

SNAPSHOT: LIBERIA'S VEGETABLES MARKET

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EXECUTIVE SUMMARY

In 2021, GROW assessed* the current state of the vegetables market-defining market channels, key constraints, and opportunities to shift business norms that could spur inclusive growth.

There is unmet demand for quality vegetables in Liberia. In county markets, many farmers supply the same vegetables (creating seasonal gluts) and purchasing power is low.

Vegetables are a relatively 'new' cash crop in Liberia, which has not received much government investment. Vegetables are widely grown, 60% of farming households are involved in some form of vegetable cultivation (LISGIS Agriculture Recall Survey 2016). Agriculture, forestry and fishing account for 39% of Liberia's 2019 real Gross Domestic Product (GDP) (www.data.worldbank.org).

The bulk of vegetables for the urban market is traded through Redlight market. At the same time, this appears to be the least conducive market channel to stimulate improvements in vegetable variety and quality. Traders are a double-edged sword; they prefinance farmers - without this most farmers would struggle to buy inputs such as seeds.

Traders also literally squeeze farmers by determining the price (this is market-wide): buying produce by the bag and then squeezing too much in a single bag, deducting the resulting wastage from farmer revenues. With few exceptions, signs were not found of interest in investment in better storage and packaging to reduce wastage and improve quality among traders.

Farmers complain about traders and switch between them, but are at the same time dependent on them. They send produce using local transport without any supervision which also leads to wastage and poor quality. Farmers do not have access to alternative sources of financing for inputs or buyers who are not members of what effectively is the Redlight market cartel.

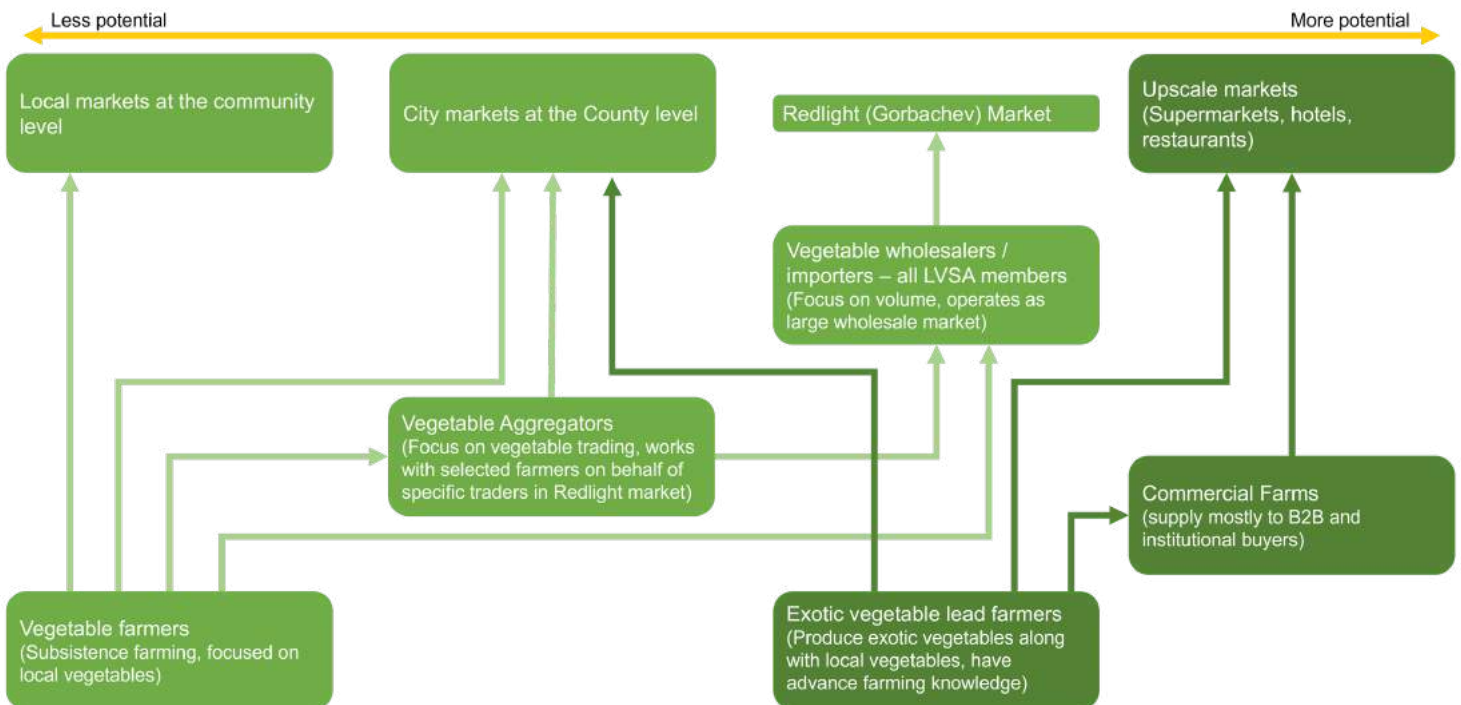
The most dynamic segment of the vegetable market consists of supermarkets and some institutional buyers (hotels etc.) in search of better-quality vegetables and the commercial farms (and some traders) seeking to supply them. They prefer not to source from Redlight. Here one consistently finds investment in, for instance, storage and agronomic advisors to improve quality and variety. There is concrete interest to include more smallholder farmers in these channels as a means to scale up supply.



VEGETABLE MARKET CHANNELS

| Vegetable Markets/Channels | Key Characteristics |
|---|--|
| Local markets at the community level | <ul style="list-style-type: none"> Volume traded in these markets are relatively small. Most farmers grow local vegetables (e.g., chili pepper, bitterballs, kitley, sweet potato, plantain, etc.) for their own consumption and sell the surplus amount, so the local demand for these local vegetables are low and markets are saturated in season. Very little demand for higher-value exotic vegetables (e.g., tomato, cabbage, carrot, eggplant, etc.) as they are not very common in the local diet and expensive. Overall, these markets offer very limited inclusive growth potential. |
| Large city markets at the county level | <ul style="list-style-type: none"> Small quantities of local and exotic vegetables from nearby production zones are traded here. There is demand for selected exotic vegetables like tomato, cabbage, carrot, cucumber, etc., but demand is small and seasonal Overall, these markets offer limited inclusive growth potential. |
| Redlight in Monrovia | <ul style="list-style-type: none"> Central kitchen market in Monrovia, trades the largest volume of vegetables. Vegetables come from all main production zones across the country. Largest market for trading exotic vegetables that are either imported or grown locally. Offers higher price for vegetables compared to local markets and county level city markets. Trading in this market are controlled and supervised by a network of vegetable traders and almost inaccessible for individual producers. A potentially important market channel, but trade practices currently restrict growth. |
| Upscale markets that include supermarkets, hotels and restaurants | <ul style="list-style-type: none"> Have a reasonable demand for both local and exotic vegetables. Cater a wide range of consumers with high purchase capacity. Has business relation with local vegetable traders, commercial farms and selected individual producers who can supply to them as per their standard. This channel has potential to trade larger volumes, is most dynamic. |

Market Channels Schematic



REDLIGHT: BULK MARKET TRADING - 1



Redlight (Gobachop) is the largest wholesale and retail vegetable market: Local and imported vegetables are traded through here to different retail markets in and around the capital city.

All vegetable traders operating in this market are members of the Liberian Vegetable Sellers Association (LVSA), which is the central association of all vegetable traders. During the conversation with vegetable traders, there was no indication of any other formal or informal network's existence or operation in vegetable trading in Monrovia.

LVSA dictates the market price. This is possible because all vegetable trade in Redlight goes through LVSA members – only LVSA members are allowed to trade vegetables in Redlight. This is reinforced by LVSA members pre-financing farmers.

Almost all LVSA members pre-finance farmers to ensure regular supply of vegetables. They provide cash for inputs or the physical inputs themselves to farmers in exchange of buy-back guarantee. The farmers need to sell back to their financing traders through marked bags to ensure no other trader will buy from them. Depending on the investment capacity of the traders, the number of farmers they pre-finance vary. A small-scale trader would pre-finance 3 to 5 farmers, whereas a large trader would pre-finance as many as 20 farmers. Traders also buy from other farmers and aggregators from different locations, based on the demand of vegetables in the market.

Pre-financing is essential for farmers to invest in inputs – this is the only form of financing covering a whole season farmers have access to – but also presents a double-edged sword.



REDLIGHT: BULK MARKET TRADING - 2



Pre-financed farmers' profit margins are squeezed by traders. Farmers send their produce through local transport (typically in bags) and traders collect them at Redlight market. Farmers mentioned, after receiving the bags the traders report that the bags are not fully filled in and then squeeze in more produce per bag. For example, farmers mentioned if they send 10 bags, that would be turned into 8 bags in this process. Then the traders would report about 2 more bags of produce got damaged during transport, reducing the total they would be paid for to 6 bags only. Since the traders negotiate the price per bag, not by weight, this is how they try to buy more and pay less, and cost of damage/wastage is passed on to the farmers.

The relationship between traders and farmers is generally one of limited trust. Majority of the farmers lack financial resources at the start of the planting season, so they need to take money from traders if they want to grow more commercial crops, for which they have to buy seeds and (some) agro-inputs. There are examples of farmers who have been able to save enough money to buy their own inputs and then got out of this pre-financing relationship with traders.

Overall, the current arrangement is working in favor of the traders. It is a volume and margin driven market where traders make margins by buying large volumes as cheap as possible and selling them at high prices. The traders do not have an incentive to innovate or change their business model or focus on quality of supply as they dominate the market.

Positive deviance: We also found examples of traders themselves having a farming background, who had gotten into trading and had become LVSA member. These traders have relatives or acquaintances in the community whom the pre-finance. They are willing to pay better price. They still use local transport, so transport and packaging related wastage is still an issue. Generally, these are smaller traders who only deal with a handful of farmers.



SUPERMARKETS, HOTELS: HIGHER VALUE TRADING - 1

As mentioned, rural households have limited demand for vegetables beyond what they grow. Local diet comprises of a few vegetable (mostly chili pepper, kittley, bitterballs, avocado, plantain, okra; sometimes a bit of cabbage, tomato and cucumber). Most rural households grow what they consume and not much of that is locally traded. Any surplus goes to wholesale market in Monrovia where the major trade takes place.

Supermarkets in Monrovia have large demand for a variety of vegetables including exotic varieties. There is demand for tomato, cabbage, onion, carrot, eggplant, potato, lettuce, parsley, coriander leaves, green chili, zucchini, cucumber and bell pepper. Apart from expat communities and affluent Liberian households, hotels and restaurants are major consumers of these exotic vegetables.

Majority of exotic vegetables are imported. Tomato, onion, potato, zucchini, carrot and bell pepper are imported almost all year round. There are some producers who are growing tomato, onion and carrot locally – the volume produced is little compared to the demand. Cabbage, eggplant, green chili, avocado and okra are both grown locally and imported based on seasonality. Lettuce, parsley, coriander leaves and other herbs are grown locally in very small quantity but also imported at times.

Most exotic vegetables are imported from neighboring countries by local traders and are not always recorded. Hence, exact data on local production and import volumes is difficult to find. According to FAO, in 2018, Liberia produced about 3,500MT of tomato and imported about 41,000MT.

Stop N Shop usually imports two 20ft standard containers of vegetables, fruit and other food items every month. However, during the festival months (Eid, Christmas, etc.) they import one container every week. Harbel – another prominent supermarket chain – imports one 20ft container every month and two during the festival months. Each container can carry about 20MT of goods and one third of that would be vegetables. Therefore, these two supermarket chains on an average import about 20MT of vegetables per month, the equivalent of what 30 HH can produce (assuming the average yield per Ha is 2MT, each farming HH's average land size is 1.6Ha and they employ 30% of their land for exotic vegetable production). To meet their total year demand hundreds of farmers would be needed.

Typically, vegetable import increases during April and May (at the start of the rainy season and local planting season) and in November and December (the local dry season when production is low).



SUPERMARKETS, HOTELS: HIGHER VALUE TRADING - 2

Supermarkets always prefer sourcing their produce from commercial farms. To manage their supply chain, supermarkets and major hotels buy locally and import. They keep contact with several commercial farms and (not preferred) local Redlight traders (so that they can call and check who has supply and buy from them. They also resort to importing vegetables directly themselves from Morocco, Spain and France to fill unmet demand. They prefer not to buy from Redlight unless vegetables are scarce due to inconsistency in quality.

For example, Harbel, the largest supermarket with five outlets in Monrovia, is starting to reduce importation of exotic vegetable and sourcing more from commercial farms when possible. Mamba Point hotel has established their own farm in 2018 and grow about 30% of their total demand and source the rest from selected local suppliers.

Few commercial farms can supply the exotic vegetables demanded by the upscale consumer segment, hotels and restaurants. The supermarkets and institutional buyers do not yet have any long-term supply agreement with these suppliers. This is mainly because the production and supply are not consistent. There is a preference to source from commercial farms, but there are mostly still in the process of getting established and gaining scale.

Commercial farms cannot meet demand. Commercial farms want to source from SHF as they cannot meet the demand for vegetables.



VEGETABLES WITH GROWTH POTENTIAL

Based on this assessment, GROW should aim to boost production of two different categories of vegetables that are in demand:

Category 1:

- **Vegetables in high in demand among middle to upscale Liberian households and expats and mostly locally grown.** The market has the capacity to absorb supply when producers are able to grow them in larger quantities.
- Consumers usually have concerns about size (too small), shape (not uniform), and firmness (too soft). Retailers complain about packaging, wastage during handling and limited shelf life. These inconsistencies in quality are mostly due to disease, poor quality inputs, their inconsistent use and inappropriate post harvest handling. This can be improved by improving quality of input, better agricultural practices and post harvest handling.
- There is potential for value addition (processing) to produce processed food like sweet potato chips or flour, so that there are opportunities for producers to sell to alternative markets.

Category 2:

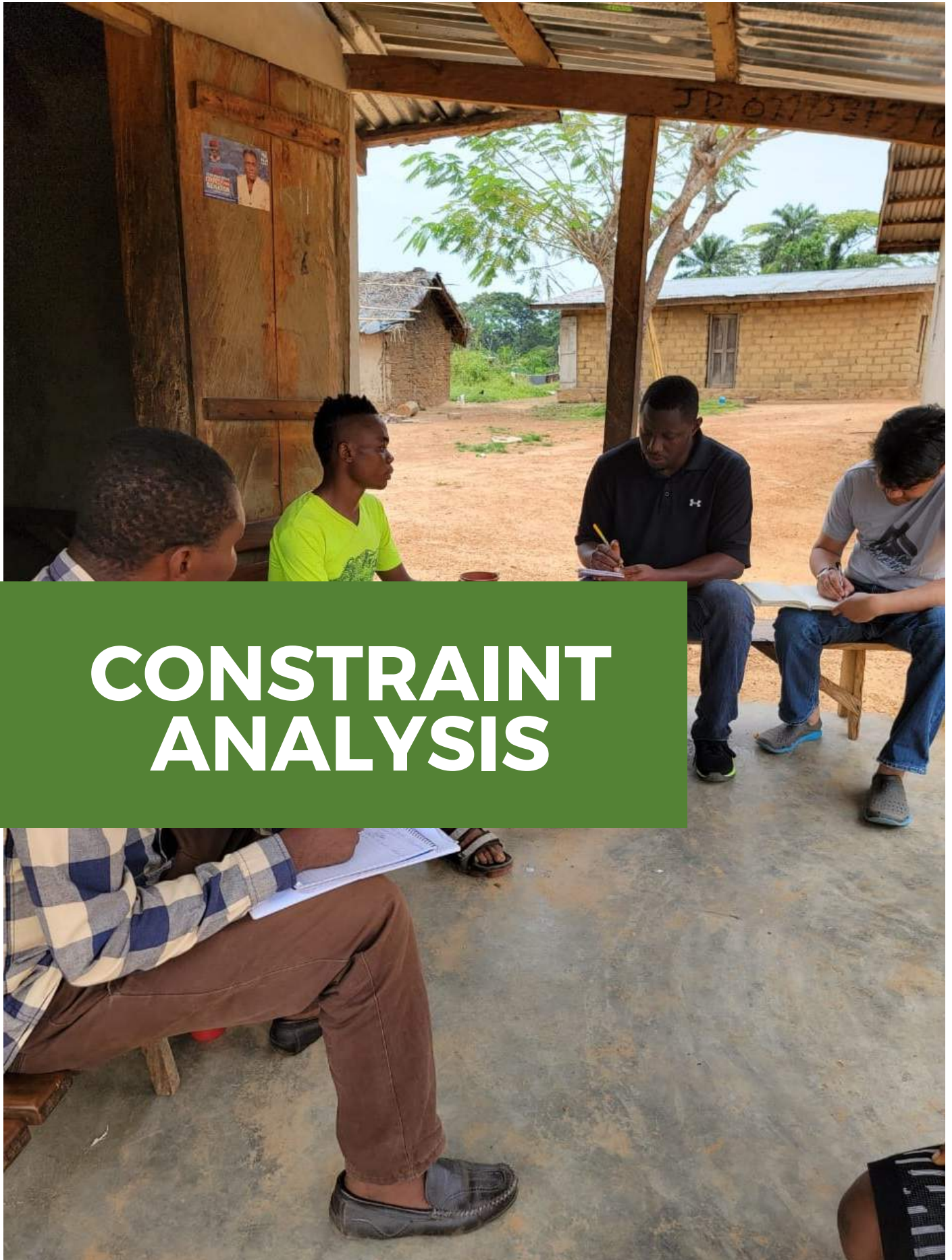
- **Vegetables high in demand among expats and the upscale market segment that are currently being imported.** Based on the discussion with two large supermarket chains, they sell around 20MT of vegetables per month through their outlets. These quantity doubles during the festival months. Sizeable local production will present opportunities for import substitution.
- **Familiar in local diets** and have a reasonable demand among Liberian households. This, will encourage the producers to grow more.
- There is evidence of nascent local production which can be scaled up, so that the producers do not need to acquire any sophisticated or new set of skills/knowledge to grow them.

The vegetables that fall under these categories are shown in the table below:

| Category 1 | Category 2 | Not priority at this stage* |
|--------------|-------------|-----------------------------|
| Chili pepper | Tomato | Coriander leaves |
| Sweet potato | Onion | Parsley |
| Watermelon | Bell pepper | Garlic |
| Plantain | Cabbage | Green chili |
| | Carrot | Zucchini (Courgettes) |
| | Cucumber | |
| | Eggplant | |
| | Lettuce | |

*There are certain vegetables such as Zucchini which are better to be left out of focus at this stage. This has little demand and there are examples when few advanced farmers and commercial farms tried to grow them without much success. They either could not produce them in uniform shape and size, or it got infested by insects and diseases that the producers could not manage, or required specific weather conditions.





CONSTRAINT ANALYSIS

Market Access and Logistics

| Market limitations | Description |
|--|---|
| Limited investment in storage, packaging or other means to reduce wastage and/or to increase value-added sourcing | <p>Traders have very minimal incentive to invest in storage and packaging</p> <ul style="list-style-type: none"> • Their business model is about volume fresh trading: securing volumes and making margins by suppressing purchase prices, quickly selling off at (slightly) higher prices. This applies both to traders sourcing domestically and across the border. • The cost of wastage due to poor transport, packaging is born by the farmers <p>Only a few traders are willing to change or offer better prices</p> <ul style="list-style-type: none"> • Alternative trader business models were not observed in Redlight (with few exceptions). • Traders coming from within the community are willing to offer better prices and agree on how the farmers pack the produce so that they do not lose out; however, they are few in number, are limited in capacity and can only work with very few farmers. |
| The few market actors with the interest and incentive to invest in storage, transport, and packaging lack access to information and networks to source equipment | <p>Traders interested in pursuing an adjusted business model do not know how to;</p> <ul style="list-style-type: none"> • They are not aware of any specialized packaging for vegetables that can reduce the post-harvest wastage during collection and transport and can increase its shelf life. <p>Commercial farms are interested in value-adding sourcing, having concrete plans.</p> <ul style="list-style-type: none"> • They do not have access to the right information on technical specification for storage and transport facilities that are required for different types of vegetables. • Materials and machinery need to be imported for such facilities. Commercial farms import some of these directly (especially more sophisticated equipment). Importers of small equipment are locally present. Often 'new' commercial farms lack networks and information to work out what to get from where. |

Agronomic Information, Education and Advisory Services

| Constraint Area | Explanation and Underlying Causes |
|---|---|
| Farmers have limited access to information; the information that is available is mostly 'static' (does not get updated) and is less relevant for 'new' high value crops | <p>Additional Government extension services are required, and resources are limited</p> <ul style="list-style-type: none"> • The government extension officer to farmer ratio in Liberia is 1:33,000. Though employees of government, most of the extension officers are deployed under different donor funded programs and focus on permanent cash crops. • Given the number and focus, government extension services are unlikely to drive the adoption of better cultivation practices and high value exotic vegetables. <p>Traders rarely offer agronomic information to farmers</p> <ul style="list-style-type: none"> • Most traders operate with a model that provides little incentive for them nor their farmer suppliers to invest. <p>Agro-dealers have some agronomic knowledge</p> <ul style="list-style-type: none"> • GROW supported 22 agro-dealers in 2018-20 with training on general agronomic, business and marketing practices; 17 agro-dealers are still providing advisory services to the smallholders and working with agents in their communities. • In an environment in which farmers have virtually no access to other sources of information, these agro-dealers provide a lifeline. If conditions do not change, the current information remains relevant. <p>Commercial farms employ agronomists but using these to educate out-growers is rare.</p> |



Agronomic Information, Education and Advisory Services

| Constraint Area | Explanation and Underlying Causes |
|---|--|
| Commercial actors have struggled to turn information services into a commercially viable business model | <p>Agricultural radio programs halted due to lack of sponsorship</p> <ul style="list-style-type: none"> The School of Agriculture of Liberian International Christian College (LICC) in Ganta ran a radio program on general agricultural information for a year which was funded by University of Maryland. Radio programs discontinued once funding finished. <p>Agricultural courses are offered by county level colleges, but with limited outreach</p> <ul style="list-style-type: none"> School of Agriculture of LICC has offered a short ,16 hours course on general agricultural practices, which attracted 20 paid students. LICC has offered a longer 3-year commercial diploma course on general agriculture since 2009. The graduates have gone on to become input dealers in their community, commercial farmers and politicians, as examples. Many students note an intent to join government extension services, but employment opportunity is limited. |

Seeds and Agro-inputs

| Constraint Area | Explanation and Underlying Causes |
|--|---|
| Most farmers can be described as subsistence farmers, growing local vegetable varieties with few inputs | <p>Most farmers grow local vegetables in a 'low input – low output' fashion</p> <ul style="list-style-type: none"> Most farmers produce local vegetable varieties using self-retained seeds that have likely lost genetic purity. This affects the quality and physical attributes of the produce. |
| Farmers have insufficient access to financial resources and information to invest in more high-value vegetables | <ul style="list-style-type: none"> Quality seeds for tomatoes, onions, cabbage, watermelons, cucumbers, bell peppers, okra, carrots and lettuce come from across the border, but are 3-8 times more expensive than locally retained seeds. Farmers have limited financial capacity to change practice nor invest in seeds and other inputs. For instance, input shops sell fertilizer bags in small packets to match farmers' buying capacity. Farmers rely on pre-financing from traders. However, outside of these mostly exploitative relationships, farmers lack access to credit to buy inputs at the start of the season. Farmers have limited access to information on how to productively cultivate more expensive vegetable varieties, making them hesitant to invest. |
| Local seed multiplication that could strike a middle ground between expensive high-yielding imported seeds and low-yielding affordable seeds, is almost non-existent | <p>Producers of quality local vegetable seeds are scarce</p> <ul style="list-style-type: none"> According to CARI, there is no formal seed multiplier present in Liberia. Some lead farmers occasionally sell their retained seeds. These are not commercial operations. <p>No investment from international seed companies</p> <ul style="list-style-type: none"> Lead international seed companies operating in neighboring countries are not present in Liberia. Many express concern regarding Liberia's addressable market. However, fertilizer companies are growing interest. <p>Absent regulatory framework for inputs and no infrastructure for seed testing or input quality control</p> <ul style="list-style-type: none"> USAID supported the development of the Liberian Seed Development and Certification Agency Act in 2017 and it was passed in 2019. However, the act has not operationalized due to lack of resources. There is no laboratory to conduct soil testing and seed testing which is crucial to regulate the quality of seeds and other inputs that are available on the market or to recommend nutrients required to grow crops. The Environmental Protection Agency of Liberia published a list of banned chemical components, pesticides, and fungicides in 2000 – this is the latest version. |



Other Specialized Agricultural Services

| Constraint Area | Explanation and Underlying Causes |
|---|---|
| Farmers lack access to mechanized agricultural services | <p>Cultivation practices are still mostly manual, irrespective of farm size.</p> <ul style="list-style-type: none">• Farmers use common agricultural tools including; hoes, cutlasses, rakers, shovels etc.. This process is labor intensive and costly. Labor costs constitute 20 to 35% of total cultivation costs.• Mechanization services are scarce in Liberia.• There is an absence of irrigation facilities. Access to a source of water can contribute to success in horticulture cultivation.• The availability and access to the aforementioned services determines smallholder farmers ability to diversify their crop choice. |





RECOMMENDATION - EMERGING SUPPLY CHAINS

The most dynamic emerging vegetable supply chain in Liberia is a short, integrated supply chain between supermarkets and other institutional buyers (hotels and restaurants), larger commercial farmers and, potentially, smallholder farmers included as out growers. The focus is on quality, variety and consistency not supplied through regular fresh market trading. Because of this focus there is an interest and incentive to invest in storage, transport, agronomic advice and inputs.

Longer-term opportunities can be found when a number of early local MSMEs together start to create an environment in which there is more room for quality than in regular fresh market trading. This environment is less sophisticated than the short, integrated supply chain described above, but has the potential to include more smallholder farmers in the long run. This consists of:

- The emergence of mutually beneficial trading models between traders and farmers
- Investment in local commercial seed production to create more affordable inputs that are better fit for Liberia
- More diverse access to sources of finance
- More local access to information on vegetable cultivation to increase yields, reduce risks (for instance when the School of Agriculture can train more farmers and agro-dealers).
- Local investment in storage.

