

Introduce Kenyan Frozen Avocado to the Netherlands

Article

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Commissioners: Woody Maijers

Supervisor: Caicheng Huang

Person Commissioned: Xiaoyi Zhang

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Xiaoyi Zhang



Introduction

The general export season for Kenya is from April to September. It will compete with Peru, South Africa, Israel, Mexico, and Spain. These competitors all have good reputation on quality (CBI, 2022). However, the production is dominated by small-scale farmers. It contributes to the challenge of quality and certificates for export (Snel et al., 2021). Also, the production of avocados is seasonal. The two aspects (small-scale farmers and seasonal) result in the low value for the chain of avocados and 10%-20% of avocados will be wasted (CBI, 2022; Kiilu & Wambugu, 2001; Snel et al., 2021). Individual Quick Freezing (IQF) in Kenya is considering as an approach to solve the short shelf life of perishable fruits and help supply products all year round (Sebastian, 2020). The Netherlands is the center of import and re-sell frozen fruit products in the Europe market (CBI, 2020a). As estimated, 70% of the frozen products will go to food processing industry and there is a great increasing in food service industry in Europe (CBI, 2020b). Also, the trend of seeking convenient and healthier alternatives provide a potential consumer market for frozen fruits (CBI, 2020b). Therefore, the objective of the project is to investigate the opportunities to sell IQF frozen from Kenya to the Dutch market to reduce oversupply food waste by doing literature study, interviews, and market survey.

Methodology

The research included two parts: interviews and market survey.

Interviews: Sunripe was selected as the Kenya IQF avocado exporter and processor to understand their capacity and processing status. For B2B market (Dutch importer/food processor/food services), the questions were about the competitors in the market and their preferences. The collected data were analysed by SWOT matrix and Porter's 5 Forces. The former was used to indicate the strengths and weaknesses of Kenya IQF avocados, and the opportunities and threats of the Dutch market; the latter was used to know the competition in the Dutch market.

Market Survey: The target group of the market survey is Dutch consumers. For questions "satisfaction of the frozen avocado in the Dutch market" and "willingness to buy frozen avocado instead of the fresh for different factors", the two questions are the scale questions. The quantitative data will be defined with number (e.g., Very Satisfied-5, Very Dissatisfied-1). It will be

presented as the average score first. For each score, it will be compared to the score that is lower than itself by One-sample t test to show if it is significantly different with the lower score ($p < 0.05$). Also, since the data is categorical data, it will be analysed with Chi-square by SPSS ($\alpha = 0.05$) to check whether the factor will affect their choice. For the rest questions, the results will be analysed by frequency and make it visible by bar chart or pie chart.

Current Situation of Kenya IQF Avocados

Strengths:

- Both in the literature study and survey, IQF avocado can help extend the shelf life of fresh avocados and supply all year round. Therefore, it means a better profit.
- Kenya government will set up frequent bans on the fresh avocado exports to ensure their quality. Sunripe claimed that the IQF can help solve the problem of perishability and break the bans of the fresh avocado, which extends the Kenya avocado supply period, creates more profits, and reduce the food waste.
- Regarding the quality of frozen avocados, IQF can provide almost the same texture/flavour products as the fresh.

Weaknesses:

Generally, the Kenya frozen avocado industry is facing these challenges (Kiilu et al., 2001):

- Lack of international and regional standards and product specifications
- Availability of raw materials (fresh avocados)
- Lack of storage facilities
- High requirements of processing facilities during peak season and low utilization in the rest time

However, as the pioneer of the Kenya IQF avocados, Sunripe does not face these challenges. They have international food certification (e.g., Global G.A.P). Also, their avocado trees can fruit 9 months a year. These fruits can be processed immediately after being picked and kept under Controlled Atmosphere (CA) after being processed, they can ensure the continuity of the cold chain as well. Regarding the utilization of the machines, they have other frozen products to process (e.g., broccoli). The situation will be different due to the size of the company.

- For Sunripe, they will add antioxidants to ensure the quality of products.

Competition of Kenya IQF Avocados in Dutch Market

Threats of New Entrants:

Vietnam shows an increase in export to Europe to be a potential competitor (CBI, 2020b). It may be a sign for the easier entry of new entrants. Also, the Netherlands is one of the biggest European frozen fruit markets, which is also the largest importer and re-exporter in Europe (CBI, 2020b). The threats will be *high*.

Bargaining Power of Suppliers:

As for the suppliers, in the literature study, the main frozen avocado supply countries for European market are Vietnam, Mexico, and Peru (CBI, 2020b). There are many international companies in the market, such as Champion Food (Mexico). Also, there are many European companies, such as Salud Foodgroup (the Netherlands) and Syros (Belgium). These companies

have the same target market as Sunripe. Therefore, the bargaining power of suppliers is *low*.

Bargaining Power of Buyers:

In the market survey, only 39.8% of them have tried frozen avocados. For these consumers, the main reason for not choosing frozen avocados are “Quality Concern” and “Lack of Awareness of Products”.

Threats of New Substitutes:

There are two types of substitutes: other type of frozen avocados, and fresh avocados.

a) Frozen avocados:

In the market survey, the satisfaction of three elements is 3.19, 3.21, and 3.10. The customers’ satisfaction of frozen avocados in the Dutch market is on the Neutral level but not Satisfied.

Customer Satisfaction with Frozen Avocados in the Dutch Market

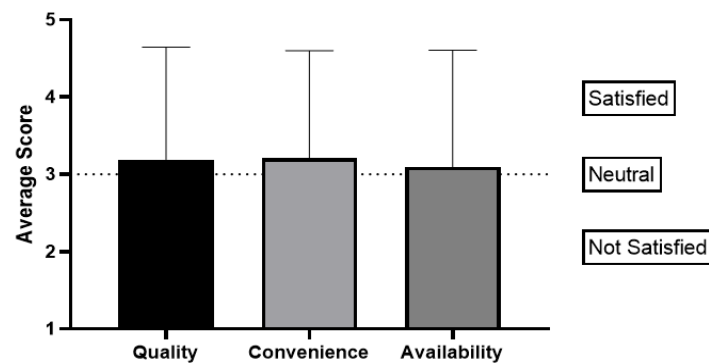


Fig. 1 Customer Satisfaction with Frozen Avocados in the Dutch Market (1-Very Dissatisfied, 5-Very Satisfied)

b) Fresh avocados:

In the market survey, consumers’ willingness to buy frozen avocado rather than fresh avocado for four elements is 1.485, 2.153, 1.785, and 1.583. They are less willing to buy frozen avocados instead of the fresh with price, quality, and reputation. But they would like to buy the frozen for convenience.

Willingness to Buy Frozen Avocados Instead of Fresh Avocados for Different Factors

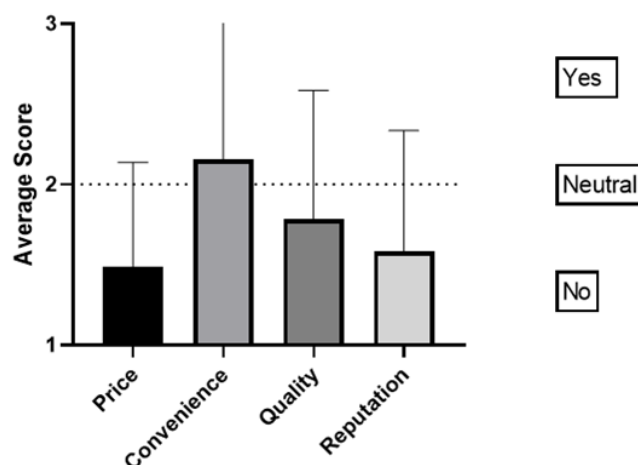


Fig. 2 Willingness to Buy Frozen Avocados Instead of Fresh Avocados for Different Factors

(1-No, 2-Maybe, 3-Yes)

Based on two figures, threat of other frozen avocados is *medium* since consumers are not enough satisfied with the products in the market; but the threat of fresh avocados is *high*, because they are less interested in the frozen avocados with “Price” “Quality” and “Reputation” when compared to the fresh. Therefore, the threat of substitutes is *high*.

Competition in the Industry:

Based on the information above, Kenya IQF avocados have to face the competition from Mexico, Peru, Vietnam, and even the European competitors. Regardless of them, Kenya IQF avocados also need to join the race with fresh avocados. Therefore, the competition in the industry is *High*.

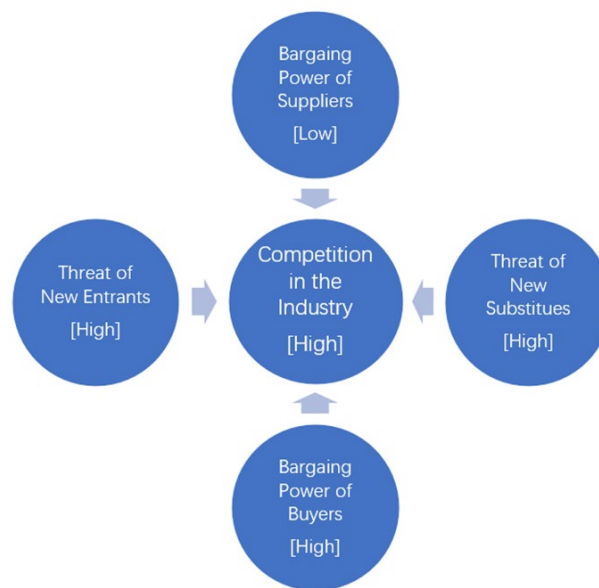


Fig. 3 Porter’s 5 Forces, described the competition that Kenya IQF avocados will face in the Dutch market.

EU Regulations on Frozen Avocados

There are two aspects of EU regulations that related to frozen fruits.

Control of contaminants:

- Pesticide Residue
- Microbiological Contaminants
- Heavy Metals

These three are the main perspectives of contaminants. For Pesticide, importers are responsible for checking and testing. The unqualified products will quit the market. Also, European Union also has official border controls for pesticides. The requirements will be stricter if the products are repeatedly non-compliant (CBI, 2020b; Regulation (EU) 2022/913). The common microbiological organisms in tropical fruits are norovirus and salmonella. And this is related to the production environment and post-harvest. Regarding heavy metals, according to the European Commission Regulation (EC) No 1881/2006, lead and cadmium may be present in frozen fruits, which are possible from the cultivation environment, packaging materials, etc.

Temperature Control: For IQF products, EU has special requirements for them. Due to the special product characteristics, the temperature should be equal and even lower than -18 °C on every step of the chain to guarantee the quality (CBI, 2020b).

Buyers Requirements on Frozen Fruits

B2B:

The general requirements are about four aspects:

- Quality: According to the research from CBI (2020b), as an element of the quality, taste will be influenced by additives. Additionally, a good quality IQF products should be individual with each other (CBI, 2020b; Shahnawaz & Shiekh, 2011).
- Certificates: Popular certificates are International Featured Standards (IFS), British Retail Consortium Global Standards (BRCGS), Food Safety System Certification (FSSC 22000), Global G.A.P and HACCP (Arana Coronado et al., 2015; CBI, 2020b; Match Maker Associates, 2022).
- Traceability: Considering the food safety for consumers, many stakeholders require the traceability of the products, so that they can recall the faulty products. Also, consumers prefer to know the footprint of the whole journey of the product from the farm to the shelf (CBI, 2020b).
- CSR: Some pioneers have designed the common rules and prefer their suppliers to follow their rules of CSR and CSRD (directive), but the requirements could be diverse (CBI, 2020b).

B2C:

- Quality: Consumers prefer to have products with less and even no additives/ preservatives. Also, the texture/taste should be as same as the fresh. The product should be sustainable as well.
- Convenience: Consumers are seeking healthier and convenience food. They prefer the product can have longer shelf life and save time. But they didn't show a strong interest in the characteristics of IQF avocados: freezing individually.
- Price: Price is not the key element that affect their choices. Some consumers worry that a lower price means a worse quality.
- Origin of Suppliers: Consumers don't care about the origin of suppliers much.

Both in the literature study and market survey, consumers showed a strong willingness to buy frozen avocados for special foods (e.g., smoothies). It also affects potential consumers' choice for trying frozen avocados in the future: people who buy frozen fruits for special foods will be more willing to try frozen avocados (Table 1).

Table 1. Chi-square Analysis of "Specific Food" and "Willingness to try frozen avocado in the future" ($p < 0.05$).

		Willingness to try frozen avocado in the future			Total	X ²	p
		Yes	Maybe	No			
Buy frozen fruits to make special food (e.g., smoothies)	Yes	13	14	7	34	8.253	0.016
	No	10	12	24	46		
Total		23	26	31	80		

Therefore, the opportunity and threats in the Dutch market can be summarized.

Opportunity:

- Consumers are seeking convenience and healthier alternatives (smoothies). People who buy frozen fruits for special foods are more willing to try frozen avocados in the future.
- People are looking for avocado products with a longer shelf life.
- People in the Dutch market not that care about the origin of the suppliers.

Threats:

- People are not that interested in “freezing individually”.
- Customers prefer to have less additives/ preservatives.
- The awareness of the frozen avocado is limited.
- Due to the concerning of quality, people prefer to have fresh avocados.

To have a better overview of Kenya IQF avocados, SWOT is selected to know all aspects of the internal and external conditions of it will be integrated and summarized.

Strength [↵]	Weakness [↵]
1. IQF can produce almost the same texture/ flavor products as the fresh. [↵] 2. Compared with the fresh avocados, the IQF avocados can have longer shelf life and supply all year round. [↵] 3. IQF avocados can help breaks the frequent bans on fresh avocado export in Kenya. [↵] 4. Big companies (such as Sunripe) are able to ensure the quality of the products and meet the requirements of the customers (availability, certificates, sustainability, and traceability). [↵]	1. The abilities to meet the requirements of Dutch market depend on the company size. [↵] 2. It's difficult to have certificates and be a part of the supply chain for small-scale farmers. [↵] 3. The products will be added with antioxidants. [↵]
Opportunity [↵]	Threat [↵]
1. The trends of seeking convenience and healthier alternatives (smoothies) help expand the market. [↵] 2. People are looking for avocado products with a longer shelf life. [↵] 3. People's satisfaction of the frozen avocado products in the Dutch market is Neutral. [↵] 4. People in the Dutch market not that care about the origin of the suppliers. [↵]	1. People are not that interested in “freezing individually”. [↵] 2. The competition in the Dutch market is intensive. [↵] 3. Customers prefer to have less additives/ preservatives. [↵] 4. The awareness of the frozen avocado is limited. [↵] 5. Due to the concerning of quality, people prefer to have fresh avocado [↵] 6. B2B market prefer their suppliers are able to have traceability of their products. [↵] 7. Consumers prefer to buy sustainable products. [↵]

Fig.4 SWOT Matrix, provided the internal and external conditions of Kenya IQF avocados. Strength and Weakness are about the internal analysis of Kenya IQF avocados; Opportunity and Threat are about the external analysis of Dutch market.

Conclusion

The quality of Kenya IQF avocados can be different for the size of the company. Bigger company can be easier to meet the requirements of Dutch market.

In term of the quality of IQF and none IQF avocados in the Dutch market, consumers are not enough satisfied with them. Also, they prefer to buy fresh avocados instead of the frozen due to a better quality.

Regarding the requirements, EU regulations have legislated the restriction on Control of contaminants and temperature control of the products. Therefore, Kenya IQF avocados should take care of the environment of the production area and ensure the continuity of the cold chain. For B2B market, companies have their own preferences on quality, certificates, traceability, and CSR. However, due to the limitations of the survey, the detailed information is still unknown, which could be the direction of the further study.

Regarding B2C market, consumers showed that “Quality” and “Convenience” are the top elements that affect their choices. For quality, they hope the products can have almost same texture as the fresh, and with less additives/preservatives. Also, the product will be better if it’s sustainable. For convenience, they prefer the products can have longer shelf life and save time.

Overall, Kenya IQF avocado can be successful to enter the Dutch market, but it may be not suitable for all companies. For big companies, the trend of smoothies, seeking convenience food, and preferences on sustainability are the opportunities for them to enter the Dutch market.

Recommendations

- Big Kenya IQF avocado producers/exporters should cater to the growing trend of seeking convenient and healthier alternatives (e.g., avocado smoothies) with their products by producing high-quality product with almost the same texture and flavour as fresh avocados.
- Small companies can collaborate with big companies and make use of their expertise and resources to overcome the challenge of meeting the requirements of the Dutch market based on company size.
- Differentiate from competitors by emphasizing the superior quality and assurance provided by big companies like Sunripe, reassuring customers about the product's trustworthiness.
- Bigger companies should enlarge their influence to help the farmers learn more knowledge of growing high-quality avocados.
- The government should provide support and guidance for small-scale farmers. Educate them with cultivation knowledge and help them reduce the usage of chemicals.
- The industry should look for approaches to reduce or eliminate the use of antioxidants in the IQF avocado to meet the customer preferences.

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