

Palm oil production and markets in Sierra Leone

Profiling palm oil farmers in Bonthe, Kambia, Pujehun and Port Loko districts

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About the paper

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Acronyms

AVDP	Agriculture Value Chain Development Project
CAPI	Computer Aided Personal Interviews
CPO	Crude Palm Oil (HS 151110)
DOBI	Deterioration of Bleachability Index
DFID	Department of International Department
EU	European Union
ECOWAS	Economic Community of West African States
FBOs	Farmer Based Organisations
FFA	Free Fatty Acid content
FFBs	Fresh Fruit Bunches
FGDs	Focus Group Discussions
GOSL	Government of Sierra Leone
IDB	Islamic Development Bank
ITC	International Trade Centre
KIIs	Key Informant Interviews
MOAH	Mineral Oil Aromatic Hydrocarbons
MOSH	Mineral Oil Saturated Hydrocarbons
MTI	Ministry of Trade and Industries
NRA	National Revenue Authority
ODK	Open Data Kit
PKO	Palm Kernel Oil
POF	Palm oil and its fractions (HS 151190)
PV	Peroxide values
SCADeP	Smallholder Commercialization Agribusiness Development Project
SLADF	Sierra Leone Agribusiness Development Fund
SLIEPA	Sierra Leone Investment and Export promotion Agency
SLL	Sierra Leonean Leone (local currency)
SLPMC	Sierra Leone Produce Marketing Company
SLSB	Sierra Leone Standards Bureau
SPSS	Statistical Package for Service Solutions
UN	United Nations
UNIDO	United Nations Industrial Organisation
VGGT	Voluntary Guidelines on the Governance of the Tenure of Land, Forests and Fisheries
WACOMP	West African Competitiveness Programme

Executive Summary

Palm oil is one of the most widespread food commodities in the world. It is used for cooking in many developing countries, and in food processing and production (of chocolate, biscuits, ice cream etc) across the developed world, and in a wide range of consumer goods including shampoo and cosmetics. In Sierra Leone, Palm oil is a traditional crop produced in almost all parts of the country, but most of the production occurs in high rainfall regions, in the southern and eastern parts of the country. Most palm oil production is used for cooking, soap making and refinery purposes, which is in high demand on the West African regional market and therefore mainly exported.

The EU funded West African Competitiveness Programme (WACOMP) in Sierra Leone, has identified the oil palm oil sector as one of three major agriculture subsectors that stimulate economic growth, prop up the private sector and generate new job opportunities especially for the youth and women. The programme aims at increasing Sierra Leone's competitiveness through enhanced productivity and trade compliance in the cocoa, cassava, and oil palm value chains with a view to boosting the country's integration into regional and global value chains.

This study, conducted under the guidance of the International Trade Centre (ITC), aims at providing a deeper understanding of the bottlenecks related to the production, processing, as well as to the palm oil current domestic and export markets, with a view to increasing farmers' access to improved agricultural technology and practices to support quality improvement of selected commodities, as well as creating better access to markets.

The study, which is the result of extensive field data collection from the 28th April to 8th May 2021, targeting small holder oil palm farmers in the Port Loko, Kambia, Pujehun and Bonthe Districts of Sierra Leone, was carried out using a methodology which included: (i) a desk review, (ii) developing questionnaires, setting up a dashboard using ODK/Kobo collect tool box and pre-testing of questionnaires, (iii) recruitment and training of field staff, (iv) facilitation of a pilot survey, (v) field data collection and data cleaning (vi) export of data to SPSS/Pivot tables, (vii) analysis of data and report preparation.

The initial three chapters of this report provide background information on the objectives of the study, the palm oil sector context in Sierra Leone and methodology of the study conducted. Key findings and recommendations are contained in chapters four and five. Chapter four focuses on the analysis and discussions on all the data collected on farm practices, harvesting, processing, and marketing with their associated bottlenecks, while chapter five discusses the bottlenecks, conclusions and provided recommendations for the respective bottlenecks.

The report shows that the effective management of smallholder oil palm requires the availability of input supplies such as improved seedlings, fertilizer, and extension services. The findings also show that smallholder farmers' yields of fresh fruit bunches (FFB) are generally low in the four districts at an average of 2.1 tons and 3.5 tons for plantations of respectively 1-5ha and 5-10ha. This may likely be due to the prevalence of unclassified planting materials, limited use of fertilizers, aged plantation and

lack of farm maintenance. The average yield of FFB for large scale producers like Socfin in the Pujehun district currently stands at 11-12 tons/ha, which indicates the adherence of good farm management practices and the use of improved variety of planting materials.

It also emerged that there are limited oil palm processing facilities in the districts, particularly for smallholder farmers, some of whom (especially in the northern districts of Kambi and Port Loko) are still using the traditional pit method of processing palm oil, a method that is not only unhygienic but also has an extraction wastage of up to about 50%. Reports from small holder farmers in the survey areas indicate that the introduction of locally manufactured palm oil processing machines in the production areas and the district head quarter towns, has significantly increased both the extraction rate and quantity of palm oil by half, as well as improved the quality of palm oil extracted, as compared to the pit method of palm oil processing. However, the high cost of the palm oil processing machines (which are usually rented by farmers) and frequent breakdowns was reported to be limiting access of these services to farmers.

Other findings from the survey includes lack of data management and capacity building for farmers coupled with poor road network and land tenure issues; lack of information on quality and quality assurance practices (as farmers do not see their traditional practices of oil palm processing as inimical to the low quality of their produce, hence low prices); limited awareness raising programs in the districts relating to good processing practices, such as high concentration of Free Fatty Acids (FFA), water quality, waste management are lacking (as farmers continue to use old traditional methods which are unhygienic).

The palm oil sector also presents some opportunities for the inclusiveness of women, given the important role that they play in the production process (overall representing 61% of total workforce in the targeted farms). However, a ore limited involvement in decision making as compared to men and the current status of land rights attribution in the country is curbing the possibility to unlock opportunities for women to scale up their contribution to the sector.

Some of the recommendations provided in this report include:

- 1) Increase access to grants and affordable credit sources for oil palm producing households that can enable them to engage hired labour and access basic mechanical equipment needed for higher on-farm productivity
- 2) Provide a common platform through which palm oil smallholder farmers can share information and best practices, as well as seek together opportunities for funding needed to purchase key planting materials
- 3) Capitalize on inter-institutional linkages to: a) increase smallholders' access to technical innovations developed elsewhere, and b) Increase access of farmers/FBOs to affordable credit for large-scale commercial production of oil palm.

- 4) Improve data management and mapping of oil palm production across the four districts of Pujehun, Bonthe, Kambia and Port Loko
- 5) Ensure access to up to date market information in order to improve the capacity of farmers to negotiate a fair price.
- 6) Intensify capacity building on best practices in oil palm production processes for smallholder farmers as well as on the benefits of participating in cooperatives and trade unions.
- 7) Work with traditional and local authorities, and the relevant Government Ministries to ensure access to land, especially for women that represent an important part of the workforce in the sector.

CHAPTER 1: INTRODUCTION

1.1 Background to the report

The International Trade Centre (ITC), in partnership with the United Nations Industrial Organisation (UNIDO), is implementing a technical assistance project in Sierra Leone under the West African Competitiveness Programme (WACOMP), which is funded under the 11th European Development Fund. The project aims at increasing Sierra Leone's competitiveness through enhanced productivity and trade compliance in the cocoa, cassava and oil palm value chains with a view to boosting the country's integration into regional and global value chains.

In Sierra Leone, palm oil is a major ingredient of local food and a source of livelihood for the rural population, contributing to job creation for youths and women, local and export market and a raw material for the manufacturing of vegetable oil and soap (EU 2019). However, even though the rapid expansion of the palm oil sector in Sierra Leone is driven largely by large-scale producers with large plantations, smallholder farmers across the country are still making significant contributions to the overall production of palm oil in the country.

The integration of Sierra Leone's smallholder farmers into inclusive value chains through modernization of the agribusiness sector could serve as an effective way to improve their incomes, employment, and productivity. To improve the access of smallholder oil palm farmers to markets, this report has the objective of identifying the challenges and bottlenecks affecting oil palm production, processing and marketing in Sierra Leone and defining possible recommendations.

This report provides also extensive field data collected from April 28th to 8th May 8th 2021. A survey was conducted to provide an understanding of palm oil production and supply potential in Sierra Leone and to identify specific farm-level production and processing challenges faced by smallholder oil palm farmers and out grower groups in selected chiefdoms of the priority districts of Port Loko, Kambia, Pujehun and Bonthe districts, set by the WACOMP Sierra Leone Programme.

1.2 Objectives of the report

The core objective of the report is to providing an overview of the key bottlenecks related to the production, processing, and sale of palm oil in domestic and export markets and provide recommendations that could unlock the potential of the sector through a market driven approach.

The report also provides an assessment of the domestic, regional, and international market potentials for Sierra Leone's oil palm products in order to determine how the quality and productivity of the sector could be harnessed for improved competitiveness.

In particular the activities implemented by this report included:

1. Conduct desk research and consultations with stakeholders to prepare background information on the sector
2. Identify, collect, and analyse data on oil palm production and processing, volumes and values of both domestic and export trade
3. Identify the bottlenecks related to the production, processing, and marketing along the oil palm value chain at national level:
4. Identify specific farm-level production and processing challenges faced by smallholder oil palm farmers and out grower groups in selected Chiefdoms in the priority districts
5. Analyse the challenges identified and provide specific recommendations.

Figure 0.1: Women at work plucking oil palm fruits in Sierra Leone



Source: Author

CHAPTER 2: THE STATUS OF OIL PALM PRODUCTION IN SIERRA LEONE

2.1 Historical Perspective

Various studies have confirmed that, the development of Oil Palm Industry in Sierra Leone started in the 50s with Government establishing oil palm plantations in different parts of the country using the high yielding Tenera seedlings, commonly called Masanki, which produces a fruit with more pulp that yields more palm oil.

Smallholder farmers were also supported by the Government with the seedlings through District Councils (District Local Government Authorities) to cultivate with oil palm plantations.

The small-scale traditional system relies mainly on wild plants, the native variety (*dura*) which produces red oil and has a smaller fleshy pulp surrounding the seed.

Rural households use both cultivated and wild oil palm for different purposes which includes the extraction of palm oil from the fruit and palm kernel oil from the palm kernel. Both types of oils provide nutrition and cash income for households, and are major export products from Sierra Leone.

Due to the prolonged civil war, tree crops, especially oil palm, were abandoned for a long period, and the slow recovery process have left these plantations unattended with little or no maintenance and rehabilitation or replanting them with new ones (IDB 2007). According to MAF, there are over there are over 50,000ha of oil palm currently under cultivation with significant acreage owned by smallholder farmers cultivating 1-2 ha each. The remaining oil palm cultivation has been done by government (the Gambia/Matru Oil Palm Estate in Bonthe District) and a number of private estates established in the last fifteen years by Socfin in in Pujehun District, Goldtree in Daru, NedOil in Tonkolili District, Sierra Leone Agriculture and West Africa Agribusiness Company in the North Western Province.

2.2 Palm Oil Production in Sierra Leone

Oil palm is native to West African region, especially Côte d'Ivoire, Ghana, Nigeria and Sierra Leone and is also grown extensively in Asia and South America. It is one of the world's most commonly used vegetable oils, present in around half of frequently used food and consumer products, from snacks to cosmetics. Total oil palm production was 75,000 MT in 2020, following a steady increase since the 2005 (see **Figure 2.2**).

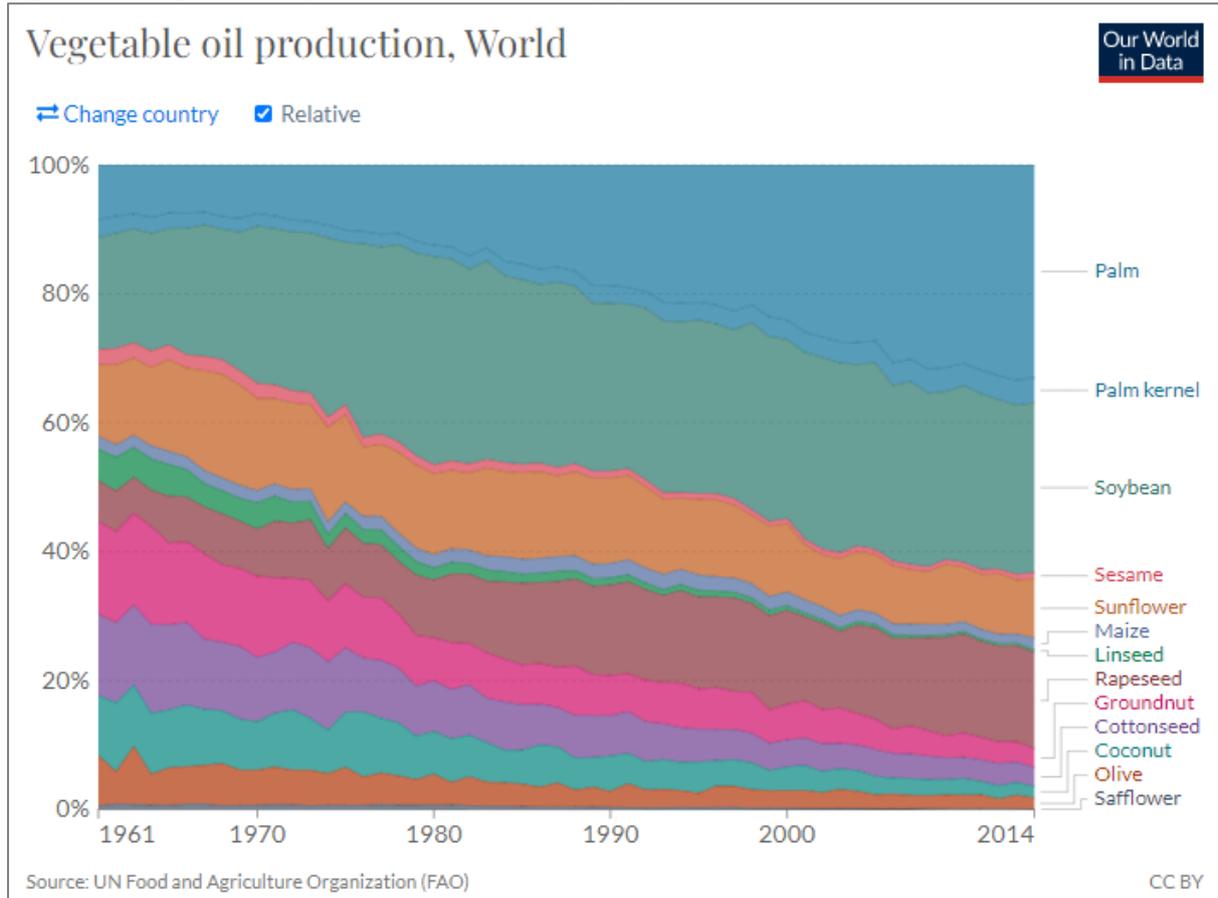
According to MAF, the most suitable soils for oil palm production in Sierra Leone are of alluvial origin and are formed from the uplifted valley floors in the hinterland on the interior plains (Daru, Makeni, Sahn Malen), and the uplifted marine terraces in the coastal plain region (Gambia, Kanga/Kasse, Masanki, Magbingbera, Mange). These suitable soils are not found in large contiguous areas and often exist in

association with soils that have high gravel content in the top layers, MAF said. Therefore, the areas of high oil palm plantation concentration with high production potential are the South and the Eastern parts of the country. Kambia and Port Loko District in the North Western Region are considered as “palm belts” and have some concentration of cultivated oil palm plantations.

Notwithstanding these potentials, it emerged during the preliminary visit by the researcher to these districts and further discussions with the farmers that, apart from Socfin Oil palm company in Pujehun district that owns the largest oil palm mill with a capacity of 60 tonnes/hr in the country, there exist no other large mill to support out grower farmers in these regions. In fact, the other Oil palm companies, Goldtree and Nedoil, which are the only large-scale companies that maintained a contract farming scheme with smallholder farmers has their oil palm mill with a capacity of 20 tonne/hr located in the Daru town in Kailahun district in the eastern province of Sierra Leone. According to the management of Goldtree, Fresh Fruit Bunches (FFB) purchased from outgrowers across the country including Port Loko and Kambia districts in the Northern province, and Bonthe and Pujehun districts in the southern province, had to be transported to Daru for processing; a journey that will take over 6 hrs by road. The location of oil processing mill would therefore be ideal intervention in the areas mentioned above.

In Sierra Leone, pre-germinated improved seeds are usually sourced from regional suppliers in Benin, Côte d’Ivoire and Ghana. After transplantation from the nurseries and application of good management practices, oil palm trees can begin producing fruits about three years after planting and can remain productive for roughly about 25 years. Some farmers, however, do not have the financial resources to secure improved seedlings and would mostly have to rely on government and NGO support for the supply of seedlings or resort to the use of available low yielding varieties.

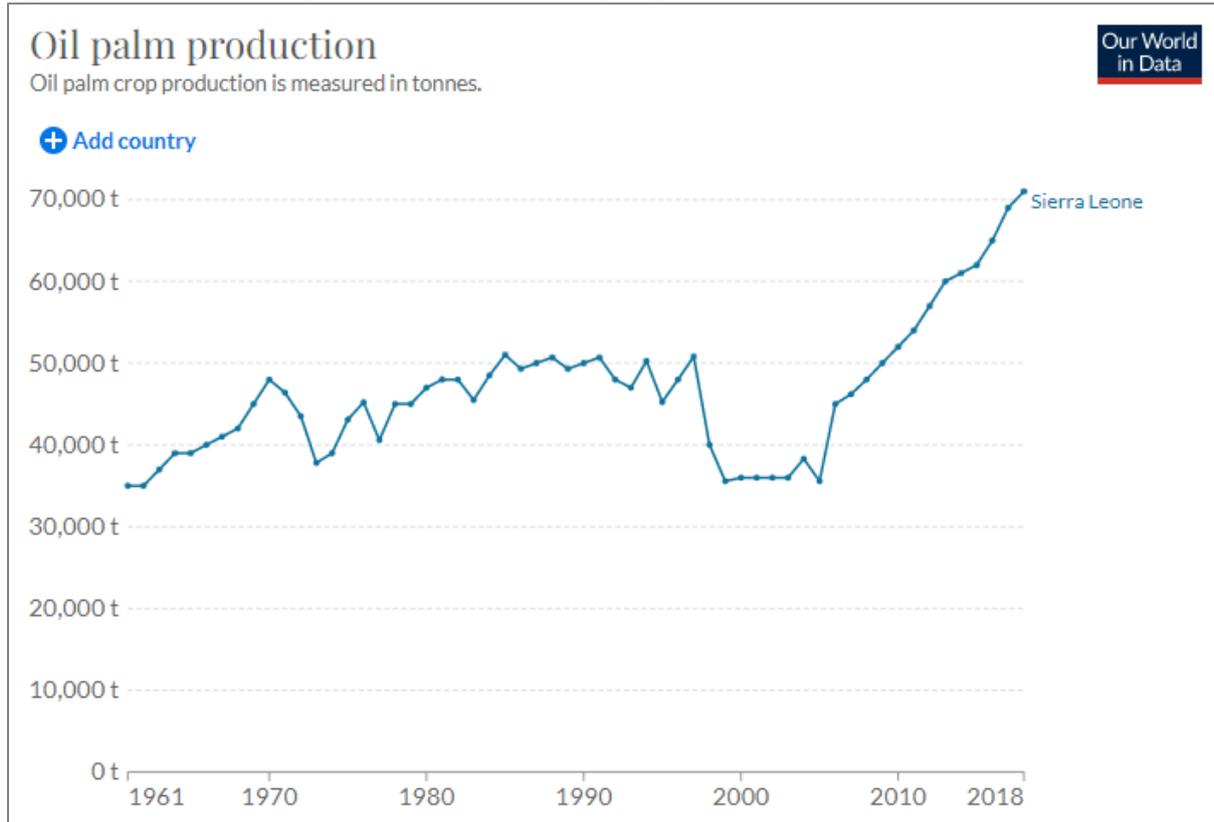
Figure 0.1: Vegetable oil production in the World (%)



Source: UN Food and Agriculture Organization (FAO), <https://ourworldindata.org/palm-oil>

According to the most recent revision of “Our World in Data”, based on the latest UN FAO data released on oil palm production, the world palm oil production has increased rapidly over the past 50 years. In 1970, the world was producing only 2 million tonnes. This is now 35 times higher: in 2018 the world produced 71 million tonnes (H Ritchie and M Roser, 2021). It is believed that the rise of palm oil production across the world follows the rapid increase in demand for vegetable oils more broadly. While its production is declining in region as Europe, it remains, together with soybean, the main source of vegetable oil production in the World (see **Figure 2.1**).

Figure 0.2: Production of palm oil in Sierra Leone (tons)



Source: UN Food and Agriculture Organization (FAO), <https://ourworldindata.org/palm-oil>

In Sierra Leone, FAO data illustrated in **Figure 2.2** above shows a sharp increase in production from 35,000 t in 2005 to 71,000 t in 2018. To meet this rising demand in an environmentally and socially sustainable manner, a major opportunity exists through expansion and improvement of smallholder production. It is believed that smallholders are already playing a significant part in the palm oil industry between the two countries that dominate world production, Malaysia and Indonesia as smallholders are responsible for 37-40% of the total area under oil palm cultivation (IIED, 2006). In Sierra Leone the majority of the production takes place in small holders plantations, which hold approximately double the land of estate oil palm¹. According to Elikplim Dziwornu Agbitor, RSPO Head, Africa, “*Oil palm production in the region is dominated by several hundred thousand smallholder farmers, with typically 1–2-hectare holdings, who are estimated to account for an average of 70% of the total production area. These smallholdings have great opportunities for sustainable improvement as they are faced with challenges of poor management practices, poor planting materials, and very low yields (average 2-4 tonnes of FFB per hectare). Commercial estates account for less than 30% of production area which are better managed and higher yielding (average of 16-18 tonnes of FFB per hectare)*”². The RSPO Secretariat, in August 2021 announced that, the first Independent Smallholders Group in Africa that has been certified by RSPO in Sierra Leone: “*The Ngoyai Gbaayegie Group, within the catchment*

¹ “Available data from the Ministry of Trade and Industry suggests that about 18,000 hectares are devoted to estate oil palm. In addition, there is a substantial amount of land in smallholder oil-palm production — perhaps 32,000 hectares. Almost all production currently takes place on smallholder plantations averaging 1 to 2.5 hectares in size”. See <https://slconcordtimes.com/oil-palm-business-in-sierra-leone-and-its-economic-benefit/>

² See <https://rspo.org/news-and-events/news/nearly-5000-independent-smallholders-certified-in-sierra-leone>

of Goldtree Sierra Leone Ltd.³, has achieved certification covering 4,983 Independent Smallholders who own a total land area of 8667 hectares. This is the single largest certified Independent Smallholders group across all regions to date in terms of the number of smallholders⁴.

Furthermore, the Sustainable West Africa Palm Oil Programme (SWAPP), implemented by Solidaridad WA in the Eastern part of Sierra Leone, in September 2020 reported that members of the armed forces and teachers are getting involved in palm oil production to generate income, model self-sufficiency, and raise the profile of farming. Fourteen teachers of the Kailahun District Education Committee have established a five-acre oil palm farm with 300 improved oil palm seedlings they received from Solidaridad. (Solidaridad, 2020).

These transformation of the oil palm sector in Sierra Leone is a clear indication of the contribution of Smallholder farmers towards the development of oil palm industry.

The smallholder cultivation process, however, is still poorly managed around the World. Even in a county like Indonesia, which is the largest producer of this crop, some farmers cultivate their farms with limited good agricultural practices and limited or no fertilizer application since they do not have the capacity to get good quality seed and to provide a fertilizer continuously (Jelsma et al. 2019).

Production of oil palm in Sierra Leone can be grouped into three categories based on the use of inputs and scale of operations:

1. The first is family farms which use family labor and planting materials are usually sourced from what is sometimes referred to as the second-generation seedlings for Tenera and wild palm trees in the forest. They sell their product to middlemen/traders or directly in the local market.
2. The second is the small-/medium-scale producers. This type of method use hired labor and use Tenera seedlings. They sell to middlemen/traders, who channel the product to local markets.
3. The third, which is the large-scale producers are mainly the Foreign Direct Investors (FDI) that have large Tenera plantations. Because of their size, they either sell to middlemen/traders directly in local markets or channel their product to the export market. An Example of such producers that are established by FDIs include Socfin at Samal Pujehun, Goldtree in Daru, Kailahun District, Natural Habitat in Zimmi in Pujehun District and NedOil in Yele Tonkolili. **Table 2.1** below provides a summary of land under cultivation, production and marketing of the large-scale oil palm producing companies presently operating in Sierra Leone.

Table 2.1: Large scale palm oil producing companies in Sierra Leone

Company	Land cultivated (Ha)		Production capacity (mt)		Marketing (Mt)			
	Nucleus	Outgrower	2019	2020	Domestic Market		Export Market	
					2019	2020	2019	2020
Socfin	12,349	-	24,986	30,748				
NedOil	68	6,578.47	3,358	2,152	50mt	200mt	341mt	40mt

³ See <https://www.goldtreeholdings.com/>

⁴ See <https://rspo.org/news-and-events/news/nearly-5000-independent-smallholders-certified-in-sierra-leone>

Goldtree	2000	11,000	21,761.1	23,410				
Natural Habitats	216	N/A	540	648	102.6	123.12	N/A	N/A

Source: Field Data 2021

The management and cultivation process of oil palm plantation (incl. the type of fertilizers and seedlings used) determines the productivity and income results of the sector.

Traditional oil palm trees require between 5 to 10 years to reach maturity, while improved varieties need between 3 to 6 years. Oil palm harvests start as early as September and finish as late as May, depending on location. While some producing households extract the oil and sell it immediately, others store it for sales later in the year⁵.

Farmers appear to be reluctant to enter into any form of contract of a credit agreement with large scale producers. The most times prefer receiving government supports, have their own decision to manage their land, organize themselves, and manage themselves including their finance.

2.3 Types of Oil Palm variety planted in Sierra Leone

Information obtained from the Ministry of Agriculture and Forestry indicates that, there are mainly two varieties of oil palm found growing in Sierra Leone, and these are the Dura and the Tenera:

- The Dura oil palm is the native variety which trees have grown wild and clustered in the forest and village gardens in Sierra Leone for several years as a result of natural seed dispersal. The dura has a smaller fleshy pulp surrounding the seed and produces red oil for which there is a strong local and regional preference for cooking purposes because of its nutritional qualities.
- The Tenera (offspring) is a cross breed between the local Dura (Mother) and Pisifera (Father) cultivars, the latter usually imported from Benin and Ivory Coast, and has been introduced in the early sixties to increase oil palm production and yields. According to MAF, commercial plantations and smallholder outgrower plantations (supported by Nedoil and Goldtree) are cultivated only with Tenera oil palm commonly called Masanki .

According to MAF, the total area covered by the dura variety, the wild oil palm, is estimated to exceed 4 million ha and the areas of highest concentration are found in:

- parts of the Kailahun and Kenema Districts in the Eastern Province,
- Bo, Pujehun and Bonthe Districts in the Southern province and
- the Western parts of Kambia and Port Loko Districts in the North Western province.

⁵FEWS NET. 2010. "Sierra Leone Staple Food Market Fundamentals. February 2017" <https://fews.net/west-africa/sierra-leone/market-fundamentals/february-2017>

Wild oil palm trees are also sparsely distributed in Southern Bombali, Tonkolili, Moyamba Districts and even less in the Northern Bombali and Koinadugu Districts.

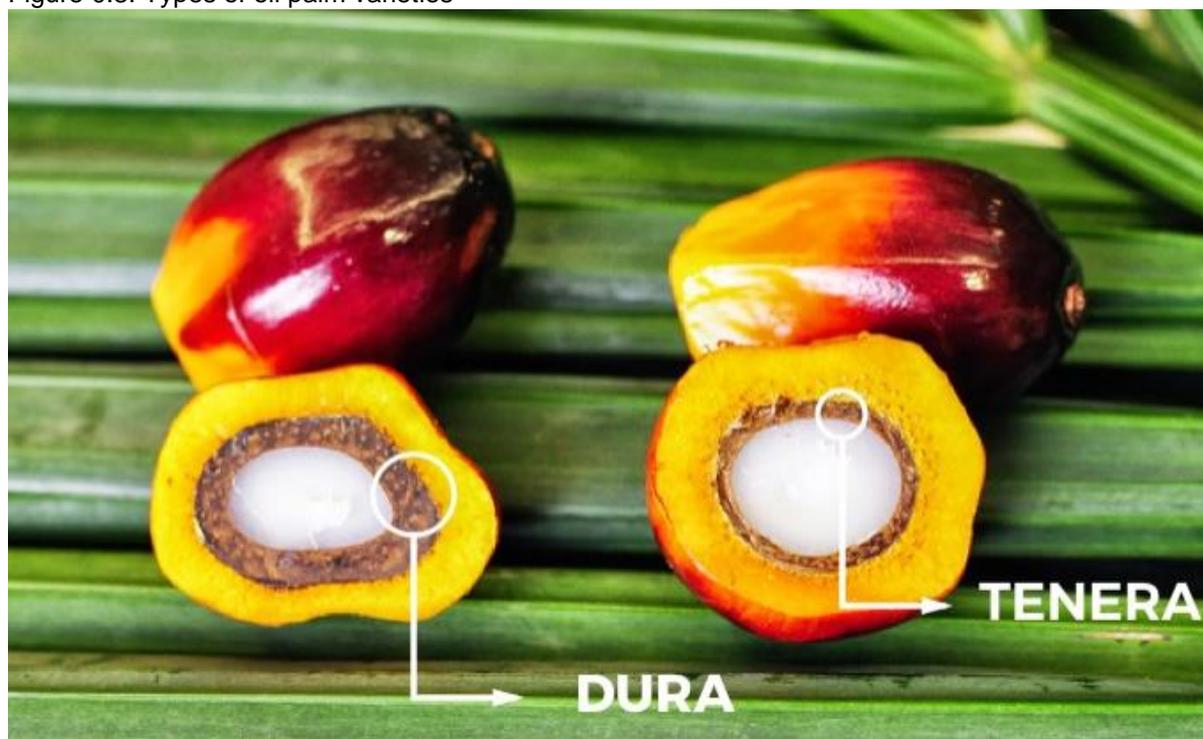
The table below shows the differences between the dura versus the Tenera, it could be seen that the Tenera oil palm can produce a large quantity of palm oil compare to the dura, hence is the recommended variety to plant for increase in productivity.

Table 2.2: Differences between Dura and Tenera variety

Dura variety	Tenera variety
→ This is a parent stock which produces large fruit bunches	→ This is an offspring produce by palms with large amount of fruit bunches
→ The fruit produced contains about 30 percent less oil than Tenera fruit	→ The fruit produces a large quantities of oil
→ The fruit can be recognised by their thick shell, with no fibres in the mesocarp around the shell	→ The fruit can be recognised by their thin shell with brown/black fibres in the mesocarp around the shell
→ Grow wild in the bush	→ Seeds are nursed and seedlings are planted

Source: Author

Figure 0.3: Types of oil palm varieties



Source: Indonesia palm kernel shell. Available at <https://palmkernelshell.id/palm-kernel-shell-biomass/palm-kernel-shell-varieties-dura-vs-tenera/>

It is however a common practice by some smallholder farmers, who could not afford to buy improved seedlings from reputable input dealers or from government supported projects, to collect loose seeds

from Tenera plantations and nurse them as seedlings which they later transplant to their farms. This practice results in lower productivity of the oil palm trees.

2.4 Uses and demand for oil palm

Palm oil is used in a vast range of edible (cooking oils and fats, margarines, ice cream, etc.) and non-edible products (soaps, bio-fuels, etc.).

Palm oil provides about 10 percent of total calorie supply per day (220 kcal/day per capita), and constitutes up to 70 percent of calories consumed from edible oils. Consumers in Sierra Leone prefer nationally produced palm oil extracted from traditional (wild/native) oil palm varieties using artisanal methods⁶.

Palm oil and palm kernel oil are the most known and widely used oils in Sierra Leone and have several uses. Palm oil is a constituent of the daily diet and is a rich source of carbohydrates, fats and vitamins. About 98% of households in Sierra Leone consume between 1 kg – 1.5 kg of palm oil daily. Domestic demand for palm oil remains high and it is expected to grow as the consumption of palm oil is diversified to use such food processing, soap production, cosmetic, vegetable oil production, etc.

Recent studies conducted on behalf the EU on Palm oil value chain analysis in Sierra revealed that, there is a local preference for red oil for cooking because the nutritional qualities of palm oil depend on their carotenoid and vitamin contents, which vary according to the type of extraction process and are higher in the red artisanal oil (CIRAD, 2018). The report further indicates that, the largest part of the palm oil production is used to manufacture soap which is in great demand into the West-African regional market and therefore mainly exported.

Socfin, one of the large-scale producers of oil palm in Sierra Leone reported that, for the local market, it is mainly produced by smallholders using traditional methods. The smallholdings severely lack the technical skills and are unable to meet local demand as no less than 50% of oil consumed on the local market was imported up to 2019.

In 2019 a refinery, known as Jolaks⁷, was commissioned in Sierra Leone refining approximately 300 tons of CPO per day producing cooking oil, soap and margarine for the local market⁸. According to the Ministry of Trade and Industry, all CPO used by Jolaks is sourced locally from Socfin, Goldtree, and other channels that are still finding it difficult to meet the CPO demand of Jolaks factory (Socfin 2021).

Similarly, a recent study conducted on behalf the EU on Palm oil value chain analysis in Sierra revealed that, despite the abundance of palm trees and the traditional use of red oil, the domestic production is not sufficient to cover demand, and Sierra Leone is importing about one fourth of its palm oil needs.

⁶ FEWS NET. 2010. "Sierra Leone Staple Food Market Fundamentals. February 2017" <https://fews.net/west-africa/sierra-leone/market-fundamentals/february-2017>

⁷ See <https://www.jolaks-sl.com/>

⁸ See <https://globaltimes-sl.com/en/2021/08/31/sierra-leone-to-export-cooking-oil-soon/>

The overall deficit of palm oil for food use is also due to the high volumes diverted to soap manufacturing (CIRAD, 2018).

In a context of galloping inflation of the national currency, palm oil can therefore represent also an important cash generator.

Figure 0.4: Red palm oil sold in Sierra Leone



Source: Author

2.5 Domestic Market Structures and prices

Sierra Leone palm oil market is dominated essentially by food products for local consumption, soap making, refinery and export to neighbouring countries. The demand, both domestically and from neighbouring countries, is strong since palm oil is used extensively by most households in one form or another.

There are two distinct marketing channels for palm oil in Sierra Leone:

- the first involves palm oil produced by small holder farmers and processors using traditional crude extraction methods, with final products destined for both domestic and regional markets.
- The second channel is largely utilised by large scale producers with both plantation and outgrower production schemes and where the end-products are destined partly for the local market but more for international export markets.

The structures of the commodity markets across the country appear to vary between rural and urban communities:

- The rural markets consist of many producers offering similar undifferentiated products. Competition is therefore sustained by keeping the prices low, at the detriment of their earnings. The effect is low profit margins (Solidaridad 2018).
- The main flow of palm oil (either artisanal and industrial) goes from the oil production sites towards the main markets in Freetown, which is by far the largest.

Interviews conducted with key informants during the survey that was conducted to prepare this report revealed that the main market for local palm oil is the domestic market. The other outlet for the marketing of palm oil is through informal exports to neighbouring countries. There has been no official estimates of the volumes traded, but it is generally acknowledged that there is a high prevalence of cross border trade along the border towns of Guinea and Liberia.

Traders interviewed in the border town of Kambia and in Bo City, the provincial headquarter of the Southern province of Sierra Leone, revealed that palm oil is generally marketed by a chain of traders who purchase the oil from village processors, mainly women, and resell to other traders and then to retailers in urban areas through informal trading practices. The standard unit normally used in trading is a 20-litre yellow plastic container known as “batta”. This unit is used for wholesale and often for retail and sometimes sold on the roadside to incoming passenger vehicles as illustrated in **Figure 2.5**.

Figure 0.5: Road side sale of oil palm by women trader along the Mambolo- junction Check Point highway



Source: Author

For the sale of smaller quantity at the retail markets in town and cities or in villages in Sierra Leone, the other unit used is a 330 ml glass bottle known locally as a pint (60 pints = 1 batta). This is commonly used for measuring dura (red) for cooking purpose as shown in **Figure 2.6** below. There are, however, formal channels mainly from large scale processing companies such as Socfin, Goldtree and Nedoil that sell locally to refinery companies, and for export to regional market in Guinea and Senegal mainly as a raw material for industrial soap making and export to the European market as RSPO certified oil.

Figure 0.6: Women selling palm oil by pint in community market in Sierra Leone



Source: Author

In terms of price determination for the sale of palm oil domestically, prices are generally not determined or regulated but are based on demand and supply or by comparison to other market prices. Smallholder processors and traders are therefore free to determine the prices. This makes the availability of update market information a key competitive edge for both smallholders and traders.

2.6 Export Trends and Opportunities

Trade data extracted from ITC Trade Map indicate that there are some substantial differences between the export data reported by Sierra Leone (direct data) and the ones reported by its importing countries

(mirror data). This could be related to a number of statistical and reporting factors⁹. Direct data are available only until 2018, while mirror data are available until 2020.

Most recent data on Sierra Leone exports of Palm oil and its fractions, whether or not refined (HS 1511) indicate USD 3.4 M exported to both regional and international markets (corresponding to 4,580 Tons). Since 2018 Senegal emerged as the main importer of Sierra Leone palm oil (and this is confirmed by both national and partner countries data, although the overall amounts exported to this country differ largely on the year 2018).

According to 2016-2020 total import growth rates, Senegal, the US and the United Kingdom are also the fastest expanding markets among the top five importers of Sierra Leone's palm oil.

Figure 0.7: List of importing markets for HS 151110 Crude palm oil (importing country data) and growth in total imports of partner countries from 2016 to 2020



Source: ITC Trade Map data

According to direct data reported by Sierra Leone export from 2014 until 2018 (latest year available) did not follow a steady path, presenting several high and low (related prevalently to exports toward a specific partner in a specific year). Although average USD values tend to fluctuate during this years between USD 65,000 (2014) to USD 8.6 M (2018), driven by a substantial increase in export to regional partners (Senegal, Benin, Cameroon and Nigeria), a record export of USD 27 M to the US is recorded in 2016 (not matched by any previous or next year export to the same country).

⁹ For more information about the differences between direct and mirror data please see <https://www.trademap.org/stFAQ.aspx?nvpm=1%7c694%7c%7c%7c151110%7c%7c%7c6%7c1%7c1%7c2%7c2%7c1%7c2%7c2%7c1%7c1>

These erratic values are also observed when analysing direct data in quantities exported, ranging from 78 t exported in 2014 up to unprecedented 61,998 t in 2018, almost entirely related to exports to Senegal. These significant surge in quantities exported in 2018 is neither comparable to quantities imported in the previous years (1.559 t in 2017 and 315 t in 2016), nor matched by the quantities reported by partner countries in the same year¹⁰.

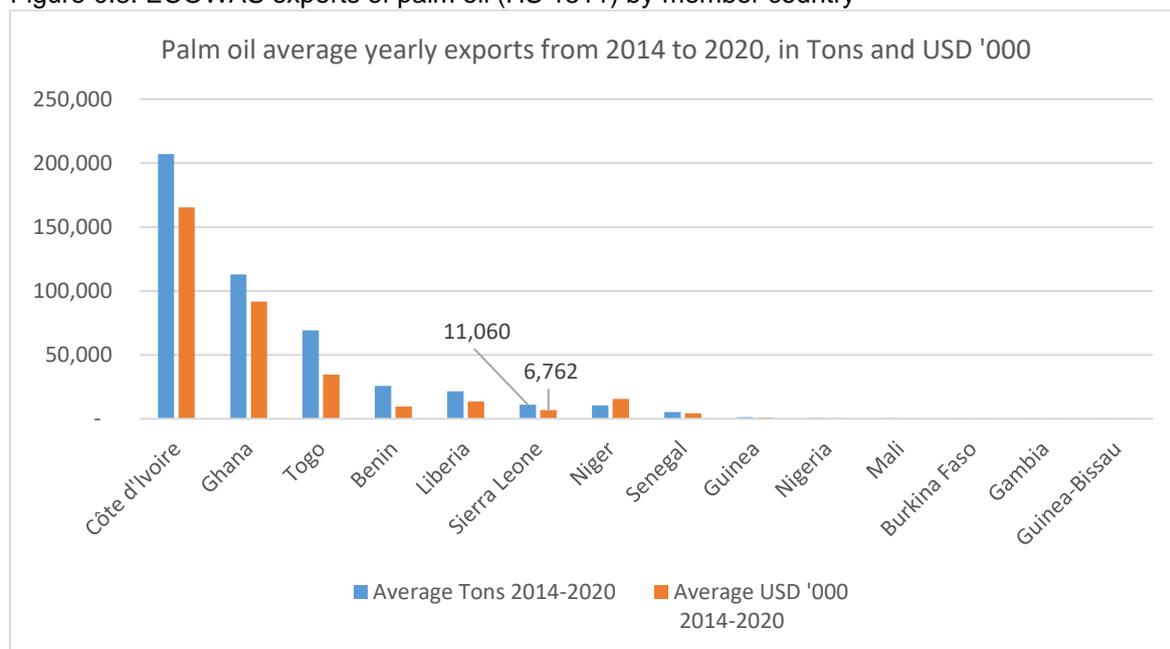
Overall, according to both national statics and partner country statistics, Sierra Leone palm oil export have been rapidly increasing since 2014, although a clear growth path cannot be drawn at this stage, and most of the export in recent years seems to be targeted to regional partners. In particular, the observation of both direct and mirror statistics seems to confirm a substantial increase of exports towards Senegal that is emerging as the leading import market.

2.6.1 Comparison to regional exporters

In 2020 exports of palm oil (HS 1511) from the ECOWAS region represented approximately 1% of the World export market. On the same year Sierra Leone exports represented between 1.2% to 1.3% of the whole ECOWAS export.

The largest exporters of palm oil within the ECOWAS region are Cote d'Ivoire, Ghana and Togo which since 2014 have been able to export on average from 50,000 t to 207,000 t per year. With approximately 11,000 t exported on average per year (USD 6.7 M) Sierra Leone is still a relatively small player as compared to its main regional competitors.

Figure 0.8: ECOWAS exports of palm oil (HS 1511) by member country



Source: Author's calculations based on ITC Trade Map data

¹⁰ Data reported by Senegal indicate 6,000 t imported from Sierra Leone in 2018, against the 57,000 t indicated by Sierra Leone statistics.

Note: The data include the usage of both direct and mirror data (when direct data were not available), as well as estimation calculated by UNSD.

Nevertheless, Sierra Leone is one of the ECOWAS countries which has shown one of the most rapid increase in export values since 2014, although decreases have been recorded since 2018 and also between 2019 and 2020 (national statistics however were not available for these latest years). The decreases in export values indicated in the latest years where, however, experienced by the ECOWAS region as a whole, despite a global increase of palm oil imports.

Table 2.3: ECOWAS export values growth of palm oil (HS 1511) by member country

Exporters	Growth in export values (USD)		
	2014-2020	2018-2020	2019-2020
World	-6%	7%	16%
ECOWAS	-11%	-21%	-36%
Benin	2706%	-73%	-49%
Burkina Faso		-100%	
Côte d'Ivoire	-69%	-66%	-68%
Gambia	0%		-71%
Ghana	79%	38%	1%
Guinea	39%	-37%	-9%
Guinea-Bissau			13%
Liberia		-16%	-13%
Mali		140%	718%
Niger	56%	8992%	-73%
Nigeria		-51%	169%
Senegal	-80%	-96%	-69%
Sierra Leone	5266%	-60%	-40%
Togo	148%	108%	76%

Source: Author's calculations based on ITC Trade Map data

Note: The data include the usage of both direct and mirror data (when direct data were not available), as well as estimation calculated by UNSD. The world aggregation represents the sum of reporting and non-reporting countries

The value per ton of palm oil (HS 1511) exported by Sierra Leone (unit value) has been on average around USD 884 per ton (set aside for the unit values during 2016, equal to an unprecedented USD 87,7782 per ton, which appear to be an anomaly in whole export performance of the ECOWAS region). This unit value is slightly higher than the average one for the ECOWAS region (USD 807 per ton) and the one for the World (USD 644 per ton). Although unit values are not equivalent to market prices, this information indicates that Sierra Leone exports of palm oil still have a higher cost per ton as compared to key competitors in the region as Cote d'Ivoire, Ghana, Togo and Benin, which therefore keep a competitive edge.

Table 2.4: ECOWAS exporters unit value for palm oil (HS 1511)

Exporters	Unit value (USD '000/Tons)
-----------	----------------------------

	Min 2014-2020	Max 2014-2020	Average 2014-2020
World	555	802	644
ECOWAS	711	1010	807
Niger	333	3013	1280
Burkina Faso	1143	1304	1224
Senegal	529	1430	914
Guinea	468	1389	898
Sierra Leone	140	1915	884
Ghana	650	1013	867
Côte d'Ivoire	681	939	803
Liberia	510	925	683
Benin	244	1212	662
Guinea-Bissau	571	643	607
Mali	459	848	588
Gambia	167	1500	577
Togo	424	579	503
Nigeria	37	266	114

Source: Author's calculations based on ITC Trade Map data

Note: The data include the usage of both direct and mirror data (when direct data were not available), as well as estimation calculated by UNSD. The world aggregation represents the sum of reporting and non-reporting countries

2.6.2 Palm oil related products exported by Sierra Leone

Keeping aside some particularly high levels encountered only on single years, Sierra Leone appears to export on similar amounts and values both Crude palm oil (HS 151110) and Palm oil and its fractions (HS 151190) since 2014.

Table 2.5: Sierra Leone exports of Crude palm oil (HS 151110) and Palm oil and its fractions (HS 151190), in USD '000 and Tons

Product label	Unit	2014	2015	2016	2017	2018	2019	2020	Total 2014- 2020	Avg 2014- 2020
HS151190 - Palm oil and its fractions, whether or not refined (excluding chemically modified and crude)	USD '000	44	170	26,909	630	903	993	2,497	32,146	4,592
HS 151110 - Crude palm oil	USD '000	21	238	479	910	7,748	4,798	991	15,185	2,169
HS151190 - Palm oil and its fractions, whether or not refined (excluding chemically)	Tons	54	67	99	473	886	1,269	3,133	5,981	854

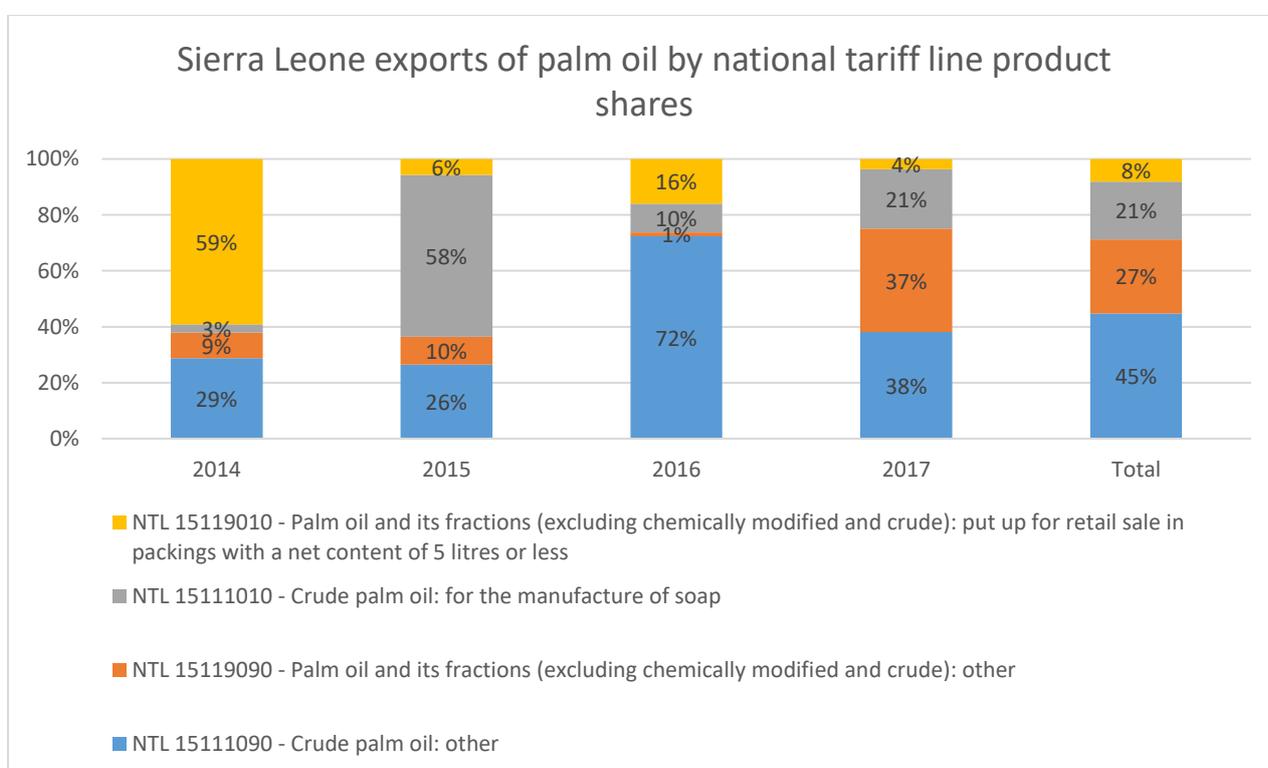
modified and crude)										
HS 151110 - Crude palm oil	Tons	24	146	213	1,086	61,112	7,410	1,446	71,437	10,205

Source: Author's calculations based on ITC Trade Map data

Note: Data based on the partner reported data (Mirror data) are shown in orange. The quantities shown in light green are estimated by UNSD. The cells highlighted in yellow indicate what seem to be anomalies in the time series.

Information on export at the most detailed product level of the international trade harmonised system (i.e. national tariff line level product codes) is available only from 2014 to 2017. Aside from residual and unspecified products categories derived from both crude palm oil and palm oil and its fractions (which represent more than 70% of the values exported since 2014), some exports seem to be related to the use of crude palm oil for soap manufacture (NTL 15111010) and to the retail sale of palm oil and its fractions in packings with a net content of 5 litres or less (NTL 15119010).

Figure 0.9: Composition of palm oil exports from Sierra Leone at the most detailed product level



Source: Author's calculations based on ITC Trade Map data

Note: The data include the usage of both direct and mirror data (when direct data were not available), as well as estimation calculated by UNSD.

2.6.3 Additional considerations

It can be inferred that, the Sierra Leone palm oil export market is and will be largely influenced by market opportunities within the West African region.

It is not clear from available export data to establish which variety (Dura and Tenera) dominates the export market in Sierra Leone and within the region (as specific product codes have not been

developed), but generally, exports in the region could be attributed to demand for manufacturing soap and for edible purposes.

Information obtained in the Barmoi Luma market, close to the Guinea-Sierra Leone border in the Kambia District, indicated that there is a strong cross-border informal trade in palm oil to Guinea and even beyond to Mali and Senegal. This information related to informal trade across the Guinean border is also confirmed by other sources (CIRAD, 2018).

More information on potential export markets for Sierra Leone and related information available is presented in **Annex VII**

2.7 Palm oil imports to Sierra Leone

Notwithstanding some improvements in its export performance since 2014, Sierra Leone remains according to both direct and mirror data a net-importer of palm oil (with only a few years in which a positive trade balance was recorded).

Although regional and international market can pay premium prices for higher quality products, this implies that the local market should still remain an important priority for palm oil traders and producers, given the large use of this product that is done in the country.

Table 2.6: Composition of palm oil exports from Sierra Leone at the most detailed product level

Product	Trade flow	USD '000						
		2014	2015	2016	2017	2018	2019	2020
HS 151190 - Palm oil and its fractions	exports	44	170	26,909	630	903	993	2,497
HS 151110 - Crude palm oil	exports	21	238	479	910	7,748	4,798	991
HS 151190 - Palm oil and its fractions	imports	1,737	3,564	2,447	2,291	2,142	12,674	6,426
HS 151110 - Crude palm oil	imports		13,429	12,056	12,370	6,055	1,358	
HS 151190 - Palm oil and its fractions	Trade balance	- 1,693	- 3,394	24,462	- 1,661	- 1,239	- 11,681	- 3,929
HS 151110 - Crude palm oil	Trade balance	21	- 13,191	- 11,577	- 11,460	1,693	3,440	991

Source: ITC Trade Map data

Note: Data based on the partner reported data (Mirror data) are shown in orange. The cells highlighted in yellow indicate what seem to be anomalies in the time series.

According to ITC Trade Map data, main suppliers countries of palm oil (HS 1511) to Sierra Leone during the last years have been Indonesia, Malaysia and the UAE. Sierra Leone has not been importing almost any palm oil from other regional partner or African country.

CHAPTER 3: FARMERS SURVEY METHODOLOGY AND VALUE CHAIN ANALYSIS APPROACH

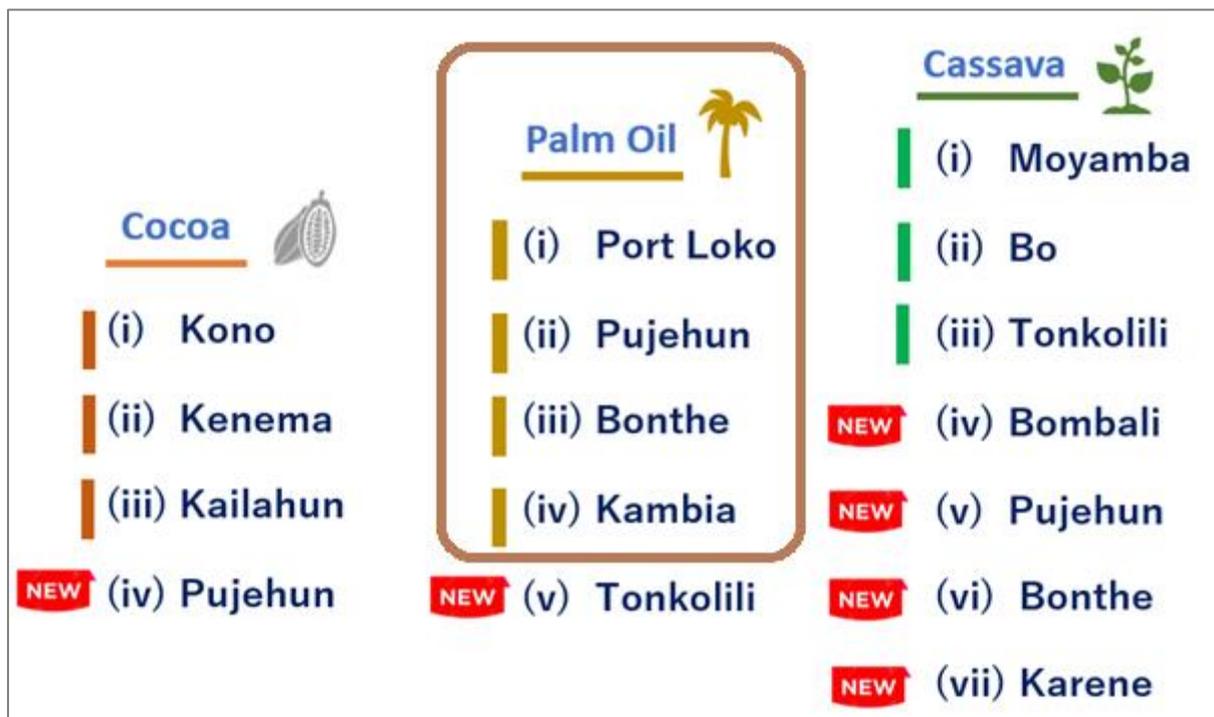
3.1 Introduction

This section presents the Approach and Methodology that the Consultant used for this assignment. The description of the study area for the assignment is first presented, followed by the approach utilised for the study and a discussion of the methodology.

3.2 Description of Study Area

The purpose of the study is to understand Sierra Leone’s production and supply potential of oil palm, the bottlenecks affecting production and productivity along the value chain as well as its current domestic and export markets.

Figure 3.1: Priority and additional districts by value chain identified in the framework of the WACOMP Sierra Leone

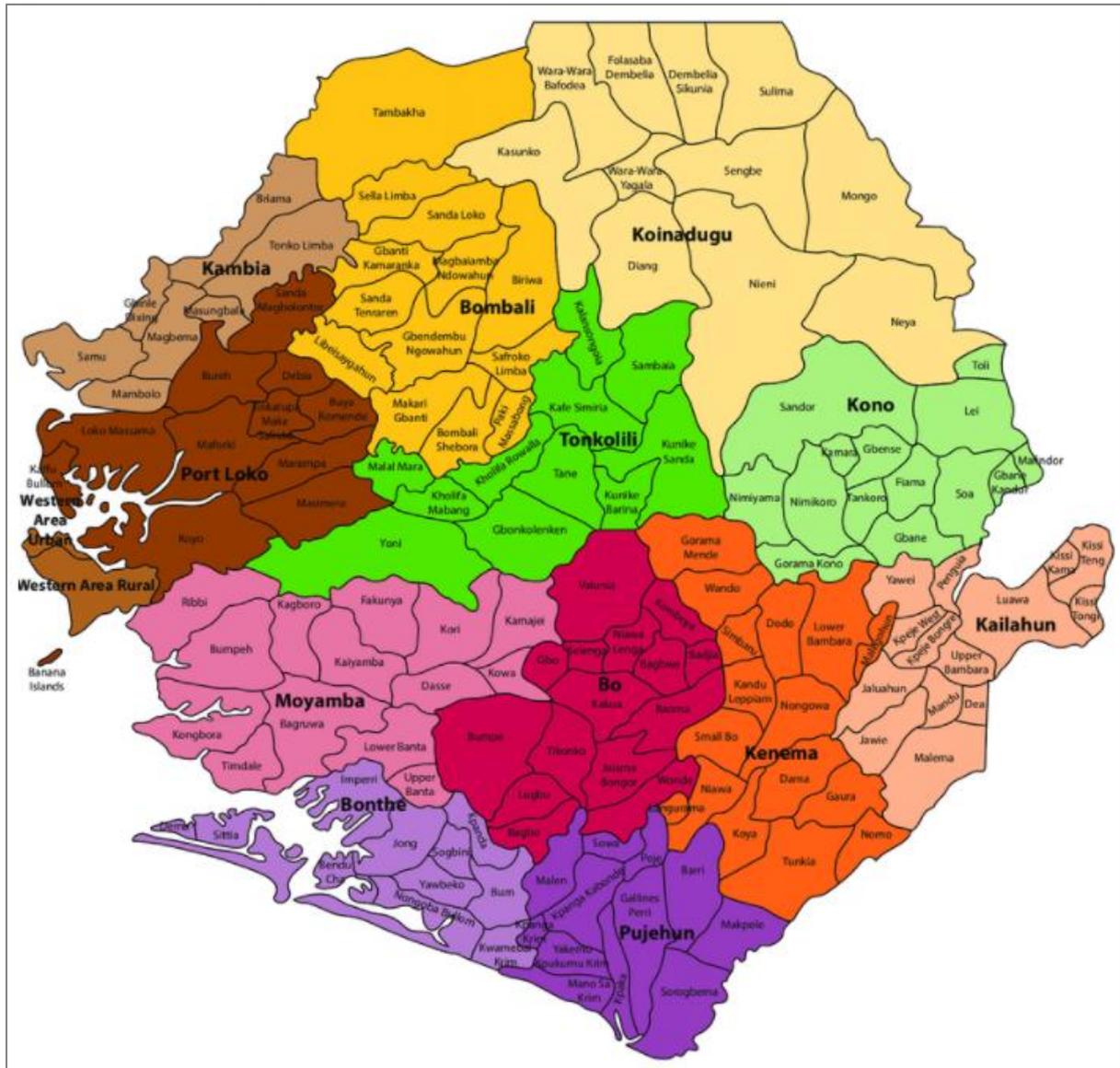


Source: UNIDO – ITC presentation to the WACOMP Project Steering Committee (18.11.2020)

Priority districts for each target value chain of the programme, were identified by the MTI and UNIDO during the inception phase of the WACOMP Sierra Leone. Following a Steering Committee Meeting in May, 2020 – UNIDO and ITC met with MTI and MAFFS to review the selection of Districts and Chiefdoms. A number of additional districts were included to the initial list.

Given the expectations of the study on oil palm production and marketing in Sierra Leone, the Kambia, Port Loko, Pujehun and Bonthe Districts were the focus of the study.

Figure 3.2: Political map of Sierra Leone with districts and chiefdoms



Source: Statistics Sierra Leone

Kambia District lies in the North Western Province of Sierra Leone with Kambia Town as the District Head Quarter and largest town. The district had a population of 343,686, and is divided into seven chiefdoms. Kambia District borders the Republic of Guinea to the north, Port Loko District to the south and Karene District to the east. Kambia district provides an important Trade route to or from the Sierra Leonean capital Freetown to the Guinean capital Conakry. The oil palm market attracts thousands of traders and other visitors from far-off areas, including from Freetown and Conakry.

Port Loko District also lies in the North Western Province of Sierra Leone. Port Loko District has a population of 614,063, and comprises eleven chiefdoms. Port Loko District shares borders with the Western Area to the west, Kambia District to the north, Bombali District to the east, Tonkolili District to the south and Moyamba District to the South-West. Production of food crops, such as rice, cassava and sweet potato, are the main livelihood sources for over 80% of the population in Port Loko district.

Pujehun district is located in the Southern Province of Sierra Leone and borders with the Atlantic Ocean to the South, Bonthe District to South West, Bo District to the North, Kenema District to the North East and Republic of Liberia to the South East. Pujehun district has a total area of 4,105 km², with a population of 345,577, divided into 10 chiefdoms. The main agricultural activities are the production of root crops (cassava and sweet potato), cash crops (oil palm, coffee and cocoa). Diamond mining is a major economic activity.

Bonthe district also in the Southern Province, has a long border with the Atlantic Ocean and shares borders with Moyamba, Bo and Pujehun Districts., The district comprises of a mainland and several islands the largest of which is Sherbro Island which is next to the Atlantic Ocean. The capital is Bonthe town. The largest city Bonthe is on Sherbro Island. Bonthe district has a total area of 3,468 km², and a population of 200,730, divided into divided into eleven chiefdoms. Fishing and farming are the two main livelihood activities of the large majority of the district population. Palm oil plantations have been on the rise and more people are engaged in this livelihood in recent years. Bonthe district has one of the world's largest deposits of titanium ore (rutile) in the world. Sierra Rutile Limited, owned by a consortium of foreign investors, began commercial mining operations in early 1980's.

Table 3.1: Geographical dimensions of the project districts

District	N. of chiefdoms	Population	Area
Port Loko	13	614,063	5,719 km ²
Kambia	10	343,686	3,108 km ²
Pujehun	14	345,577	4,105 km ²
Bonthe	11	200,730	3,468 km ²

Source: Sierra Leone Statistics

3.3 Methodology

A mixed methods approach was used for this study where both quantitative and qualitative approaches were utilised to ensure that all components of the oil palm value chain were adequately captured to provide reliable data for analysis.

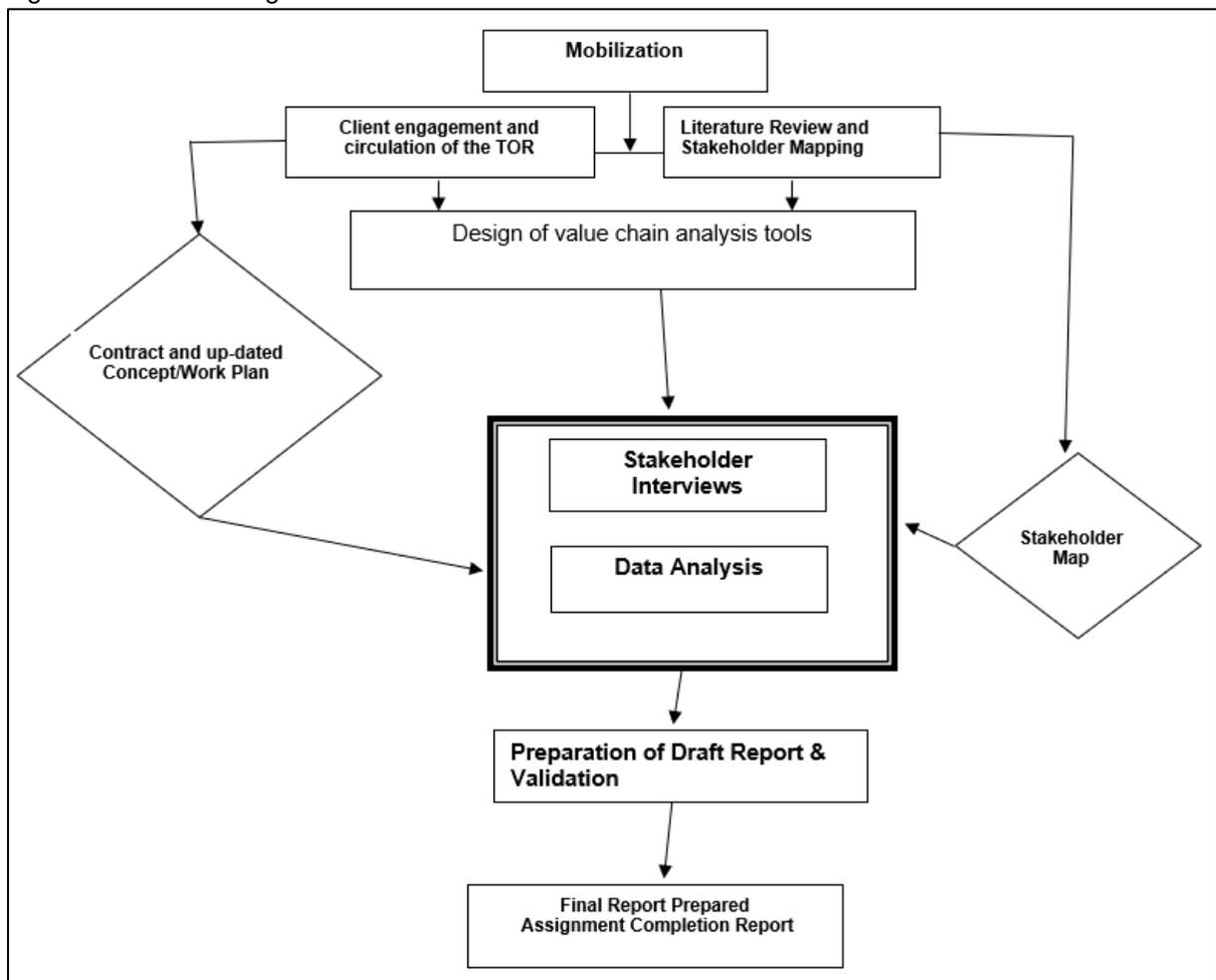
The target sample for the study was drawn and decided upon between the consultant and ITC and a purposive systematic random selection process and procedures have been applied. An extensive list of oil palm farmers in the priority districts of port Loko, Bonthe, Kambia and Pujehun was established by a dedicated team of enumerators hired for the task with support from MAF representatives during fieldwork, from which respondents were selected randomly.

The methodological process included:

- a. desk review,
- b. development of questionnaires, set up dashboard using ODK/Kobo collect tool box and pre-tested questionnaires,
- c. recruitment and training of field staff and piloting the survey,
- d. implementation and supervision of fieldwork for data collection
- e. monitoring of field data collection and data cleaning
- f. data analysis and report preparation.

This process is captured in our proposed methodological flowchart below.

Figure 3.3: Methodological flowchart



Source: Author

3.3.1 Sample Design for the survey

A purposive sampling technique was employed to select key respondents within the selected communities to respond to the questionnaires. The Ministry of Agriculture and Forestry (MAF) estimated 9,500 oil palm smallholder farmers in the four districts, namely: Port Loko (2000), Kambia (1000), Bonthe (4000) and Pujehun (2500).

Using a proportion to size sampling procedure, 200 respondents were interviewed across the four districts. This sample size was generated taking into consideration the following variables in determining the criteria for proposing a sample size:

- Estimated total number of smallholder oil palm farmers in each of the districts as stated above.
- Sex of targeted respondents
- Age of targeted respondents

The purposive sampling approach was adopted to ensure an equal representation of both male and female respondents in the data collection exercise. Hence, there was a 50-50 representation for males and female respondents. The goal behind the 50-50 representation for sex was to get information from the most knowledgeable person who were both male and females.

A structured questionnaire was developed to elicit responses from all 200 respondents who were typically representatives of oil palm farms and had significant knowledge about the oil palm production and processing processes.

To understand the household production and market structures for smallholder oil palm producers, two focus group discussions (FGDs) comprising 10 participants each, were held with producers in two oil palm producing communities, Port Loko in the North - Western province and Pujehun in the Southern Province of Sierra Leone using the random sampling approach.

Interviews were also conducted with processors, marketers, community leaders and officials of NGOs, government and large-scale oil palm estates across the four districts. The table below indicate the distribution of smallholder respondents in the four selected districts.

Table 3.2: Chiefdoms and towns selected in the four districts

Districts	Chiefdoms selected	Towns/Villages	Total Respondents		
			Females	Males	Total
Port Loko			13	29	42
	Maforki	Makaneh, Mashubah, Gbatehball, Mamasa, Moria, Gbatehball, Gberesarr, Mayeamie, Mafoirmara			
	Bureh Kasseh Makonteh (BKM)	Mange Bureh, Makaneh			

Districts	Chiefdoms selected	Town/Villages	Total Respondents		
			Females	Males	Total
	Masimera	Rotheren, Maforay-loko Marotto			
	Koya	Rosarr-bana, Maborah, Robis 1			
Kambia			15	6	21
	Magbema	Kamaraka			
	Gbinle-Dixing	Gbleh, Da re salam, Thana			
	Masungbala	Mafaray, Kawula, Kamba, Robutta, Laya munu, Maron			
Bonthe			53	31	84
	Jong	Mowagor, Segbwema, Foyah, Nyandehun, Sembehun, Blama, Upper Jouma			
	Sogbini	Karlleh			
Pujehun			19	34	53
	Kpanga Kagonde	Jabama, Tongay, Balleh, Konalleh, Benga			
	Kpaka	Massam			
	Sowa	Upper Geoma, Lower Geoma			
	Makpele	Zimmi			
	Malen	Sahn Malen, Henni			

Source: Survey data (N=200)

3.3.2 The Development of Data Collection Survey Tools

The questionnaires, Focus Group Discussion and interview guides prepared for this study were designed to improve an understanding of the production and supply potential of oil palm, the bottlenecks affecting production and productivity along the value chain as well as the current domestic and export markets in the target districts. The questionnaires and the Focus Group Discussion guide were designed for oil palm farmers while the interview guides were designed specifically for key stake holders such as trade support institutions, Government ministries, large scale producers, exporters etc. The information set in the questionnaires was related to demographic factors of oil palm farmers household in terms of sex, age group, number of family members, address of the farmer, phone contacts, level of education, labour force, education level, housing and access to services. The smallholder survey instruments and key stakeholder interview guide were supported by field observations, testimonies, video and photos. All the data collection tools are presented in the annex section of this report.

3.3.3 Data collection procedure

The procedure for data collection included administering of questionnaire, Focus Group Discussion and Interview guides are also annexed in the report. The final questionnaire was prepared in an electronic Open Data Kit, commonly referred to as ODK version and installed in all enumerators' android phones. The enumerators administered the questionnaire to Farmers in the form of interviews. Focus Group Discussions and Interviews with farmer groups and key stakeholders in the survey areas and within the survey period were conducted. The data collection activities were closely monitored and supervised by the field supervisor.

A team of experienced enumerators was recruited and given rigorous training. An in-depth interactive training on the techniques of conducting quantitative and qualitative surveys and on various instruments of the survey including household interviews, FGDs and Key Informant Interviews and use of CAPI in collecting the data was delivered. The trained enumerators were deployed for data collection in the sampled areas. The Data Scientist in the Consultant's team physically monitored the field work and also remotely monitored the entries to the dashboard when data was uploaded to track the progress and quality.

3.3.4 Focus Group Discussion at Chiefdom and Community Level

During the client engagement and discussions of the Inception Report, 2 Focus Group Discussion (FGD) were conducted with representatives' oil palm farmers of whom 55% were women farmers.

3.3.5 Key Informants Interviews (KIIs)

Key informant interviews (KIIs) were conducted in sampled communities within the districts to obtain a broader range of views with regards to oil palm production. The key informants interviewed were drawn from the following:

1. Community Leaders
2. Oil palm Cooperatives
3. Large-scale oil palm estates
4. Ministry of Trade and Industry
5. Ministry of Agriculture and Forestry
6. Sierra Leone Investment and Export Promotion Agency (SLIEPA)
7. Produce Monitoring Board (PMB)
8. Sierra Leone Standards Bureau
9. UNIDO
10. Exporters of Pam Oil
 - a. Nedoil – Producer/processor/ exporter (Tenera – International)
 - b. Socfin – Producer/Processor/ Exporter (Tenera – international)
 - c. Tanu International Enterprise – Exporter (Dura)
 - d. CAC Holdings - Exporter (Dura)

- e. Marica Enterprise – Exporter (Tenara – regional)
- 11. Solidaridad (an international NGO working in the oil palm value chain)

3.3.6 Data analysis

Data cleaning was done when errors were observed from the dashboard and after the data collection exercise. The questionnaire data collected from the field using the electronic ODK version software, and the findings from the FGD and Interviews, were entered into the Statistical Package for Social Science (SPSS) and analysed quantitatively. The recorded audio data collected by interviews and focus groups were transcribed into a written form, which is an interpretive process. A simple descriptive analysis of the data was done, and the results presented in tables, graphs and charts.

3.7 Managing the assignment amidst the Covid-19 pandemic

The survey was conducted during the Covid-19 pandemic and an alert by the World Health Organization (WHO) of an outbreak of Ebola in the neighboring Republic of Guinea. Mitigation measures were identified to avoid or minimize the chance of infection from both diseases when engaging with Farmers and other stakeholders. These included strictly following GOSL and WHO protocols on hand washing, wearing of face masks, maintaining social distancing and temperature checks. One to one engagements and the use of virtual meetings were prioritized to the extent possible for all activities.

CHAPTER 4: FINDINGS AND DISCUSSION OF THE SURVEY RESULTS

4.1 Introduction

The data collected from 200 respondents across the district of Bonthe, Kambia, Port Loko and Pujehun are discussed and highlighted in this chapter of the report. Information gathered from the focus group discussions and key stakeholder interviews are also discussed and highlighted.

Each interview was conducted with a representative of a different oil palm farm. Interviews were conducted with the person indicated as the more knowledgeable about the farm activities, and specifically in relation to oil palm.

The respondents to the survey belonged to 14 Chiefdoms across the 4 selected priority districts. The most represented district was Bonthe, with 37% of the total respondent from the chiefdom of Jong.

Table 4.1: Distribution of interviews by district and chiefdom

District	Chiefdom	# respondents	% respondents
Bonthe	Total	84	42%
	Jong	74	37%
	Sogbini	10	5%
Kambia	Total	21	11%
	Gbinle-Dixing	8	4%
	Magbema	7	4%
	Masungbala	6	3%
Port Loko	Total	42	21%
	Bureh Kasseh Makonteh (BKM)	12	6%
	Koya	6	3%
	Maforki	14	7%
	Masimera	10	5%
Pujehun	Total	53	27%
	Kpaka	10	5%
	Kpanga Kagonde	15	8%
	Makpele	4	2%
	Malen	10	5%
	Sowa	14	7%
Total		200	100%

Source: Survey data (N=200)

It is also important to keep in mind that only half of the respondents were household heads, while the others were related to a different degree to the household head. Although, the interview sample was equally divided into male and female respondents, only 18% of the household heads that responded were women.

Table 4.2: Interviewees by role played in the household

Role in the household	Female	Male	Total
Household head	18	82	100
Wife/Husband	76	2	78
Other family member	6	13	19
Other non-family member		3	3
Grand Total	100	100	200

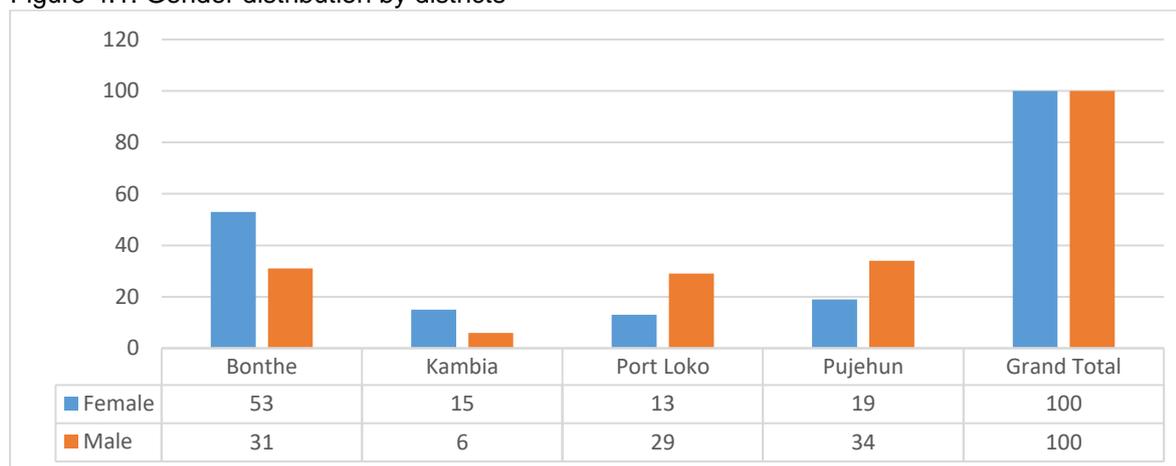
Source: Survey data (N=200)

4.2 Socio-Economic Characteristics

4.2.1 Distribution of respondents by gender and age group

A higher number of female farmers were interviewed in the the districts of Bonthe (where most of the interviews were conducted) and Kambia.

Figure 4.1: Gender distribution by districts



Source: Survey data (N=200)

The age of the respondents varied largely within each district but it appears that in Kambia the average age was generally lower. However, the majority of the respondent was above 40 years old, indicating that decision making in the farms is usually a prerogative of more senior representatives.

Table 4.3: Age distribution by districts

Districts	Average of Age of Respondent	Min of Age of Respondent	Max of Age of Respondent
Bonthe	51	20	74
Kambia	38	25	60
Port Loko	50	25	72
Pujehun	48	29	80
Grand Total	49	20	80

Source: Survey data (N=200)

4.2.2 Marital status of respondents

The large majority of the respondents (representing the most knowledgeable people in the farm) in both gender groups, were married. Similar proportions in the distribution of respondents by marital status were observed in the four districts.

Table 4.4: Marital status of respondents by gender (%)

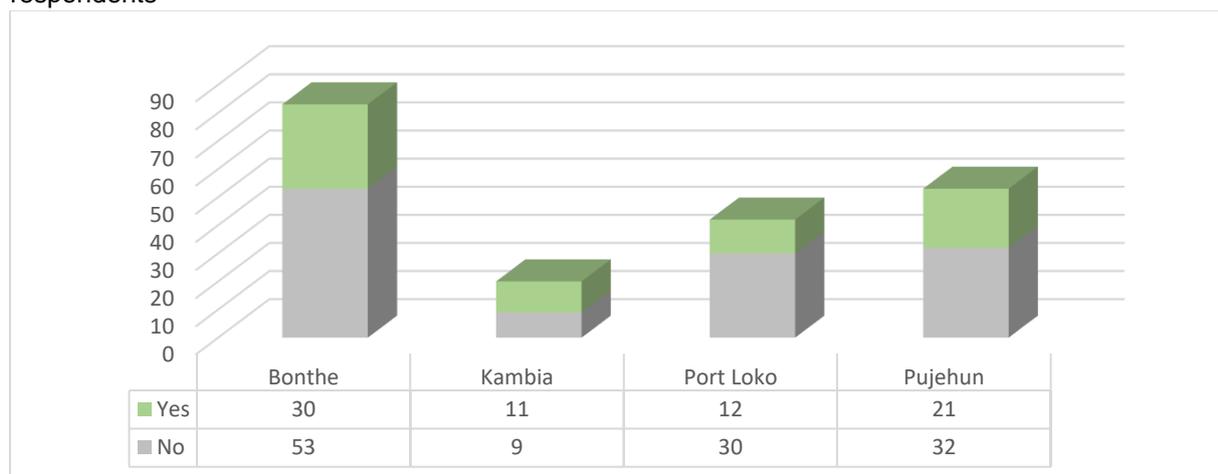
Marital status	Gender		Grand Total (%)
	Female (%)	Male (%)	
Married	40	46	86
Single	4	3.5	7.5
Widow/Widower	6	0.5	6.5
Grand Total	50	50	100

Source: Survey data (N=200)

4.2.3 Educational level of respondents

The literacy levels of respondents who constituted household oil palm farmers or the most knowledgeable representative of such farmers was examined. From the figure below, it appears that the majority of respondents were not able to read or write in English or other languages. Out of the 83 respondents interviewed in Bonthe District, only 33 could read or write. There were 21 respondents in Pujehun District and 12 and 11 respondents in Port Loko and Kambia respectively that could read and write. Those who cannot read or write in Port Loko and Kambia Districts were 30 and 9 respectively.

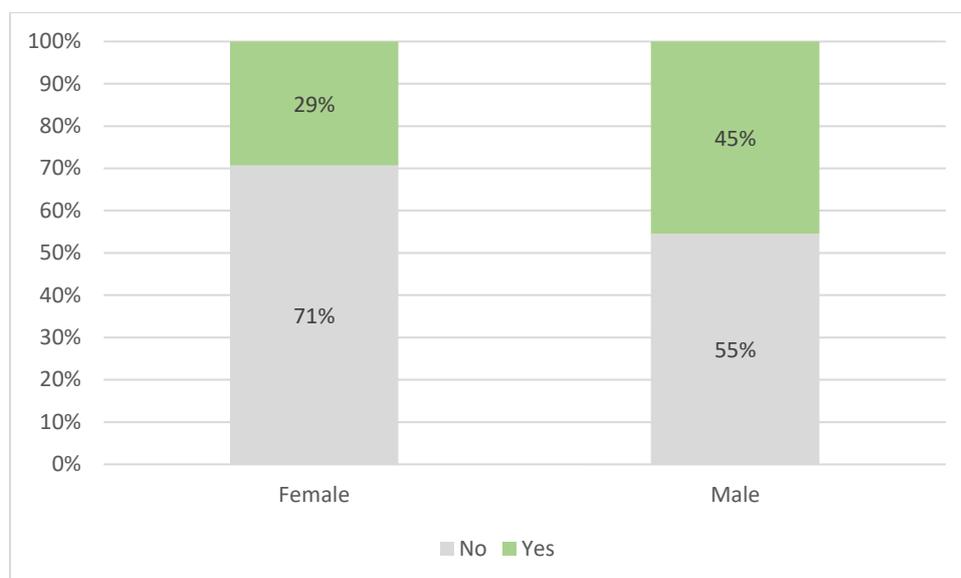
Figure 4.2: Ability to read and write in English or any other local language (literacy level) of respondents



Source: Survey data (N=200)

The percentage of farmers with basic literacy levels was higher among men (45% of them) than women (29% of them).

Figure 4.3: Ability to read and write in English or any other local language (literacy level) by gender



Source: Survey data (N=200)

Out of the 37.4% of the respondents who can read and write, 25.3% of them attended secondary school with 7.1% of them attaining primary education. About 1.5% had attained adult literacy with only 3% going as far as tertiary. It must be acknowledged that, 0.5% of the respondents who can read and write actually did not go to school. About 2% and 0.5% of those who cannot read or write had attained adult literacy and primary education respectively. This goes to show that oil palm farmers, and even those who are very knowledgeable representatives of the oil palm farmers, have low level of education with few who can read or write.

Table 4.5: Literacy rate and educational level of respondents (%)

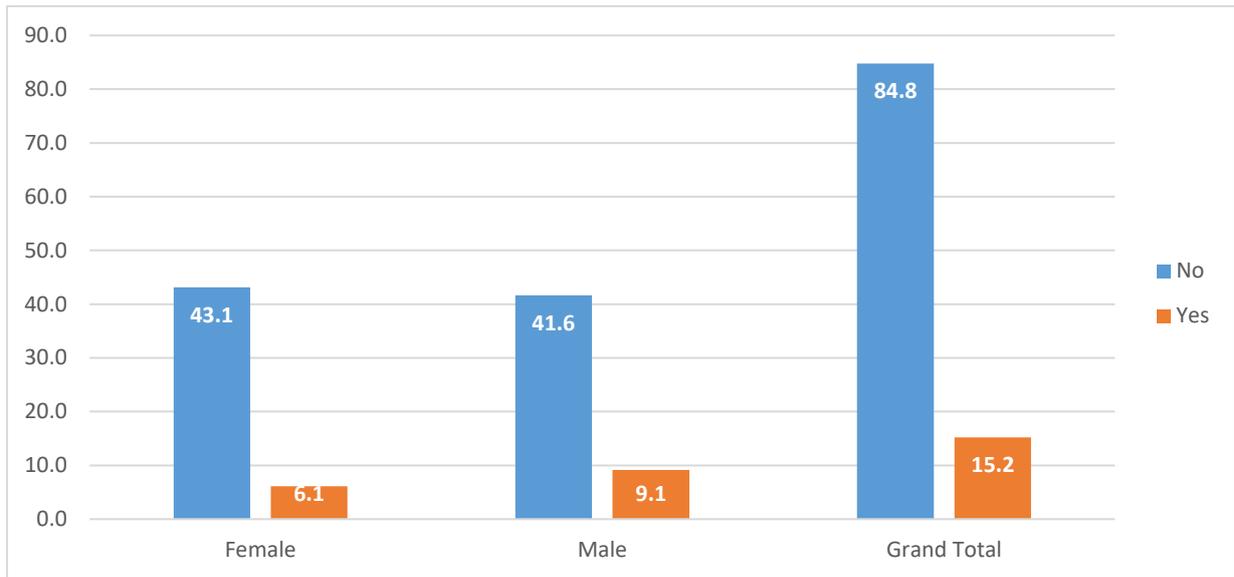
Response	Adult literacy	Primary	Secondary	Tertiary	No literacy	Total
No	2.0	0.5	0.0	0.0	60.1	62.6
Yes	1.5	7.1	25.3	3.0	0.5	37.4
Total	3.5	7.6	25.3	3.0	60.6	100.0

Source: Survey data (N=200)

4.2.4 Leadership position of respondents

Decision making in community development, be it on infrastructural or agribusiness development, requires inclusiveness of both genders. Respondents were asked if they held any leadership position in the decision making process of their communities. Only 15.2% of the respondents held leadership positions in their communities. The proportions seems to be similar between male and female respondents

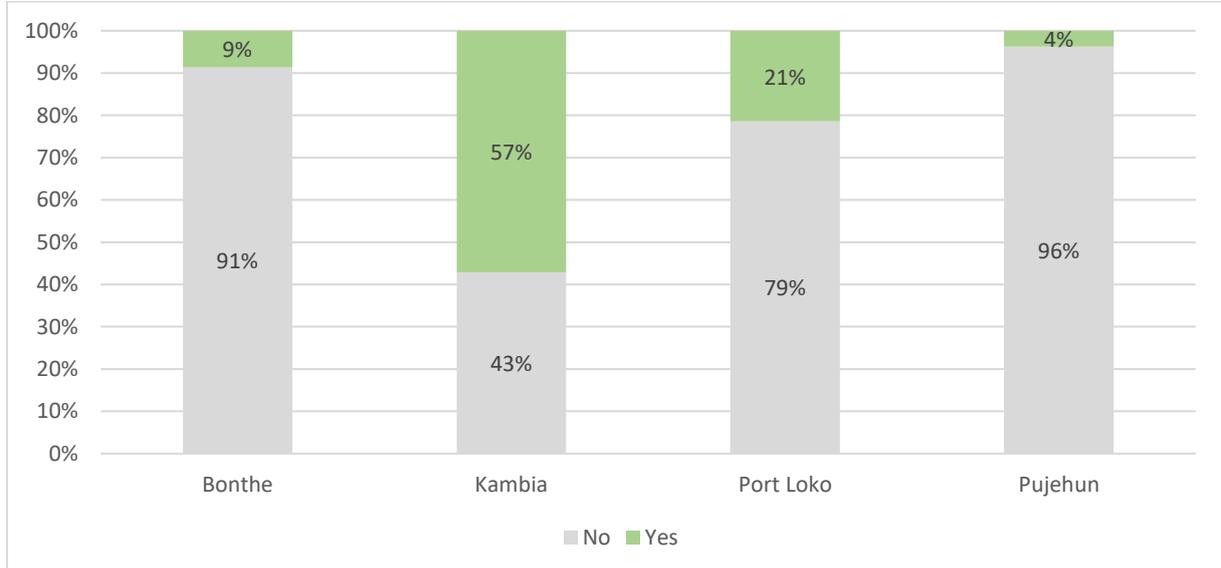
Figure 4.4: Leadership position in village development committees or farming committees (%)



Source: Survey data (N=197)

The percentage of respondent that held any leadership position in village development committees or farming committees was low across all districts with the only exception of Kambia.

Figure 4.5: Leadership position in village development or farming committees by district



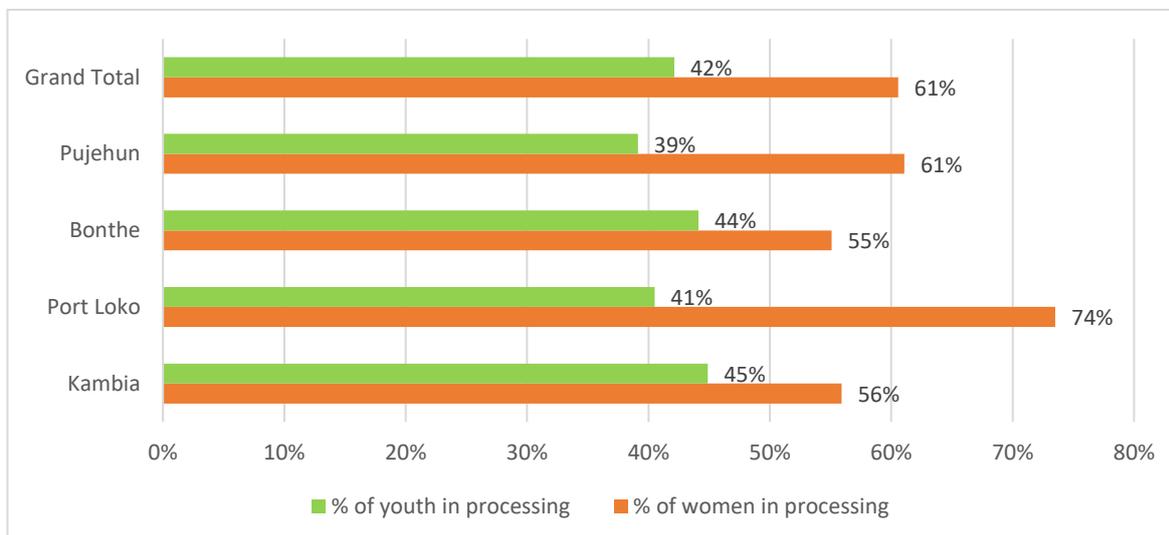
Source: Survey data (N=197)

4.2.5 Participation of women and youth in oil palm processing

Women play an important role in the processing of palm oil. On average 61% of the processing workforce is made of women. This percentage is higher in the district of Port Loko.

Youth instead appear to represent in all the analysed districts less than 50% of the population involved in the processing.

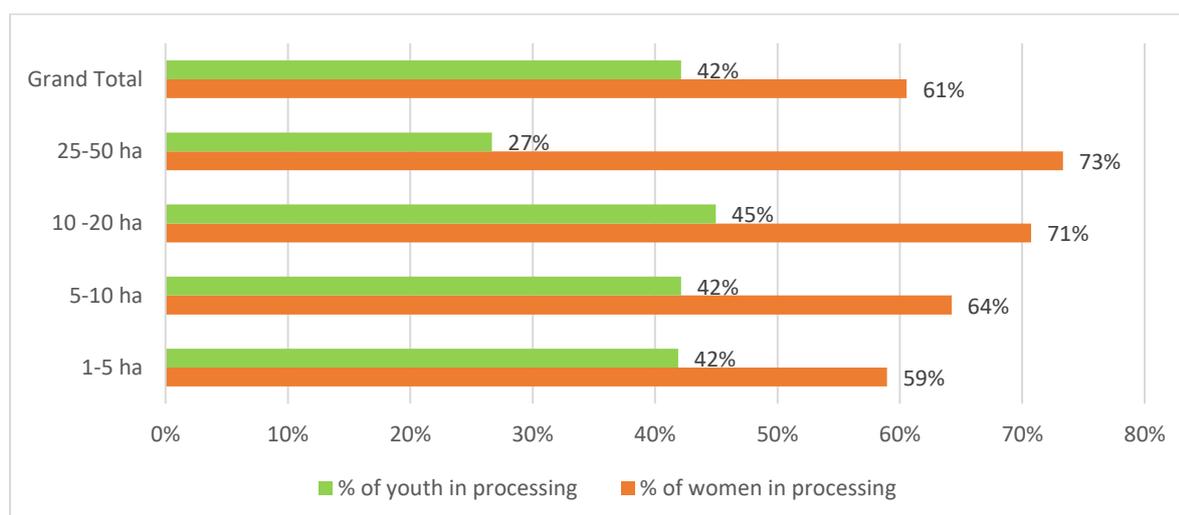
Figure 4.6: Share of women and youth in FFB processing by district



Source: Survey data (N=200)

Looking at the share of women and youth involve in processing by size of the farmland, it appears that the larger the farmland the higher is the share of women involved in processing as compared to men. A similar pattern could not be observed in terms of the youth involved in processing.

Figure 4.7: Share of women and youth in FFB processing by farmland size



Source: Survey data (N=197)

From the FGDs conducted and the KIIs, processing of FFBs is carried out by youths (both male and female) either as part of farming family or hired. Male youth are mostly hired for tasks related to processing as it was revealed during both KIIs and FGDs.

4.2.6 Main challenges faced by farmers

The survey went on to ask respondents to state some of the main challenges facing farmers, especially women in the survey districts. The most frequent challenges mentioned by participants (through open ended questions, which allowed highlighting multiple challenges at the same time) can be grouped in the following categories:

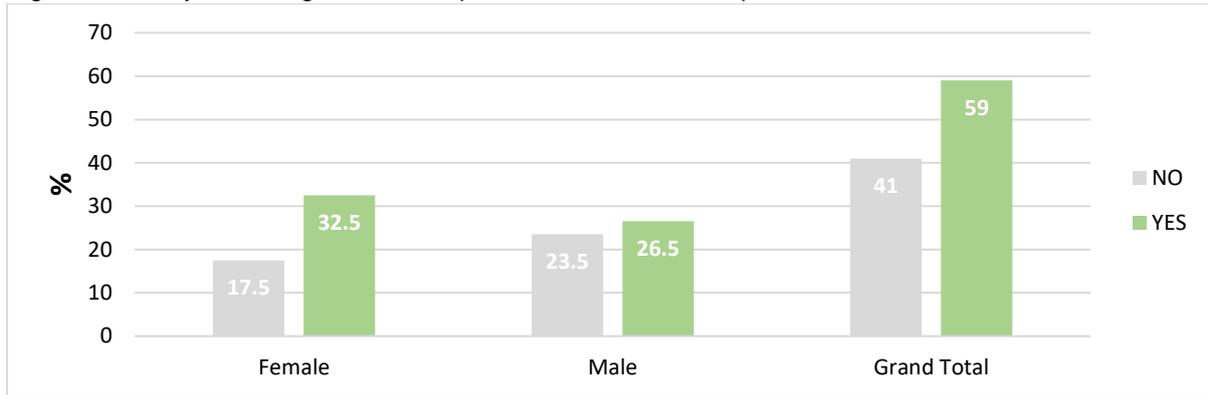
1. Lack of access to inputs and fertiliser
2. Lack of access to land
3. Lack of access to improved oil palm seedlings
4. Inability to access oil palm processing machines
5. lack of credit facility
6. Lack of government support
7. Lack of capacity building for farmers
8. Lack of storage facilities
9. High labour cost
10. Lack of extension services
11. Lack of farm machineries
12. Poor road network
13. No monitoring from MAF
14. Poor healthcare facility
15. Land right issues against women

4.3 Group membership

4.3.1 Group membership by respondents

As with other cash crops, there are specific value chain membership organisations (cooperatives, community based organisations, farmers associations) in production areas. Respondents were asked if they belonged to an oil palm association or cooperative. About 59% of the respondents stated that they belonged to an oil palm association or cooperative of which 32.5% were female while 26.5% were males, which indicates that more women joined oil palm associations or cooperatives than men.

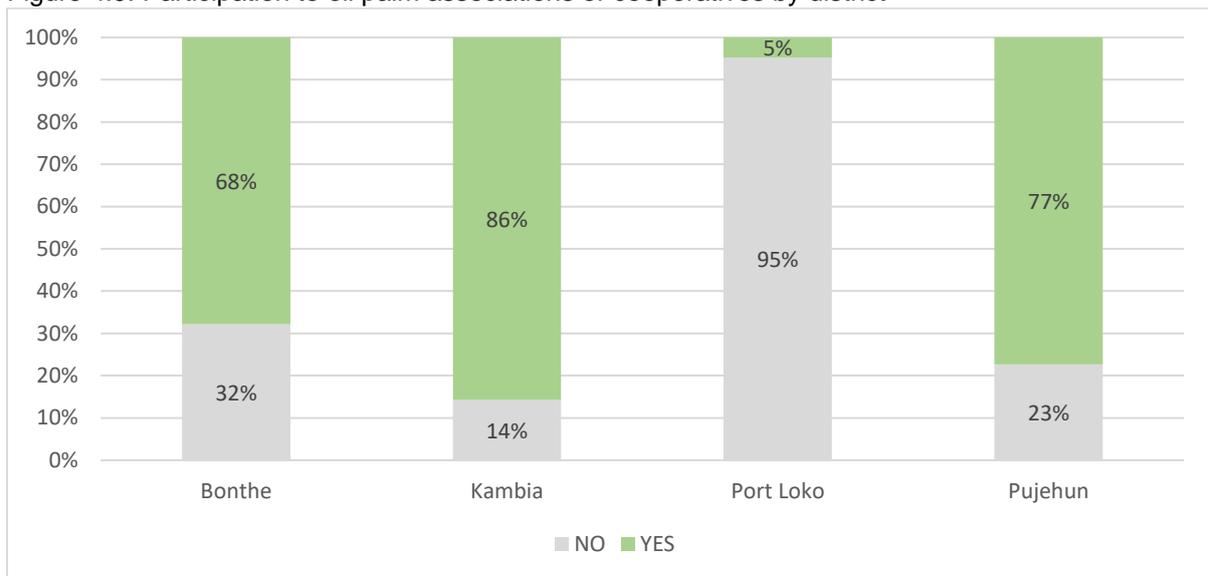
Figure 4.8: Do you belong to some oil palm association or cooperative?



Source: Survey data (N=200)

Membership to associations of cooperatives appears to be a relatively widespread practice among palm oil farmers with the exception of the district of Port Loko where only 9% of the respondents declared to belong to some oil palm association or cooperative.

Figure 4.9: Participation to oil palm associations or cooperatives by district



Source: Survey data (N=200)

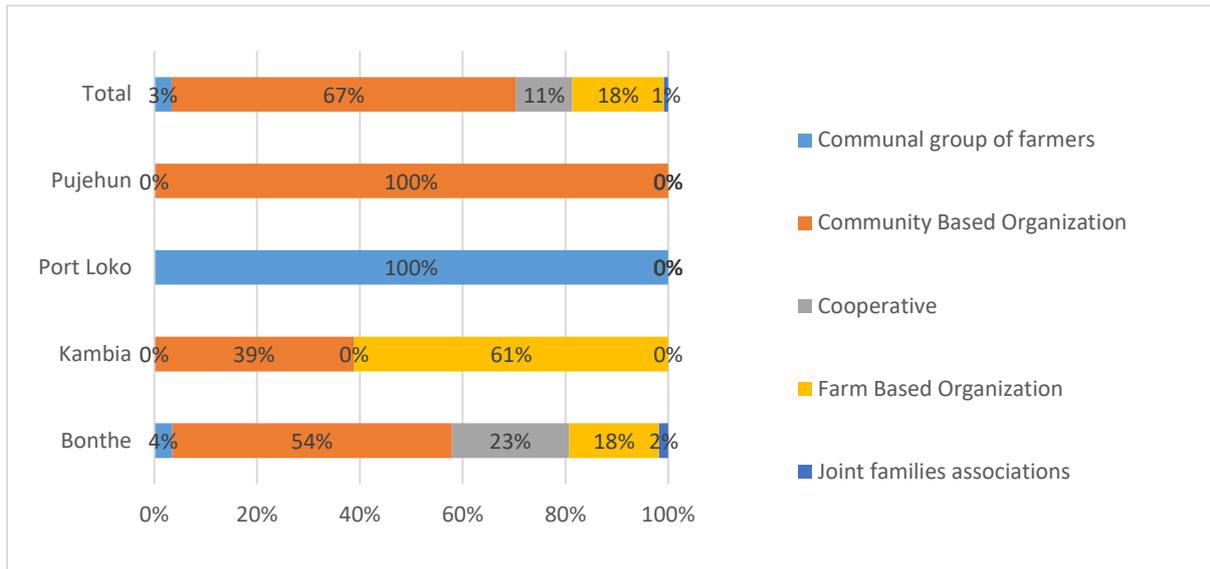
Overall, the percentage of respondents that belonged to an association or cooperative was slightly higher among farmers that had basic literacy (capacity to read or write), namely 65%, than among the ones that had none, namely 55%.

4.3.2 Type of group membership reported by farmers

As can be seen in the table below, out of the all the respondents who said they belong to associations or cooperatives (59%), the majority confirmed membership in Community Based Organization (67%), although in Port Loko respondents confirmed membership only to joint families' associations.

Membership to cooperatives was observed only in 11% of the cases (and only in the district of Bonthe), and overall appeared to be less common than membership to farm based organizations.

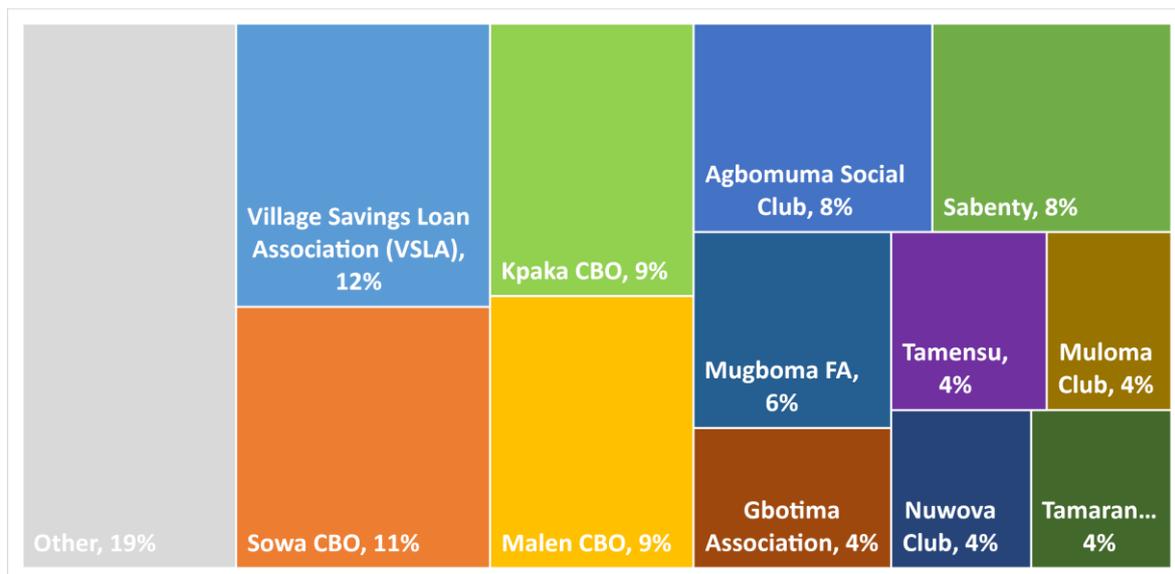
Figure 4.10: Type of group membership by district (%)



Source: Survey data (N=118)

113 respondents also provided additional indication on the name of the association or cooperative to which they belong. Among the most frequently mentioned associations there were Village Savings Loan Association (VSLA), Sowa CBO, Kpaka CBO, Malen CBO, Agbomuma Social Club, Sabenty and Mugboma FA

Figure 4.11: Respondents by membership to a specific association/cooperative

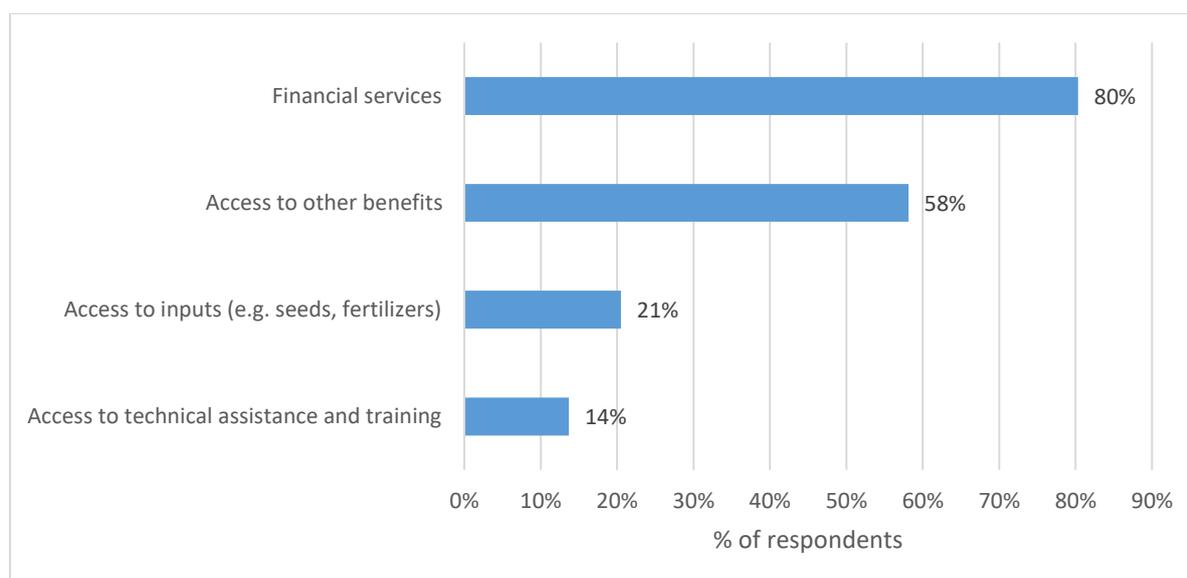


Source: Survey data (N=113)

4.3.3 Benefits of groups membership

Respondents that confirmed membership with associations or cooperatives were asked to highlight the main benefits gained from their membership. The large majority of the respondents (80%) said they gained financial services support, while 58% of them indicated access to other benefits such as welfare contributions (funeral, naming or marriage ceremonies), on-farm assistance from group members etc. Less than a third of the respondents said they benefited in terms of access to inputs (e.g seeds, fertilizers) or technical assistance and trainings.

Figure 4.12: What are the main benefits that you received from the association or cooperative?



Source: Survey data (N=117)

4.4 Management and Practice of Oil Palm Production

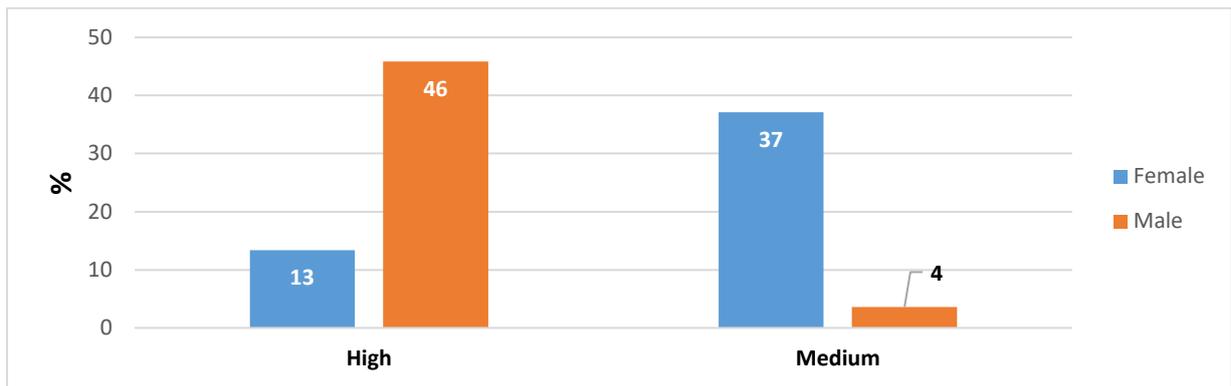
This section focuses on oil palm farm management and practices adopted by farmers during the oil palm production life cycle and examines complementary crops cultivated by farmers, size of plantations, input sources, record keeping and other factors pertaining to oil palm production.

4.4.1 Participation to farm decision making by respondents

Respondents were asked about the extent of their participation in decision making on farm practices. Predictably (having being identified as the most knowledgeable people in the farm), all the respondents indicated medium to high involvement in the farm decision making. Out of the 59% of the respondents saying they participate highly in oil palm farm decision making only 13% are females.

It therefore appears that women do participate in decision making, but to an extent that is lower to their male counterparts.

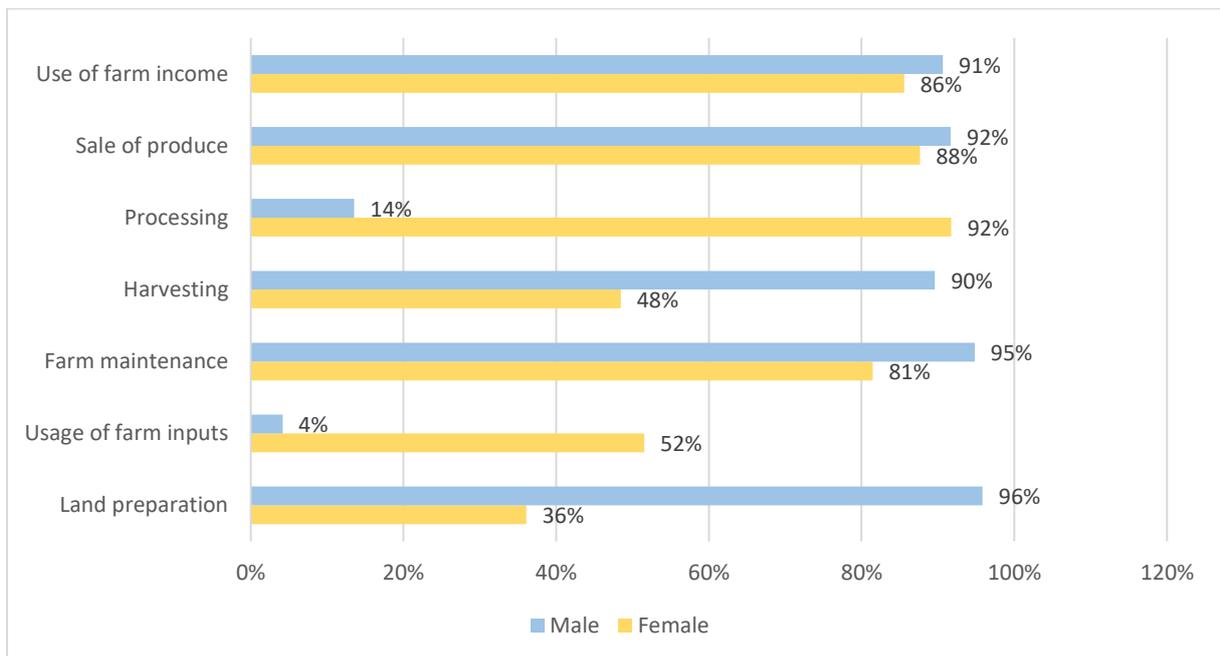
Figure 4.13: Extent of Participation in Farm Decision-Making



Source: Survey data (N=200)

In the decision involving the use of farm income, the product sales and farm maintenance men and women seem to be equally involved. Large differences can instead be observed in relation to land preparation and harvesting (where more than 90% of the male respondents are involved against less than 50% of the female respondents) and in relation to processing and harvesting (which appear to be activities where mostly women are involved in the decision making).

Figure 4.14: Participation in making decision processes by type of activity and gender



Source: Survey data (N=193)

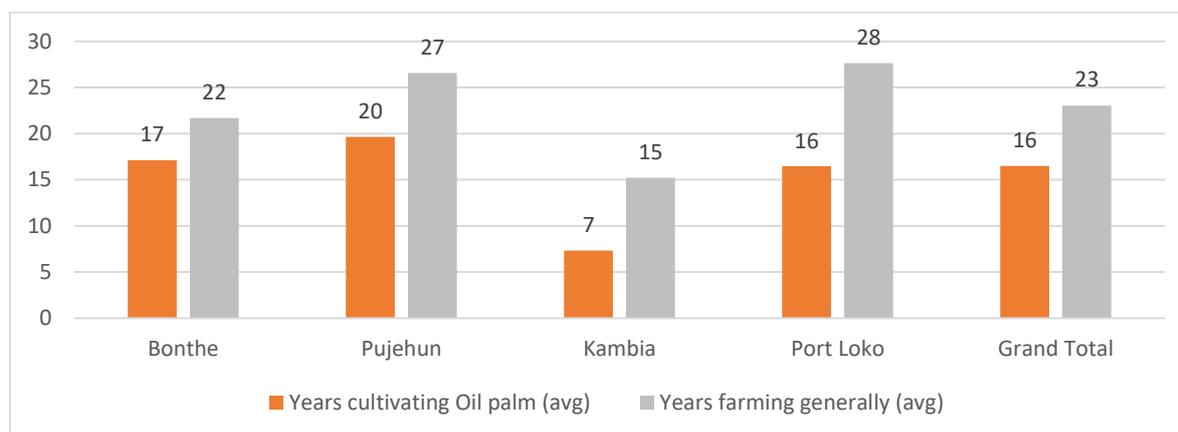
4.4.2 Years in the cultivation of palm oil

Respondents were asked on the number of years they have been farming in general and of the total sample of 200 respondents, the average number of years that respondents have been into farming was

22.5 years in the selected project districts. The average number of years of 16.4 years was reported when respondents were asked further on how many years, they have been cultivating oil palm.

Overall, interviewed farmers from the districts of Pujehun, Bonthe and Port Loko seemed to have been involved in the sector for longer than the ones located in Kambia.

Figure 4.15: Years of experience in the palm oil sector



Source: Survey data (N=200)

4.4.3 Other crops cultivated by interviewed farmers

Respondents were asked which other crops were cultivated alongside oil palm. 144 of the farmers (more than 2 out of 3 of them) indicated to cultivate other crops alongside oil palm. 112 of them (77.8%) cultivated vegetables (such as pepper, tomatoes, leaves of all kinds used for cooking, onion, garden eggs), followed by cassava which accounted for 52.8% of the responses. Only 4 (2.8%) cultivated other cash crops such as cashew and about 54 (37.5%) cultivated rice by their households.

Table 4.6: Other crops farmers cultivate

Crops	Freq.	Percent
Cassava	76	52.8
Cashew	4	2.8
Rice	54	37.5
Vegetables	112	77.8
Total (N)	144	

Source: Survey data (N=144)

Looking at the cultivation of other crops by districts, it appears that while in Bonthe and in Kambia most farmers tend to cultivate respectively Vegetables and Rice, in the districts of Port Loko and Pujehun the cultivation of cassava is more popular (although cassava was mentioned also by some farmers in Bonthe and Kambia). Cashew was cultivated only by farmers in Port Loko. Overall, many farmers tend to cultivate more than one additional crop.

Interestingly, oil palm farmers in Pujehun and parts of Bonthe District, where cocoa and coffee are grown, did not report cultivating neither of these two crops.

Table 4.7: Other crops cultivated by oil palm farmers by district

District	Other crops cultivated	# of respondents
Bonthe	Total	28
	Vegetable	16
	Cassava; Vegetable	9
	Cassava	3
Kambia	Total	21
	Rice	17
	Cassava; Rice	3
	Rice; Vegetable	1
Port Loko	Total	42
	Cassava; Vegetable	11
	Cassava; Rice; Vegetable	10
	Rice; Vegetable	6
	Vegetable	6
	Cassava	5
	Cashew; Vegetable	2
	Cassava; Cashew; Vegetable	2
Pujehun	Total	53
	Cassava; Vegetable	25
	Rice; Vegetable	15
	Vegetable	7
	Cassava	4
	Cassava; Rice; Vegetable	2
Grand Total		144

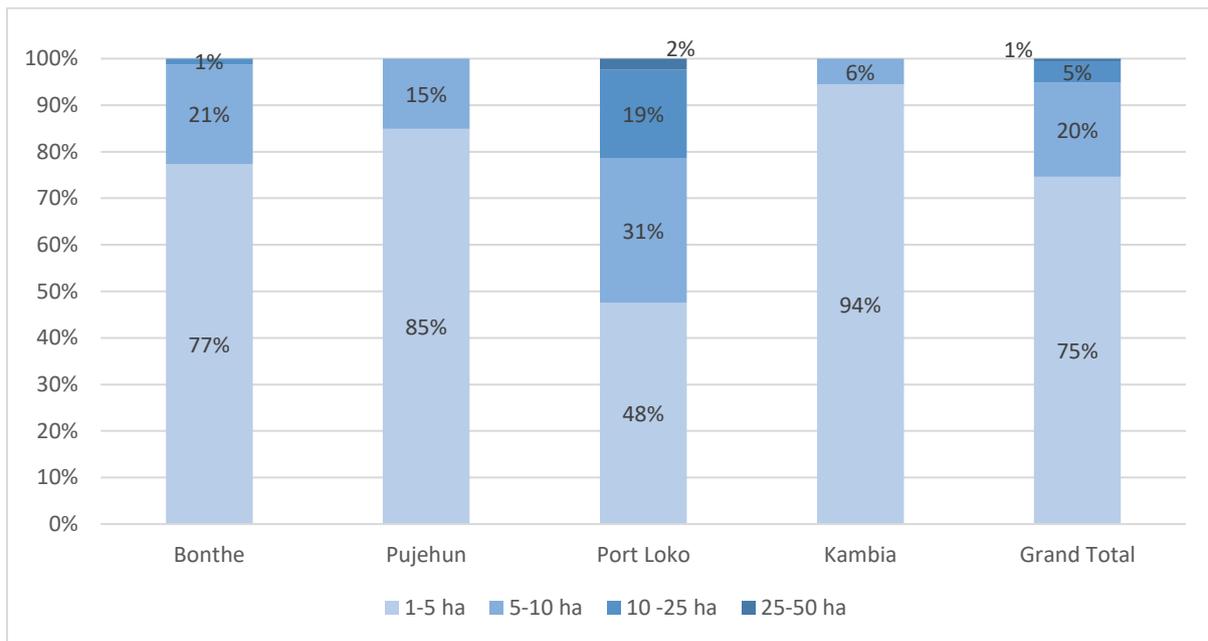
Source: Survey data (N=144)

4.4.4 Characteristics of the palm oil plantation

Respondents were asked about the acreage of oil palm cultivated by their respective households. This varied across the 4 districts. 75% respondents cultivated between 1-5 hectares of oil palm. 20.3% of the interviewed farmers cultivated between 5-10 hectares and the highest numbers were located in Bonthe District (9.1%), Port Loko (6.6%) Pujehun (4.1%), and Kambia (0.5%).

Only 0.5% of the respondents cultivated between 25-50 hectares and they are all found in Port Loko District, in the North West province of the country. Port Loko District is overall the districts where plantations larger than 5 ha were reported by more than half of the farmers.

Figure 4.16: Size of the oil palm plantation by district

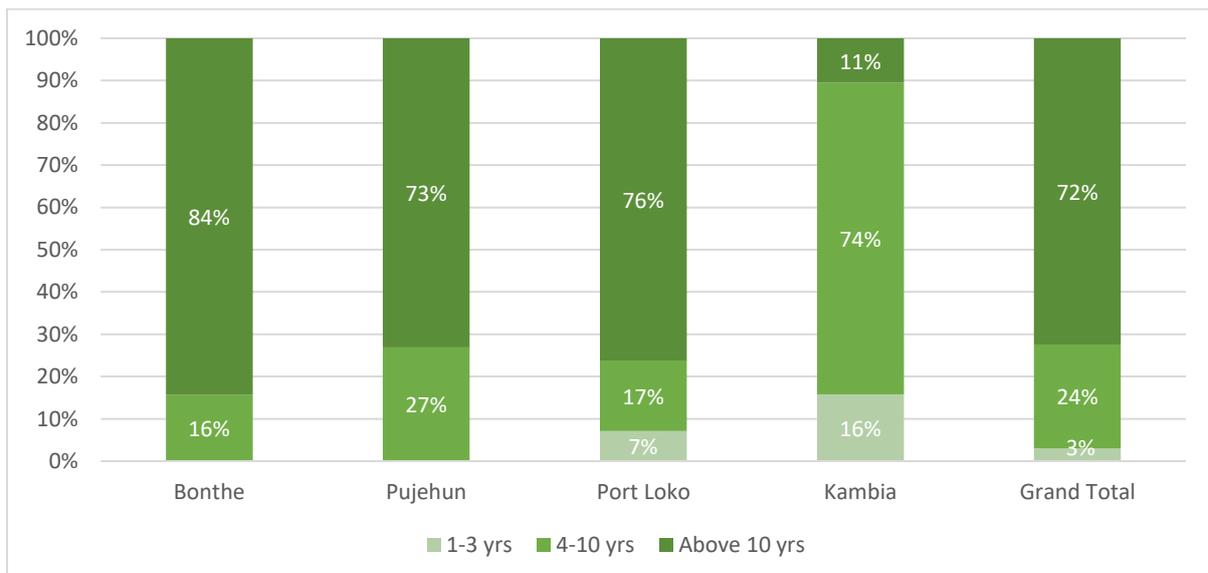


Source: Survey data (N=197)

About 72% of the respondents said that the average age of oil palm trees in farms was above 10 years while 25% stated between 4-10 years and only 3% between 1-3 years.

Namely all the farmers in the southern districts of Bonthe and Pujehun declared that the age of their oil palm plantation was more than 3 years. Relatively young plantations (1-3 yrs) could be found only in the northern districts of Port Loko and Kambia, the latter being the only district where the majority of the farmers declared that their plantations had less than 10 years.

Figure 4.17: Age of the oil palm plantation by district



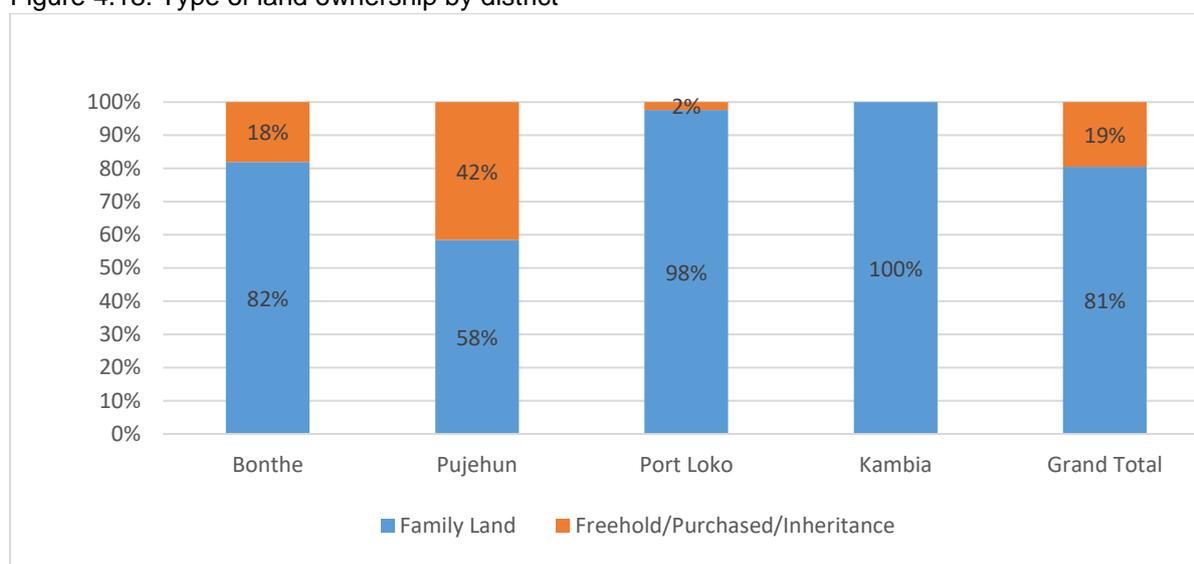
Source: Survey data (N=196)

In general it appears that the oil palm plantation in the 4 district are prevalently small in size (1-5ha) and older than 10 years, with the only exception of Kambia where oil palm cultivation appears to be a relatively new activity.

4.4.5 Land ownership for oil palm farms across the project districts

The type of land ownership by the farmers determines the size of land that farmers can cultivate. 80.5% of the respondents reported that the lands used by them for oil palm cultivation were family lands while 19.5% reported cultivating oil palm on land that was either freehold¹¹, purchased or inherited (mostly in the southern districts of Pujehun and Bonthe).

Figure 4.18: Type of land ownership by district



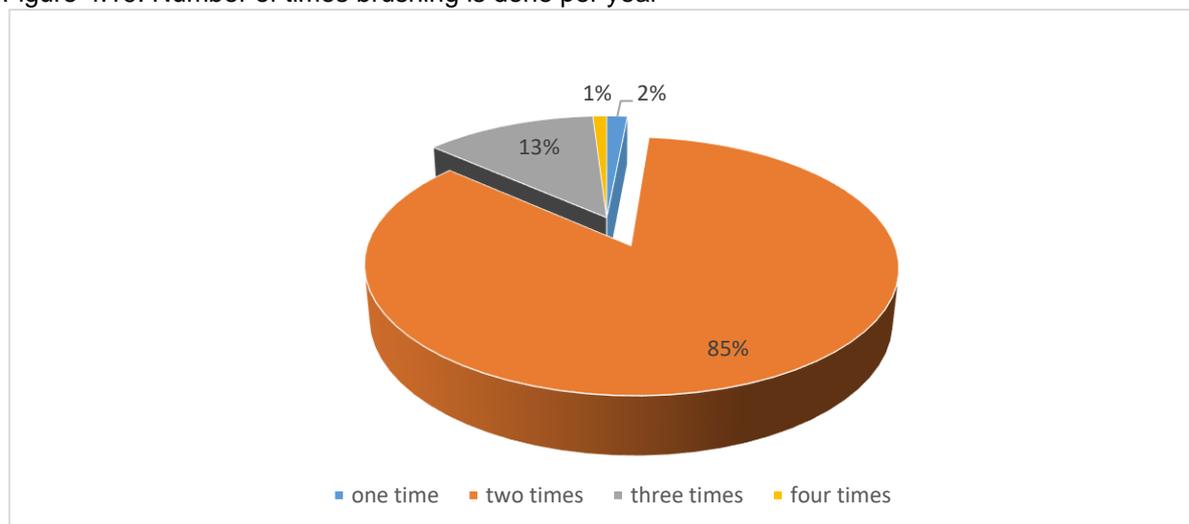
Source: Survey data (N=195)

¹¹ Freehold according to the National Land Policy (2015) was a term introduced into “the Colony as part of the English feudal doctrine of tenures and estates. Under English land law all land belonged to the Monarch. Landholders are tenants of the Crown entitled to various types of estates. The term expresses not only the quality of the estate but the quantity of the estate. There could be three types of estates, a fee simple which could be inherited by any heirs without restriction, the fee tail (seldom encountered in Sierra Leone) which restricts inheritance to particular heirs and the life estate which lasts only for the life of the grantee or the life of some other named person. The freehold was introduced into the Colony bereft of all the incidents of feudal tenure and is currently, for all intents and purposes, equivalent to absolute ownership. As a result, a freehold under the general law has some unique incidents that confer security of tenure and freedom of user and disposal subject only to the State’s power of compulsory acquisition, escheat or forfeiture after due process, the State’s regulatory or police power and the right to have the property vested in the State as bona vacantia if the freeholder dies without leaving any heirs. However, though the freehold does exist and is generally recognized in Sierra Leone, it remains a very complex concept governed by very complex common law rules, particularly relating to its creation. A violation of some of these rules may render the grant null and void”. The freehold tenure is the largest and most important tenure in land law. A freehold estate could be created either in fee, or, for life. When someone is said to own the fee simple estate in any landed property, it means that as against the rest of the world, he is the person who is entitled to deal with the land as he pleases. He may sell it to, another; he may lease it; he may use it as farm land or for some other commercial purpose; he may even leave it vacant and undeveloped. If however he has only a life interest in the property – for instance – when land is said to be conveyed to A for life with remainder to B absolutely, A does not hold the simple estate; he has to pass on the property to B, though in certain instances, he may be able to apply to the Court to “cut off the entail” so as to be able to sell the property before it is passed on to the remainder-man, which is what his successor-in-title is called in law.

4.4.6 Oil palm farm maintenance

For oil palm, best practices are that farms should be brushed four times a year. The large majority of the respondents (85 %) reported brushing their farms only twice a year.

Figure 4.19: Number of times brushing is done per year



Source: Survey data (N=200)

Respondents were further asked to state how the labour for the maintenance of their oil palm farms was obtained. Hiring was the most common form of acquiring labour followed by communal labour and family labour respectively. Only (2%) of the respondents stated they acquired labour for the maintenance of their farms through the FBO/group memberships.

Table 4.8: How labour is acquired for oil palm farm maintenance

Labour types	Freq	Percent
Family	23	11.5
Hired	179	89.5
Communal	45	22.5
FBO/group membership	4	2.0
Total (N)		200

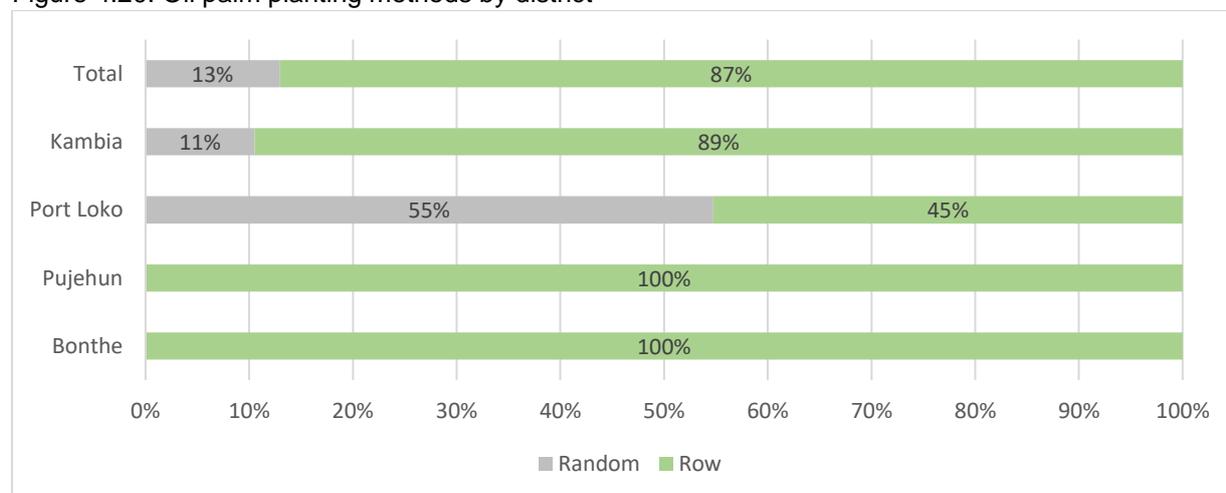
Source: Survey data (N=200)

4.4.7 Frequently used method of oil palm planting

The recommended method for planting oil palm production is the row method which results in higher productivity, provides sufficient space for farmers to move around the palm trees and makes the farm look clean and organized. The majority of respondents (87%) said that they used the row method for planting oil palm seedlings. None of the farmers from the southern districts of Bonthe and Pujehun appeared to use a random approach to plan their seedlings, while this was observed in some cases in

the northern districts of Kambia (11% of the farmers) and Port Loko (more than half of the farmers interviewed from this district).

Figure 4.20: Oil palm planting methods by district



Source: Survey data (N=193)

4.4.8 Main sources to procure planting materials

Most of the farmers indicated to recur to more than one source to procure their planting materials. More than 94% of the interviewed farmers rely on volunteer seedlings (seedlings that grown wild under oil palm trees) and their own farm/nursery. A number of them also resorted to local agro-input dealers (47%) and oil palm estates (35%). Fewer farmers also revealed that they sourced their planting material from NGOs (18.5%), Farmer organizations (12%) and the government (9.5%). About 13.5% of them said they acquired planting materials from friends/family and gift for free.

Table 4.9: Main source of planting materials

Source of planting material	Freq.	Percent
From government	19	9.5
From local agro-input dealer	94	47
From oil palm estate	70	35
NGO	37	18.5
Friends/Family/Gift for free	27	13.5
Farmer organization (cooperative)	24	12
Volunteer seeds/ Own farm/Nursery	188	94
Private	2	1
Total (N)	200	

Source: Survey data (N=200)

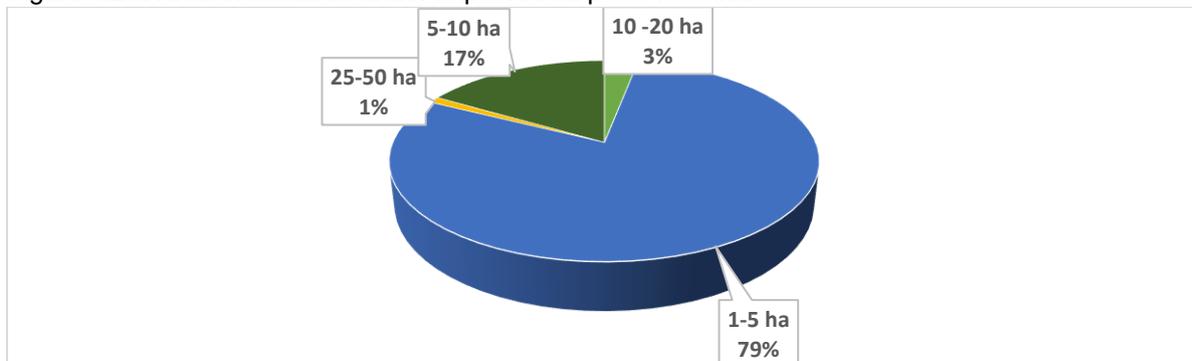
4.4.9 Usage of improved oil palm varieties

Improved oil palm varieties are the result of an oil palm cross breeding program of dura and pisifera parents varieties to a new high yielding variety known as tenera with known to have an agronomic stability and adaptability. It is sometimes referred to as hybrid oil palm variety. The use of improved varieties of oil palm is largely found in large private estate such Socfin, private supported outgrower farmers such as Goldtree and Nedoil and Government and INGOs smallholder assisted projects.

About 79% of the farmers indicated that they cultivated between 1-5 ha of their land using improved oil palm varieties. However, since most of the farmers interviewed declared that their farms were overall 1-5 ha (75% of them) it is not possible to know what was the average percentage of the soil that was cultivated using improved oil palm varieties.

However, all the respondents declared to use improved oil palm varieties, although to different extents.

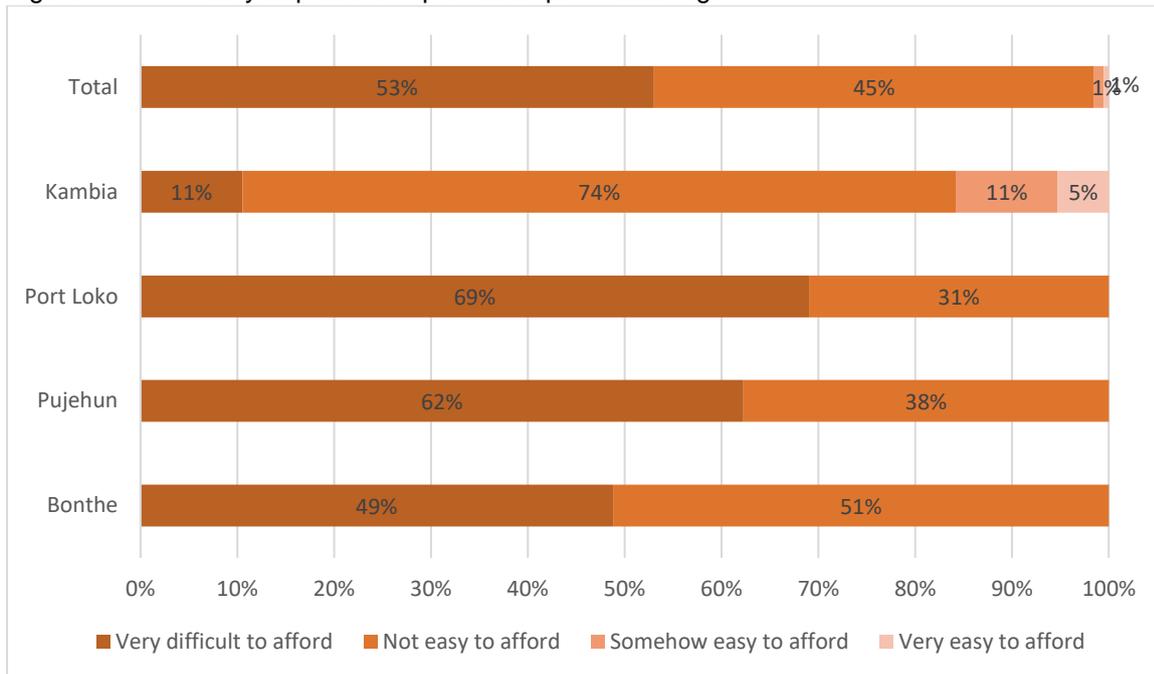
Figure 4.21: Area in hectares under improved oil palm varieties



Source: Survey data (N=200)

Respondents were asked to express their views on the affordability of the improved seedlings of oil palm used during the planting season for the last three years. Almost all the respondents indicated that improved oil palm seeds were either difficult or very difficult to afford (relatively more in Port Loko and less in Kambia).

Figure 4.22: Difficulty to procure improved oil palm seedlings

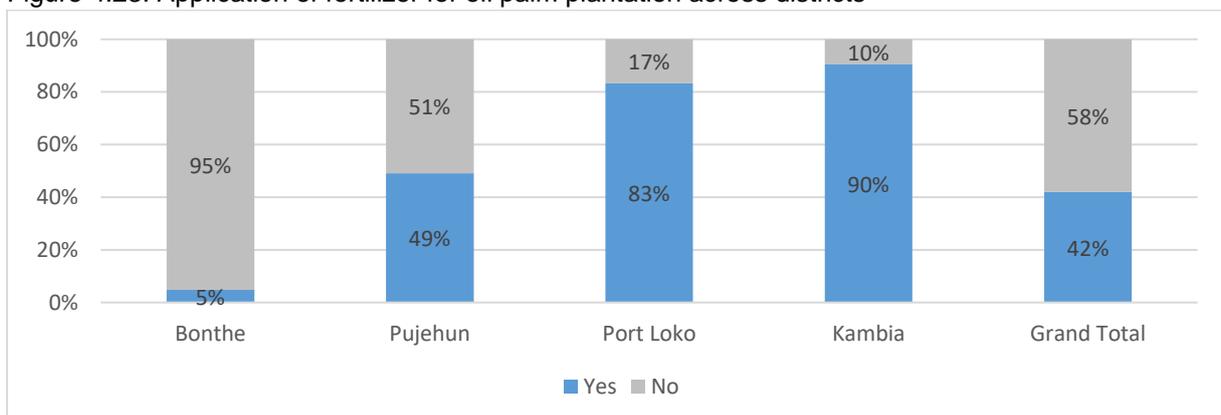


Source: Survey data (N=198)

4.4.10 Application of fertilizer/agrochemicals

About 42% of the respondents interviewed across all districts said they applied fertilizers to their lands. Farmers in the northern districts of Port Loko and Kambia tend to apply more fertilizers compared to farmers in Pujehun and Bonthe (in this last districts use of fertilizers was scarcely reported).

Figure 4.23: Application of fertilizer for oil palm plantation across districts



Source: Survey data (N=200)

Respondents who reported applying fertilizer to their oil palm were further asked to indicate how the fertilizers were obtained. Many of them indicated accessing fertilizers through different means. Of the 83 respondents who applied fertilizers, 97% purchased them from the market and 27% of them produced their own fertilizer. A few respondents indicated access to fertilizers through gifts and supplies from NGOs.

Table 4.10: How farmers access fertilizers

Responses	Freq	Percent
Purchase	81	97.6
Gift	1	1.2
Self-production	31	37.3
Supply	2	2.4
Total (N)	83	

Source: Survey data (N=83)

4.4.11 Oil palm farm certifications

The certification of oil palm farms is of current interest to various oil palm value chain actors.

17.1% of respondents stated that their farms were certified. The large majority of certified farms were located in Bonthe District, while none of the farmers from the northern districts of Kambia and Port Loko had been certified.

Table 4.11: Certification of oil palms farms across districts

Responses	Bonthe	Kambia	Port Loko	Pujehun	Grand Total
No	26.1	9.0	21.1	26.6	82.9
Yes	16.1	1.0	0.0	0.0	17.1
Grand Total	42.2	10.1	21.1	26.6	100.0

Source: Survey data (N=200)

Out of the 34 respondents who reported farm certification, 31 stated that SCADeP (a government agriculture project) was the certifying body while the remaining 3 reported being certified by their chiefdom administrations. The nature of these responses suggests that respondents do not understand the meaning of certification as both SCADeP and Chiefdom administrators are not certifying bodies.

Among the main reasons why farmers were not certified or did not seek for certification, included the lack of understanding of certifications and related processes (87.5% of the respondents) and to a lesser extent also the lack of understanding of the relevance of certifications (25% of the respondents). Only a more limited number of farmers mentioned the complexity of the certification process (8.9%) and inability to meet requirements (4.8%).

These findings suggest that awareness raising activities in the area of certification are still very important.

Table 4.12: Reasons reported for non-certification of oil palm farms

Reasons	Freq	Percent
Difficult / cumbersome process	15	8.9
Costly	2	1.2
Don't know/understand the process	147	87.5
Don't understand the relevance	42	25.0

I will do it in a later time	1	0.6
Too much documentation	2	1.2
Unable to meet all the requirements	8	4.8
Not aware of any institution with the services	1	0.6
Total (N)	168	

Source: Survey data (168)

4.4.12 Record keeping by respondents

Only 3% of the respondents across all the districts confirmed that they keep records of their activities. None of the respondents in Pujehun reported keeping records stating that mental records were made of oil palm production activities.

Record keeping therefore represents a major constraint in improving the farm management.

Table 4.13: Record keeping in oil palm farmers across districts (%)

Response	Bonthe	Kambia	Port Loko	Pujehun	Grand Total
No	41.2	8.2	20.1	27.3	96.9
Yes	1.0	0.5	1.5	0.0	3.1
Grand Total	42.3	8.8	21.6	27.3	100.0

Source: Survey data (N=194)

4.5 Harvesting and sale of Fresh Fruit Bunches (FFB)

This section examines and discusses issues related to acquiring labour for harvesting and sales, pricing and transportation (in cases of self-processing) of FFBs.

It is important to notice that all the respondents indicated that they were involved in the self-processing of FFBs. However, a smaller number of them (and possibly less frequently) also sold their FFB to be processed by other actors.

More considerations on self-processing will be provided in the **section 4.6.2** (“Oil palm processing methods”).

4.5.1 Labour acquisition for harvesting and transport to processing site

Respondents were asked about how they acquired labour for harvesting of FFBs in their oil palm farms and the responses followed a similar pattern to what obtained for farm maintenance. Again, hiring was the most common form of obtaining labour for harvesting, followed by communal and family labour. Only (2%) of the respondents obtained labour for the harvesting of FFBs through the FBO/group memberships.

Table 4.14: Labour sources used for harvesting

Labour type	Freq	Percent
Family	22	11.0
Hired	180	90.0
Communal	53	26.5
FBO/group membership	4	2.0
Total (N)	200	

Source: Survey data (N=200)

4.5.2 Buyers of Fresh Fruit Bunches (FFBs) and price determination

Even though all the respondents said they mainly do self-processing of their FFBs, at the same time, it appears that approximately a quarter of them (50) sells at least a part of their FFBs. These farmers are almost exclusively from the northern districts of Kambia and Port Loko (only 2 farmers from Bonthe declared selling FFBs and none from Pujehun).

Almost all the farmers said that they sell their FFB to middlemen, while 38% of them indicated also selling to oil palm mills. Very few sell their FFBs to associations or cooperatives.

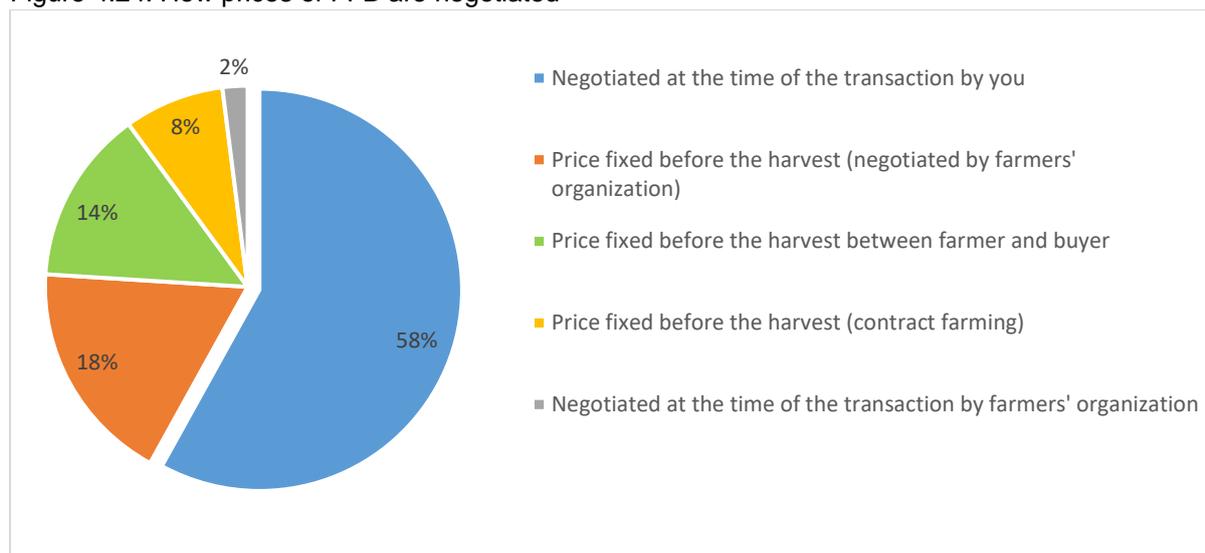
Table 4.15: Buyers of Fresh Fruit Bunches (FFB)

Response	Freq	Percent
Association or cooperative	2	4%
Middleman	48	96%
Oil Palm Mill	19	38%
Total (N)	50	

Source: Survey data (N=50)

58% of the respondents who sold some of their FFBs, indicated negotiating the price of the FFBs at the time of the transaction with the buyers. Only in 40% of the cases the prices were negotiated before the harvest, and mostly within the farmers' organization (18%) or directly with the buyer (14%).

Figure 4.24: How prices of FFB are negotiated



Source: Survey data (N=50)

Overall, it seems that the sale of FFBs after harvesting is a procedure that complements the self-processing (done by all the interviewed farmers) and is most common in the northern districts of Kambia and Port Loko.

FFBs are sold essentially to middlemen (and in some cases oil palm mills). All the negotiations are settled through verbal agreement (nothing written) and in most of the cases (92%) the buyers provide transport for the FFBs.

4.6 Oil palm fresh fruit bunches processing methods

All the farmers interviewed indicated to conduct self-processing with the Fresh Fruit Bunches (FFBs) that they harvested.

4.6.1 Means of transportation of oil palm bunches to processing sites (in case of self-processing)

Respondents indicated that hired labour was the most common means of transporting FFBs to a processing site when self-processing of FFBs was done by the farmers, followed by communal and family labour.

Table 4.16: Means of transportation of oil palm bunches to the processing site (in case of self-processing)

Response	Freq	Percent
Family	36	18
Hired	160	81
Communal	67	34

FBO/group membership	2	1
Total (N)	198	

Source: Survey data (N=198)

4.6.2 Oil palm processing methods

The method of processing FFBs used is one of the major determinants of the quality and quantity of palm oil produced, particularly with smallholder production. Overall 69% of the respondents indicated using the machine method against the manual pit method. However there were significant differences across regions. In the Southern Region (Bonthe and Pujehun Districts), all respondents used a mechanised process, for processing FFBs while in the North-Western Region (Kambia and Port Loko), processing of FFBs is widely done manually.

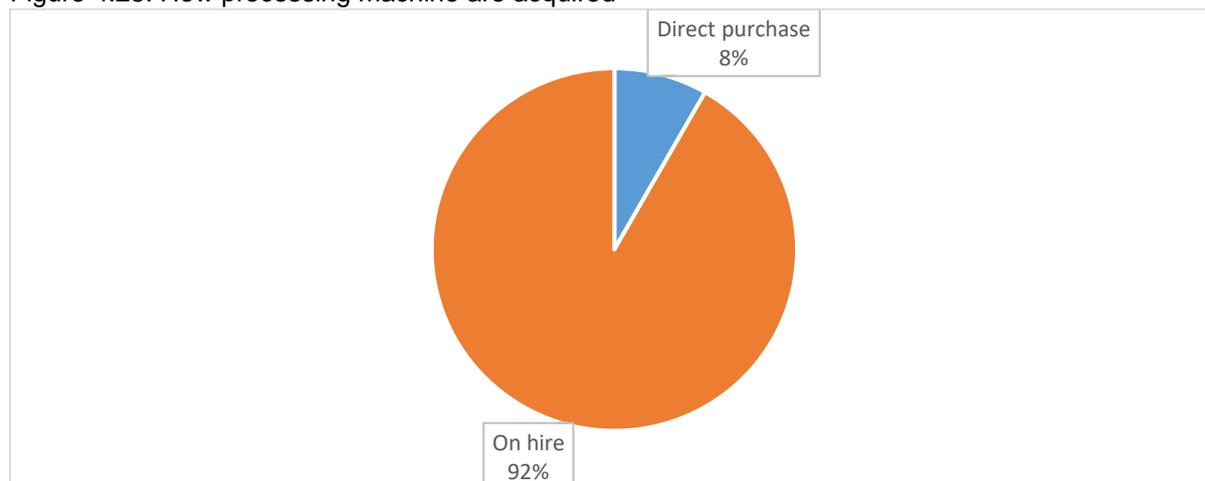
Table 4.17: Type of processing method across districts

Processing method	Bonthe	Kambia	Port Loko	Pujehun	Total
Machine method (Screw press/digester)	100%	0%	2%	100%	69%
Manual (Pit method)	0%	100%	98%	0%	31%

Source: Survey data (N=200)

Processing machines can be owned by farmers or hired from other smallholder farmers with access to them or hired directly from the fabricators of the machines who are located in the district and regional head quarter towns. Farmers that used the machine method indicated that in the large majority of the cases they rented the machines.

Figure 4.25: How processing machine are acquired



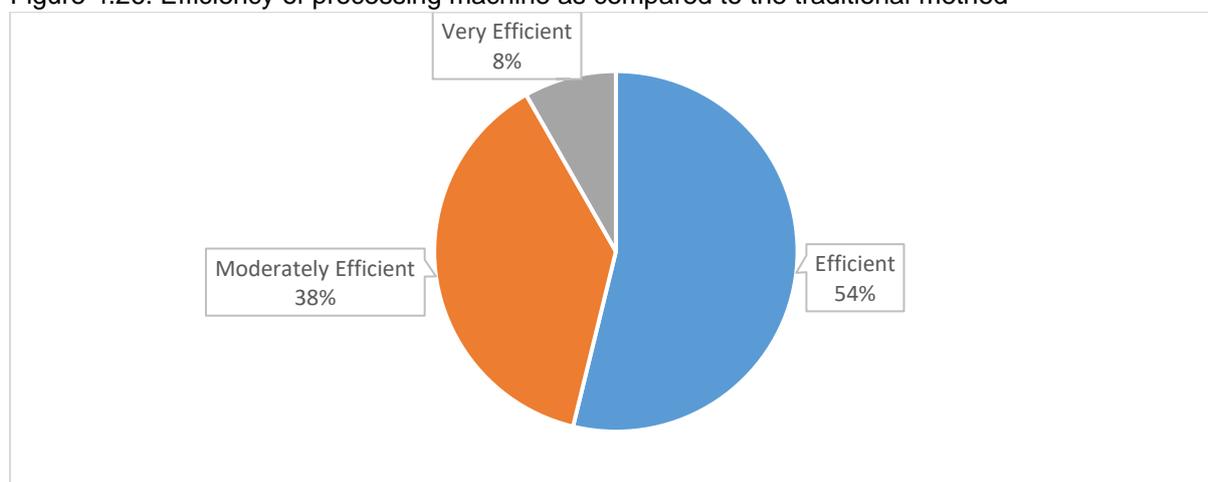
Source: Survey data (N=137)

Farmers were further asked about their opinion on the efficiency (in terms of time and cost) of processing FFBs using the machine and the traditional manual method. All the respondents to this

question confirmed that the machine method was more efficient, although to a different degree (only 8% of the respondent said that it was “very efficient”).

Breakdown of parts and the shaft, lack of spare parts, poor maintenance system and servicing challenges were some of the most frequent problems encountered by farmers when using processing machines.

Figure 4.26: Efficiency of processing machine as compared to the traditional method



Source: Survey data (N=158)

The survey went on ask respondent about the problems that they face when using the processing machines and their responses are as follows. Most of the respondents indicated issues related to the breakdown of parts and the shaft and lamented in several cases the lack of spare parts. Overall, poor maintenance services and systems seemed to be at the origin of farmers’ difficulties to work with processing machines. Some few respondents also complained about the taste that was obtained when working with processing machines.

4.7 Production costs

Participants were asked to provide information on the average cost for production during the last 2 years, 2019 and 2020 (namely, for weeding/pruning, harvesting, collecting and processing FFB). The information has been categorized by size of the farmland (a fundamental determinant of the total cost) and analysed by district and age of the farmland.

The production cost per year ranges from SLL 2.2 Mil for small farmlands (1-5 ha) to SLL 6.9 Mil for farmlands between 25 to 50 ha, correspondingly approximately to USD 191-600.

Comparing cost within the same farmland size category, Port Loko present the highest cost for production followed by Bonthe.

Table 4.18: Average cost of production during 2019 & 2020 by farmland size and district

Farmland size and district	SLL	# of respondents
1-5 ha	2,284,966	147

Kambia	536,471	17
Port Loko	3,475,500	20
Bonthe	2,659,923	65
Pujehun	1,865,455	45
5-10 ha	2,831,363	40
Kambia	1,310,000	1
Port Loko	3,088,077	13
Bonthe	3,014,417	18
Pujehun	2,192,500	8
10 -25 ha	3,132,778	9
Port Loko	3,243,125	8
Bonthe	2,250,000	1
25-50 ha	6,900,000	1
Port Loko	6,900,000	1
Farmland size not reported	616,667	3
Kambia	616,667	3
Grand Total	2,431,178	200

Source: Survey data (N=200)

Production cost also appear to be higher the older is the farm land, with the only exception for small farm lands (1 - 5 ha) where possibly the challenges related to starting up the business drive up the overall cost in comparison to older plantations.

Table 4.19: Average cost of production during 2019 & 2020 by farmland size and age

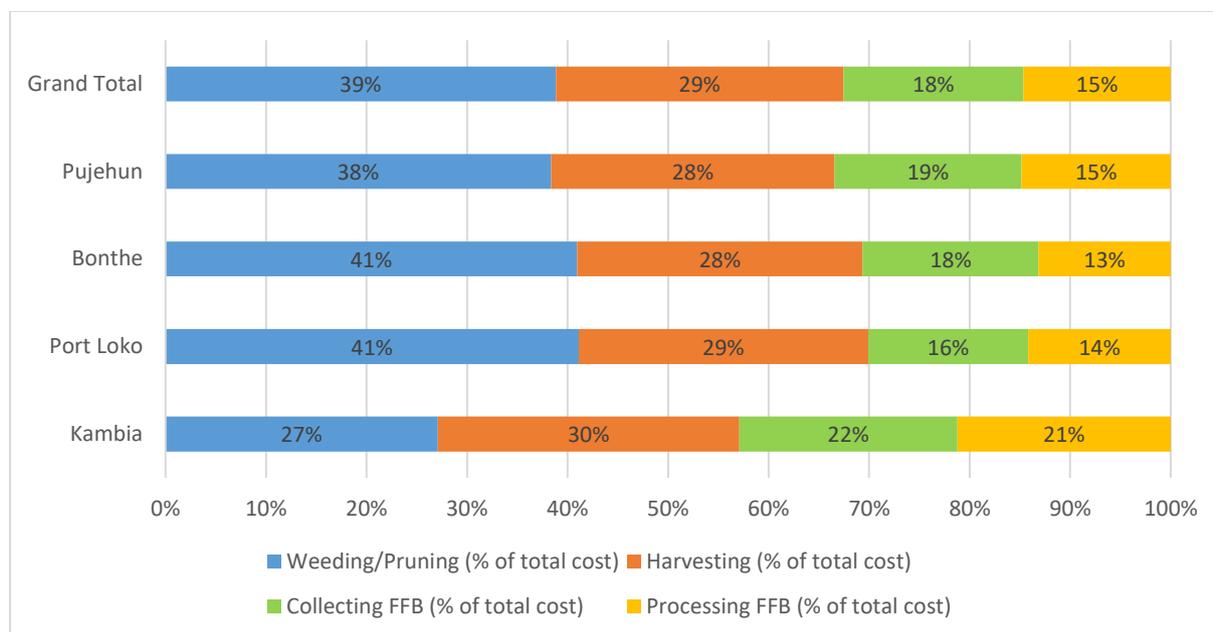
Farmland size and age	SLL	# of respondents
1-5 ha	2,284,966	147
1-3 years	3,600,000	6
4-10 years	1,516,538	40
Above 10 years	2,561,959	97
Farmland age not reported	1,087,500	4
5-10 ha	2,831,363	40
4-10 years	2,076,583	6
Above 10 years	2,964,559	34
10 -25 ha	3,132,778	9
4-10 years	2,970,000	1
Above 10 years	3,153,125	8
25-50 ha	6,900,000	1
Above 10 years	6,900,000	1
Farmland size not reported	616,667	3
4-10 years	300,000	1
Above 10 years	775,000	2
Grand Total	2,431,178	200

Source: Survey data (N=200)

In terms of the composition of the cost, the largest amount (39%) is spent on Weeding/Pruning, while progressive stages in the production process account for a smaller share of the total cost. The only exception to this is observed in the district Kambia, where the cost for collecting and processing of FFB

represent a largest share of the total cost as compared to other districts (Kambia is also the district with the highest share of small farmlands with an average age of the plantation between 4-10 years).

Figure 4.27: Share of total production cost by production stages and districts



Source: Survey data (N=200)

4.8 Production and consumption patterns

Across farmland from 1 to 10 ha, Bonthe appears to be the district with the higher average production levels, followed by Port Loko (this are also the districtis that displayed the higher costs of production). Consumptions patterns seem to suggest that approximately 80% of the total production is sold while the rest is consumed.

For larger farmlands (identified only in Bonthe and Port Loko) the data are fewer and diverge slightly from the general findings.

Table 4.20: Production and consumption patterns by farmland size and district

Farmland size by district	Average annual production of palm oil in 2019 & 2020 (Tons)	Average quantity of palm sold in 2019 & 2020 (% of total production)	Average quantity consumed in 2019 & 2020 (% of total production)	#of respondents
1-5 ha	2.1	82%	17%	147
Kambia	1.6	68%	31%	17
Port Loko	2.0	88%	15%	20
Bonthe	2.7	84%	13%	65
Pujehun	1.4	81%	21%	45
5-10 ha	3.5	84%	17%	40
Kambia	-	-	-	1
Port Loko	3.0	79%	18%	13
Bonthe	4.2	87%	15%	18

Pujehun	2.6	85%	24%	8
10-25 ha	2.7	76%	23%	9
Port Loko	2.8	75%	24%	8
Bonthe	2.0	83%	11%	1
25-50 ha	3.8	60%	24%	1
Port Loko	3.8	60%	24%	1
Farmland size not provided	2.3	81%	19%	3
Kambia	2.3	81%	19%	3
Grand Total	2.3	82%	17%	200

Source: Survey data (N=200)

Note: Data for quantities sold and quantities consumed were provided in tons and have then been converted in % of total production. Some few discrepancies have been noticed in the sum of these 2 percentages which might indicate (when higher than the total) that some palm oil for consumption is purchased by the household or (when lower) that some amounts are neither sold or consumed.

Looking at the same indicators with a focus on the age of the plantation, it appears that the older the farm the higher the production levels.

Table 4.21: Production and consumption patterns by farmland size and age

Farmland size by age of plantation	Average annual production of palm oil in 2019 & 2020 (Tons)	Average quantity of palm sold in 2019 & 2020 (% of total production)	Average quantity consumed in 2019 & 2020 (% of total production)	#of respondents
1-5 ha	2.1	82%	17%	147
1-3 years	1.3	73%	32%	6
4-10 years	1.5	80%	22%	40
Above 10 years	2.4	84%	14%	97
Farmland age not provided	1.2	65%	38%	4
5-10 ha	3.5	84%	17%	40
4-10 years	2.6	89%	11%	6
Above 10 years	3.6	84%	18%	34
10-25 ha	2.7	76%	23%	9
4-10 years	2.9	90%	10%	1
Above 10 years	2.7	74%	25%	8
25-50 ha	3.8	60%	24%	1
Above 10 years	3.8	60%	24%	1
Farmland size not provided	2.3	81%	19%	3
4-10 years	1.5	87%	13%	1
Above 10 years	2.7	79%	21%	2
Grand Total	2.39	82%	17%	200

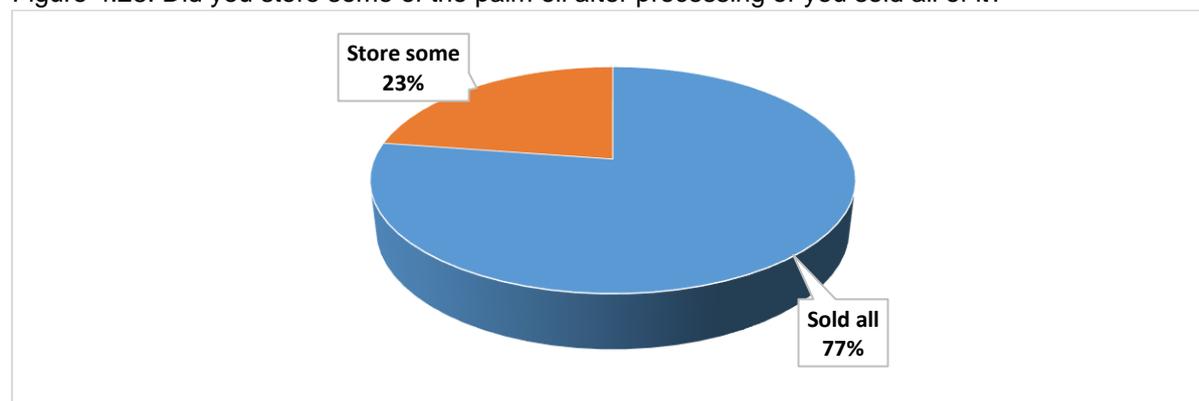
Source: Survey data (N=200)

Note: Data for quantities sold and quantities consumed were provided in tons and have then been converted in % of total production. Some few discrepancies have been noticed in the sum of these 2 percentages which might indicate (when higher than the total) that some palm oil for consumption is purchased by the household or (when lower) that some amounts are neither sold or consumed.

4.9 Storage of palm oil

77% of respondents interviewed said they sold all their palm oil with only 23% storing some of their palm oil after processing.

Figure 4.28: Did you store some of the palm oil after processing or you sold all of it?



Source: Survey data (N=200)

Respondents were asked to report what quantity of palm oil produced did they normally stored per season (in tons). On average, only 26% of the palm oil produced was stored.

Table 4.22: Average quantity of palm oil stored per season by district and farmland size

Districts and farmland size	Average annual production of palm oil in 2019 & 2020 (Tons)	Average quantity of palm oil stored per season (Tons)	Average quantity of palm oil stored per season (% of total production)	# of respondents
Bonthe	2.99	0.54	19%	84
1-5 ha	2.67	0.51	20%	65
5-10 ha	4.22	0.67	16%	18
10 -25 ha	1.98	0.35	18%	1
Pujehun	1.61	0.58	37%	53
1-5 ha	1.43	0.56	39%	45
5-10 ha	2.60	0.70	28%	8
Kambia	1.68	0.35	23%	21
1-5 ha	1.57	0.33	23%	17
Size not provided	2.28	0.47	23%	3
Port Loko	2.50	0.73	29%	42
1-5 ha	2.00	0.47	23%	20
5-10 ha	3.01	0.91	32%	13
10 -25 ha	2.78	0.93	35%	8
25-50 ha	3.75	1.35	36%	1
Grand Total	2.39	0.57	26%	199

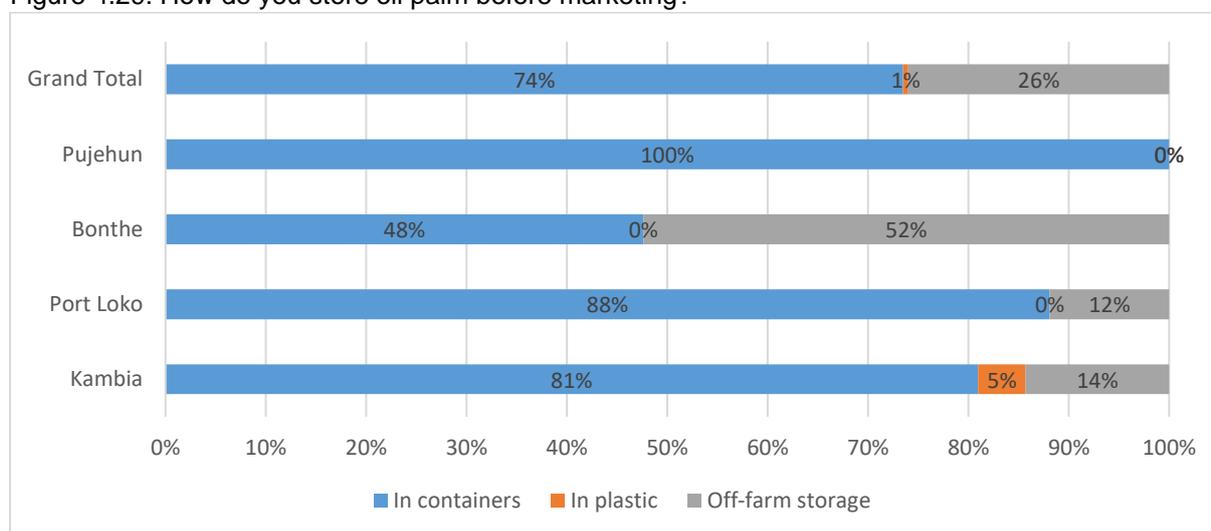
Source: Survey data (N=200)

Note: The data collected in the district of Kambia appear to have been reported in the wrong decimal unit, needing correction based on the total annual production (ensuring the amounts stored were lower).

Respondents were asked how the palm oil was stored before marketing. The large majority of respondents (74%) declared to store their produce in containers, commonly called “batta”. These containers are recycled containers and if not washed properly could lead to contamination of the palm oil with bad odour. In the case of Bonthe, however the majority of respondents indicated to rely on off-farm storage facilities. Only few respondents in Kambia indicated to store in plastic.

The decision to sell early or not is determined by the farmers. Oil palm farmers decide to sell early based on their economic situation irrespective of the kind of storage facility that they use.

Figure 4.29: How do you store oil palm before marketing?



Source: Survey data (N=200)

4.10 Marketing

4.10.1 Unit price of palm oil (SLL/Tons)

Overall it appears that the price of palm oil sold by the respondents stands at approximately SLL 4,600,000 per Ton (USD 396 per ton). Higher unit prices were reported in the districts of Kambia and Port Loko.

The unit prices reported by the survey respondents corresponds to approximately 43% of the unit price calculated using available trade data on exported values and quantities (see **Section 2.6.1**). Although, the unit values calculated on export data also include the price paid for packaging, transporting and a number of value added services provided in order to export, this stands at USD 884 per ton against the unit price of USD 379 per ton declared by the respondents at the moment of sale.

Table 4.23: Price per ton of palm oil by district

Districts by farmland size	Average price per ton in 2019 & 2020 (SLL/Ton)	Average price per ton in 2019 & 2020 (USD/Ton)	Average quantity of palm sold in 2019 & 2020 (Tons)	# of respondents
Kambia	5,562,500	479	1.19	18
1-5 ha	5,625,000	484.9	1.07	17
5-10 ha	3,750,000	323.2		1
Size not provided	5,833,333	502.8	1.85	3
Port Loko	5,551,486	479	2.03	42
1-5 ha	5,400,625	465.5	1.75	20
5-10 ha	5,741,250	494.9	2.39	13
10 -25 ha	5,575,000	480.6	2.09	8
25-50 ha	5,500,000	474.1	2.25	1
Bonthe	4,325,301	373	2.54	84
1-5 ha	4,320,313	372.4	2.24	65
5-10 ha	4,333,333	373.5	3.65	18
10 -25 ha	4,500,000	387.9	1.65	1
Pujehun	4,007,453	345	1.31	53
1-5 ha	4,008,778	345.6	1.15	45
5-10 ha	4,000,000	344.8	2.20	8
Total	4,601,295	396.63	1.97	197

Source: Survey data (N=197)

Note: Although in the questionnaire the unit price data were requested in SLL/Tons, respondents were more familiar with Batta, Gallons and Litres facing difficulties in provide the correct conversions to Tons. Enumerator have therefore collected the data in Litres with the only exception of respondents on the region of Kambia that preferred to report in Batta (equivalent to 20 litres). The figures were later converted into SLL/Tons. The USD conversion rate used (USD 1 = SLL 11,601) is the market rate retrieved in March 2022 on Xe Currency Converter

<https://www.xe.com/currencyconverter/>

Variations in prices across regions might also be related to the specific oil palm varieties cultivated and sold. Although the survey does not provide detailed information of the specific varieties cultivated and sold by the interviewed farmers, an inception mission that was conducted prior to the assessment revealed that in the norther districts of Kambia and Port Loko while the extraction rate from the Dura variety of palm oil, commonly known as red palm oil, was low, its average sales price doubled the cost of Tenera variety (commonly known as white palm oil). Fewer smallholder farmers are cultivating Tenera in these districts, which is mainly used as raw material for the refinery of Crude Palm Oil (CPO) to vegetable oil and the manufacturing of soap. On the contrary, the Pujehun and Bonthe districts seem to be more focused on the production of white oil palm (Tenera) and large volumes are being aggregated by agents for local markets and export.

4.10.2 Main buyers of palm and price determination

99% of the respondents confirmed to rely on market traders and agents as the main buyers of their produce.

Over 88% of them negotiated the price with the buyers at the time of the transaction. Only 7% of them indicated to use a price that is fixed before the harvest and negotiated by farmers' organization (group marketing), and in even lesser cases (2%) the price is fixed before the harvest between the farmer and the buyer.

Essentially, oil palm price is largely determined at transactional point without any prior structured negotiation process between farmers and buyers. This situation is also determined by the absence of trade intelligence information provided to farmers and cooperatives, including dissemination of farm gates prices.

4.10.3 Mode of transportation of palm oil to market place or buyers

Palm oil producers tend to deliver their produce to marketplaces or buyers mostly through the hire of motorcycles (65%), tricycle carrier (41.5%) and other fuel vehicles (25%). In some fewer cases, the buyer collects the goods at the farm gate (8%) or else the palm oil is carried by foot (6%).

Table 4.24: Mode of transportation farmers use to deliver palm oil to marketplaces or buyers

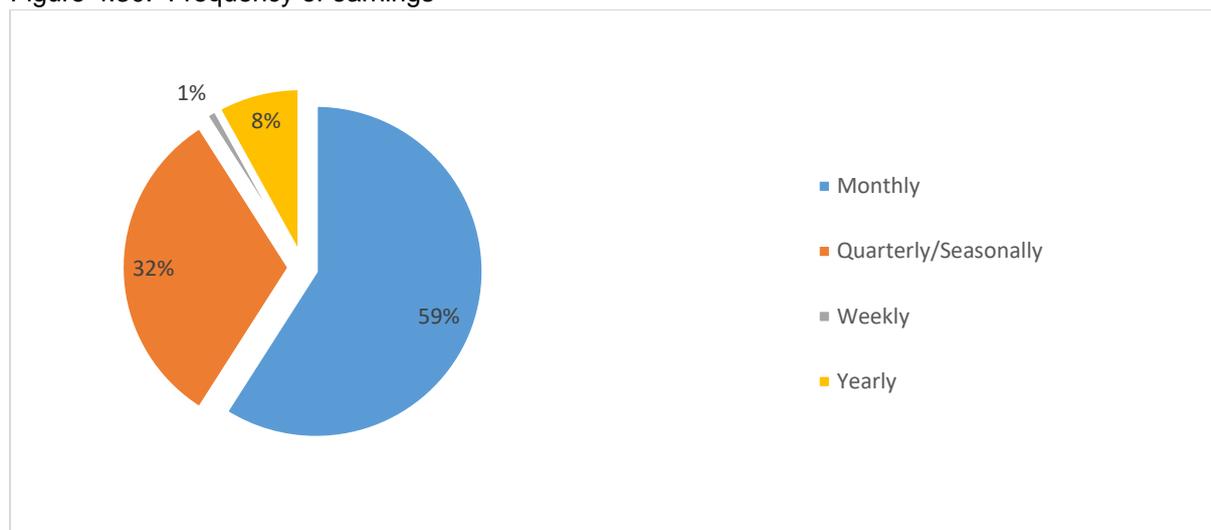
Mode of transportation	Freq.	Percent
Motorcycle	130	65%
Tricycle carrier	83	42%
Non-fuel carriage	11	6%
Buyers collect goods from farm gate	16	8%
Vehicle	50	25%

Source: Survey data (N=200)

4.10.4 Frequency of earning from the production of palm oil

59% of the respondents said they earn their money on a monthly while 32% of them see an income from the palm oil production only once per trimester/season. Some (8%) only earn a living from palm oil only once per year.

Figure 4.30: Frequency of earnings



Source: Survey data (N=200)

4.11 Access to Finance (savings, credit, and other sources of income)

This section of the survey looked at the sources of income, access to finance and revenue from other sources. Respondents were asked about the amount of general savings held prior to the study.

4.11.1 Savings of the respondents

The average savings reported by respondents was SLL 1,828,730, ranging from a minimum of SLL 65,000 to a maximum of SLL 5,600,000. The amount of savings appeared to be higher in the southern districts of Bonthe and Pujehun. No particular trend was analysed in the saving patterns by size of the farmland or gender of the respondents.

Table 4.25: Average savings by district

Districts	Average savings (SLL)	# of respondents
Kambia	1,558,824	17
Port Loko	900,500	42
Bonthe	1,960,238	84
Pujehun	2,442,453	53
Total	1,828,730	196

Source: Survey data (N=196)

Note: Outlier data were found for 4 respondents from the district of Kambia and have been removed from the analysis

4.11.2 Main sources of capital for managing of oil palm farms

Each respondent was asked to name their main sources of capital for managing their farms (multiple responses were given in different cases). Income from palm oil (and other crops) and credits from associations represented among the main sources on which respectively 73% and 51% of the

respondents relied on. About 18% of the respondent said they received support from family members, remittances and savings. Support from the Government was indicated as a main source of capital only by 6.1% of the respondents.

Table 4.26: Main sources of capital for managing the plantation

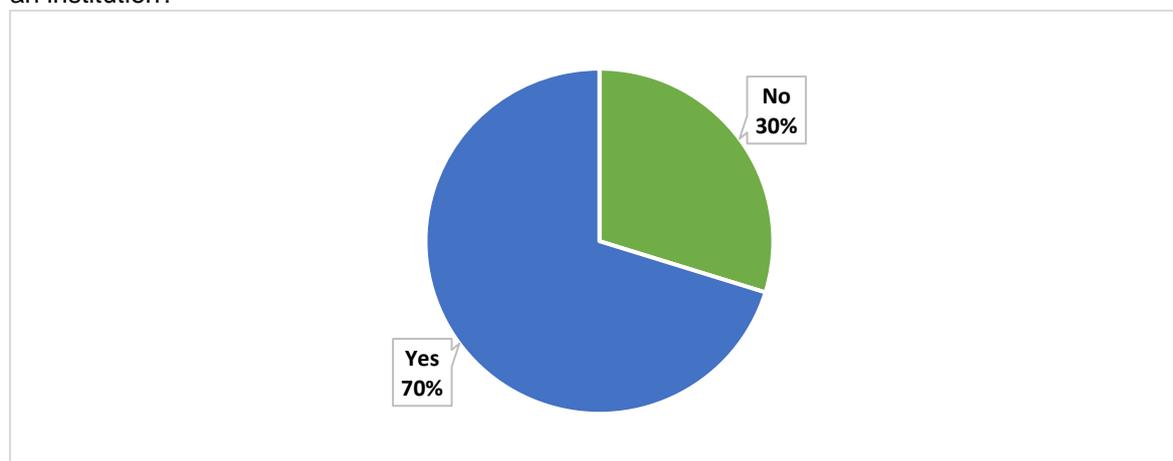
Source of income	# of respondents	% of total respondents
Support from the family, remittances, saving	35	18%
Credit from intermediary (Eg. Agent, Middlemen)	28	14%
Credit from the association	100	51%
Support from Government	12	6%
Income from oil palm and other cash crops	143	73%
Other private business	22	11%
Total (N)	197	

Source: Survey data (N=197)

4.11.3 Loans from institutions and main usage

During the last two years (2019 and 2020), 70% of the respondents had borrowed money from an institution. Respondents said they took loans from FSAs, Osusu groups, community banks etc.

Figure 4.31: Over the past 12 months did you or anybody else in the household borrow money from an institution?



Source: Survey data (N=200)

The majority of respondent that borrowed money indicated that the largest amounts borrowed were used essentially to invest in their oil palm production and pay for school fees. In 60% of the cases the loans were used also to support the production of other crops.

Table 4.27: Use of the largest amount of money borrowed by the household in the last two years (2019-2020)

Activities	# of respondents	% of total respondents
Oil palm production	135	97%
School fees	126	91%
Other agricultural crops production	84	60%
Private business	17	12%
Total	139	

Source: Survey data (N=139)

4.11.4 Other sources of income aside from palm oil production

Some of the respondents also indicated other sources of income aside from income from oil palm production. Most of them (74%) said they get income from other cash crops, while 20% from Animal Sales/Farming.

Table 4.28: Other income sources

Sources of income	# of respondents	% of total respondents
Other Cash Crop (eg. Cashew, Cocoa, coffee)	122	74%
Animal Sales/Farming	33	20%
General Trade in Non-Agricultural Produce	19	12%
Food Crops	15	9%
Petty Trading	6	4%
Salaried Worker (Formal Sector)	4	2%
Lending/Loan Services	4	2%
Transport Business	1	1%
Agro - Processing	1	1%
Total (N)	165	

Source: Survey data (N=165)

4.12 Capacity building for oil palm farmers

Capacity building for farmers is a proven way of enhancing their efficiency and productivity in agriculture value chains and for this reason, respondents were asked if they had received trainings on oil palm production.

Only 11% of the interviewed farmers (all of them located in the Kambia district) declared receiving trainings on at least one of the following topics:

1. Pre and post-harvest losses
2. Best farm management practices
3. Certification processes
4. Techniques of intercropping and diversification
5. Integrated Pest Management (IPM)
6. Protection of water bodies/rivers/streams on farms

7. Safe use of chemicals
8. Identifying and use of processing equipment
9. Climate smart, organic and conservation agriculture
10. Marketing of produce
11. Financial management practices

Figure 4.32: Farmers that received trainings during the last two planting seasons



Source: Survey data (N=200)

4.13 Palm oil Infrastructure constraints

Respondents were asked to indicate the main constraints to business growth and profitability levels. More than 80% of the respondents indicated Lack of farm maintenance support, High cost of labour, Inadequate method of processing FFB, Lack of training and Lack of improved planting materials to be among their main concerns in terms of infrastructure. In particular High cost of labor and Lack of improved planting materials were reported by more than 90% of the respondents.

Figure 4.33: Infrastructure constraints affecting the oil palm business growth and profitability



Source: Survey data (N=200)

Note: Each respondent could indicate multiple answers

4.14 Farmers' perception of risks and opportunities in the palm oil sector

This section of the survey looks at smallholder farmers' perception about palm oil production. These opinions have been categorized by the gender of the respondents.

4.14.1 Motivation and overall satisfaction

Respondents were asked if they would be willing to change from oil palm production to another and revealed to be overall satisfied by their business and unwilling to change to another crop.

Respondents were also of the opinion that they are motivated to obtain high palm oil yields and to increase their oil palm land (indicating trust in the capacity of the government to provide economic resources to achieve this objective).

Table 4.29: Smallholder Farmer motivation and satisfaction perception about Oil Palm

Smallholder Farmer Perception About Oil Palm	Female			Male			Total
	Agree	Disagree	Maybe	Agree	Disagree	Maybe	
Motivation							
I will not change to another crop.	6%	43%	1%	3%	46%	1%	100%
I will increase the area of oil palm production	50%	0%	0%	49.5%	0%	0.5%	100%
I can sell the oil palm fruit without any problem	48.5%	0.5%	1%	49%	0.5%	0.5%	100%
The government can provide economic resources to expand oil palm in my lands	50%	0%	0%	47%	0.5%	2.5%	100%
I can obtain high oil palm yields	50%	0%	0%	49.5%	0%	0.5%	100%
Satisfaction							
In general, I am satisfied with my oil palm plantation	49.5%	0%	0.5%	49.5%	0.5%	0%	100%

Source: Survey data (N=200)

4.14.2 Benefits

All the respondents were of the opinion that oil palm plantation has increased their family's standard of living. They also believe that income from oil palm is bigger than other income sources. All of the respondents believe that income from oil palm is bigger than other crops so to crown it all, smallholder oil palm farmers said they were satisfied with cultivating oil palm plantation.

Table 4.30: Smallholder Farmer benefits perception about Oil Palm

Smallholder Farmer Perception About Oil Palm	Female			Male			Total
	Agree	Disagree	Maybe	Agree	Disagree	Maybe	
Benefits							

Oil palm plantation has increased the family's standard of living	49.5	0	0.5	47.5	0.5	2	100%
The income from oil palm is bigger than other crops	50	0	0	49	0	1	100%
The income from oil palm is bigger than other income sources	49	0.5	0.5	49.5	0	0.5	100%

Source: Survey data

4.14.3 Risk perception

On the issue of risk perception in relation oil palm production both genders said they don't trust the buyers or the contractual arrangements they had with their buyer. Respondents were also worried about the risk involved with price fluctuations in this case a fall in prices of oil palm. Lack of access to credit is considered by almost all respondents to be able to curb expansion of palm oil production. Respondents were of the opinion that the small nature of their land makes it difficult to expand the oil palm production.

Table 4.31: Smallholder Farmer risk perception About Oil Palm

Smallholder Farmer Perception About Oil Palm	Female			Male			Total
	Agree	Disagree	Maybe	Agree	Disagree	Maybe	
Risk perception							
I don't trust the buyers/I don't trust the contractual arrangement with the buyer	48%	1%	1%	47%	2.5%	0.5%	100%
I am afraid that oil palm price will fall down	48.5%	0%	1.5%	47.5%	0.5%	2%	100%
I cannot expand my oil palm production because of the lack of credit	49.5%	0.5%	0%	47%	0%	3%	100%
I cannot expand my oil palm production because my land is small	50	0	0	48	0	2	100%

Source: Survey data

4.15 Findings from focus group discussion with smallholder farmers

This section of the report of will focus on providing summary discussions from the two Focus Group Discussion (FGDs) conducted in Port Loko and Pujehun districts.

4.15.1 Focused group discussions with smallholder palm oil producers in Port Loko District – Northern Province producing red palm oil (Dura type)

The purpose of this focus group discussion was to understand the role of women in the processing and marketing of palm oil and the challenges they faced. 24 red (dura type) palm oil producers comprising 20 women and 4 men were engaged in a focus group discussion at Mafoimarah village, Maforiki Chiefdom in the Port Loko District.

The following findings from the Focus Group Discussions were identified:

1. According to the group, Dura Fresh Fruit Bunches that produce red palm oil were normally harvested by men from uncultivated wild palm trees in the bushes around their communities.
2. The land owners where the wild oil palm trees were located received compensation either in cash or in kind with a specified quantity of palm oil processed from the FFB, each time a harvest was made on the land.
3. Women were responsible for the transportation of the FFB from the points of harvest to the processing site, while the men threshed the FFBs to remove the fruits from the bunches.
4. FFBs are left for 4-5 days at the processing site for the fruits to fully develop and ripen before shredded from the bunches. This practice, is the main reason for high percentage of Free Fatty Acids (FFA) in the processed palm oil.
5. Processing of the fruits is done using both the pit and mini fabricated methods and after processing, the palm oil is decanted into recycled 5 gallon containers locally known as “batta” ready for sale within the community or to middlemen/traders.
6. More women than men were involved in the palm oil processing process and children were rarely involved. Most farmers could not afford to engage labour for palm oil processing and as a result, the women provided communal labour.
7. A higher quantity of palm oil was extracted when using a processing machine compared to the traditional pit method. However, utilisation of the machines was low in the communities and across Port Loko District. This was attributed to the high cost of the machines (about \$800).
8. They had not received any formal trainings on oil production, processing and quality assurance. The knowledge utilised was generational over the years. For quality testing, human physical senses of smell, taste and sight were used which were unreliable.
9. Their motivation for the oil palm business was the high demand for the product often resulting in high prices and increased incomes for them and also for food consumption as palm oil was widely used for domestic food preparation in Sierra Leone.

Table 4.32: Labour requirements for processing red palm oil

No.	Red palm oil production activity	Gender usually involved
1	Harvesting of FFB	Men
2	Carrying from the bush to processing site	Women
3	De-fruiting (Threshing)	Men

4	Removing fruits	Women
5	Loading fruit into boiler	Women
6	Getting Wood for boiling	Women
7	Boiling	Women
8	Carrying boiled palm fruits to local oil pit mill	Women
9	Crushing boiled palm fruit with their feet	Men
10	Carrying to frying pan	Women
11	Scooping of raw palm oil from the well	Women
12	Boiling of the raw oil	Women
13	Final scooping of the crude oil	Women
14	Putting the CPO into containers for storage	Women

Source: Field Data 2021

4.15.2 Focused group discussions with smallholder Palm Oil producers in Pujehun district – Southern Province producing white palm oil (Tenera)

In Pujehun district, Focus Group Discussions were held in Gandabu Bakoi village, Kpanga Chiefdom. A total of 15 farmers were present during the meeting. Farm sized ranges from 5 – 10 ha and some of the famrers in the focus group discussion own farms. In this community, the type of palm oil produced is Tenera. The following are the findings from the Focus Group Discussion:

1. Oil Palm seedlings were obtained from friends, purchased from local nurseries or thorough government related projects
2. Labour was a serious challenge for farm maintenance as most of the youths were involved in the bike riding business (“okada”) and mining activities
3. Access to finance and extension services were other challenges resulting in high post-harvest losses. Because of lack of finance, labour costs for brushing, pruning, harvesting and threshing the fruits was paid for by an exchange of the processed palm oil.
4. The method utilised for processing palm oil was mainly the manual fabricated press machine
5. High profits was the main motivation for engaging in the oil palm business as there was high demand for palm oil in the district.
6. No equipments were used for determination of quality during processing. Quality was determined by their experiences with processing over the years
7. Sale of palm oil was done at the village to middlemen and traders who transported the palm oil to the towns and cities.

4.16 Findings from other key stakeholders ’ interviews

4.16.1 Discussions with Ministries, Departments and Agencies (MDAs)

a) Ministry of Trade and Industry

The Acting Chief Director of the Ministry of Trade and Industry, during an engagement meeting with the researcher outlined the following developments relating to the oil palm value chain:

1. That the Ministry and its agencies (SLIEPA, PMB and SLSB) was supporting the governments strategy of increasing oil palm production and improving processing in the country.
2. That the Ministry had developed a National Agribusiness Policy and Strategy that highlighted the need:
 - to strengthen the national quality infrastructure and improve the testing capabilities of the Sierra Leone Standards Bureau (SLSB)
 - strengthen the regulatory framework for agriculture commodities including palm oil, palm kernel oil, palm kernel nuts and cake
 - develop market information systems for agriculture commodities
3. That the Ministry is facilitating investment promotion and export development for the oil palm sector, trade facilitation, support to light manufacturing, encouraging domestic investment participation and support to light manufacturing for palm oil production.
4. That the Sierra Leone Produce Marketing Company (SLPMC), which is under the Ministry of Trade and Industry, created market linkages for smallholder oil palm farmers by serving as an off-taker for palm oil, providing a local distribution channel and export exporting palm oil
5. The recent establishment of Jolaks Manufacturing Company Limited in Freetown for the refinery of CPO to vegetable oil, with and installed capacity of over 100 tonnes of CPO per day producing cooking oil, soap and margarine for the local market, has reinforced the effort of the Ministry in improving the oil palm value addition in the country. This as stated, has provided opportunities in the local market for both large scale producers and smallholder farmers.

These value-added initiatives, are expected to reduce the importation of edible oils, up to 50% as stated by the Ministry. The refinery products, known as “Paddy”, are now sold in every part of the country and exported to Liberia and The Gambia.

The trade facilitation challenges in Sierra Leone, according to the exporters, can be attributed to several factors such as: trade information not being easily accessible; high levels of physical inspections; multiple fees, licenses, permits and certificates and testing requirements related to the lack of coordination among agencies. The proprietors of CAC Holdings and Tanu International, two palm oil exporters, indicated too many taxes and high freight costs they are experiencing as compared to what is operating in other countries in the West Africa sub-region like Guinea where transaction costs of for the export of palm oil are far lower. The Ministry of Trade and Industry, however, confirmed that the introduction of the new system for the collection of customs data, the ASYCUDA World, by the National Revenue Authority (NRA) has allowed for electronic processing of manifests and customs declarations at the seaport, airport, and certain land border offices. The ASYCUDA provides online access to and interoperability with other government, trade facilitation agencies, and clearing agents. The Ministry encouraged Traders and agencies to familiarise themselves with the ASYCUDA system which they believe, has drastically reduced the transaction cost and the time it takes to process custom

documentation, as Exporters can now lodge documents electronically for processing and approval and make payments on goods imported and exported out of the country.

b) Sierra Leone Investment and Export promotion Agency

Respondent at SLIEPA spoke of the Agency's contribution to the development of key exports in agriculture such as cocoa, cassava, coffee, palm oil, etc, through the establishment of provincial offices in Bo, Kenema and Makeni to support both investors and exporters with reliable information on market access for both local, regional and international markets.

The Acting Director of Investment Promotion, further gave an account of the Agency's effort towards identifying new investment opportunities for oil palm in Sierra Leone. According to the Acting Director, SLIEPA has been engaging potential investors in the agriculture sector, including a major palm oil grower, Golden Veroleum to invest up to \$1.6 billion in Sierra Leone in what promises to be the second largest investment in the industry. The subsidiary of the US-based Verdant Fund LP, which is controlled by the Singapore-listed palm oil giant Golden Agri-Resources, is eyeing over half a million hectares of land eventually. The company is negotiating a 50-60 years lease agreement with the government and locals in the South and Eastern Regions, especially Kenema and Pujehun districts. This investment, when fully realised will eventually boost the palm oil industry in Sierra Leone, SLIEPA said.

c) Produce Monitoring Board (PMB)

According to the Executive Director of the Produce Monitoring Board, the palm oil market in Sierra Leone is competitive in the sense that it has many buyers and sellers at all levels. The role of PMB is therefore, to ensure that export trade in produce is conducted in accordance with the regulatory framework of the Board. The Director observed that, although there are serious challenges in meeting the standard and regulatory compliance by exporters which the Board is trying to address, the palm oil sector has not been given serious regulatory attention as the sector lacks up to date regulatory standards, that match with international standards as well as a regulatory framework for the sector.

This void in the regulatory framework, according to PMB Director, has led to a limitation in improving the quality of the palm oil industry. Palm oil exporters, however, trade across the border to the neighbouring countries of Guinea and Liberia through informal trade channels. The total amount of produce that moves through this channel can be hardly estimated. However, PMB confirmed that, the amount of unregulated palm oil that flows across the border is substantial, transported by wholesalers and traders who often put together truckloads of "batta" for export to neighbouring countries.

With the ongoing collaborating with UNIDO, the PMB Board is in the process of setting up an Agricultural Produce Inspection Body that will ensure greater monitoring and compliance in the produce sector particularly palm oil.

d) The Sierra Leone Standards Bureau (SLSB)

The SLSB is the National Standards Body, and by law also a Conformity Assessment Body, ensuring that specified requirements relating to a product, process, system, person or body are fulfilled.

The Standard Bureau is responsible for the management of the nation's quality infrastructure involving Metrology, Standardisation, Testing, Quality Management and Conformity Assessment including Certification.

An engagement with Senior officials of SLSB during the preparation of this report revealed that, though a national standard for palm oil had been developed, it has not been enforced. To ensure reliability of measuring equipment, the bureau also confirm the adoption of a standard cup of easement for palm oil across the county. However, also this measurement has not been enforced.

As a national conformity body, the SLSB maintains Food Testing Laboratories, and conducts conformity assessment tests on food products for general quality assurance (i.e., safety and fitness for purpose and intended use) based on certain parameters within the scope and capacity of the laboratories. Respondent further revealed that, although these laboratories can carry out test for Free Fatty Acid (FFA), moisture content and Specific Gravity (SG) on palm oil. However, SLSB reported that, the labs at the moment cannot conduct other critical tests on oil palm, such as - Peroxide value (PV) , Beta carotene, Unsaponifiable matter, Saponification value (SV), and Iodine value (IV), due to faulty equipment and unavailability of required reagents/chemicals, which may compromise the integrity of the test result, and, ultimately, the quality and safety of the product.

As part of its support to the SLSB under the WACOMP Sierra Leone programme, UNIDO has provided some of the equipment and most of the reagents required by the Food Testing Laboratories to conduct these tests. Installation and calibration of the newly procured instruments is to be done by the external experts. The SLSB, however, cannot support specific tests such as Mineral Oil Saturated Hydrocarbons (MOSH), mineral oil aromatic hydrocarbons (MOAH), Deterioration of Bleachability Index (DOBI) and the *peroxide* values (PV) of the fresh *oil* sample, which are common client requirements for major oil palm exporters of palm oil in Sierra Leone.

e) Discussion with the Ministry of Agriculture and Forestry

Oil palm development is amongst the government priority areas for tree crops development with emphasis in increasing the participation of women and youths.

Interviews conducted with official of the Ministry of Agriculture and Forestry (MAF) in the districts revealed that, vulnerable rural households are benefiting from the Agriculture Value Chain Development Project (AVDP), with support from the International Fund for Agricultural Development (IFAD), with focus on rice, palm oil, cocoa and vegetable. The project targets about 34,000 vulnerable rural households, and at least 40% of the project's participants will be women and youth. The project is expected to increase production and improve the marketing of rice, palm oil, cocoa and vegetables, contributing to the Government's priorities of rice self-sufficiency, crop diversification and rural poverty reduction. The AVDP project, is expected to see the nursing of around 540,000 improved oil palm seedlings to be distributed to fifteen palm oil producing districts across the country. According to MAF, the AVDP had already established oil palm community nurseries, assisting farmers to carry out intercropping with food crops (groundnuts and rice) during the initial growth of infant trees to improve livelihoods and household nutrition. The project organised farmers into groups of 25 farmers comprising mainly women and youths and will be supported in the cultivation of 1 ha per farmer, providing the farmers with improved oil palm seedlings. The AVDP project is also supporting those farmers referred

to as Legacy farmers, who had benefitted from the previous Smallholder Commercialisation Programme (SCP) project, financed by the Global Agriculture and Food Security Programme (GAFSP), which ended about 3 years ago.

In a similar intervention, over 16,000 oil palm farmers in across the country are also benefiting from the Sierra Leone Agribusiness Development (SLADF), under the Smallholder Commercialization and Agri-Business Development Project (SCADeP), a World Bank financed project, under an outgrower scheme, supporting farmers with improved oil palm seedlings, farm maintenance, RSPO certification and market linkages. The project has also supported the MAF in building capacity of agriculture officials on oil palm development.

4.16.2 Discussion with Non-Governmental Organisations - Solidaridad West Africa

Both local and International NGOs seek to complement government's development efforts, and because of their various technical strengths and abilities they hold potential to impact the communities they operate in. Solidaridad West Africa started development work in Sierra Leone in 2017 with LEGEND, a DFID funded investment project on land governance and tenure. Under this project, Solidaridad supported communities in Makpele chiefdom in Pujehun District to reduce the original concession for oil palm production from 41,128 hectares to around 5,000 hectares, which is the threshold allowable under the National Land Policy for any single oil palm investment in Sierra Leone.

Solidaridad undertook a scoping study of the oil palm sector in Sierra Leone in 2018 and identified Port Loko District and its environs as an important oil palm belt in the country. With funding from the Dutch Embassy in Ghana under the Sustainable West Africa Palm Oil Programme Phase 2 (SWAPP2), Solidaridad profiled farmers in the Port Loko district and given the potential of the district in terms of palm oil production and processing. The recommendations of that study culminated in the incorporation of WAF Agricultural Solutions SL Limited (WAFASSL) in February 2019, a social enterprise wholly owned by Solidaridad West Africa. WAFASSL later began the construction of a 1Mt/hour mill at Banthoron Village, Bureh Chiefdom in Port Loko District to provide farmers with a buyer to purchase and process their FFB. According to Solidaridad, the project aimed at increasing rural income and reducing food insecurity through increasing farm productivity and the efficiency of processing mills in Sierra Leone. From January 2018 until today, the project has supported 5,225 farmers in Daru and Buedu with improved Tenera oil palm varieties to cultivate 1,250 hectares of land and also facilitated investment in a 1t/hr mill (through WAFASSL) in Buedu for the processing of CPO, PKO and Briquettes in in collaboration with the Buedu Oil Palm Association.

The construction of the mill is currently at 60% completion with a targeted completion date set in the second trimester of 2022. Apart from this mill, there are no existing mini oil palm mills in both Port Loko and Kambia districts, the nearest being 75km away. Solidaridad has also implemented SWAPP2 in in the Kailahun and Kenema districts, collaborating with Gold Tree Holdings Limited and Kissi Tong Oil Palm Farmers' Cooperative as private sector partners and with the Ministry of Agriculture and Forestry.

4.16.3 Discussions with large scale producers

In order to understand the business relationship between large scale oil palm plantation companies operating in the districts of Port Loko, Kambia in the North and Pujehun and Bonthe in the Southern province, the following companies were identified and interviewed were conducted by the research team during preliminary visit to the districts.

a) Ethical Agro Allied Farms (SL) Limited:

This company started operation about two years ago and have already cultivated 400 ha of palm trees as part of a 2,000 ha under a concession land space in Rogbom village, Maforki Chiefdom, Port Loko district. The company is currently using the nucleus method of production, but intend to introduce an off-taking scheme within the Port Loko and Kambia communities for the sourcing of palm oil Fresh Fruit Bunches as raw material for Oil Palm processing mill (fully automated) diesel engine with capacity of 3 tons/hr that the company is currently establishing in the district. This mill is expected to be in full operation by the first quarter of 2021, and would provide a scheme that will support over 1500 existing smallholder farmers within Kambia and Prorloko district in the buying and processing of their fruits.

Figure 4.34: A 3 tons/hr palm oil processing mill under construction in Port Loko district



Source: Author

b) Mabengra Oil Palm Project:

This plantation was established forty years ago, and is the oldest oil palm plantation in port Loko district. The estate was established by the former vice president of Sierra Leone, Mr. S.I. Koroma, with over 600 ha of palm trees for under a 50-year long-term lease which is now expired and the plantations returned to the land owner families of Maforki village. Because of the old age trees, the estates are relatively unproductive and the family owners can no longer maintain the plantation.

Figure 4.35: Forty years' plantation of oil palm trees in Port Loko district



Source: Author

c) SOCFIN Agriculture Company (Malen village)

According to the Financial controller of the company, Socfin is the biggest investment in oil palm total USD 171 million located in Pujehun district, with a total of 12,339 ha of land under cultivation, on a lease concession arrangement with landowners for up to 25 years lease period. Operations began in 2011 with the construction of a nursery to grow new improved selected Tenera seedlings, and planting of palm trees began in 2012 and was completed in 2015. A total of 12,349Ha (30,502 acres) was planted consisting of 2 million palm trees.

The company starts production in 2015 with a total of 6,745 FFB production amounting to 1,002 CPO production. With the newly installed expanded processing mill with a 60 toon/hr mill capacity, the biggest palm oil operating mill in Africa, the company produced 30,727tons of CPO in 2020, and 40,200 tons in 2021, with a projected 55,540 tons of CPO production in 2024. The company employs 1,554 permanent staff, up to 2,600 seasonal staff and 3rd party agricultural, transportation and security contractors numbering over 940 workers. In all over 5,000 people obtain their livelihoods from Socfin directly. The company employed about 3,500 workers and carry out CSR in the district supporting the community to grow other crops for food security. However, the company operates solely on a nucleus model and does not support any form of smallholder out-grower scheme.

Figure 4.36: Newly expanded 60 tons/hr palm oil mill at Socfin in Pujehun district



Source: Author

4.16.3 Discussion with local palm oil processing machines fabricators

Preliminary visit to Port Loko, Kambia, Pujehun and Bonthe by the research team revealed that, here are **limited oil palm processing facilities in the country**, particularly for smallholder farmers, some of whom are still using the pit method to process the palm oil. The pit method is known for being unhygienic and responsible for an extraction wastage of up to 50%.

Figure 4.37: Manual pit method of palm oil processing



Source: Author

The introduction of fabricated processing machines, manufactured locally within the districts and by Fomel Industry & National Industrialization Centre (FINIC) in Freetown, has significantly increased the extraction rate of oil palm production by half, improved the quality and production, and reduced the production time, as compared to the pit method, according to testimonies by some farmers. However, the high cost of machines and frequent breakdowns is limiting access of these services to farmers.

According to local fabricators in Bo city, though the demand for the fabricated processing machine is high, they are manufacturing these machines under challenging conditions such as lack of high-quality

metal materials, high cost of electricity, lack of appropriate innovative techniques and improved technologies. According to the local fabricators, most of them are using recycle materials from scrap yards to produce these milling machines, which are most times not durable. Local fabricators are calling for support through capacity building and study tour to help improve their skills.

Figure 4.38: Oil palm processing mill fabricator in Bo City



Source: Author

Figure 4.39: A locally fabricated palm oil processing used by locals in Port Loko district



Source: Author

An improved version of fabricated mini palm oil processing mill with high efficiency rate and mechanically operated, manufactured in Sierra Leone by FINIC, a company that is specialised in the development of agricultural processing machinery for smallholder farmers. However, due to the cost of these machines, most farmers cannot afford to buy them, unless they receive support by Government, NGO and development partners.

Figure 4.40: Improved version of fabricated processing mill designed by FINIC in Freetown



Source: Author

CHAPTER 5: BOTTLENECKS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Bottlenecks facing oil palm production in Sierra Leone

This section of the report looks extensively at the bottlenecks related to production, processing, and marketing along the local oil palm value chain in the Port Loko, Pujehun, Bonthe and Kambia districts. These bottlenecks were deduced from data collected, focus group discussions and key informant interviews.

5.1.1 Bottlenecks related to the production of oil palm

1. **Poor application of farm maintenance practices:** Although the oil palm farms should be brushed at least 4 times per year, 85% of the farmers brushed their farm only 2 times per year. In addition to that only 42% of the interviewed farmers declared to apply fertilizers (most of them located in the northern districts of Kambia and Port Loko). Lack of farm maintenance support was indicated as a challenge by 89% of the interviewed farmers.
2. **Difficulties to afford improved seedlings and planting materials:** Although all respondents reported to us improved seedlings, farmers involved in oil palm production across the four districts have difficulty affording the improved seedlings. About 53% of the respondents said they find it very difficult affording the available improved seedling of oil palm during the last planting seasons. Farmers seem to rely on different sources to obtain planting materials (including seedlings) but only few declared to receive planting materials from the government (9%) or cooperatives (12%), while most rely on volunteer seedlings (seedlings that grown wild under oil palm trees). Lack of improved planting materials was indicated as a challenge by 93% of the interviewed farmers.
3. **Lack of access to fertilisers:** Smallholder oil palm farmers lack access to fertilisers resulting in low application of it on their farms. 58% of the palm oil farmers interviewed indicated that they do not apply fertiliser
4. **Lack of record keeping practices:** Record keeping is not practiced by almost 97% of the by oil palm farmers interviewed. This therefore hampers the possibility to assess any changes in the performance of the farm as well as the development of consistent business plans. It also reduces the possibilities to access sources of finance.
5. **Lack of knowledge on oil palm certification processes:** 87.5% of the farmers are not aware of certifications or don't know how to certify their farms. This is a relevant problem particularly in the palm oil sector where main foreign markets are growing more concerned about the sustainability of the product and practices used for its production.
6. **Difficulty in getting labour for farm maintenance and that it comes at a higher cost:** This is a challenge that cuts across all the levels of the oil palm value chain. 89% of the respondents said they acquire their labour through hired at a very high cost. This explains that large share of the

overall production cost held by weeding/pruning, harvesting and collecting the FFBs. The high cost of labour is a challenge reported by 94% of the interviewed farmers.

7. **Lack of capacity building for smallholder farmers:** Only 11% of the interviewed palm oil farmers interviewed indicated they have not received training on farming best practices. 88% of the interviewed farmers indicated the lack of trainings as one of the main challenges in the value chain.

5.1.2 Bottlenecks related to processing of palm oil

1. **Usage of inadequate processing methods:** Although most farmers recognized the overall efficiency of processing machines, only few 8% were fully convinced about its usage. In the districts of Port Loko and Kambia the manual pit method is still largely used. Overall, 84% of the interviewed farmers indicated that the inadequate method of processing FFB as an important challenge in the sector.
2. **Challenges in the usage of processing machines:** Frequent breakdowns of processing machines coupled with lack of spare parts and maintenance services, however, reduces the efficiency of the machines, leading to low return of palm oil. Possibly for this reason 92% of the respondents stated that they prefer to rent the processing machines.
3. **Lack of information and linkages to end users and secondary processors of palm oil:** As evidenced during FGDs and KIIs with key stakeholders in the oil palm value chain, processors are often not informed about the opportunity to meet supply gaps, losing therefore the motivation to increase their productivity.

5.1.3 Bottlenecks related to marketing along the oil palm value chain

1. **Lack of coordination of farmers in the negotiation of their palm oil price:** Over 88% of the interviewed farmers negotiated the price with the buyers at the time of the transaction, thus holding a very limited control over the price of the product. Very few respondents relied on cooperatives to establish the price of their produce before the sale. In addition to that, farmers are missing information on prices, quality and availability of products in order to better negotiate their position with middlemen.
2. **Limited use of storage facilities:** Only 23% of the respondents said they currently store some of their palm oil after processing. On average they reported to store around 26% of their produce. This means they cannot take advantage of seasonal variation in prices.
3. **Poor road transport conditions:** 61% of the respondents highlighted this issue as hampering the marketing of palm oil. Farmers mostly make use of motorcycles and tricycle carriers to transport their products. There have been some efforts by some oil palm companies to link smallholder farmers through an out-grower model but poor road network is grossly undermining this effort, particularly during the aggregation period. This also affect the quality of the palm oil when transport is needed to bring FFB to processing plants, as companies may finds it increasingly difficult to collect the harvested FFBs within the recommended 24hr period in order to prevent the accumulation of Free Fatty Acids.

5.2 Conclusions

5.2.1 Input, extension services and farm maintenance

The effective management of oil palm farms requires availability of improved input supplies such as available land, seedlings, extension services fertilizers, pesticides and farm equipment. Local service providers for these inputs appear to be absent from the oil palm sector in the four districts the study was conducted. Efforts need to be made to ensure that efficient extension services from both the private sector and government are made available to smallholder farmers to ensure proper management of their farms and close the skills gap they face.

Farmers are concerned that extension services are generally unavailable beyond the life cycle of both government and donor projects particularly the provision of seedlings.

5.2.2 Better collection and management of farmers' data

There is a need for improved data collection, management and mapping of oil palm sector across the four districts to support national planning and resource allocation for the sector. Apart from the government assisted projects, there is no available baseline data on oil palm farmers groups and cooperatives, production and market information.

5.2.3 Inclusive women participation

The palm oil sector can be used to increase the women economic inclusiveness given the important role that they play in the sector. The level of participation in decision making (high or medium) was similar between man and women across the various activities, except for land preparation and harvesting, where respectively only 37.4% and 46.5% of the women interviewed took part in decision making. This is probably related to the physical nature of these activities. On the other hand, processing is the sector in which the percentage of women involved in decision making was slightly higher than the one observed for men. However, land rights in force, which do not allow land title or ownership of land for women, unless they are widows of previous owners, indicate that decision-making and access to land for women has not yet been adequately addressed in the sector.

5.2.4 Low level of productivity of oil palm farms

Smallholder farmers' yields are generally low in the four districts at an average of 2.1 tons and 3.5 tons for plantations of respectively 1-5ha and 5-10ha. Average yield for large scale producers like Socfin in the Pujehun district currently stands at 11-12 tons/ha. This may likely be because of the prevalence of unclassified planting materials, old age trees, and poor farm maintenance.

5.2.5 Need for oil palm processing improvements

There are limited oil palm processing facilities in the districts, particularly for smallholder farmers, some of whom are still using the pit method to process the palm oil; a method that is unhygienic with an extraction wastage of up to about 50%. The introduction of fabricated processing machines manufactured locally within the districts and by Finnic Company in Freetown, has significantly increased the extraction rate of oil palm production by half, improved the quality and production, and reduced the production time, as compared to the pit method, according to testimonies by some farmers. However, the high cost of machines and frequent breakdowns is limiting access of these services to farmers. Most local fabricators in the districts are producing processing machines under challenging conditions such as lack of high-quality metal materials, high cost of electricity, training on innovative and improved technologies. Most of them are using recycle materials from scrap yards to produce these milling machines which are most times not durable. Local fabricators are calling for support through capacity building and study tour to help improve their skills.

5.2.6 Need for quality improvements

Lack of information on quality and quality assurance practices is also a major challenge within the districts, as farmers do not see their traditional practices of oil palm processing as inimical to the low quality of their produce, hence low prices. Awareness raising programs relating to good processing practices such as high concentration of Free Fatty Acids (FFA), water quality, waste management are lacking in the districts and farmers therefore, continue to use old traditional methods which are unhygienic. Large scale oil palm industries, especially those that are producing for export, are concerned about the cost of doing business in Sierra Leone. The absence of a one-stop-shop for trade facilitation and having to deal with too many players in the chain will lead to high cost of transaction.

5.2.7 Land tenure affecting large-scale producers

Large scale investment in palm oil production is dependent on easy access to land. Most of the large-scale companies interviewed revealed that, there is little room for expansion due to the current land policy in Sierra Leone. According to them, land cannot be easily bought and sold, and acquiring large pieces of land involves a long process of negotiations with landowners, chiefs, people on the land, as well as compensation for the land, people on the land and structures on the land. This makes the entire process of acquiring land for large scale investment sometimes becomes complicated and unreliable for large-scale investors.

5.3 Recommendations

Real effort in improving the competitiveness of palm oil production, processing and marketing in Sierra Leone requires a combination of efforts from actors including smallholders, smallholders' associations, government agencies, plantation and milling companies, traders and retailers, and key third parties (e.g., people's organisations, NGOs, banks, insurance agencies). In particular, the prevailing conditions

in all the oil palm producing districts is generic, and this therefore makes it easier for intervention at all levels of the value chain.

Sierra Leone needs an institutionalized, systemic transformation within the oil palm industry, particularly smallholder participation. First, government Ministries and relevant Agencies could organise oil palm producers into organisations/associations and provide training on best farming practices and sustainability in order to enable the smallholder to participate effectively both at national and international markets. Second, the government can set up a special fund to support farmers in group certification, farm management support, provision of improved seedlings and other related activities that would increase their productivity. As the smallholder can play an increasingly prominent role in Sierra Leone's growing palm oil industry, how they transform is an important indicator of the sustainability of the palm oil industry as a whole.

This report provides recommendations to address key issues related to specific farm-level production, processing and marketing challenges faced by smallholder oil palm farmers and out grower groups and interventions that will bring changes for an efficient and effective palm oil value chain in Sierra Leone in general.

The following recommendations are proposed to address key issues related to specific farm-level production, processing and marketing challenges faced by smallholder oil palm farmers and out grower groups:

- 8) Increase access to grants and affordable credit sources for oil palm producing households that can enable them to engage hired labour and access basic mechanical equipment needed for higher on-farm productivity. Of primary need are farm tools, access to improved planting materials and specially to uphold quality reducing FFA and land preparation, weeding/pruning, farm maintenance, harvesting and processing. This will enable large-scale commercial farming at less manual labour input. Working with the FSAs and Community Banks to design special financial product for farmers to access loans, with lower interest rates using farmers' groups as guarantee, could be an option to be analysed.
- 9) Provide a common platform through which palm oil smallholder farmers will harmonize approaches, prices, exchange information, expertise, technical resources, and proven results and experiences to new locations. In addition to that, it might be considered the possibility to set up a loan guarantee fund for processors and manufacturers to increase the locally made goods popularly referred to in national Linqua Franca, Krio, as 'made na ya so', meaning 'Made in Sierra Leone'. This type of fund could also help input dealers to import improved inputs such as seeds, fertilisers, and machinery.
- 10) Organize farmers/FBOs into out-grower schemes of geo-referenced clusters for sustainable raw material supply to oil palm milling press factories and other markets beyond their communities and fresh fruits bunches can be sold easily to large private estate.

- 11) Capitalize on inter-institutional linkages to: a) increase smallholders' access to technical innovations developed elsewhere, and b) Increase access of farmers/FBOs to affordable credit for large-scale commercial production of oil palm.
- 12) Improve data management and mapping of oil palm production across the four districts of Pujehun, Bonthe, Kambia and Port Loko as it came out during the FGDs and KIIs at both district and national level. Apart from the government assisted projects, there is no available baseline data for oil palm farmers/groups/cooperative, productivity market information, etc., in the districts. This is extremely important for national planning purposes and resource allocation for agricultural development.
- 13) Ensure access to up to date market information in order to improve the capacity of farmers to negotiate a fair price. Presently, the Planning, Evaluation, Monitoring and Statistics Division (PEMSD) of the Ministry of Agriculture & Forestry (MAF) has established the Agricultural Management Information System (AMIS). However, most of the value chain actors cannot easily access this information portal due to lack of education. It is therefore recommended to establish a methodology to send information to farmers group through electronic means, such SMS messages, audios, etc.
- 14) Intensify capacity building on best practices in oil palm production processes for smallholder farmers. Also, increased extension services are highly recommended because it helps farmers to know new technologies and information that would help in increasing productivity in oil palm sector. A particular focus should also be dedicated to improve the farmers' understanding of the benefits of joining cooperatives and associations to strengthen their group dynamics, accountability, leadership and peace building.
- 15) Work with traditional and local authorities, and the relevant Government Ministries to ensure access to land, especially for women that represent an important part of the workforce in the sector. The sensitisation and awareness of the National Land Policy, the Voluntary Guidelines on the Governance of the Tenure of Land, Forests and Fisheries (VGGT) principles and Women's land rights should be upscaled in the project areas so that more women will gain access to land.

Table 5.1: Interventions proposed in order to improve the competitiveness of the palm oil industry in Sierra Leone.

Increase productivity of smallholder farmers
<ul style="list-style-type: none"> ▪ Support farmers to plant new improved oil palm seedlings ▪ Increase smallholder farmers area under cultivation by replanting existing old oil palm with new ones ▪ Introduce of high yielding oil palm varieties ▪ Support smallholders to improve their plantation management in particular in order to increase harvest frequency and to better manage the vegetation cover and the organic matter use ▪ Encourage farmers to replace older trees with new ones. ▪ Promote farmers linkages with large scale producers and RSPO certification

- Support the development of a domestic input supply chain for the oil palm sector.
- Provide resources to smallholder farmer to be able to collect more fruit, invest in replanting and to acquire mechanical equipment that would improve the efficiency of processing

Strengthen extension delivery in the palm oil sector

- Design of programs to upgrade of skills and knowledge of Extension Agents and Farmers in oil palm value chain processes.
- Facilitate the movement of extension agents to and within the oil palm production and processing areas
- Develop guidelines for smallholder producers and processors on the effective land and waste management.

Improve quality assurance and testing capability

- Design of programs to improve coordination between oil palm processors and traders to ensure consistency with the requirements of the consumer side along the value chain that can allow for raises in the price of the final product
- Design programs to drive improvements in quality management at both institutional and enterprise levels
- Raise awareness on the advantages of small-scale oil palm mills for improvements to processing palm oil
- Develop sales and marketing mechanisms for locally manufactured mill
- Facilitate investments in small scale oil palm mills
- Support the improvement of quality management infrastructure, namely strengthening support to the testing capability of SLSB and provide downstream training and coaching programmes, primarily aimed at the cooperative level on quality¹².
- Organise a palm oil Value Chain events such as “palm oil days,” fairs, round tables to increase awareness of quality standards of palm oil
- Develop and promote national grades on palm oil including packaging requirement at all levels of the supply chain to give confidence to consumers on the quality and quantity of the content.
- Identify and provide training to local fabricators of mini mail oil mills on improved and innovative technologies

Enhance policy alignment

- Promote and strengthening of institutional coordination for policy and regulatory alignment for effective monitoring and for effective and efficient private sector investment and participation of actors in the production, processing and commercialization of oil palm sector
- Bring together key stakeholders in the industry to establish an industry plan for upgrading the Palm oil, and to support industry stakeholders and service providers in implementation of this upgrading strategy
- Develop programs that are mainstreaming women and youth in the districts through enterprise development and other productive activities in the oil palm value chain

¹² Basic training of farmers could be tailored towards improving the quality of palm oil during processing stage so as to reduce the Free Fatty Acid (FFA) and foreign impurity levels.

- Promote awareness programs that would provide opportunity for the smallholder farmers to interact and benefit from the service of trade support institutions and other service providers in the sector.
- Prioritize the development of roads and feeder networks leading to palm oil production areas in the districts in order to improve accessibility transportation of the commodity to major markets

Facilitate private sector investment in commercial oil palm production

- Explore regional studies for new market
- Improve reforms on land to make land accessible to large scale investors willing to promote outgrower models within operating communities
- Create awareness that would attract commercial banks to provide credit facilities to oil palm smallholder producers

Improve access to market information

- Support the improvement of data collection for better planning of the sector
- Support of a detailed GPS survey of smallholder farms would be imperative for planning and for linkages to potential larger mills
- Encourage entrepreneurship activity in the sector needs for a better understanding of the business by all actors including regulators, lenders and smallholder farmers too. An understanding of the businesses itself will improve access to finance which is still challenging for smallholder farmers in the districts

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ANNEX II: Terms of Reference of the palm oil sector assessment conducted by ITC

The Terms of Reference (ToR)

Under the direct guidance and the overall supervision of the ITC Agro business team, and in close coordination with WACOMP project manager and National Project Coordinator, the Consultant will undertake the following duties:

1. **Activity:** Preparation of the work methodology and approach. This will include:
 - The overall strategy, approach, samples, locations, logistics, coordination, and implementation plan of the study
 - Preliminary identification of international and regional markets with export potential for Sierra Leone oil palm products
 - Identification of key chiefdoms and farm area on which to focus and related selection criteria.
 - Identification of key stakeholders to be involved at different stages – (SMEs – Processors, Exporters, Cooperatives, and Trade Support Institutions etc.).
 - A time plan including milestones and management reporting of activities.
 - Use and dissemination of the study including reporting formats or events, audiences and main responsibilities.
 - Conduct meeting(s) to further discuss and agree on the methodology and approach with the ITC Agro business team
2. **Activity:** Identify, collect, and analyse data on national oil palm production and processing, volumes and values of both domestic and export trade
 - Consult with relevant government authorities (e.g. MAF, PMB, SSL, etc), the private sector stakeholders (traders and exporters) and NGOs to capture data on domestic trade and export markets.
 - Identify major domestic markets and the level of domestic trade
 - Identify the regional and international export markets and establish export volume and value based on the data obtained from relevant authorities and exporters.
 - Provides an analysis of the current demand and supply situation and provide recommendations to increase sales and market share of Oil-Palm products.
3. **Activity:** Identify the bottlenecks related to the production, processing, and marketing along the oil palm value chain at national level:
 - Identify the key challenges that currently affect the production and processing of oil palm at national level
 - Identify and analyse key obstacles to the national palm oil supply chain
 - Provide national level recommendations and solutions to address the challenges and bottlenecks identified.

4. **Activity:** Identify specific farm-level production and processing challenges faced by smallholder oil palm farmers and out grower groups in selected Chiefdoms of the following districts: a) Port Loko, b) Pujehun, c) Bonthe, and d) Kambia
5. **Activity:** Analyse the challenges identified and provide specific recommendations for consideration at the level of the selected districts.
6. **Activity:** Supervision of enumeration for developing farmer profiles of smallholder oil palm farmers/producers in the following districts: a) Port Loko, b) Pujehun, c) Bonthe, and d) Kambia.
7. **Activity:** Submit to ITC a first draft report on the identification and analysis of oil palm production, productivity and market bottlenecks.
8. **Activity:** Prepare a short presentation capturing the main findings and recommendations of the study
9. **Activity:** Produce a final written report on the oil palm subsector, incorporating comments that may be provided by ITC.

It is expected that the study responds to the objectives of the WACOMP project, which includes:

- Reaching an accurate estimate of size of supply and demand for Oil-palm and its derivatives in the domestic market
- Understanding the size of the regional and international export market, existing and potential competitors, market requirements, trade regimes and market entry strategies
- Identifying the demand and supply side capacities, current production and processing capacities, existing and required technologies along the value chain and ability to meet market demand as per consumer preferences and desired quality specifications.
- Identifying the main producers (domestic and regional) and market size and market share structures and most relevant marketing channels, potential competitors, market requirements, trade regimes and market entry strategies
- Assessing existing bottlenecks impacting the competitiveness of the Oil-Palm value chain (domestic and regional levels)
- Identifying and mapping the existence of any imported products that compete with Sierra Leone products including, reasons for its success and gaps.
- Identifying information gaps – from production to processing and marketing of Oil-Palm products

The consultant will ensure that the study:

- Avails itself of both secondary and primary sources, through desk research and field surveys as applicable to gather relevant and reliable quantitative data and qualitative information.
- Utilizes an articulated and coherent methodology which will allow for very practical references for the WACOMP project to respond to the project's objectives in the form of capacity development actions/interventions along the Oil-Palm value chain
- Provides an analysis of the current demand and supply situation and provide recommendations to increase sales and market share of Oil-Palm products.

As a background for the work, the consultant will be provided with:

- A template format that should be used for the report drafting.
- a tentative list of chiefdoms that the actions should covered for him to select based on his knowledge of the sector
- a tentative list of cooperatives that have been addressed by previous actions conducted by ITC and other implementing partners (UNIDO)
- Information on preliminary foreign markets mentioned in previous discussions with the project donors and stakeholders for the consultant consideration.

Expected Outputs and Timelines:

The consultant shall produce the following deliverables:

- **Output 1:** Outline of the methodology and work approach.
- **Output 2:** Final list of stakeholders to be contacted to implement the study.
- **Output 3:** Final survey questionnaire.
- **Output 4:** First draft of the sector report.
- **Output 5:** Documentation on underlying data (e.g. survey data; questionnaires hardcopy) provided.
- **Output 6:** Final version of the sector report with answers to comments and recommendations.

ANNEX III: Value chain analysis of the oil palm sector in Sierra Leone: Data collection tool

Methodological notes:

- Each interview will be conducted with a representative of a different farm
- Interviews will be conducted with the person indicated as the more knowledgeable about the farm activities, and specifically in relation to oil palm

No.	QUESTION	HINT	ANSWER TYPE	OPTIONS
A	BASIC DATA			
A1	District Name		Single Choice	1=Kambia 2=Port Loko 3=Bonthe 4=Pujehun
A2	Chiefdom Name		Single Choice	1=Port Loko → Bureh Kasseh Makonteh (BKM) → Buya Romende → Dibia → Kaffu Bullom → Koya → Lokomasama → Maforki → Marampa → Masimera → Sanda Magbolontor → Tinkatupa Makonteh Safroko(TMS) 2= Kambia → Bramaia → Gbinle-Dixing → Magbema → Mambolo → Masungbala

				<ul style="list-style-type: none"> → Samu → Tonko Limba 3= Bonthé → Bendu Cha → Bum → Dema → Imperi → Jong → Kpanga Kemo → Kwamebai Krim → Nongoba Bullom → Sittia → Sogbini → Yawbeko 4=Pujehun → Mano Sakrim → Soro Gbema → Kpaka → Makpele → Yakemu Kpukumu Krim → Gallines Perri → Malen → Barri → Sowa → Pejeh → Kpanga Kagonde
A3	Village/Community Name:		Open answer (text)	
A4	Enumerator Name/		Full Name Cellphone No	
A5	Date of Interview:		DD/MM/YY	
A6	Time of Interview:		GMT	

A7	Name Head of Household:			Family name
				Given Name
A8	Name of Respondent			Family name
				Given Name
A9	Marital Status of Respondent		Single Choice	1=Not Married (Single) 2=Married 3=Separated 4=Divorced 5=Widow/Widower 6=Cohabiting 7=Other, Specify:
A10	Relationship of the respondent to the household head, if not the head	Main Decision Maker/Bread Winner	Single Choice	1 = Wife 2 = Other family member 3 = Other non-family member
A11	Age of Respondent		Integer	
A12	Year of Birth of Respondent	Calculate the respondents' year of birth by subtracting age from the current year	DD/MM/YY	
A13	Sex of Respondent	Gender	Single choice	1=Male 2=Female
A14	Local dialect/traditional language spoken	Local Language	Multiple choice	Krio Temmne Mende Limba Loko Susu Mandingo Fullah Other, specify

A15	Can you read or write in English or any other local language?		Single choice	1=Yes 2=No
A16 (linked to A15)	If yes, what is your highest level (class) of education?		Single choice	1=Primary 2=Secondary 3=Tertiary 4=Non formal 5=Adult literacy
A17	How many people normally live in your household?	By household we mean living together and eating from the same pot regularly. Count respondent Include those temporarily absent (up to 6 months)	Integer	
A18	How many household members are adults?	Adults are meant as individuals that are 18 years old and above. Include the respondent if above 17	Integer	
A19	How many household members are in school?		Integer	
A20	Do you hold any leadership position in village development committees or farming committees?		Single choice	1=Yes 2=No
A21	In your view, what are the main challenges facing farmers, especially women?		Open answer (text)	
A22	Do you belong to some oil palm association or cooperative?		Single choice	1=Yes 2=No

A23 (linked to A22)	If yes, please, specify the type of association or cooperative		Single choice	1=Community Based Organization 2=Farm Based Organization 3=Cooperatives 4=Communal group of farmers 5=Joint families' associations 6=Other						
A24 (linked to A22)	If yes, what is the name of your association or cooperative?		Open answer (text)							
A25	Please indicate your level of participation in making decisions about the following farm activities		Multiple choice	Agricultural Activities Land preparation Usage of farm inputs Farm maintenance Harvesting Processing Sale of produce Use of farm income	Extent of Participation in Farm Decision-Making			Low (1)	Medium (2)	High (3)
A26 (linked to A22)	What are the main benefits that you received from the association or cooperative?		Multiple choice	1= Access to technical assistance and training 2= Access to inputs (e.g. seeds, fertilizers) 3= Access to other benefits, specify 4= Financial services						

				5=Group negotiation 6= Other, specify
B	MANAGEMENT AND PRACTICE OF OIL PALM PRODUCTION			
B1	How many years now, have you been farming generally?	Number of years	Integer	
B2	How many years now, have you been cultivating oil palm?	Number of years	Integer	
B3	What other crops do you cultivate?		Multiple choice	1=Cassava 2=Cashew 3=Coffee 4=Cocoa 5=Rice 6= Other (specify): _____
B4	What is the size of your oil palm plantation?		Single choice	1=(1-5 ha) 2=(5-10 ha) 3=(10 -20 ha) 4= (25-50 ha) 5=(55-85 ha) 6=(Above 100 ha)
B5	What is the average age of the oil palm in your farm?		Single choice	1=(1-3yrs) 2=(4-10 yrs) 3= Above 10 Yrs
B6	Please identify the main source of planting materials		Multiple choice	1= From government 2= From local agro-input dealer 3= From oil palm estate 4=NGO 5=Friends/Family/Gift for free 6= Farmer organization (cooperative) 7 =Volunteer seeds (seedlings that grown wild under oil palm trees)/ Own farm/Nursery

				8. Other (specify):
B7	What area (ha) under improved oil palm varieties		Single choice	1=(1-5 ha) 2=(5-10 ha) 3=(10 -20 ha) 4= (25-50 ha) 5=(55-85 ha) 6=(Above 100 ha)
B8	How affordable was the unit cost/price of the improved seedling to you in the last three years of planting season?	2018, 2019 & 2020	Single choice	1= Very easy to afford 2= Easy to afford 3= Somehow easy to afford 4= Not easy to afford 5= Very difficult to afford
B9	Do you keep records of activities you undertake in the farm?		Single choice	1=Yes 2=No
B10	What is the type of landholding of your farm?		Single choice	1=Freehold/Owned/Inheritance 2=Freehold for a Period 3=Family Land 4=Rented/Leased
B11	Which planting method did you use?		Multiple choice	1=Row 2=Random
B12	Do you apply fertilizer and agrochemicals on the farm?		Single choice	1=Yes 2=No
B13 (linked to B12)	If "Yes", how do you access fertilizer/agrochemicals		Single choice	1=Purchase 2= Supply 3=Gift 4= Self
B14	Is your farm certified?		Single choice	1=Yes 2=No

B15 (linked to B14)	If "Yes", what type of certification?		Multiple choice	1=RSPO 2=Organic 3=Rain Forest Alliance 4=UTZ 5=Other (specify)
B16 (linked to B14)	How long has your farm been certified?		Single choice	1= 1 – 12 months 2= 1 - 2 years 2= above two year
B17 (linked to B14)	If "No", why has your farm not been certified?		Multiple choice	1= difficult / cumbersome process 2= costly 3= don't know/understand the process 4= don't understand the relevance 5= I will do it in a later time 6= too much documentation 7= unable to meet all the requirements 8 = other (specify): _____
B18	How many times do you brush your oil palm farm per year?	Put zero (0) if farm was not clean	Single choice	1=0 2=one time 3=Two times 4=Three times 5=Four times
B19	How do you acquire labour for farm maintenance?		Multiple choice	1=Family 2=Hired 3= Communal 4=FBO/group membership 5= Other (specify)
C	OIL PALM HARVESTING & PROCESSING & MARKETING			
C1	Which labour source do you use to harvest your farm?		Multiple choice	1=Family 2=Hired 3= Communal 4=FBO/group membership 5= Other (specify)

C2	How do you process the Fresh Fruit Bunches (FFB)?	FFB Means Fresh Fruit Bunches	Multiple choice	1= Self processing 2=Sold FFB
C3	If Fresh Fruit Bunches (FFB) are sold, to whom?		Multiple choice	1= Association or cooperative 2= Middle man 3= Oil Palm Mill 4= Other, specify
C4	How are the prices negotiated?		Multiple choice	1= Price fixed before the harvest (contract farming) 2= Price fixed before the harvest (negotiated by farmers' organization - group marketing) 3= Price fixed before the harvest between farmer and buyer 4= Negotiated at the time of the transaction by you 5= Negotiated at the time of the transaction by farmers' organization 6= Fixed by government 7= Fixed by buyer at time of transaction 8= Other (specify): _____
C5	What types of agreement are being made for the sale of FFB with the buyers?		Multiple choice	1= Verbal agreements 2= Signed contracts 3=Other, specify
C6	Do the buyers provide the following?		Multiple choice	1= Transport 2= Advance in credit 3= Advance in seeds, inputs 4= Other, specify 5= Nothing
C7	If self-processing, state the means of transporting oil palm bunches to the processing site?		Multiple choice	1=Family 2=Hired 3= Communal 4=FBO/group membership 5= Other (specify)
C8	What type of processing method do you use?		Multiple choice	1=Manual (Pit method) 2= Machine method (Screw press/digester)

C9	How do you acquire the processing machine?		Single choice	1= Direct purchase 2= On hire
C10	How efficient was this machine as compared to the traditional means of processing?	Efficiency in terms of time and cost	Single choice	1= Very Efficient 2= Efficient 3=Moderately Efficient 4= Less Efficient 5= Not Efficient
C11	How many women are involved in processing in your oil palm farm?		Integer	
C12	How many young people are involved in processing in your oil palm farm?	Young meant as people that are 24 years old or younger	Integer	
C13	How many people overall are involved in processing in your oil palm farm?	This figure should be equal or possibly larger than the figure provided for young people (because it includes also adults) and for women (because it includes also men)	Integer	
C14	What problems do you encounter when using the processing machine?		Open answer (text)	
C15	What was your average cost of production during the last two seasons (2019 & 2020)?	Farm maintenance Harvesting/processing Marketing/sales In Leone (Le)	Integer	Weeding/pruning = Harvesting = Collecting FFB = Processing = Others, specify =
C16	What are the main sources of the capital for managing your plantations?		Multiple choice	1= Support from the family, remittances, savings 2= Credit from intermediary (Eg. Agent, Middlemen)

				3= Credit from the company 4= Credit from the association 5= Support from Government 5= Other, specify
C17	What was your average annual production of palm oil in the past two years (2019 & 2020)?	Tons	Number, with decimals if needed (e.g. 1.5)	Tons:
C18	What was the average quantity of palm oil you and your household consumed in the past two years	Tons	Number, with decimals if needed (e.g. 1.5)	Tons:
C19	What was the average annual quantity of palm oil sold in the past two years (2019 & 2020)?	Tons	Number, with decimals if needed (e.g. 1.5)	Tons:
C20	What was the average unit price per ton in the past two years (2019 & 2020) ¹³		Leonean/1 Ton	Le
C21	Who were your main buyers during the last two years (2019 & 2020)?		Multiple choice	1=License Buying Company 2=Agent 4= Co-operative 5= NGOs /INGOs (e.g., WFP) 6= Market Trader 7= Other (specify): _____

¹³ Although in the questionnaire the unit price data were requested in SLL/Tons, respondents were more familiar with Batta, Gallons and Litres facing difficulties in provide the correct conversions to Tons. Enumerator have therefore collected the data in Litres with the only exception of respondents on the region of Kambia that preferred to report in Batta (equivalent to 20 litres). The figures were later converted into SLL/Tons

C22	How is the price of palm oil usually determined?		Multiple choice	<ul style="list-style-type: none"> 1= Price fixed before the harvest (contract farming) 2= Price fixed before the harvest (negotiated by farmers' organization - group marketing) 3= Price fixed before the harvest between farmer and buyer 4= Negotiated at the time of the transaction by you 5= Negotiated at the time of the transaction by farmers' organization 6= Fixed by government 7= Fixed by buyer at time of transaction 8= Other (specify):
C23	Did you store some of the palm oil after processing or you sold all of it?	To understand	Single choice	<ul style="list-style-type: none"> 1= Store some 2= Sold all
C24	What quantity of palm oil produced you normally stored per season? (tons)	tons	Integer	Tons:
C25	How do you store oil palm before marketing?		Single choice	<ul style="list-style-type: none"> 1= Off-farm storage 2= On-Farm storage 4= In containers 5= In plastic 6= Other (specify): _____
C26	During the last two farmer seasons (2019-2020) did you receive any of the listed trainings?		Multiple choice	<ul style="list-style-type: none"> 1= Pre and post-harvest losses 2= Best farm management practices 3= Certification processes 4= Techniques of intercropping and diversification 6= Integrated Pest Management (IPM) 7= Protection of water bodies/rivers/streams on farms 8= Safe use of chemicals 9= Identifying and use of processing equipment 11= Climate smart, organic and conservation agriculture 12= Marketing of produce 13= Financial management practices 14= None at all 15= Other (specify): _____

C27	How do you transport your palm oil to marketplaces or deliver to buyers?		Multiple choice	1=Motorcycle 2=Tricycle carrier 3=Non-fuel carriage 4= Other – Specify
C28	What are the foremost important infrastructure constraints affecting the oil palm business' growth and profitability?		Multiple choice	1= Lack of improved planting materials 2= Lack of land rights 3= Poor road/transport conditions 4= Lack of farm maintenance support 5= High cost of labour 6= Inadequate method of processing FFB 7= Lack of training 8= Unregulated prices 9= Other (specify): _____
D	SAVINGS, CREDIT, & OTHER SOURCES OF MONEY			
D1	How much savings do you have?	Amount in Leone	Integer	Le
D2	Over the past 12 months did you or anybody else in the household borrow money from an institution?		Single choice	1= Yes 2= No
D3	What is the use of the LARGEST amount your household has borrowed in the last two years (2019 -2020)?		Multiple choice	1= Wedding/Ceremony 2= Funeral Insurance 3= School fees 4= Purchased land 5= Oil palm production 6= Other agricultural crops 7= House (build/repair) 8= Other, please specify
D4	What is your other source of income?		Multiple choice	1= Other Cash Crop (Eg. Cashew, Cocoa, coffee) 2= Food Crops 3= Petty Trading 4= Transport Business 6= Mining 7= Salaried Worker (Formal Sector)

ANNEX IV: Minutes of focus group discussion meetings

A. Focus Group Discussions in Port Loko District

- **Location:** Mafoimarah village, Maforki Chiefdom, District: Port Loko
- **Stakeholder Group:** Oil Palm Smallholder Farmers Processors
- **Date:** 8th March 2021 at 13:00Pm
- **Number of focus group participants:** 25
- **Provide description of make-up for the focus group:** The group comprised men and women within the community whose main activity is palm oil production.
- **Facilitator/Note Taker(s):** Henry Yamba Kamara
- **Purpose statement:** The purpose of the FGD was is to further deepened the understanding of palm oil production, processing and marketing and its associated challenges in the Port Loko district.
- **Assent statement reviewed with focus group participants:** A brief assessment of the group was conducted to determine whether they have knowledge in palm oil production, processing and processing. It was observed that majority of them have a thorough idea of palm oil and are also engaged in the various farm activities

Questions	Notes
What type of palm oil are you producing? (The Dura or the Tenera or both)	The group said they processed dura palm oil harvested from wild treed
Where do you get the oil palm seedlings to plant and what is the average farm size per person?	These are wild trees that grow on their own. However, the group said there are some farmers in the village who planted Tenera and seedlings were obtained from local nurseries
Where do you get support to carry out your farming activities?	According to the respondent, they do not receive any support from government. However, they are been supported through communal within their communities. Women form small groups during harvesting and processing of the palm oil
Who does the harvesting and transportation of the FFB to the processing site?	Harvesting is normally done by men who sometimes work on hire, but the process is sometimes dangerous due to the height of the palm treed. Transportation of the FFB is normally done by women and sometimes children help but not always, according to group members
What method do you use to process the FFbs (Pit or machine method)	In terms of the processing method used in palm oil production, it was generally accepted that the pit method is the dominant in the community as farmers don't have the money to buy or hire the fabricated mini mills. The confirmed that, extraction rate is low when using the pit method and cost of labour is high too.
What is the total number and average age of men and women that are involve in the production, processing and marketing of palm oil?	In terms of the number of men and women, respondent came up with various numbers, based on the activities. It was clear from the respondent that men normally take the lead during production and farm maintenances. During processing and marketing, women are the main leaders. But in terms of decision making, there are women respondent who said, they normally take lead in decision making as a household. However, it was the general consensus of all members that it is the men that takes the lead in many of the farming activities.
Are children involved in the palm oil production?	Respondent said, they sometimes used their children to help in the transport of the bunches.
How do you store the palm oil after processing and where do you sell your palm oil?	Balm oil is stored in yellow containers known as "batta" which is 22 liter in size and the palm oil is normally sold to middlemen or traders who come to the village during peak season.
How do you determine the quality of the palm oil?	Quality is determined through testing and visual inspection. Smell, taste and color are the main determinant for good palm

	oil. They however, indicate that, some middlemen adulterate the palm oil by the time it is taken to bigger towns.
Have you received any form of training in the production of palm oil during the past three years?	According to the respondents, they have not received and form of training as knowledge of oil palm production is transferred from one generation to the other.
Why motivates you to go into palm oil production	The motivation behind the palm oil industry, according to some members is that, they see the business as a profitable one and the demand is high in the region and the selling price, particularly for red palm oil is good. Other said is because is part of their food, they prefer to produce it than to use their limited resources to buy.
What other crops do you grow apart from palm oil?	Some group members said they grow cassava and rice but not on al large scale as oil palm is their main crop for their livelihood. Few said they grow cashew and citrus crops but are all is small quantity less than one hectare.

Additional comments:

Production of palm oil, particularly the dura type is relatively high in port Loko district. Farmers are motivated to engage in the palm oil business as the demand remains high due to cross border trading activities and for edible purpose too. There is generally low extraction rate due to the type of processing method used, and the type of variety too.

B. Focus Group Discussion in Bonthe District

- **Location:** Gandabu Bakoi village, Kpanga Chiefdom
- **Stakeholder Group:** Oil Palm Smallholder Farmers (Producers, processors & marketers)
- **Date:** 11th March 2021 at 11:00am
- **Number of focus group participants:** 15
- **Provide description of make-up for the focus group:** The group comprised men and women within the community whose main activity is palm oil production.
- **Facilitator/Note Taker(s):** Henry Yamba Kamara
- **Purpose statement:** The purpose of the FGD was is to further deepened the understanding of palm oil production, processing and marketing and its associated challenges in the Port Loko district.
- **Assent statement reviewed with focus group participants:** A brief assessment of the group was conducted to determine whether they have knowledge in palm oil production, processing and processing. It was observed that majority of them have a thorough idea of palm oil and are also engaged in the various farm activities

Question	Notes
What type of palm oil are you producing? (The Dura or the Tenera or both)	The FGM are primarily palm oil producers and high concentration in the production of Tenera. There are few farmers that produces dura
Where do you get the oil palm seedlings to plant and what is the average farm size per person?	Respondents claimed that, farmers in the community have farmers between 5 – 10 hectares. Most of the farms are young between the of 5 – 10 years and most of them are of the improved variety sourced from community nurseries, government and from NGO.
Where do you get support to carry out your farming activities?	When asked about the motivation behind the palm oil business, some said, there appears to be an increase in large scale investment in the district in the past few years and even before and after the civil war, and this has encouraged them to continue with the production of palm oil as the price of the commodity continue to appreciate.

Who does the harvesting and transportation of the FFB to the processing site?	Tenera trees as not as high as the dura so harvest is done by the use of harvesting tool. This is carried by man and women transport the FFB to processing sites.
What method do you use to process the FFbs (Pit or machine method)	The most common method used in the processing of the palm oil fruits is the use of fabricated mini milling machines. Extraction is high compared to the pit method which is uncommon in the district. Cost of machine is however high and for those who can afford complain of high cost of maintenances. Service provides In terms of the processing method used in palm oil production, it was generally accepted that the pit method is the dominant in the community as farmers don't have the money to buy or hire the fabricated mini mills. The confirmed that, extraction rate is low when using the pit method and cost of labour is high too.
What is the total number and average age of men and women that are involve in the production, processing and marketing of palm oil?	In terms of the number of men and women, production is usually dominated by men although some large plantations are owned by women, usually widows. Processing is done by women but are supported by men especially in the operation of the mini mill which is mainly manual. Marketing is also lead by women as they normally keep custody of the palm oil after processing.
Are children involved in the palm oil production?	Respondent said, they sometimes used their children to help in the transport of the bunches. However, some respondents said children are only used to support on minor task but not the transportation of FFbs
How do you store the palm oil after processing and where do you sell your palm oil?	Respondent said, palm oil is normally stored in yellow containers known as "batta" which is 22 litre in size. Most of the oil is sold to middle men who buys for soap making or for refinery purposes. Generally, sale of teneral variety is slow compared to the red palm oil. The selling rice is also less than the cost of red palm oil. However, according to the respondents, extraction rate seems to be high compared to the red palm oil. Red palm oil processed in the district is brought to the big cities for sale.
How do you determine the quality of the palm oil?	Quality is determined through testing and visual inspection. Smell, taste and color are the main determinant for good palm oil. They however, indicate that, some middlemen adulterate the palm oil by the time it is taken to bigger towns.
Have you received any form of training in the production of palm oil during the past three years?	According to the respondents, some claimed that they received training on farm management from NGO's and government related projects.
Why motivates you to go into palm oil production	As for the motivation to engage is palm oil production, many respondents see it as a profitable business that will provide money to families on a regular bases for a long period of time.
What other crops do you grow apart from palm oil?	Some group members said they grow rice, coffee, but oil palm is their main crop for their livelihood. Some farmers are also engaged in other activities such as fishing.

Additional comments:

Production of palm oil, particularly the dura type is relatively high in port Loko district. Farmers are motivated to engage in the palm oil business as the demand remains high due to cross border trading activities and for edible purpose too. There is generally low extraction rate due to the type of processing method used, and the type of variety too.

ANNEX V: Key stakeholders consulted on qualitative information related to the Oil Palm Value Chain in Sierra Leone

Title	First name	Last name	Job title	Organization
Mr	Emmanuel	Konjor	Chief Director & Professional Head	Ministry of Trade and Industry
Mr	Victor	Bangura	Ag. Director Investment Promotion	SLIEPA
Mr	Bobson	Maggai	Ag. Director Export	SLIEPA
Dr.	James	Vibbi	Esecutive Director	Produce Monitoring Board
Prof.	Thomas	Yormah	Executive Director	SLSB
Dr.	Shaukat	Hussaine	CTA	UNIDO
				SOLIDARIDAD
Mr	Charles	Kamara	District Agriculture Officer	Ministry of Agriculture and Forestry (Port Loko)
Mr	Nyuma	Manigo	Snr. Extension Officer	Ministry of Agriculture and Forestry (Port Loko)
Mr	Idrissa	Kamara	M&E Officer	Ministry of Agriculture and Forestry (Port Loko)
Mr.	Pawusha	Kamara	Operations Manager	Ethical Agro Allied Farms (SL) Limited (Port Loko)
Mr.	Ambrose	Bindi-Kamara	District Agriculture Officer - Kambia	Ministry of Agriculture and Forestry (Kambia)
Mr.	Andrew	Samura	M&E Kambia	Ministry of Agriculture and Forestry (Kambia)
Mr	Mohammed	Fofana	Landowner/Farm – Private estate	Sobeymuwohinka Company Limited - Kambia
Mr	Hassan	Papa-Kamara	Small holder farmer	Local manual oil press processor/farmer Kambia Gbeleh Chiefdom
Mr	Francis	Kekura	District Agriculture Officer - Bonthe	Ministry of Agriculture and Forestry (Bonthe)
Mr	Tamba Charles	Kelli	Deputy DAO – Bonthe – Matru Jong	Ministry of Agriculture and Forestry (Bonthe)
Mr	Francis L.	Sandy	MAF Engineer	Ministry of Agriculture and Forestry (Bonthe)
Mr	Ghadiru	Boulley	Staff in a small holder group - Bonthe	Small holder group benefitting from EU/BAFFS Oil Palm Milling Machine produced by FINNIC
Mr	John	Kamara	Team Lead – Yandayhun Motema Bonthe Matru Jong township	Small holder group benefitting from EU/BAFFS Oil Palm Milling Machine produced by FINNIC
Mr	Alex	Fissan	District Agriculture Officer	Ministry of Agriculture and Forestry (Pujehun)
Mr	Idrissa	Kabba	Crop Officer	Ministry of Agriculture and Forestry (Pujehun)
Mr	Fanner	Mansaray	M&E	Ministry of Agriculture and Forestry (Pujehun)
Chief	Vandi	Kamara	Chief Vandi Kamara	Gandabu Bakoi village
Mr	John H.	Amara	Secretary General	ABC FFS, FBOs, Groups of farmers, Lower Jouma Village, Sowa Chiefdom, Pujehun
Mr	Jean	Tonks	Finance Manager er	SOCFIN Agriculture Company – Malen village Pujehun district
Mr	Mohamed	Kamara	Managing Director	NedOil
Mr	Alhaji	Mohammed	Owner	Soap making factory, Koribondo Bo district

Mr		Bella	Trader/exporter Oil palm to Guinea, Senegal, and Gambia	Koribondo highway Bod district
Mr	Paul	Buyawah	Proprietor	Local fabricator – Keane Metal Works
Mr	Emmanuel	Annan	Proprietor	Local Fabricator – Metal Workshop
Mr	Momodu	Koroma	Proprietor	Oil Palm Aggregator, Off-taker for domestic market sales
Mr.	Ali	Bao	General Manager	Natural Habitat, Zimmi
Mr.	Mohamed	Kamara	Group Director of Africa	Gold tree/Natural Habitat
Mr	Sahid	Kamara	Proprietor	MARICA Enterprise
Mrs	Dunstan	Williams	Proprietor	CAC Holdings
Mr	Jean-Baptiste	Combaz	Finance Manager	Socfin

ANNEX VI: Sierra Leone export value, quantities and Unit values

Exports of Palm oil (HS 1511) in USD '000															
Exporters	Exported value in 2014	Exported value in 2015	Exported value in 2016	Exported value in 2017	Exported value in 2018	Exported value in 2019	Exported value in 2020	Share of World exports 2020	Share of ECOWAS exports 2020	Average value 2014-2020	Growth 2014-2020	Growth 2018-2020	Growth 2019-2020	Share of World exports 2014-2020	Share of ECOWAS exports 2014-2020
World	34,709,176	29,346,605	27,959,991	33,621,856	30,457,740	27,923,044	32,471,930	1		30,927,192	-6%	7%	16%	1	
Economic Community of West African States (ECOWAS) Aggregation	309,614	339,429	321,848	332,473	349,664	432,847	276,108	0.9%	100.0%	337,426	-11%	-21%	-36%	1.09%	100.0%
Benin	120	18,195	11,784	14,546	12,680	6,592	3,367	0.0%	1.2%	9,612	2706%	-73%	-49%	0.03%	2.0%
Burkina Faso	-	-	-	455	40	-	-	0.0%	0.0%	71	#DIV/0!	-100%	#DIV/0!	0.00%	0.0%
Côte d'Ivoire	210,095	154,739	175,340	162,755	188,800	201,578	65,020	0.2%	23.5%	165,475	-69%	-66%	-68%	0.54%	49.0%
Gambia	2	3	4	3	-	7	2	0.0%	0.0%	3	0%	#DIV/0!	-71%	0.00%	0.0%
Ghana	61,129	96,172	82,668	103,518	79,694	108,781	109,611	0.3%	39.7%	91,653	79%	38%	1%	0.30%	27.0%
Guinea	705	854	578	1,364	1,571	1,080	982	0.0%	0.4%	1,019	39%	-37%	-9%	0.00%	0.0%
Guinea-Bissau	-	-	-	-	-	8	9	0.0%	0.0%	2	#DIV/0!	#DIV/0!	13%	0.00%	0.0%
Liberia				6,828	16,769	16,074	14,038	0.0%	5.1%	13,427	#DIV/0!	-16%	-13%	0.04%	4.0%
Mali			774	133	116	34	278	0.0%	0.1%	267	#DIV/0!	140%	718%	0.00%	0.0%
Niger	9,730	28,607	323	1	167	55,274	15,183	0.0%	5.5%	15,612	56%	8992%	-73%	0.05%	4.0%
Nigeria	-	158	127	2,522	174	32	86	0.0%	0.0%	443	#DIV/0!	-51%	169%	0.00%	0.0%
Senegal	2,160	10,130	2,261	3,576	10,457	1,410	439	0.0%	0.2%	4,348	-80%	-96%	-69%	0.01%	1.0%
Sierra Leone	65	408	27,388	1,540	8,651	5,791	3,488	0.0%	1.3%	6,762	5266%	-60%	-40%	0.02%	2.0%

Togo	25,608	30,163	20,601	35,232	30,545	36,186	63,605	0.2%	23.0%	34,563	148%	108%	76%	0.11%	10.
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Source: Author's calculations based on ITC Trade Map data

Note: Data based on the partner reported data (Mirror data) are shown in orange. The quantities shown in light green are estimated by UNSD. The data resulting from the aggregation of mirror and direct data are shown in purple. The cells highlighted in yellow indicate what seem to be anomalies in the time series.

Exports of Palm oil (HS 1511) in Tons														
Exporters	Exported quantity, Tons in 2014	Exported quantity, Tons in 2015	Exported quantity, Tons in 2016	Exported quantity, Tons in 2017	Exported quantity, Tons in 2018	Exported quantity, Tons in 2019	Exported quantity, Tons in 2020	Share of World exports 2020	Share of ECOWAS exports 2020	Average 2014-2020	Growth 2014-2020	Growth 2018-2020	Growth 2019-2020	Share of World exports 2014-2020
World	43,292,673	47,641,036	42,449,814	55,464,391	48,662,267	50,308,695	No Quantity	N/A		47,969,813	#VALUE!	#VALUE!	#VALUE!	
Economic Community of West African States (ECOWAS) Aggregation			429,661		491,777	565,290	378,977	N/A	100.0%	466,426	#DIV/0!	-23%	-33%	0.97
Benin	99	74,480	41,627	18,553	13,395	No Quantity	6,708	N/A	1.8%	25,810	6676%	-50%	#VALUE!	0.05
Burkina Faso	-	-	-	349	35	-	-	N/A	0.0%	55	#DIV/0!	-100%	#DIV/0!	0.00
Côte d'Ivoire	243,213	227,324	212,985	173,243	226,610	281,227	84,911	N/A	22.4%	207,073	-65%	-63%	-70%	0.43
Gambia	4	2	6	14	-	17	12	N/A	0.0%	8	200%	#DIV/0!	-29%	0.00
Ghana	No Quantity	108,154	127,119	102,175	88,686	135,935	115,275	N/A	30.4%	112,891	#VALUE!	30%	-15%	0.24
Guinea	1,031	650	416	No Quantity	3,360	1,574	1,160	N/A	0.3%	1,365	13%	-65%	-26%	0.00
Guinea-Bissau	-	-	-	-	-	14	14	N/A	0.0%	4	#DIV/0!	#DIV/0!	0%	0.00
Liberia				7,385	23,490	31,500	24,156	N/A	6.4%	21,633	#DIV/0!	3%	-23%	0.05
Mali			1,379	236	229	74	328	N/A	0.1%	449	#DIV/0!	43%	343%	0.00
Niger	8,984	33,638	169	3	285	18,344	12,844	N/A	3.4%	10,610	43%	4407%	-30%	0.02
Nigeria	-	-	No Quantity	No Quantity	653	864	2,165	N/A	0.6%	736	#DIV/0!	232%	151%	0.00

Senegal	1,897	10,831	3,026	6,762	12,737	1,776	307	N/A	0.1%	5,334	-84%	-98%	-83%	0.01
Sierra Leone	78	213	312	1,559	61,998	8,679	4,580	N/A	1.2%	11,060	5772%	-93%	-47%	0.02
Togo	51,338	57,483	42,622	60,884	60,299	85,286	126,517	N/A	33.4%	69,204	146%	110%	48%	0.14

Source: Author's calculations based on ITC Trade Map data

Note: Data based on the partner reported data (Mirror data) are shown in orange. The quantities shown in light green are estimated by UNSD. The data resulting from the aggregation of mirror and direct data are shown in purple. The cells highlighted in yellow indicate what seem to be anomalies in the time series.

Exports of Palm oil (HS 1511) in Unit Values (USD per Ton)											
Exporters	2014	2015	2016	2017	2018	2019	2020	Min unit value 2014-2020	Max unit value 2014-2020	Average unit value 2014-2020	
	World	802	616	659	606	626	555		555	802	644
Economic Community of West African States (ECOWAS) Aggregation	1010		749	889	711	754	729	711	1010	807	
Niger	1083	850	1911	333	586	3013	1182	333	3013	1280	
Burkina Faso				1304	1143			1143	1304	1224	
Senegal	1139	935	747	529	821	794	1430	529	1430	914	
Guinea	684	1314	1389		468	686	847	468	1389	898	
Sierra Leone	833	1915	87782	988	140	667	762	140	1915	884	
Ghana		889	650	1013	899	800	951	650	1013	867	
Côte d'Ivoire	864	681	823	939	833	717	766	681	939	803	
Liberia				925	714	510	581	510	925	683	
Benin	1212	244	283	784	947		502	244	1212	662	
Guinea-Bissau						571	643	571	643	607	
Mali			561	564	507	459	848	459	848	588	
Gambia	500	1500	667	214		412	167	167	1500	577	
Togo	499	525	483	579	507	424	503	424	579	503	
Nigeria					266	37	40	37	266	114	

Source: Author's calculations based on ITC Trade Map data

Note: Data based on the partner reported data (Mirror data) are shown in orange. The quantities shown in light green are estimated by UNSD. The data resulting from the aggregation of mirror and direct data are shown in purple. The cells highlighted in yellow indicate what seem to be anomalies in the time series.

ANNEX VII: Potential markets for Palm oil exports from Sierra Leone and available sources of information

The following matrix of potential market destinations and available information was elaborated by ITC in consultation with the Ministry of Trade and Industry of Sierra Leone as a starting point to identify the need for additional target market studies under the WACOMP Sierra Leone.

Type of market	Potential market	Rationale
1. Extra-African markets	UK	<ul style="list-style-type: none"> According to official statistics reported by Sierra Leone¹⁴, the UK is one of the largest importers of Sierra Leonean palm oil, with approximately USD 1mil imported since 2014. A conversation with selected exporters indicated that they would like to have a better understanding of the market in United Kingdom given the presence of large diaspora, which can provide a good niche opportunities A study has already been conducted in the framework of the WACOMP Sierra Leone programme https://www.intracen.org/WACOMP-Documents/
	Netherlands	<ul style="list-style-type: none"> According to ITC Trade Map¹⁵, this is one of the main EU importers of palm oil from Sierra Leone. It present the highest unit value (USD 1115 per ton) recorded in 2019 for Sierra Leone exports of palm oil The Netherlands are also one of the top 5 importers of palm oil in the World in 2019¹⁶ However, according to Euromonitor reports palm oil is disappearing from the market as unethical production becomes obsolete. The manufacturers that will make use of it tend to switch toward sustainable palm oil¹⁷.
	Portugal	<ul style="list-style-type: none"> According to ITC Trade Map¹⁸, in 2019 this has been one of the main EU importers of palm oil from Sierra Leone. Amounts exported in 2019 totalled 1620 tons and has been increasing since 2017 (before that year no exports to Portugal where recorded)
	Other European markets	<ul style="list-style-type: none"> Information on exporting to most promising markets in Europe is available through the CBI website https://www.cbi.eu/market-information/vegetable-oils/palm-oil High market value particularly for premium market (Organic/RSPO) can be sold up to \$1400/ton Even the normal market value for palm in these regions can go up to \$900/ton The market is also attractive for Africans living in these areas for edible purposes
	USA	<ul style="list-style-type: none"> According to ITC Trade Map¹⁹, it is the largest importing country for Sierra Leone after the regional market and the European market as a whole. Differently from other clients markets, the US has been importing constantly palm oil from Sierra Leone (even though in small amounts ranging from 5 tons in 2011 to 413 in 2019) during the last 10 years High market value particularly for premium market (Organic/RSPO) can be sold up to \$1400/ton

¹⁴ ITC Trade Map Data: www.trademap.org

¹⁵ ITC Trade Map data: www.trademap.org

¹⁶ ITC Trade Map data: www.trademap.org

¹⁷ Euromonitor, Edible Oils in the Netherlands, November 2020, <https://www.euromonitor.com/edible-oils-in-the-netherlands/report>

¹⁸ ITC Trade Map data: www.trademap.org

¹⁹ ITC Trade Map data: www.trademap.org

		<ul style="list-style-type: none"> ▪ Even the normal market value for palm in these regions can go up to \$900/ton ▪ The market is also attractive for Africans living in these areas for edible purposes
	Australia	<ul style="list-style-type: none"> ▪ According to ITC Trade Map²⁰, although in small amounts (below 60 tons per year), this country has been importing palm oil from Sierra Leone since 2009. ▪ A report from NetBalance foundation provides information on the Australian palm oil industry and the main product usage in the market²¹
2. ECOWAS regional markets	General	<ul style="list-style-type: none"> ▪ The market value is low compared to Europe/USA and stands at \$500/ton. ▪ This market is predominantly an industrial purpose for soap making. ▪ However, there is little or no concern for premium products in the ECOWAS markets ▪ According to a Palm oil Value Chain Analysis conducted in Sierra Leone²², palm oil is mainly used domestically for the production of soap and exported to the West African regional market, where it has large demand. ▪ General information on the ECOWAS market for palm oil has been provided by an ITC report conducted in 2012²³
	Senegal	<ul style="list-style-type: none"> ▪ Discussions with selected exporters indicated that they would like to have a better understanding of the market Senegal market to enhance existing business. ▪ According to ITC Trade Map²⁴, has been the main importing country from Sierra Leone during the last couple of years ▪ According to ITC Export Potential Map, Sierra Leone has an untapped export potential of USD 179,000 for Palm oil (excl. crude) & fractions toward Senegal.²⁵
	Mali	<ul style="list-style-type: none"> ▪ Official trade statistics do not report any exports from Sierra Leone to Mali ▪ Nevertheless, a 2017 report from the FEWS NET indicated strong market linkages with Mali (Guinea and Senegal) in relation to palm oil exports ²⁶. ▪ Discussions with selected exporters indicated that they would like to have a better understanding of the market to identify new opportunities also for reasons of geographical proximity in comparison to regional competitors
	Guinea	<ul style="list-style-type: none"> ▪ A portion of the palm oil produced transits through Guinea and Liberia also in the form of soap. ▪ A conversation with selected exporters indicated that they would like to have a better understanding of the Guinea market due to geographical proximity and since most of the palm oil trade transits there.
3. Other African markets	East African markets (Kenya and Sudan)	<ul style="list-style-type: none"> ▪ These markets are mainly for peacekeeping troops operating in these areas, as oil palm is very scarce in the Eastern African Regions. ▪ However, Euromonitor International reported in November 2020, that middle class consumers in Kenya are shifting their consumption to healthier oils such as olive oil, canola oil and sunflower oil²⁷

²⁰ ITC Trade Map data: www.trademap.org

²¹ NetBalance, Palm Oil in Australia - Facts, Issues and Challenges, March 2013, <https://www.bsigroup.com/LocalFiles/EN-AU/RSPO/PalmOilinAustralia.pdf>

²² CIRAD, Palm oil Value Chain Analysis in Sierra Leone, 2018. Available at: <https://agritrop.cirad.fr/589437/>

²³ ITC, Palm Products Global Markets and Developments, 2012, https://www.intracen.org/uploadedFiles/intracenorg/Content/About_ITC/Where_are_we_working/Multi-country_programmes/Pact_II/Palm%20Oil%20Report%202012.pdf

²⁴ ITC Trade Map data: www.trademap.org

²⁵ ITC Export Potential Map: <https://exportpotential.intracen.org/>

²⁶ FEWS NET, *Sierra Leone: Staple Food Market Fundamentals*, February 2017, https://fews.net/sites/default/files/documents/reports/Sierra%20Leone%20MFR_final_20170228_0.pdf

²⁷ Euromonitor International, *Edible Oils in Kenya*, November 2020