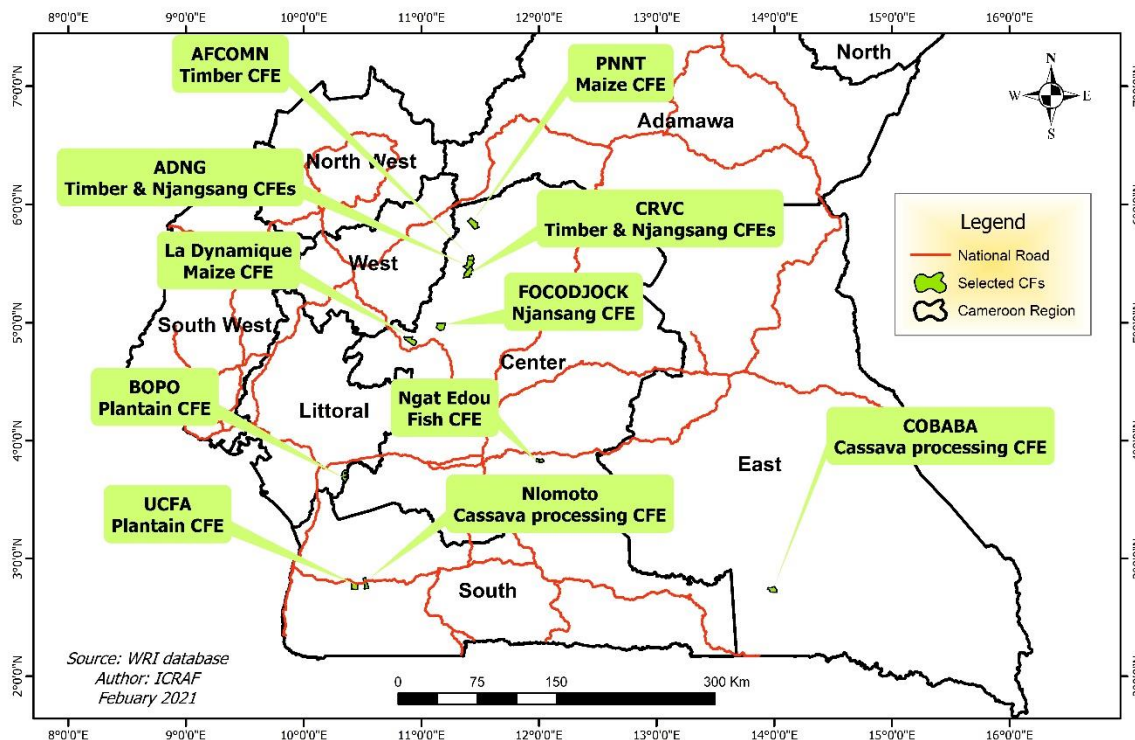


Figure 2: Map of sampled CFEs in four regions of Cameroon

Table 2 shows the distribution of sampled enterprises by typology. The CFEs were sampled using a stratified random sampling approach from a population of 32 active CFEs within the project. Sampling represented the different typologies of enterprises and captured differences in the impacts of the crisis from one typology of enterprise to another ( see Appendix 1 for more details of sampled CFEs).

**Table 2.** Typology of CFEs

Typology of CFEs	Activities	Population per typology	Number sampled	% sample
Agriculture and food processing	Produce and process cassava into by-products	16	6	37.5%
Non-timber forest products	Collect, crack, dry and commercialize 'njangsang' ( <i>ricinodendron</i> ) seeds	11	3	27.2%
Fisheries (production and processing)	Farm tilapia fish in community ponds, smoke and sell	1	1	100%
Timber	Artisanal logging of timber from community forests	3	3	100%
<b>Totals</b>		<b>31</b>	<b>13</b>	<b>35%</b>

### 3.2 Focus-group discussions

Between 16 November and 2 December 2020, focus-group discussions were conducted with members of the CFEs and management. The discussions were conducted with both women and men. In total, 13 discussion groups were conducted in 13 rural communities with CFEs; a total of 125 participants. Efforts were made to have community forest leaders, community members, and managers of the enterprises within the group discussion to share insights into the perceptions of the community and enterprise of the impacts of COVID-19. The team made an effort to have a mix of men, women and youth in the discussions. This method was employed to collect most of the data at the community and enterprise levels; the management team alone gave details of the impact of COVID 19 on the enterprise.

### 3.3 Content analysis of CFE documents

To understand trends related to sales, production and workforce, exploratory content analysis of CFE documents was done to understand how the pandemic affected them. This was also used as a method to triangulate information provided during the focus-group discussions.

## 4. Findings

### 4.1 Respect for Government measures to limit spread of COVID-19 by village communities

Panic, fear, confusion were the main words used to describe how community members felt when they heard about the coronavirus outbreak. Fear was reflected in how community members respected Government-prescribed measures to limit the virus's spread. These measures were accompanied by enforcement mechanisms put in place by the Government. The confinement measures were relaxed by a presidential decree on 1 May 2020.

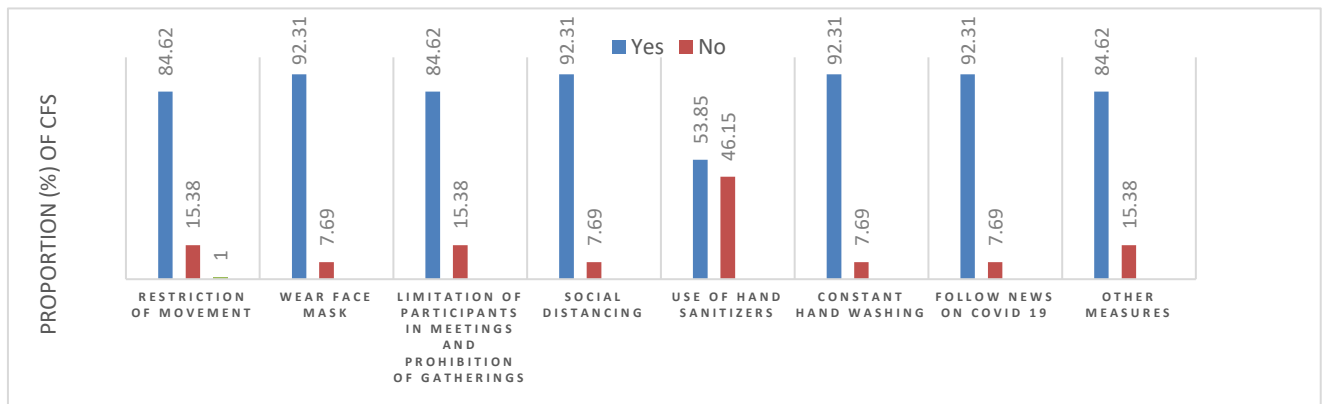


Figure 3: Actions taken by community members to avoid the spread of COVID-19 in rural forest communities in Cameroon during the first five months of the COVID 19 pandemic

In addition to these measures, all communities followed the news, especially statistics on COVID-19 at local, national, and international levels. Moreover, they consumed local and traditional medicines to prevent diseases, especially those believed to have COVID-19 curative properties. However, when the restrictions were relaxed, community members stopped respecting all the Government's measures.

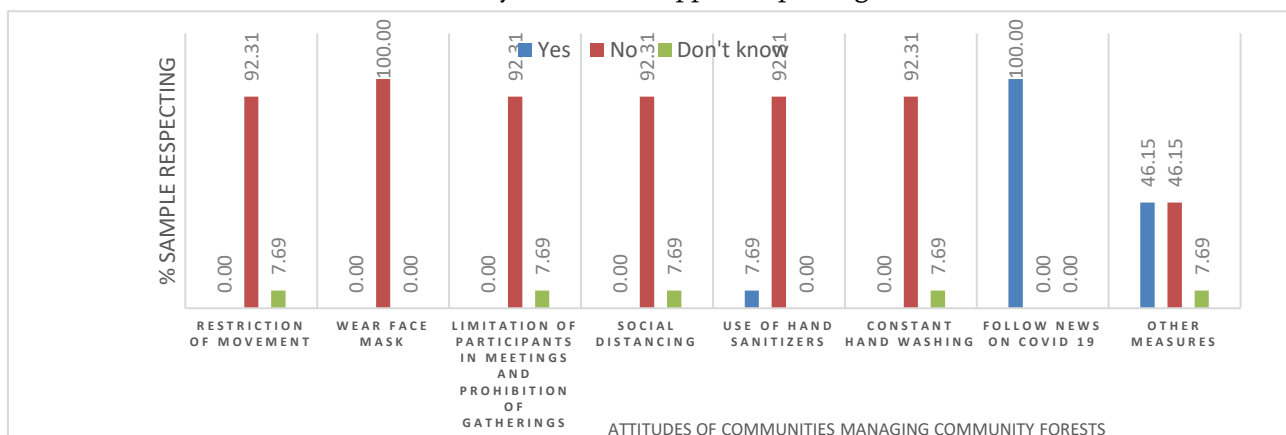


Figure 4: Attitudes of community members managing community forests

## **4.2 Effect of COVID-19 on community activities**

During the pandemic's initial phase (January–August 2020), about half (46.15%) of communities declared that their agricultural activities were negatively affected. Indeed, access to farm inputs was more complex and extension workers could not visit farmers for advisory services. Furthermore, using a facemask while farming was challenging and affected farmers' performance.

The outbreak of the pandemic led to mass urban–rural migration. People in major cities saw rural villages as less vulnerable owing to the low interaction of community members with people from other parts of the world. Average household sizes in these communities increased, leading to higher demand for food. This period also coincided with the farming season (land preparation, planting, maintenance and harvesting). Thus, some farmers had to divert funds meant for farming activities to buy food for larger families. Cocoa farming is intense between February and August and this coincided with the COVID-19 lockdown, leading to decreases in follow up by farmers or extension agents who were confined and could not visit farms.

The working time of farmers reduced significantly after the outbreak of the virus. Most farmers did not farm early in the morning for fear of cold weather, which they believed were when the virus could easily be transmitted. Thus, they often farmed only in the afternoons, thus reducing hours of work. Access to farm inputs for cocoa farmers was equally challenging owing to the limited movement of vehicles and closure of borders. The inputs were not only scarce but also more expensive, thus increasing the cost for farmers; this was confirmed by 53.85% of sampled CFEs. Education was severely affected in all villages because all schools were closed and students and teachers were confined at home. The limitation of number of participants in meetings and general prohibition of gatherings also severely affected communities; this was the case with 61.54% of the sample. Transport, just like education, was one of the critical sectors that was highly affected by the outbreak and accompanying measures. Transport fares almost doubled in most communities owing to limited numbers of cars and social distancing in cars, limiting the number of people to carry per car. Owing to the prohibition of gatherings, social activities and ceremonies in villages were severely affected with 76.92% of the sampled CFEs confirming this.

With the release of the presidential decree relaxing restrictions, the prevalence of COVID-19 reduced within communities, however, transport remained a significant problem. Although travel restrictions had been lightened, not all traders resumed visiting villages to buy products; some were still sceptical. Those that make it to remote villages often proposed very low prices.



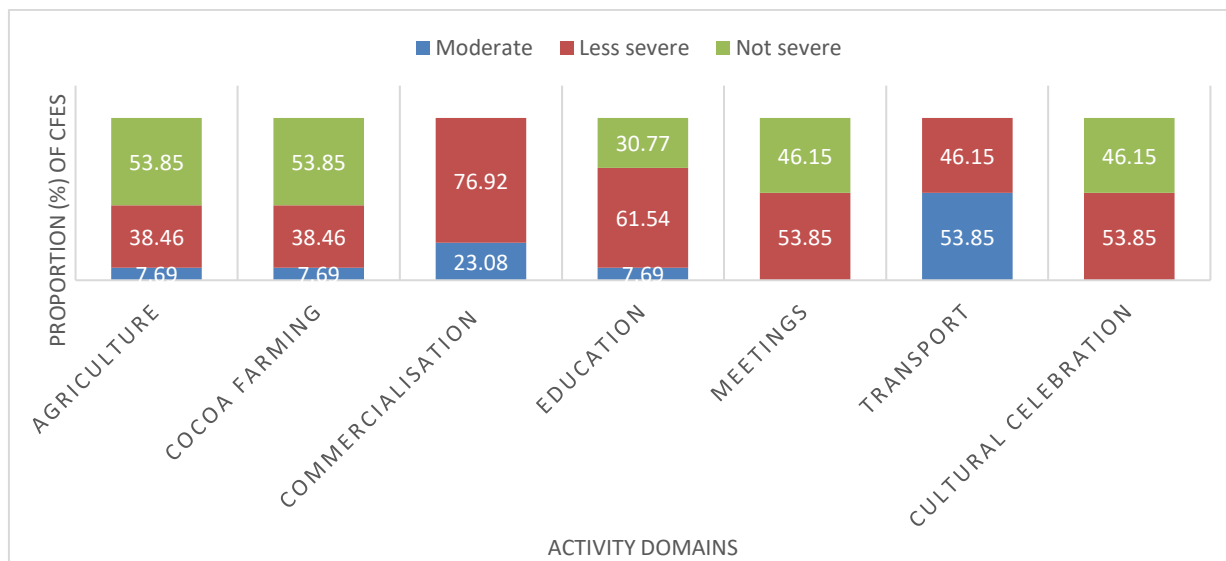


Figure 5: Perceptions of severity of effects of COVID-19 on activities in the community forests at the beginning (January–May 2020) of the pandemic

With the resumption of schools in villages and all over the national territory, farmers faced a different challenge of meeting children's financial needs. They found it difficult to pay school fees and to buy school necessities. This was principally because parents spent much money during confinement to feed the increased number of dependents because of mass urban–rural migration. Parents' inability to pay fees was also attributed to the layoff of workers in major cities who were responsible for paying for children's education in their native villages. However, in most villages, cultural celebrations took their ordinary course during the Government's confinement measures: 53.85% of the sample confirmed that impacts on cultural celebrations were less severe while the rest said they were not severe.

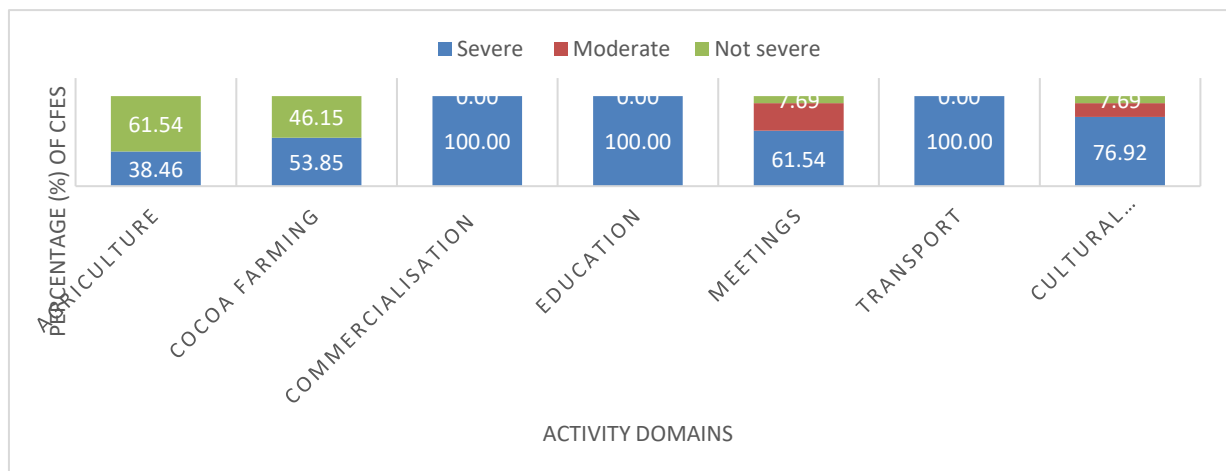


Figure 6: Severity of COVID-19 impacts on activities in the community forest areas in Cameroon after relaxation of restriction measures

In all communities, elderly people were more afraid of COVID-19 because they were told that they were more vulnerable. This group most respected measures to contain COVID-19 and also spent a lot of time listening to updates on the progress of the pandemic.

### 4.3 Effect of COVID-19 on activities of CFEs

#### 4.3.1 Impacts of the COVID-19 pandemic on administrative and financial aspects of CFEs

From the standpoint of administrative and financial management, CFEs suffered when partners — such of those providing technical and financial support — were unable to visit. However, only one-third of the sampled CFEs were affected by this. A majority of the CFEs developed alternative communication channels with their technical and financial support partners, such as through messaging apps.

CFE administrative activities — such as review of monthly activities and planning for the next month; travel to the bank for withdrawal or deposit of funds; travel for prospection, procurement, meeting with community members and administrative processing of documents in ministries — were vital tasks. We found that only 15.38% of the sample had severe and high difficulties reviewing and planning their activities with technical support partners. Travel for withdrawal or deposit of funds mainly was affected: 53.85% of the sample rated very high the challenges they faced while 7.6% rated high. This was principally because when CFE personnel went to the bank, social distancing measures were in place, with some banks closing some branches, thus, increasing the number of customers per branch, leading to a longer wait at the bank. Only 23.08% of CFEs complained of difficulties in travelling for customer prospection and purchase of equipment. This was principally because most CFEs indicated that they had already done their market prospection and were in contact with their customers.

Organizing meetings to inform community members of enterprise activities' progress and obtain their point of view on management was challenging. This was principally because gatherings were banned: 15.38% of the sample indicated that this had a very high adverse effect on their enterprise and 23.08% indicated it had a high adverse effect.

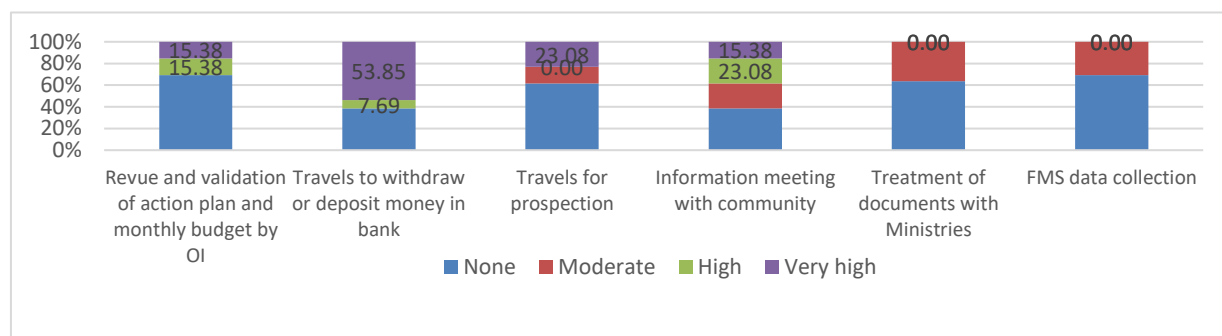


Figure 7: Effects of COVID-19 on administrative and finance activities of CFEs

With COVID-19, the field monitoring system was not affected by the majority (69.23%) of CFEs. Indeed, most monitoring agents continued their activities while respecting distancing measures. They were able to visit households to discuss with targeted persons then visit the enterprise or farm. For the remaining CFEs, the negative impact of the pandemic was moderate. Areas affected were those where monitoring agents were forced to stay in town owing to confinement.

#### 4.3.2 Effect of COVID 19 on productive activities of CFEs in Cameroon

The impact of the COVID-19 pandemic on the production activities of the sampled enterprises varied depending on the type of enterprise and the dominant activities during the first six months after the outbreak.

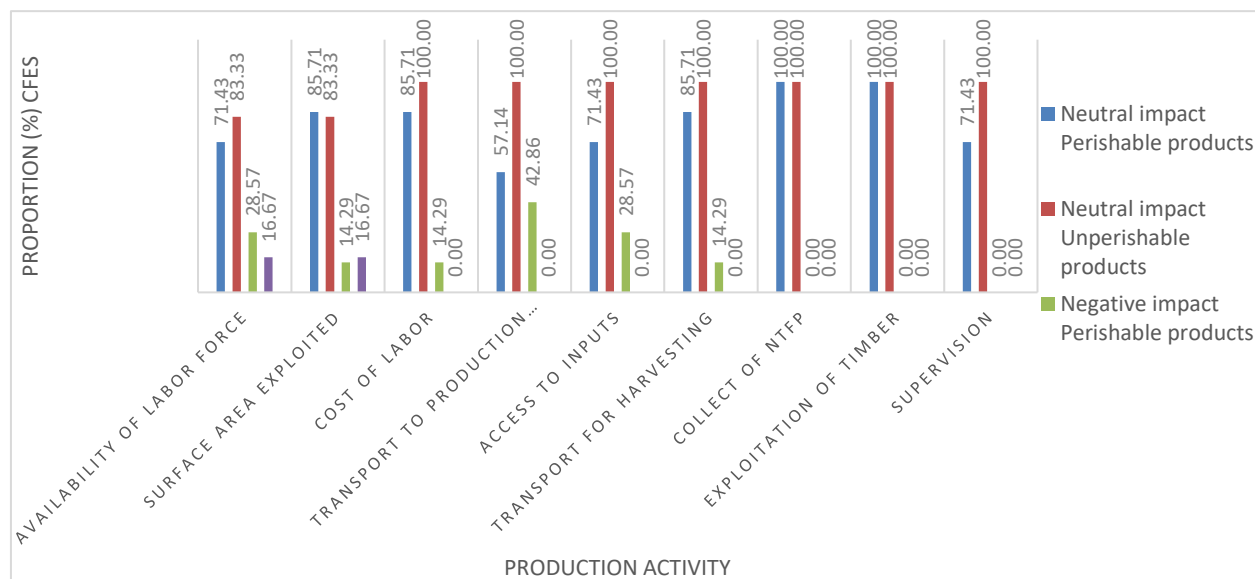


Figure 8: Effect of COVID-19 on production activities per type of CFE

The impact of the virus on most production activities was neutral except for a few key activities. As seen in the figure above, labour availability was a significant problem, primarily owing to the restriction

On movements imposed by the Government as part of measures to contain the virus. On average, 28.57% of the sampled enterprises dealing in perishable products, such as cassava, had labour shortages owing to people's limited movement; this also reduced surface area exploited. This was confirmed by 14.29% of the sampled CFEs.

The impact of COVID-19 on enterprises' productive activities dealing with perishable products seemed to be more specific. The figures below highlight the key findings from this study.

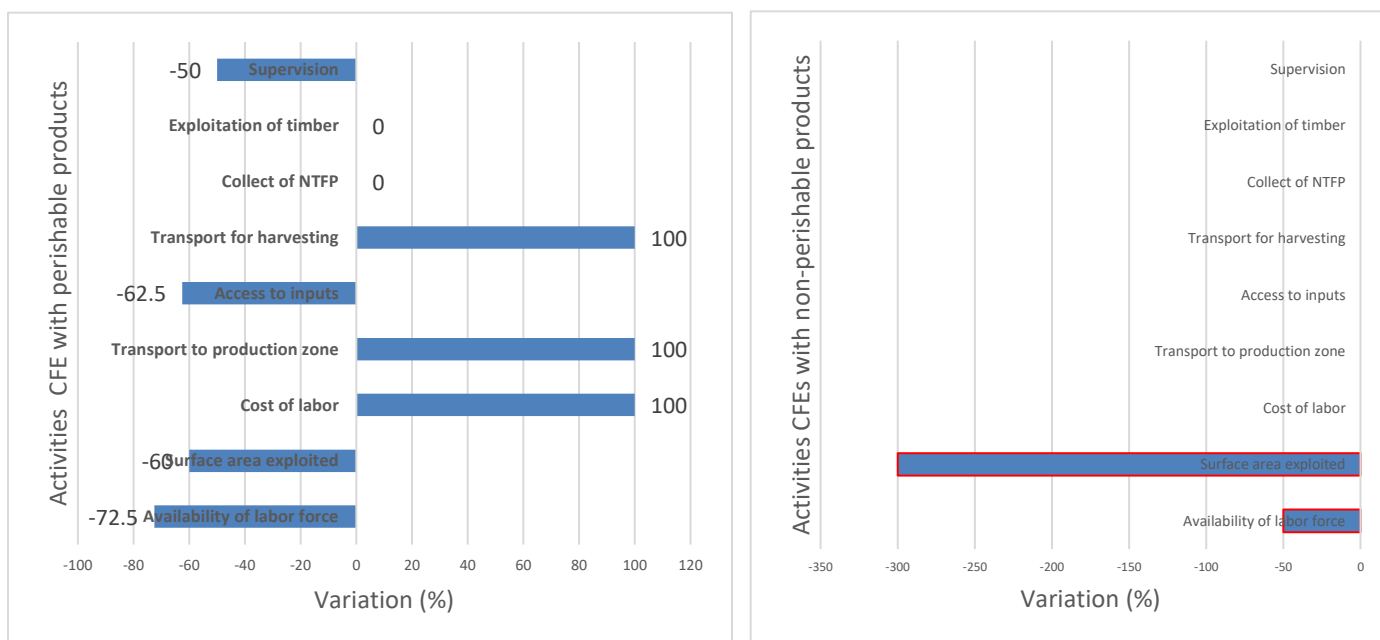


Figure 9: Variation in the effect of COVID-19 on productive activities for perishable and non-perishable goods

It can be seen from the figures above that there was a reduction in the availability of labour by 72.5%. CFE delegates confirmed a reduction in exploited areas by 60% as a result of COVID-19, however, owing to reduced supply of labour, labour costs increased. All CFEs confirmed 100% increases in labour and transport costs to the production zone. Access to inputs was more difficult because the movement of persons and goods were limited, thus, moving inputs to rural villages was challenging: access to these inputs reduced by 62.5%. Transport costs for harvesting of products also increased because one car or motorbike could no longer carry the same number of people as before owing to the restrictions. The movement of cars was also limited, leading to increased transport costs. However, there were no significant changes recorded for collecting non-timber forest products (njangsang) and timber. CFEs highlighted a 50% reduction of supervision activities of CFEs owing to the COVID-19 virus.

#### 4.3.3 Effect of COVID-19 on commercialization of CFE products

The Government's restriction of movements to contain the COVID-19 pandemic had severe adverse effects on CFE products' marketing. As seen in the table below, 16.67% of CFEs dealing in perishable products could not do market prospection, meanwhile, 50% of these enterprises saw the number of products ordered reduced while 42.86% of CFEs dealing in non-perishable products saw a reduction in quantity of demand. With reduction in number of products demanded, the quantity sold correspondingly reduced significantly: 66.67% of CFEs dealing in perishable products confirmed reduction in sales while 28.57% of CFEs selling non-perishable products also saw a reduction. These

same enterprises also witnessed a drop in prices. The cost of commercialization also increased. This was especially the case for perishable products, for example, transport costs doubled between Assok (Assok plantain enterprise) and Kribi, a significant market for the product. This increase in transport costs was owing to reduced vehicle movement because of restrictions and social distancing measures.

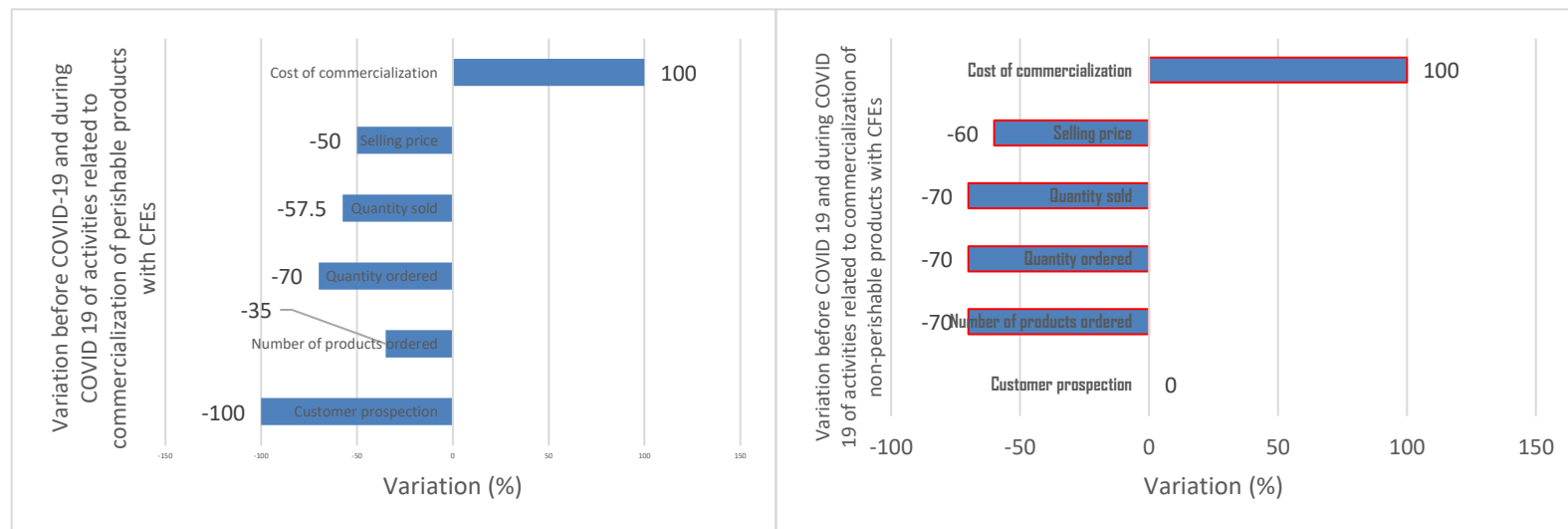
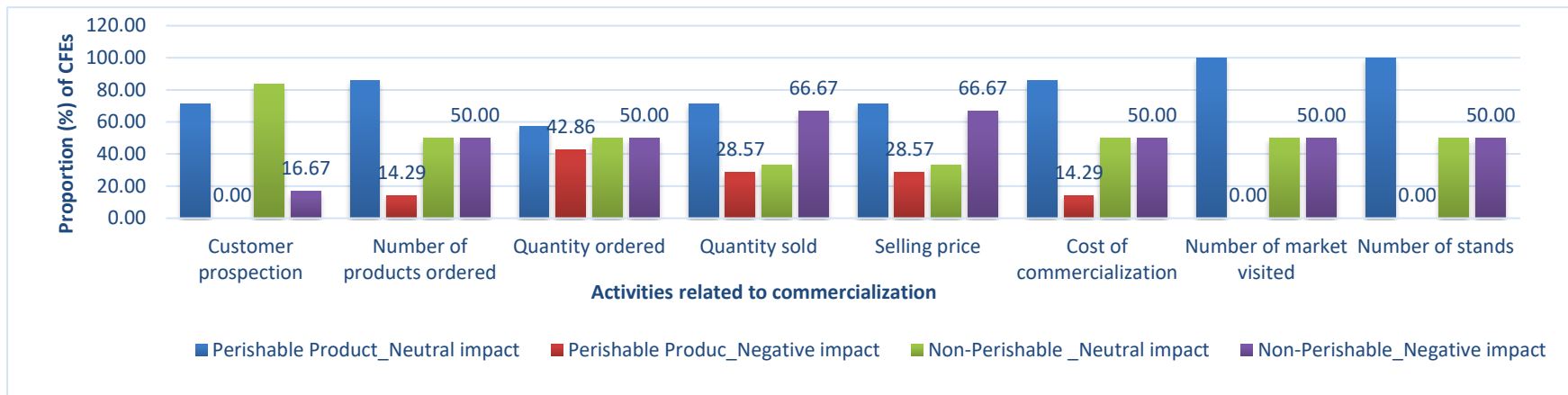


Figure 10: Impact of COVID-19 on CFE activities and major variation of commercialization activities

Relationships with partners were also affected by COVID-19, manifesting through a reduction in the number of interactions. From the figure below, all CFEs trading in perishable products confirmed that the number of encounters was reduced. Communications with donors reduced, a reduction that was significant for CFEs trading in perishable products (42.85%) while 66.67% of CFEs trading in non-perishable products confirmed a reduction in transactions with donors. The pandemic also affected the regularity at which enterprise-development organizations (implementing organizations) were able to provide support and technical advice to CFEs. Their modes of operation had to change; telecommunications tools — such as WhatsApp — were more common. However, even this was challenged in some remote areas without access to telephone networks. A total of 42.86% of CFEs trading in perishable products highlighted the reduction in regularity of visits from their support organization; 16.67% of CFEs trading in non-perishable products also confirmed reduction in such visits. The CFEs were divided about how the pandemic affected communication with support organizations: 14.29% of CFEs dealing in perishable products confirmed an increase in communication because of the pandemic whereas CFEs dealing in non-perishable products confirm a reduction in communication.

Table 3: Effect of COVID-19 on activities related to partnerships with CFEs.

<b>Partnership activities</b>	<b>Positive impact</b>	<b>Neutral impact</b>	<b>Negative impact</b>	<b>Total</b>
Visit of donor	0.00	15.38	84.62	100.00
Communication with donor	0.00	76.92	23.08	100.00
Visit of IO	0.00	69.23	30.77	100.00
Communication with IO	7.69	69.23	23.08	100.00
Collaboration with state organizations in the area	7.69	92.31	0.00	100.00
Collaboration with councils	7.69	92.31	0.00	100.00
Collaboration other organizations in the area	23.08	69.23	7.69	100.00
Collaboration with financial institutions	7.69	69.23	23.08	100.00
Collaboration with elite	7.69	69.23	23.08	100.00
Partnership with others	0	100	0	100.00
Gender consideration	0	100	0	100.00

Collaboration with state institutions improved for 14.29% of CFEs dealing in perishable products; this was mainly through the provision of COVID-19 medical kits. A majority of the CFEs did not witness any change in their relationship with the State. However, relationships with other organizations improved.

## 5. Medium-to-long-term effects of the pandemic on CFEs

The medium-to-long-term effects of the crisis on CFEs and rural communities can be segregated into supply and demand effects.

**Supply-side effects:** Restrictions during the peak production period for most forest-related enterprises made it difficult for movement of persons and goods. Strict lockdown measures were applied at the peak of the agricultural season. Agricultural enterprises had difficulties securing the required number of workers. This study found that labour availability reduced by 72.5%. Owing to the reduction in labour supply, some CFEs could not meet their planned targets. In other areas, owing to the limited supply, the cost of labour became more expensive, thus, increasing the overall costs of the production process, practically doubling for most CFEs. This also reduced the quantity produced for most products.

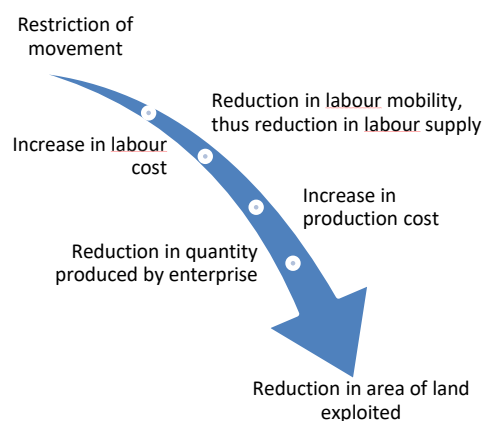


Figure 11: Supply-side effects of COVID-19 on CFEs

**Demand-side effects:** Like the supply side, demand was adversely affected by the pandemic. Most of the country's enterprises in the South and Eastern regions had their major customers coming from Equatorial Guinea and Gabon. With the close of both air and land borders, these enterprises had difficulties selling their products; some CFEs saw their products perish in their villages because buyers could not travel. The prices offered for these products reduced significantly: by 50% for perishable products and 60% for non-perishable products. The reduction in the quantity bought and the low prices meant a reduction in revenue for CFEs. Figure 12 below shows a schematic representation of the demand-side effects of COVID-19 on CFEs in Cameroon.



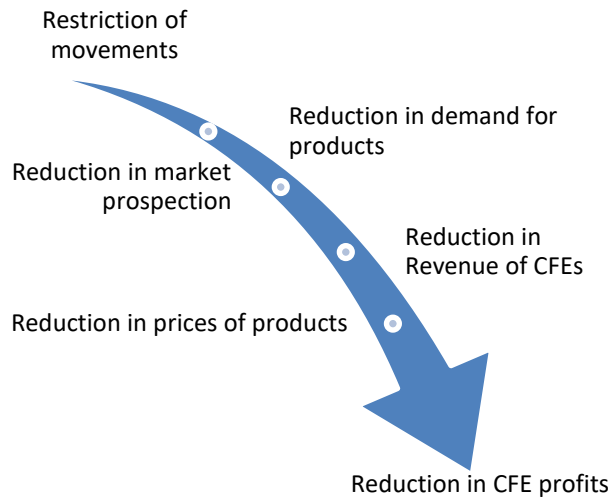


Figure 12: Demand-side effects of COVID-19 on CFEs

The findings in this paper empirically validates a series of cascading events proposed by Duguma et al. (2020), these events induced by lockdowns disrupts agroecosystems and provokes the emergence of positive and negative effects. Immediate impacts such as reduced supply of labour, farm inputs coupled with increased cost of inputs have also been highlighted in the literature (Duguma et al. 2020).

## 6. How do we build back better?

For businesses to thrive, they must be resilient to climate, financial and health shocks. CFEs are more vulnerable because their resilience in the face of health shocks such as COVID-19 depends on the whole community's ability to be resilient. Therefore, 'building back better' requires looking at specific actions for communities, for CFEs and for government.

**For communities:** Perhaps as part for building back better, further analysis and studies on the concoctions used by these communities can be explored at national level, alongside all the other measures prescribed by government.

**For enterprises:** CFEs developed several strategies to reduce the negative impact of COVID-19 on their activities. With the limitation of movement, CFEs sought to use information and communication technology to engage with their customers. Some were in regular contact with customers through WhatsApp. Other communities, such as the La Dynamic maize enterprise, integrated the national WhatsApp group of maize producers and actors. Within this group, producers indicated the quantity of maize they had for sale and buyers contacted them privately for negotiation. Social media platforms and pages related to maize cultivation and sales in Cameroon were also used for marketing CFE

products to potential customers. Some communities used social gatherings, such as church meetings, to market their products and indicate products' availability to potential customers.

The crisis led to significant losses for some CFEs because of high transport costs, difficulties with marketing perishable products, reduction in prices of products, and high transaction costs for CFE activities. These led to a significant increase in expenditure and reduced projected income and sales revenue.

This resulted in some enterprises adopting strategies that will change the way they do business in the medium and long term, revolving around market changes and changes in actors. Some CFEs in border areas, such as those in the South and East regions, had major buyers from neighbouring countries, such as Equatorial Guinea and Gabon. With the closure of borders during the lockdown, buyers could no longer enter and buy from the villages. These CFEs had to develop new domestic market links, which changed their trade dynamics from export to domestic markets. These relations are likely to be sustained in the short and medium term. For labour-intensive agricultural activities, such as maize cultivation, the change from casual or piece labour to full-time, permanent labour will significantly change CFEs cost structures and crop production.

With the difficulties of movement, some CFEs resorted to planning their activities over three months. Funds were also withdrawn to implement these activities over the slated period. This significantly reduced the number of travels, time spent at the bank and transport costs. To counter labour shortages owing to restricted mobility, some CFEs, especially those dealing in perishable products, resorted to employing permanent staff for different activities. For example, PNNT plantain enterprise employed 10 young men to work permanently on the enterprise's farm. They lived in the community with accommodation and food provided by the enterprise.

## 7. Conclusion

The effect of the COVID-19 pandemic on CFEs in Cameroon has not been homogenous. This study found that CFEs dealing in perishable products suffered significant losses owing to increased transport costs and limited movement of customers, leading to losses through increased labour costs and reductions in quantities produced. Operational difficulties were also widespread: CFEs spent more hours withdrawing money owing to the closure of some banks and access to inputs became difficult owing to limited movement. On the demand side, products such as plantain rotted in villages because buyers were not coming, and cities' cars were nowhere to be found. Marketing challenges were related to restrictions to contain the virus, which resulted in more than 50% and 60% reduction in market prices for perishable and non-perishable products, respectively, leading to significant financial losses.

Faced with these difficulties, CFEs implemented appropriate coping strategies to manage aspects related to increased transaction costs, however, they were limited in managing their products' perishability during periods of crisis when lack of market access was prolonged. They could not do anything to stop products from perishing or sales prices dropping by 50%.

One of the key recommendations from this study is that perishable products' market potential should be evaluated. Further processing of perishable products, feasibility analyses at rural level, and strong and extensive market links are vital activities. With proper knowledge of these, these products' value chains can further be improved through added processing.

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## Annex

### Annex 1. Summary of sampled CFEs

Community Forest	Activity	Business type	Area of community forest (ha)	Sub-Division	Division	Region	Global Forest Watch link	Population of community	CFE jobs FT	CFE jobs PT or seasonal
CFE1	Plantain-pistachio	Agriculture	3859	Ngwei	Sanaga-Maritime	Littoral	<a href="http://bit.ly/2wGhDvf">http://bit.ly/2wGhDvf</a>	99	2	46
CFE2	Cassava-processing	Agriculture	2300	Ngoyla	Haut Nyong	East	<a href="http://bit.ly/2wGhDvf">http://bit.ly/2wGhDvf</a>	210	12	35
CFE3	Plantain	Agriculture	3450	Assok	Ntem	South	<a href="http://bit.ly/2PtN4Rd">http://bit.ly/2PtN4Rd</a>	300	5	52
CFE4	Manioc	Agriculture	1400	Nlomoto	Ocean	South	<a href="http://bit.ly/2PxR1nJ">http://bit.ly/2PxR1nJ</a>	600	5	66
CFE5	Maize	Agriculture	5000	Akout•	Mbam et Inoubou	Centre	<a href="http://bit.ly/2PufYAM">http://bit.ly/2PufYAM</a>	5000	3	39
CFE6	Maize	Agriculture	5000	Mambi	Mbam-et-Kim	Centre	<a href="http://bit.ly/2PxHm0B">http://bit.ly/2PxHm0B</a>	508	3	29
CFE7	Tilapia	Aquaculture / livestock	1700	Ngat	Nyong-et-Mfoumou	Centre	<a href="http://bit.ly/2wCZaiV">http://bit.ly/2wCZaiV</a>	2400	4	2
CFE8	Njansang	NTFP	4998	Mambiok o	Mbam-et-Kim	Centre	<a href="http://bit.ly/2wBEGaz">http://bit.ly/2wBEGaz</a>	350	1	11
CFE9	Njansang	NTFP	4683	Ngambe Tikar	Mbam-et-Kim	Centre	<a href="http://bit.ly/2PsS7RV">http://bit.ly/2PsS7RV</a>	1500	3	53
CFE10	Njansang	NTFP	2554	Mekom	Meme	Centre	<a href="http://bit.ly/2PxrQSy">http://bit.ly/2PxrQSy</a>	1800	4	116
CFE11	Timber	Timber	4998	Mambiok o	Mbam-et-Kim	Centre	<a href="http://bit.ly/2wBEGaz">http://bit.ly/2wBEGaz</a>	350	2	22
CFE12	Timber	Timber	5000	Ngambe Tikar	Mbam-et-Kim	Centre	<a href="http://bit.ly/2PwTJtF">http://bit.ly/2PwTJtF</a>	1200	2	21
CFE13	Timber	Timber	4683	Ngambe Tikar	Mbam-et-Kim	Centre	<a href="http://bit.ly/2PsS7RV">http://bit.ly/2PsS7RV</a>	1200	2	22

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